

NEW HAMPSHIRE

Coastal Zone Management Act
Section 309 Enhancement Grants Program
Assessment and Strategy
July 2021 – June 2025



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ACRONYMS

CAW – New Hampshire Coastal Adaptation Workgroup
CMP – Coastal Management Program
CZM – Coastal Zone Management
CZMA – Coastal Zone Management Act
GBNERR – Great Bay National Estuarine Research Reserve
FEMA – Federal Emergency Management Agency
NHCP – New Hampshire Coastal Program
NHDES – New Hampshire Department of Environmental Services
NHFG – New Hampshire Fish and Game
NOAA – National Oceanic and Atmospheric Administration
NPS – Nonpoint Source
NROC – Northeast Regional Ocean Council
PREP – Piscataqua Region Estuaries Partnership
SAMP – Special Area Management Plan
UNH – University of New Hampshire

INTRODUCTION

The Coastal Zone Enhancement Program was established under Section 309 of the Coastal Zone Management Act (CZMA), as amended. The program encourages state coastal management programs (CMPs) to strengthen and improve their federally approved coastal management programs in one or more of nine enhancement areas: wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area management plans (SAMPs), ocean/Great Lakes resources, energy and government facility siting, and aquaculture.

Every five years, states and territories are encouraged to conduct self-assessments of their CMPs to determine the extent to which problems and opportunities exist to enhance their programs within each of the nine enhancement areas and assess the effectiveness of existing management efforts to address identified problems.

Past Section 309 Assessments

In 1991, as part of instituting an Enhancement Grants Program in New Hampshire, the state conducted a detailed assessment of the New Hampshire Coastal Program (NHCP) using public input and other resources. This assessment prioritized needed NHCP improvements by identifying Wetlands Protection and Restoration as well as Cumulative and Secondary Impacts of Development as New Hampshire's two priority coastal issues. A five-year Strategy document to serve the state through Federal Fiscal Year 1995 was then developed that identified specific projects for addressing these priority issues. Each project was designed to lead a program change that New Hampshire would seek to implement. For example, the 309 Plan was used to support the establishment of the salt marsh restoration program.

The Strategy was revised in 1994, 1996, 2001, 2006, 2011 and 2016. The table below summarizes the high priority areas identified in each NHCP assessment, which have included the Wetland Protection and Restoration throughout the history of the New Hampshire coastal program.

High Priority Coastal Issues in New Hampshire								
Enhancement Areas	1991	1994	1996	2001	2006	2011	2016	2021
Wetlands	✓	✓	✓	✓	✓	✓	✓	✓
Coastal Hazards						✓	✓	✓
Public Access								
Marine Debris								
Cumulative & Secondary Impacts	✓	✓	✓	✓	✓	✓	✓	
Special Area Management Planning								
Ocean & Great Lakes Resources					✓	✓		
Energy & Government Facility Siting								
Aquaculture								

2021 Section 309 Assessment

The priority issues and strategies for this Assessment were determined through a comprehensive planning process undertaken by NHCP staff during the summer and fall of 2019. Stakeholders and partners were involved in this process through personal interviews and facilitated input sessions. The facilitated sessions included confirmation of enhancement area prioritization developed by NHCP staff as well as targeted discussions on coastal hazards and wetlands. The sessions provided NHCP staff with additional management needs, gaps, and emerging issues at the community, state and regional level. The enhancement area prioritization was supported by members of the New Hampshire Coastal Adaptation Workgroup (CAW) and the Management Committee of the Piscataqua Region Estuaries Partnership (PREP). Additional support for priorities and strategies for this Assessment came through the PREP 2015 Environmental Planning Assessment (PREP, 2014) as well as the 2020-2024 NHDES New Hampshire Nonpoint Source Management Program Plan (NHDES, 2019). Because both of these management plans also contain prioritized goals and objectives based on input from stakeholders, they, too, provide public guidance on Section 309 activities. Upon completion of the draft 2021 Section 309 Assessment and Strategy in February 2020, the report will be subjected to a 30-day public comment period.

SUMMARY OF RECENT SECTION 309 ACHIEVEMENTS

Wetlands

Program change: New state legislation

In 2019, the New Hampshire Department of Environmental Services (NHDES) Wetlands Rules were updated to include a new coastal section (Chapter 600) which includes requirements for certain applicants to conduct a coastal vulnerability assessment to their project and consider and address sea-level rise and salt marsh migration potential in their project. The new rules also place new requirements on permits for tidal crossings (Tier 4) and incentivize living shoreline approaches to shoreline stabilization and coastal protection (NHDES, 2019a). A Project of Special Merit funded staff time to write the new wetlands rules in partnership with the Wetlands Bureau.

The new wetlands rules will significantly change the development permit process in the tidal buffer zone and for tidal road crossings, resulting in both less development in those high hazard areas and more resilient designs that provide improved conditions for salt marsh and other coastal ecosystems. The changes will also likely influence wetlands buffer/conservation district zoning ordinances in coastal communities as they consider improvements to their relevant local regulations over time.

Program change: Guidelines in the form of environmental targets and hydrological needs for selected tidal areas

Through a Project of Special Merit (PSM) the NHCP assessed all tidal crossings in New Hampshire with a goal of characterizing their condition and impact as well as identifying high priority projects based on a selection of ecosystem, hazard mitigation and climate resiliency evaluation criteria. The PSM enabled NHCP to implement the tidal crossing assessment protocol at all tidal crossings in New Hampshire's Coastal Zone and enabled NHCP to evaluate field data to determine whether road crossings were restrictive of existing and predicted tide elevations. The tidal crossing assessment data was used to score sites based on structure condition, flood risk and effect on adjacent tidal habitats. The release of new mapping products and data that characterize tidal crossings for community and ecosystem resilience can now be used by community officials and road managers to enact strategic repair/replacement of tidal crossing infrastructure and to identify high priority restoration and conservation opportunities at tidal crossings sites.

Coastal Hazards

Program change: New state legislation

Three new laws based directly on recommendations from the New Hampshire Coastal Risk and Hazards Commission (CRHC) final report and recommendations (2016) were passed. NHCP staff, funded by 309, provided direct assistance to the CRHC in the development of the report and recommendations, which was identified as a Strategy in the previous 309 Assessment and Strategy. In addition, NHCP staff provided testimony on all three bills.

- NHDES Wetlands Rules – Chapter 600 (2019) As described above under Wetlands, the rules were updated to include a new coastal section (Chapter 600). NHCP staff were instrumental in writing the new rules (NHDES 2019a).

- [Chaptered Law 121 - Senate Bill 374](#) (2016) This law requires the Department of Environmental Services to update coastal flooding trends (storm surge, sea-level rise, precipitation, and other relevant projections) at least every five years. An update was published in 2019 (NHGC, 2016a).
- [Chaptered Law 195 - Senate Bill 452](#) (2016) This law requires certain state agencies, including the Department of Environmental Services, to conduct an audit of laws governing coastal regions to enable authorities to take appropriate actions and to consider the Science and Technical Advisory Panel Report projections in actions. Agencies submitted their audit reports in 2018 and some agencies now have formal policies or regulations requiring consideration of sea-level rise and/or precipitation projections, including the New Hampshire Department of Transportation (NHGC, 2016b).

A PSM funded NHCP staff time to conduct the analysis for the NHDES. Future policy changes within the department are likely to be based on the findings of the audit. The final report [Audit of Laws Governing the Coastal Region to Enable Authorities to Take Appropriate Actions to Prepare for Coastal Flood Risks \(SB 452\)](#) was posted on the NHDES website (NHDES, 2016a).

Accomplishment: Implement the New Hampshire Coastal Risk and Hazards Commission recommendations.

The New Hampshire Coastal Risk and Hazards Commission completed its work on December 1, 2016 with the publication of its final report and recommendations. The Commission's work represents the best opportunity for improving the management of coastal hazards in New Hampshire at both state and local levels. In addition to working on the new state legislation (described above), NHCP staff worked with state agencies and coastal communities to identify and implement appropriate planning and coordination recommendations related to New Hampshire coastal management.

- **FFY16 Project of Special Merit: Acting on the Coastal Risk and Hazards Commission's Science, Assessment, Implementation, and Legislation (SAIL) Recommendations**

The New Hampshire Setting SAIL project provided outreach and technical assistance to support state and municipal implementation of the New Hampshire Coastal Risk and Hazards Commission (CRHC) final report, *Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise and Extreme Precipitation*. Project activities raised state agency and municipal awareness of CRHC recommendations; assisted Great Bay municipalities in implementing priority CRHC recommendations; and provided capacity for state agencies to complete inventories of vulnerable state assets and coastal resilience audits of agency statutes and administrative rules. To achieve the project's multi-faceted goals, the NHCP worked with project partners, including the Great Bay National Estuarine Research Reserve (GBNERR), Rockingham Planning Commission (RPC), Strafford Regional Planning Commission (SRPC), University of New Hampshire Cooperative Extension (UNHCE), and New Hampshire Sea Grant (NHSG). RPC, SRPC, and NHCP staff delivered customized technical assistance to 9 of the 10 Great Bay municipalities to prioritize and implement CRHC recommendations that met their unique needs.

- **FFY18 Project of Special Merit *SUSTAIN = Science Update, Social & Technical Approaches, and Incentives***

The NHCP was awarded a FFY18 Project of Special Merit to advance implementation of priority Coastal Risk and Hazards Commission recommendations to prepare the state and coastal zone municipalities for projected increases in coastal flooding. The *New Hampshire SUSTAIN Project for Coastal Resilience* enables project partners to: (1) Update best available coastal flood risk science and guidance; (2)

Identify and test creative strategies to build social capital for resilience; and (3) Inform future implementation of New Hampshire Senate Bill (SB) 185, which extends the community revitalization tax relief program to coastal properties subject to coastal flooding. Since the project began, NHCP staff have coordinated the development and external review of the 2019 New Hampshire Coastal Flood Risk Science Summary; drafted and obtained preliminary input on the companion 2019 Coastal Flood Risk Guidance; met with project staff from UNH Cooperative Extension and New Hampshire Sea Grant to receive an update on the development of the Creative Outreach Plan for Coastal Community Resilience and begin planning for the 2019 Coastal Flood Risk Guidance public input meetings; and submitted a legal inquiry to the New Hampshire Municipal Association and met with planning and assessing departments in the City of Dover, Town of Durham, Town of Rye, and Town of Hampton regarding the viability of Senate Bill 185.

- **2019-2021 NOAA Coastal Management Fellowship Project**

NHCP was awarded a 2019-2021 NOAA Coastal Management Fellowship, entitled *Keeping New Hampshire's Coast Afloat: Creative Financing Mechanisms and Policy Making for Resilient Coastal Communities*. The Afloat project will advance the adoption and use of creative financing mechanisms and state and local policies that facilitate on-the-ground adaptation and resilience efforts in coastal New Hampshire. To accomplish this goal, a fellow has joined NHCP staff and partners to: 1) lead the creation of a coordinated partnership program to advance coastal community understanding and implementation of local stormwater and resilience fees; and 2) facilitate a collaborative process to investigate and recommend state and local coastal resilience policies. The fellow began work in July 2019.

- **FFY19 Project of Special Merit**

NHCP was awarded a FFY19 Project of Special Merit proposal, entitled *Coast Shift: Changing how the New Hampshire Seacoast transports, plans, permits, and finances for resilience*. The goal of the Coast Shift project is to catalyze new coordinated partnerships to infuse coastal resilience in four emerging priority focus areas: transportation, community planning, coastal permitting, and financing. To do so, the Coast Shift proposal entails four tasks: 1) complete a Seacoast Transportation Corridor Vulnerability Assessment and Plan; 2) Complete a draft Hampton Coastal Hazards and Adaptation Master Plan Chapter; 3) Create coastal wetlands rules guidance for tidal vulnerability assessments and living shorelines; and 4) Advance implementation of creative financing and policies for coastal resilience. The project award period will run from October 2019 – March 2021.

Accomplishment: Coastal Adaptation Workgroup (CAW)

NHCP joins the NHDES Air Resources Divisions Permitting and Environmental Health Bureau, the Coastal Training Program at the Great Bay National Estuarine Research Reserve (GBNERR), New Hampshire Sea Grant, the Natural Resources Outreach Coalition, two regional planning commissions, and a multitude of other organizations and expertise in participating in CAW.

CAW helps communities in New Hampshire's Seacoast area prepare for the effects of extreme weather events and other effects of long term climate change by providing education, facilitation, technical assistance and guidance. CAW members coordinate on projects that move forward climate adaptation planning.

NHCP staff have been active members of CAW throughout the last five years, participating in both the full CAW and outreach subcommittee meetings. NHCP staff launched and continue to maintain CAW's social media presence on three platforms (Twitter, Facebook and Instagram) and led the implementation of King Tide photo contests and post-contest outreach, which has included photo exhibitions around the Seacoast.

An example of a major CAW accomplishment that resulted directly from NHCP’s coordination, funding and staff support was the launch of the new CAW website in the spring of 2017. The goal of the CAW website is to be a place for municipal officials and volunteers, citizens, educators and others to quickly connect to information about how to reduce the risk of damage from coastal hazards like flooding from storms and sea-level rise and get involved with coastal adaptation projects in New Hampshire. Visitors will find links to upcoming workshops, events, and resources specific to enhancing resilience in the local coastal area. Additionally, the website showcases stories and photos from New Hampshire to help others learn and build on what’s already being done. Visit the website at www.nhcaw.org.

Cumulative and Secondary Impacts

FFY16 Project of Special Merit

The NHCP served as the principal project manager for the *Incentivizing Resiliency through Implementation Plans in One of Coastal New Hampshire’s Fastest Growing Communities (Exeter Stormwater Resilience – Lincoln Street Phase II)* Project of Special Merit. The NHCP coordinated and supported the work of the project partners – Rockingham Planning Commission (RPC), Waterstone Engineering, and a Communications Consultant. The *Exeter Stormwater Resilience – Lincoln Street Phase II* project incentivized climate resiliency in the Town of Exeter, New Hampshire through the development of a sub-watershed scale implementation plan and climate adaptation policies combined with innovative communications that illustrate the economic benefits of flood adaptation. The project improved community education, including the design and implementation of the Water Trail in Exeter, and engaged in practices focused on using green stormwater infrastructure as a tool to enhance flood protection and water quality.

PHASE I (High-level) ASSESSMENTS

Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR 328.3(b)]. See also pg. 174 of the CZMA Performance Measurement Guidance¹ for a more in-depth discussion of what should be considered a wetland.

PHASE I (HIGH-LEVEL) ASSESSMENT: (Must be completed by all states.)

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

- Using provided reports from NOAA’s Land Cover Atlas,² please indicate the extent, status, and trends of wetlands in the state’s coastal counties. You can provide additional or alternative information or use graphs or other visuals to help illustrate or replace the table entirely if better data are available. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico currently only has data for one time point so will not be able to report trend data. Instead, Puerto Rico should just report current land use cover for all wetlands and each wetlands type.

Current state of wetlands in 2016 (acres): 2016 CCAP data was not available.

Coastal Wetlands Status and Trends

Change in Wetlands	from 1996-2011	from 2006-2011
Percent net change in total wetlands (% gained or lost)*	-0.9% (-923.2 acres)	-0.2% (-216.2 acres)
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	-0.8% (-785.1 acres)	-0.2% (-206.6 acres)
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	-0.1% (-98.1 acres)	-0.02% (20.5 acres)

¹ <https://coast.noaa.gov/data/czm/media/czmapmsguide.pdf>

² <https://coast.noaa.gov/digitalcoast/tools/lca.html>. Note that the 2016 data will not be available for all states until later. NOAA OCM will be providing summary reports compiling each state’s coastal county data. The reports will be available after all of the 2016 data is available.

NHDES tracks wetland permitting activities and associated wetland impacts that are depicted in the following tables.

Coastal Wetlands Status and Trends – Number of Acres of Permit-Estimated Change in Wetlands Habitat Due to Activities Subject to CZM Regulatory Programs

Change in Wetlands	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of acres tidal wetlands lost	0.28	0.09	0.01	0.02	0.34	0.03	0.17	1.0	1.89
Number of acres tidal wetlands gained/mitigated	0.34						4.3		
Number of acres beach dune habitat lost								0.1	
Number of acres nearshore habitat lost					0.01			0.16	0.93
Number of acres non-tidal/freshwater wetlands lost	1.9	0.71	2.65	1.18	0.2	2.34	1.46	1.27	2.64
Number of acres other habitat gained/mitigated							17.2		0.41

*Data reported in the New Hampshire Summary NOAA Performance Measures Reports (July to June)

Changes in Coastal Habitat Due to CZM Funding or Staff

Change in Coastal Habitat	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of acres tidal wetlands restored	0.5	0.5	0.5 + 14.3 river miles	0.5	0.5	0.5	0.5	0.6	0.6
Number of acres beach dune habitat lost				1.85		3.7	3.7	3.7	1.5
Number of acres nearshore acquired or protected by easement	10	11	11	11	1.3	1.3	1	4.24	4.24
Number of acres of other habitat restored						0.1		17.5	17.5

*Data reported in the New Hampshire Summary NOAA Performance Measures Reports (July to June)

How Wetlands Are Changing*

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2011 (Sq. Miles)	Area of Wetlands Transformed to Another Type of Land Cover between 2006-2011 (Sq. Miles)
Development	1.14	0.36
Agriculture	0.041	0.04
Barren Land	0.14	0.006
Water	0.20	0.012

* Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in wetlands for the time period for which data are available. Puerto Rico does not report.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.

- [Piscataqua Region Estuaries Partnership \(PREP\) - State of Our Estuaries Report](#) (2018) – This report “examines environmental indicators of estuarine health, such as bacteria levels, nutrient concentrations, toxic contaminant levels, abundance of shellfish, and land use in the coastal watershed. By examining long-term datasets compiled from a variety of organizations, the report describes the current status of Southeastern New Hampshire and Southern Maine’s estuaries and suggests trends for the future. The report is designed to provide readers with an accurate understanding of environmental trends for the Great Bay and Hampton-Seabrook estuaries so that they may make informed land use and resource management decisions.” From the early 1900s to 2010 over 1,000 acres of salt marsh area was lost in the Piscataqua Region watershed. In 2017 a baseline assessment was conducted using standardize digital methods, categorize salt marsh into high-marsh grass and low-marsh grass, as well as invasive species to track the area of salt marsh lost to sea-level rise. The assessment found that approximately 5,521 acres of salt marsh habitat remain (PREP, 2018).
- [New Hampshire Nonpoint Source Management Program Plan 2020-2024](#) (2019a) – The goal of New Hampshire’s Nonpoint Source (NPS) Program is to protect and restore clean water in the state’s rivers, lakes, estuaries, and other waters from the negative impacts of nonpoint source pollution. Specifically, the NPS Program works toward improving land management practices such that water quality in impaired watersheds is restored and water quality in healthy watersheds is not degraded as a result of land use activities. The NPS Program partners with many organizations, including coastal watershed partners, to develop and implement the Plan. This update of the 2014 NPS Management Plan establishes specific, short-term objectives and measurable milestones to be accomplished over the next five years to work toward attaining long-term NPS Program goals. This report notes that experts continue to document existing and predicted changes to hydrology and habitats (salt marsh migration and conversion to mudflats as well as freshwater wetlands emerging due to rising groundwater) associated with sea-level rise (NHDES, 2019b).
- [New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) identify risks associated with coastal storms, sea-level rise, and extreme precipitation, including mapped vulnerability to sea-level rise and storms for all coastal zone communities. The report suggests that risks vary for difference communities, but overall risk of coastal flooding in

New Hampshire's coastal zone is high. Higher water levels will drown salt marshes, deepen estuarine waters, convert salt marsh to mud flat and mudflat to subtidal zones. Modeling suggests that salt marshes will likely reach a tipping-point under the highest sea-level rise scenario, with 95 percent of salt marshes potentially disappearing by 2100. In addition, extreme storm events can pose significant risks to coastal systems by altering hydrology, sedimentation, and land forming processes (NHCRHC, 2016).

- [New Hampshire Wildlife Action Plan](#) (2015) identifies species of greatest need of conservation, habitats that are at the greatest risk, as well as land uses and activities that present the greatest threats to wildlife and habitat. The Plan outlines actions that can be taken to protect and manage habitat and wildlife in New Hampshire. Saltmarshes and dunes were habitats identified as high priority with the greatest number of high-ranking threats. These threats include commercial and residential development, pollution, disease, and climate change. The plan identified where and how wildlife will be impacted over the next ten years and what actions need to be taken to prevent further loss. Specifically, the [Salt Marsh Appendix](#) reports there are 6,039 acres of salt marsh in New Hampshire and an estimated 18-50% loss of the state's original salt marsh has been lost to development (including ditches for mosquito control) or inadequate tidal flow (due to transportation including railroad beds and roads). Additional loss has occurred due to the spread of the invasive common reed (*Phragmites australis*). Climate change induced reductions in salinity and increased nutrient will likely facilitate the growth of invasive species further. Excess nutrient input has impacted the quality of some expanses of remaining salt marsh. Protecting and restoring remaining salt marsh habitat is of high priority (NHFG, 2015).
- [Resilient Tidal Crossings](#) (2019) – The New Hampshire Coastal Program published the results of a comprehensive inventory and assessment of tidal stream crossings in New Hampshire's coastal zone. Scoring criteria were applied to prioritize each crossing with a focus on enhancing coastal resilience for both human and natural communities. Infrastructure condition, inundation risk, tidal restriction, fish passage and salt marsh migration were among the scoring components. Out of the 118 tidal crossings, the assessment determined that greater than 80% of sites are moderately to highly restrictive to tidal flows and the majority of sites result in altered hydrology leading to severe channel erosion immediately upstream and downstream of the crossing. Seven crossings are permanent barriers to aquatic organism passage; many of these are perched at high tide or impounded. In terms of planning for long term sea-level rise, sixty-two crossings (53%) were identified as having 5-acres or more of salt marsh migration potential (NHDES, 2019c).
- [Living Shorelines Site Suitability Model](#) The New Hampshire Living Shoreline Site Suitability Assessment (L3SA) is intended to help interested stakeholders identify sites that are suitable for specific living shoreline approaches in order to address erosion issues along the New Hampshire tidal shoreline. The L3SA evaluates living shoreline suitability using spatial data about the state's tidal shoreline and characteristics unique to the Northeast such as a short growing season, effects of ice, nor'easters, and large tidal range. The L3SA assigns a suitability index number between 1 (less suitable) and 6 (highly suitable) to points along the shoreline (NHDES, 2019d).
- [National Wetlands Inventory Plus](#) (NWIPlus) procured by the New Hampshire Department of Environmental Services in 2017. NWIPlus data were published for Southern and Southeastern New Hampshire and included the Piscataqua-Salmon Falls Watershed (HUC CODE: 01060003).

NWI digital data contains records of the extent, approximate location, and type of wetlands and deepwater habitats in the United States and its Territories. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). NWIPlus is an extension of the core NWI database that adds a set of hydrogeomorphic-type descriptors to the basic wetland coding, thereby facilitating the prediction of wetland functions. The new wetland attributes - referred to as LLWW descriptors - describe Landscape position, Landform, Water flow path, and Waterbody type. The primary source used for the NWIPlus development was 2014 NAIP leaf-on true color imagery. The NWIPlus data were developed by the Conservation Management Institute (CMI), Virginia Tech, under contract to the New Hampshire Department of Environmental Services. Prior to this update, some areas of the coastal watershed hadn't been mapped since 1985 (NHDES, 2017).

- High Resolution Salt Marsh Habitat Maps: In 2019, NOAA Office for Coastal Management, in partnership with the Great Bay National Estuarine Research Reserve (GBNERR) and the New Hampshire Coastal Program, published a High Resolution Salt Marsh Habitat Map for New Hampshire. For the first time ever, various vegetative species and community assemblages of salt marsh have been comprehensively mapped using a classification system developed by NOAA and the National Estuarine Research Reserve System. The classification system, combined with high resolution source data, facilitated the development of finely detailed habitat delineations that provide baseline representation (of 2013 conditions) of salt marsh habitats in New Hampshire and will be suitable for change analysis in the future (NHFG, 2019a).

Management Characterization:

1. Indicate if there have been any significant changes at the state or territory level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment.

Significant Changes in Wetland Management

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

[New Hampshire Department of Environmental Services Wetlands Rules](#) (2019) See “Summary of Recent 309 Achievements – Wetlands Section” for a description. Also, Chapter 600 which will significantly change the permit process resulting in requirements for coastal vulnerability assessments, incentivizing

living shoreline approaches, and potential changes to wetlands buffer/conservation district zoning ordinances in coastal towns over time. Also, the new wetlands rules will also result in both less development in those high hazard areas and more resilient designs that provide improved conditions for salt marsh and other coastal ecosystems.

In addition, Chapter 900 creates a new category (Tier 4) within the stream crossing rules. Stream Crossing replacement in New Hampshire is regulated with increasing scrutiny based on watershed size. For instance, small watersheds of less than 200 acres are categorized as a Tier 1 Crossing and require minimal permitting. Road stream crossing structures that convey discharge from areas greater than 640 acres are categorized as Tier 3 crossings, which require that a professional engineer perform hydraulic analysis and ensure that the proposed structure is compatible from a geomorphic, aquatic organism passage, and flood hazard perspective. The primary regulatory criteria of the new Tier 4 crossings are that an engineer/ designer must demonstrate that a replaced structure does not restrict the tide and can accommodate the 100 Year 24-hour storm. Previous to this policy change, NHDES regulated tidal stream crossing replacement on a case-by-case basis, in the absence of specific regulatory criteria.

Formally adopted on June 10, 2019, the new NHDES Wetland permitting rules will go into effect on December 15, 2019 (NHDES, 2019a).

[Piscataqua Region Environmental Planning Assessment](#) (2015) – This report assesses land use regulations and planning practices in the Piscataqua Watershed, and provides an understanding of how natural resources are managed. To protect resources and accommodate growth, purposeful coordination and consistency are required to achieve success in improving water quality and minimizing community costs associated with pollution and impacts from intensifying weather events. The report is compilation of data recorded from questionnaires designed to collect information on local programs, policies, and regulations designed to protect water quality and ecosystems, and prepare for the impacts of climate change.

Nearly half of the municipalities (46%) in the Piscataqua Region have no regulations restricting disturbance of vegetative buffers along wetlands. 75% of municipalities have no regulations restricting or preventing the application of fertilizers along wetlands. 71% of municipalities allocated funds collected from land use change tax to land conservation. Only 2 % of municipalities have adopted regulations restricting the application of fertilizer adjacent to waterbodies, and only half of these communities require a 100' buffer (PREP, 2015).

[New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) identify risks associated with coastal storms, sea-level rise, and extreme precipitation, including mapped vulnerability to sea-level rise and storms for all coastal zone communities. The report suggests that risks vary for different communities, but overall risk of coastal flooding in New Hampshire's coastal zone is high. Sea-level rise will likely result in greater total habitat and species losses in developed areas where there is no space for natural habitats to retreat and migrate inland. Higher water levels will drown salt marshes, deepen estuarine waters, convert salt marsh to mud flat and mudflat to subtidal zones. Eelgrass will also be impacted because the light necessary for growth and survival will no longer penetrate to the deeper estuarine floor. Changing water levels may impact fish and waterfowl, and saltwater intrusion in freshwater wetlands and drinking water sources may occur. The report lists four goals: science, assessment, implementation, legislation (NHCRHC, 2016).

Comprehensive Plan for Resilient Salt Marshes in New Hampshire (draft expected in 2020) is currently under development through 2018 Coastal Resilience Grant from NHCP to GBNERR. The Resilient Salt Marsh Plan enables the GBNERR to develop a spatially explicit salt marsh management and monitoring plan for the State of New Hampshire. The first phase of the project will be complete by June 2020. The final plan is expected in 2021. The primary outputs of the plan will be characterization of salt marsh condition and vulnerability. The plan will also include spatially explicit recommendations for the restoration, conservation, monitoring, and land use planning for salt marshes (Lucey, 2019).

The [2020 Comprehensive Conservation and Management Plan Climate Change Vulnerability Assessment \(2019\)](#) – assesses how climate change may impact PREP’s ability to meet management goals outlined in the Comprehensive Conservation and Management Plan. The report provides recommendations for adaptation or mitigation actions that PREP could take in response to management priorities that may be hindered by climate change (MIsna, 2019).

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	<u> X </u>
Medium	<u> </u>
Low	<u> </u>

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The New Hampshire Coastal Program has chosen a priority level of high for this enhancement area to foster activities related to salt marsh resiliency. Among the various predicted ecological effects of rapid sea-level rise, none is more concerning than the predicted collapse of salt marsh in New Hampshire. There are currently 6,039 acres of salt marsh in New Hampshire. If sea-level rises at a rate of 6.6 feet by 2100, Sea-Level Rise Affecting Marshes Model (SLAMM) predicts that less than 300 acres of currently existing salt marsh will remain. Detecting this change on the landscape, developing practice to intervene against this change, protecting endemic species that depend on this critical habitat, and conserving lands to grow new salt marsh are some of the salt marsh resiliency activities identified through stakeholder engagement. Stakeholders engaged by NHCP included the Piscataqua Region Estuaries Partnership, Great Bay National Estuarine Research Reserve, The Nature Conservancy, University of New Hampshire- Jackson Estuarine Laboratory, Seabrook Hamptons Estuary Alliance, US Fish and Wildlife Service – Gulf of Maine Coastal Program.

Coastal Hazards

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea-level rise and Great Lakes level change. §309(a)(2)

Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea-level rise; Great Lake level change; land subsidence; and saltwater intrusion.

PHASE I (HIGH-LEVEL) ASSESSMENT: (Must be completed by all states.)

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards. The following resources may help assess the level of risk for each hazards. Your state may also have other state-specific resources and tools to consult. Additional information and links to these resources can be found in the “Resources” section at the end of the Coastal Hazards Phase I Assessment Template:

- The state’s multi-hazard mitigation plan.
- Coastal County Snapshots: Flood Exposure.
- Coastal Flood Exposure Mapper.
- Sea-Level Rise Viewer/Great Lakes Lake Level Change Viewer.
- National Climate Assessment.

General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk ³ (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	M
Shoreline erosion	M
Sea-level rise	H
Great Lakes level change	L
Land subsidence	L
Saltwater intrusion	M
Other (please specify)	

³ Risk is defined as “the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.” *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

2. If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or climate change risk assessment or plan may be a good resource to help respond to this question.

The [New Hampshire Coastal Flood Risk Summary Part I: Science](#) (2019) – provides a synthesis of the state of the science relevant to coastal flood risks in New Hampshire. Specifically, this document provides updated projections of sea-level rise, coastal storms, groundwater rise, precipitation, and freshwater flooding for coastal New Hampshire. This information is intended to serve as the scientific foundation for the companion New Hampshire Coastal Flood Risk Summary - Part II: Guidance for Using Scientific Projections and is intended to inform coastal land use planning and decision-making (Wake, 2019).

The [New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections](#) (Draft 2019) – intended to help decision makers use and incorporate the updated coastal flood risk projections summarized in the *New Hampshire Coastal Flood Risk Summary, Part I: Science* (2019) into state and local projects including plans, regulations, and site-specific applications (NHCFRSTAP, 2019).

The [State of New Hampshire Multi-Hazard Mitigation Plan](#) (2018) – identifies coastal flooding as a natural hazard of high risk. While the plan characterizes current risk as high, citing two Major Disaster Declarations for nor'easter storms along the coast, the plan also identifies the increasing future risk of coastal flooding due to expected changes in sea-level of up to 2 feet by 2050 and up to 6.6 feet by 2100.

The plan also identifies dam failure as a technological hazard of concern, including high hazard dams in the coastal zone. Other hazards identified that are of importance to coastal hazard risk include severe winter weather, tropical and post-tropical cyclones, known and emerging contaminants, and aging infrastructure (NHDOS, 2018).

[New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) – See “Phase 1, Wetlands Section Management Characterization Question 2” identify risks associated with coastal storms, sea-level rise, and extreme precipitation, including mapped vulnerability to sea-level rise and storms for all coastal zone communities. The report suggests that risks vary for different communities, but overall risk of coastal flooding in New Hampshire's coastal zone is high (NHCRHC, 2016).

The [2020 Comprehensive Conservation and Management Plan Climate Change Vulnerability Assessment](#) (2019) – See “Phase 1, Wetlands Section Management Characterization Question 2” provides a broad, risk-based, qualitative, planning-level climate change vulnerability assessment. assesses how climate change may impact PREP's ability to meet management goals outlined in the Comprehensive Conservation and Management Plan. The report provides recommendations for adaptation or mitigation actions that PREP could take in response to management priorities that may be hindered by climate change (MIsna, 2019).

Management Characterization:

1. In the tables below, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas*	N	Y	N
Management of development/redevelopment in other hazard areas	N	Y	N
Climate change impacts, including sea-level rise or Great Lakes level change	Y	Y	Y

*Uses state definition of high-hazard areas.

Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Hazard mitigation	Y	Y	Y
Climate change impacts, including sea-level rise or Great Lakes level change	Y	Y	Y

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Sea-level rise or Great Lakes level change	Y	Y	Y
Other hazards	Y	Y	Y

2. Briefly state how “high-hazard areas” are defined in your coastal zone.

In New Hampshire, coastal “high-hazard areas” are defined as FEMA flood insurance rate map zones V, V1-30, and VE. The preliminary flood insurance rate maps that incorporate new coastal data have consolidated the zones by eliminating V and V1-30, therefore, when the preliminary maps for Rockingham County are adopted in 2019, “high-hazard areas” will be defined as FEMA flood insurance rate map zone VE.

In addition to this definition, the state of New Hampshire recognizes a tidal wetlands buffer zone of 100 feet landward of the Highest Observable Tide Line and limits development in this zone to preserve the buffer for flood and natural resource protection. Additionally, New Hampshire designates Fluvial Erosion Hazard Area Zones, along river corridors that present high risks of erosion. Several river segments within the coastal zone have been designated as Fluvial Erosion Hazard Areas, including parts of the Cocheco River, the Exeter River, and the Lamprey River. Development is limited in designated Fluvial Erosion Zones in order to reduce risk and vulnerability.

3. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

- a. Describe the significance of the changes;
 - i. [New Hampshire Department of Environmental Services Wetlands Rules \(2019\)](#) - See “Summary of Recent 309 Achievements – Wetlands Section” for a description. The rules were updated to include a new coastal section (Chapter 600) which includes requirements for certain applicants to conduct a coastal vulnerability assessment to their project and consider and address sea-level rise and salt marsh migration potential in their project. The new rules also place new requirements on permits for tidal crossings (Tier 4) and incentivize living shoreline approaches to shoreline stabilization and coastal protection (NHDES, 2019a).
 - ii. [Chaptered Law 121 - Senate Bill 374](#) (2016) passed, requiring the Department of Environmental Services to update coastal flooding trends (storm surge, sea-level rise, precipitation, and other relevant projections) at least every five years. An update was published in 2019 (NHGC, 2016a).
 - iii. [Chaptered Law 195 - Senate Bill 452](#) (2016) passed, requiring certain state agencies, including the Department of Environmental Services, to conduct an audit of laws governing coastal regions to enable authorities to take appropriate actions and to consider the 2014 Science and Technical Advisory Panel Report projections in actions. Agencies submitted their audit reports in 2018 and some agencies now have formal policies or regulations requiring consideration of sea-level rise and/or precipitation projections, including the Department of Transportation (NHGC, 2016b).
- b. Specify if they were 309 or other CZM-driven changes;
 - i. These changes were 309-driven. All were based directly on recommendations from the New Hampshire Coastal Risk and Adaptation Commission final report and recommendations (NHCRHC 2016). NHCP staff funded by 309 provided direct assistance to the development of the NHCRHC report and recommendations, which was identified as part of Strategy 2 in the previous 309 Assessment and Strategy. NHCP staff provided testimony on the bills prior to their passage. A NOAA Project of Special Merit funded staff time to write the new wetlands rules in partnership with the Wetlands Bureau and to implement Chaptered Law 121 and 195.
- c. Characterize the outcomes or likely future outcomes of the changes.
 - i. The new wetlands rules will significantly change the development permit process in the tidal buffer zone and for tidal road crossings, resulting in both less development in those high hazard areas and more resilient designs that provide improved conditions for salt marsh and other coastal ecosystems. The changes will also likely influence wetlands

- buffer/conservation district zoning ordinances in coastal communities as they consider improvements to their relevant local regulations over time.
- ii. Chaptered Law 121 resulted in an updated 2019 Coastal Flood Risk Synthesis, developed with advisory capacity from multiple state agencies. The synthesis includes updated sea-level rise projections,
 - iii. Chaptered Law 195 resulted in published analyses of statutes, regulations, and policies to understand whether changes are needed to enable state agencies to adapt to future coastal flood risks. The analysis for the New Hampshire Department of Environmental Services was performed by NHCP staff and shared with the Governor of New Hampshire. Future policy changes within the department are likely to be based on the findings of the audit. Additionally, the law resulted in the incorporation of future coastal flood risks into several department rules and other agency policies.

Significant Changes in Hazards Planning Programs or Initiatives

- a. Describe the significance of the changes;
 - i. The New Hampshire Multi-Hazard Mitigation Plan was updated in 2018 with assistance from NHCP staff. New data, including sea-level rise was incorporated in the plan update. Recommendations from the New Hampshire Coastal Risk and Hazards Commission were also incorporated.
 - ii. The New Hampshire Coastal Flood Risk Summary Parts I and II were developed over the course of 2019, resulting in an updated summary of the coastal flood risk science (Part I), focused on relative sea-level rise, coastal storms, sea-level induced groundwater rise, and extreme precipitation and freshwater flooding. The summary also consists of a new guidance document (Part II) to assist decision-makers as they incorporate coastal flood risk science into their projects.
- b. Specify if they were 309 or other CZM-driven changes;
 - i. The coastal flooding sections within the plan update, including incorporation of sea-level rise, were driven by NHCP staff funded by 309 funds.
 - ii. The New Hampshire Coastal Flood Risk Summary was funded by a FFY18 NOAA Project of Special Merit.
- c. Characterize the outcomes or likely future outcomes of the changes.
 - i. The New Hampshire multi-hazard mitigation plan now incorporates more explicit priorities of NHCP with respect to coastal flooding, including recommendations for utilizing sea-level rise information in hazard mitigation planning and decision making.
 - ii. The Coastal Flood Risk Summary will be incorporated into plans, regulations, and site-specific applications throughout coastal New Hampshire.

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

- a. Describe the significance of the changes;
 - o Several significant mapping and modeling updates have taken place since the previous 309 Assessment and Strategy. They include:
 - i. New public sea-level rise maps that show increments of 1, 2, 4, 6, and 8 feet of sea-level rise on the New Hampshire Coastal Viewer
 - ii. Development of a hydrodynamic model and flood scenarios for Great Bay and the Hampton-Seabrook Estuary
 - iii. Completion of vulnerability assessment mapping for all coastal zone municipalities
 - iv. Mapping of all tidal crossings, including condition and flood hazard assessment information with sea-level rise

- v. Mapping of living shoreline site suitability along the entire tidal shoreline
 - vi. Publication of sea-level rise induced groundwater rise maps on the New Hampshire Coastal Viewer
- b. Specify if they were 309 or other CZM-driven changes;
- o All of the changes were driven by NHCP projects. Several, including i, iii, iv, v and vi were supported by 309-funded staff time and/or projects of special merit.
- c. Characterize the outcomes or likely future outcomes of the changes.
- o The new mapping efforts are leading to enhanced likelihood that decision makers will access and use best available flood risk data. The new sea-level rise maps will be used as part of a wetlands permit mapping tool for coastal vulnerability assessments.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	<u> X </u>
Medium	_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Coastal Hazards was selected as a High Priority enhancement area. The risks posed by the latest sea-level rise science are high, and there are many associated coastal community needs for technical assistance to help incorporate sea-level rise projections and other coastal flood hazards into regulatory decision-making. As a result, the New Hampshire Coastal Program plans to continue efforts to provide staff-based technical assistance and fund associated projects focused on coastal hazards. There is a robust network of local, regional, and state stakeholders focused on coastal hazards planning and implementation in coastal New Hampshire, however, they are limited by time and financial resources. Much progress has been made to develop guidance and test pilot projects over the past five years on this topic, however, the New Hampshire Coastal Program sees a significant need to continue enhancement work on coastal hazards, and to focus that work toward utilizing sea-level rise and other coastal flood hazard information in regulatory decision making and making site-specific plans for the future of the most vulnerable coastal assets in New Hampshire.

Public Access

Section 309 Enhancement Objective: Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Use the table below to provide data on public access availability within the coastal zone.

Public Access Status and Trends

Type of Access	Current number	Changes or Trends Since Last Assessment (↑, ↓, -, unkwn)	Cite data source
Beach access sites	16	–	New Hampshire Coastal Atlas , 2014
Shoreline (other than beach) access sites	15	– (Note: Does not include beach or boat access sites)	New Hampshire Coastal Atlas , 2014
Recreational boat (power or nonmotorized) access sites	31	–	New Hampshire Coastal Atlas , 2014
Number of designated scenic vistas or overlook points	31	–	NHCP Section 309 Enhancement Grants Program Assessment and Strategy. 2001, 2006, 2011, and 2016
Number of fishing access points (i.e. piers, jetties)	65	↑ (Does not include beach access for fishing.) (Note: Reported 14 sites in 2016, most of the increase is due to additional source of data, however, one new ramp and pier were constructed.)	New Hampshire Office of Strategic Initiatives, "Access Sites to Public Waters" GIS coverage. 2012 Revision. http://www.eregulations.com/newhamphshire/fishing/saltwater/coastal-access-sites/ https://nhfg.maps.arcgis.com/apps/webappviewer/index.html?id=2243091f322449819c244c0c3b2f3f43 NHDES, "2016 Annual Report to the Public Water Access Advisory Board Programs and Activities of the NHDES" 2016

Type of Access	Current number	Changes or Trends Since Last Assessment (↑, ↓, -, unkwn)	Cite data source
Coastal trails/ boardwalks <i>(Please indicate number of trails/boardwalks and mileage)</i>	No. of Trails/ boardwalks 42 Miles of Trails/boardwalks 96 mi.	↑ (Note: Identified 18 new trails reflecting 31.3 miles of trails from new data sources. At least one new trail was constructed and several trails are ADA compliant.)	www.trails.com www.hikenewengland.com www.alltrails.com www.traillink.com NHDES, "2017 Annual Report to the Public Water Access Advisory Board Programs and Activities of the NHDES" 2017
Number of acres parkland/open space	Total sites 449 19,118 ac+ 49,918 ac Sites per miles of shoreline >24.9	↑ (Note: This is the number and area of conservation parcels, primarily fee ownership, in the coastal zone.) Local land trusts and nonprofit conservation groups purchased 49,918 acres of land, permanently conserved or considered public lands in the 22 coastal communities. including 5 communities located in Maine	Society for the Protection of New Hampshire Forests. "Conservation/Public Lands" GIS coverage. 2013 Revision. Piscataqua Region Estuaries Partnership. "2018 State of Our Estuaries Report" 2018
Access sites that are Americans with Disabilities Act (ADA) compliant	Unknown (3 documented sites)	(Note: Many of the access sites at state and local park properties are ADA compliant or in the process of becoming ADA compliant)	https://nhmunicipal.org/TownAndCity/Article/632 https://nhtourguide.com/wp/places/category/accessible-attractions-for-people-with-disabilities/ www.traillink.com
Other (please specify)	N/A	N/A	N/A

- Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan, the National Survey on Fishing, Hunting, and Wildlife Associated Recreation, and your state's tourism office.

The population within the state's coastal shoreline counties is projected to increase by +13 percent between 2010 and 2020 (NOAA, 2013)

The New Hampshire Office of Energy and Planning estimates the population within the state's seacoast communities is projected to increase by 5.2 percent between 2015 and 2025. This is slightly higher than the state's projected population increase of 3.3 percent for the same time period (NHOEP, 2016).

Nearly 78% of New Hampshire's beaches along the coast are publicly owned either by the State or local communities. The public have access to these beaches through numerous State Parks, which include parking, restrooms and in some instances RV accommodations. Additionally, the Great Bay Estuary has numerous public access points, although a greater proportion of the shoreline is privately owned. Public access points within Great Bay include motorized and non-motorized boat launches as well as trails and wildlife viewing areas (PREP, 2019).

Travel spending throughout New Hampshire declined between 2008 and 2010 due to the recent economic recession, but began increasing between 2010 and 2012 as the economy improved. In FY 2014, travel spending in the coastal region increased by 15.4% compared to a 12.1% across the state (NHDTT, 2015).

Demand for coastal access is also assessed by the New Hampshire Office of Strategic Initiatives (OSI), formerly known as Office of Energy and Planning, periodically through the use of outdoor recreation surveys and community needs assessments. The Department of Natural and Cultural Resources (DNCR) compiles the surveys as well as other stakeholder input in its [Statewide Comprehensive Outdoor Recreation Plan \(SCORP\)](#). The most recent plan was developed for 2019-2023. The surveys do not poll stakeholders on coastal access specifically; however, they do poll New Hampshire residents on their outdoor recreation priorities and interests. For example, surveys conducted for the most recent report revealed that the greatest demand for recreation were for youth activities and sites close to major population centers. In addition, the [2019-2023 SCORP](#) reports that Rockingham County, one of New Hampshire's two coastal counties, has the highest number of water sports areas and fishing access sites in the state.

Hampton Beach Boardwalk was rated #1 Beach Boardwalk in America as well as, Hampton Beach State Park as Best State Parks in America. During 2012-2017 capital investments in New Hampshire State Parks included the Hampton Beach Seawall (part of \$14,678,000 spent). Seventy-eight percent of municipal officials surveyed in New Hampshire identified building more greenways/trails as an important priority. Since coastal tourism generates \$484 million dollars in revenue for the state it is likely the demand for outdoor recreation and access will grow (NHDNCR, 2018).

Data published by the U.S. Fish and Wildlife Service in their [2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation](#) (FHWAR) showed that nationally there was a 16 percent increase in the total number of people 16 years and older participating in wildlife-related activities in the United States. FHWAR no longer collects data at a state level so estimates for New England were used. The 2016 report indicates that 1,333,000 anglers fished in New England, a slight decrease from 1,355,000 anglers reported in the 2011 data (USFWS, 2016).

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

Surveys and Reports on New Hampshire Outdoor Recreation

- [New Hampshire Outdoor Recreation Economy Report](#) - Sixty-nine percent of New Hampshire residents participate in outdoor recreation each year. Communities across New Hampshire recognize that outdoor recreation supports health, contributes to a high quality of life and

attracts and sustains employers and families. Investing in outdoor infrastructure attracts employers and active workforces, ensuring those communities thrive economically and socially. The report found that New Hampshire residents are more likely to participate in day hiking and kayaking than the average American. Also, more jobs in New Hampshire depend on outdoor recreation than the state's high tech sector (OIA, 2017).

- New Hampshire Coastal Program reported in the [CZMA National Performance Measures Database](#) (accessed in 2019) for 2017 that a New Hampshire Department of Transportation project, U.S. Route 4 Bunker Creek Replacement, which underwent Federal Consistency Review by Coastal Program staff will improve access. Enhanced public access was not a primary goal of the project and was not recommended by the Coastal Program; however, it is an indirect result of the proposed design to the area upstream of the existing bridge by kayakers and canoers who currently put-in on the Oyster River or in Great Bay. There is currently no public access or public parking in the direct vicinity of the existing bridge and access to the area above the bridge is limited by the tide. Additionally, the New Hampshire Coastal Program provided funding and staff assistance to design and construct a living shoreline to stabilize and restore severely eroding shoreline at Wagon Hill Farm. The project also enhanced the public access to this popular public recreation spot in the town of Durham. The project began construction in May 2019 (NOAA, 2019a).
- [Marine Cadastre Ocean Report](#) (accessed in 2019) showed that beach nourishment projects were conducted for Hampton Beach, Hampton Harbor, and Wallis Sands State Park. Beach nourishment projects indirectly provide allow for continued or expanded beach access and recreation (NOAA, 2019b).

Surveys and Reports focused on the New Hampshire Coastal Region

During this time period, no reports were found that focused specifically on outdoor recreation in the New Hampshire Coastal Region. The report noted below looked at issues related to climate change and the potential impact on public access sites and indirectly outdoor recreation.

- [Climate Risk in the Seacoast: Vulnerability Assessment Report – Great Bay Region, New Hampshire](#) - This report categorizes projected sea-level rise and storm surge flooding for the Great Bay Region. Under the 6.3 feet sea-level rise scenario four water access/recreation sites will be impacted and two outdoor/recreation sites will be impacted, although not discussed in the report. The report highlights areas where land conservation efforts should be implemented to minimize flooding impacts and increase flood storage capacity. Chapman's Landing water recreation access and parking lot as well other areas bordering the Squamscott River will be most susceptible to coastal flooding. Marinas and boat launches will be impacted under these scenarios (RPC, 2017).
- [From Tides to Storms: Preparing for New Hampshire's Future Coast – Assessing Risk and Vulnerability of Coastal Communities to Sea-Level Rise and Storm Surge](#) – This report assessed the vulnerability of coastal municipalities and public infrastructure to flooding from expected increases in storm surge and rates of sea-level rise. This regional report also included an assessment report and map for each of the seven coastal communities. These maps and reports provided assessments of risks to roadways and supporting transportation infrastructure, critical facilities and infrastructure, and natural resources (RPC, 2015).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Significant Changes in Public Access Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
Operation/maintenance of existing facilities	Y	Y	N
Acquisition/enhancement programs	Y	Y	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

There have been no significant changes in the public access management categories since the last assessment. However, in May of 2019 Jenness State Beach added a beach accessible ramp, new bathhouse, and improved the parking lot including adding four motorcycle spaces with concrete pads for stability of the motorcycles (NHSP, 2019).

3. Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?

Publicly Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	Y	Y	Y
Web address (if applicable)	https://wildlife.state.nh.us/access/documents/access-sites.pdf	http://www4.des.state.nh.us/CoastalAtlas/Atlas.html http://www.granit.unh.edu/nhcoastalviewer/	http://www4.des.state.nh.us/CoastalAtlas/Atlas.html

Public Access Guide	Printed	Online	Mobile App
		https://granitview.unh.edu/html5viewer/index.html?viewer=granit_view https://nhfg.maps.arcgis.com/apps/webappviewer/index.html?id=2243091f322449819c244c0c3b2f3f43	
Date of last update	April 2007	Daily as necessary	Daily as necessary
Frequency of update	No current plans to update	As necessary for Beach and Shellfish advisory updates	As necessary for Beach and Shellfish advisory updates

The online [New Hampshire Coastal Atlas](#) was released in 2014. This internet-based product provides the public with quick access to information on shellfish harvest opportunities and closures, beach swimming advisories, and coastal public access sites. The shellfish and beach advisories are updated as information becomes available. The public access information will be revisited as capacity and resources permit. The mobile version of this product includes a geo-location feature to help users get directions to where they want to go while using their mobile devices (NHDES, 2014).

[GRANITView](#), is a comprehensive public interface of geographic information systems data which includes a layer called “Access Sites to Public Waters” maintained by the New Hampshire Office of Strategic Initiatives (UNH, 2019). The Public Water Access Advisory Board (PWAAB), a part of the NHFG, is responsible to advise, monitor and coordinate state agency public access efforts including the Statewide Public Access Program. The NHFG website offers an interactive map [New Hampshire Boating and Fishing Public Access Sites](#) as well as hard copy of public access boating and fishing locations (NHFG, 2019b). Of note, the New Hampshire Boating and Fishing Public Access Map uses the same data layer (New Hampshire Water Access Sites) as is used in GRANITView.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium X
Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Although there is considerable direct public access to coastal resources in the New Hampshire coastal zone, demands for tourism resources and recreation continue to grow rapidly in the coastal zone. To meet these increasing demands there is a need for additional access and educational outreach. Based on this the enhancement area is rated as a Medium priority.

Marine Debris

Section 309 Enhancement Objective: Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, characterize the existing status and trends of marine debris in the state's coastal zone based on the best-available data.

Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknwn)	Type of Impact (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknwn)
Beach/shore litter	High	Aesthetic & Resource Damage	-
Land-based dumping	Medium	Aesthetic & Resource Damage	-
Storm drains and runoff	Medium	Aesthetic & Resource Damage	-
Land-based fishing (e.g., fishing line, gear)	Low	Aesthetic, Resource Damage & User Conflicts	-
Ocean/Great Lakes- based fishing (e.g., derelict fishing gear)	High	Aesthetic, Resource Damage & User Conflicts	-
Derelict vessels	Low	Aesthetic & Resource Damage	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	Low	Aesthetic & Resource Damage	-
Hurricane/Storm	Medium	Aesthetic & Resource Damage	-
Tsunami	N/A	N/A	N/A
Other (please specify) Wastewater treatment disks*	Low	Aesthetic	↑

*In March 2011, the Hooksett, New Hampshire Wastewater Treatment Facility accidentally released between 4 million and 8 million plastic disks used to enhance the wastewater treatment capacity of the plant. The disks were released into the Merrimack River during a storm, and have subsequently been found along the banks of the Merrimack River downstream over

65 miles to its mouth, as well as on beaches and in estuaries in New Hampshire, Massachusetts and Maine. The white plastic disks, approximately 2 inches in diameter, and 93 were collected along the New Hampshire coast in 2018 (Kennedy, 2019).

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.
 - [2019 Gulf of Maine Marine Debris Action Plan](#) – the action plan establishes a framework for action to ensure that the Gulf of Maine and its coasts, people, and wildlife are free from marine debris. The plan categorizes the sources of marine debris as ocean-based (items that may be dumped, swept, or blown from vessels or stationary platforms at sea, as well as abandoned, lost or derelict fishing gear), and land-based (debris from intentional and unintentional littering and dumping in rivers and streams), as well as storm water discharges, and waste management practices. The plan identifies strategies that will be undertaken by many stakeholders during 2019-2024. This plan will be evaluated and revisited within a five-year timeframe (NOAA, 2019f).
 - [New Hampshire Marine Debris to Energy Project](#) – This project reports on the amount and type of debris collected on New Hampshire beaches, and reported to the project’s website, from 2006 to present. Between 2006 and 2018, the amount of debris collected has ranged from a high of 12,386 pounds in 2009 to a low of 4,812 pound in 2015. In 2018, 3,421 volunteers collected 9,138 pounds of debris at 46 locations for the 215 clean-up events. This project is supported by the NOAA Marine Debris Program and other partners (UNH, 2019e).
 - [New Hampshire Nonpoint Source Management Program Plan 2020-2024](#) See “Phase 1 Wetlands Section Resource Characterization Question 2” for a summary of the plan. The plan reported that in 2017-2018, EPA Trash Free Waters convened stakeholders from Maine to New Hampshire forming Trash Free Waters Piscataqua. The group identified waste streams of greatest concern to be single-use plastics, derelict fishing gear and pet waste (NHDES, 2019b).
 - [New Hampshire Public Waters Access Advisory Board Annual Reports](#) – The 2017 report described the NHDES Coastal Program support of the Blue Ocean Society for Marine Conservation’s (BOS) beach cleanup programs, including the Adopt-a-Beach Program. With Coastal Program grant funds BOS funded 160 Beach cleanups that removed an estimated 7,278 pounds of litter from New Hampshire beaches. Over 73,000 pieces of litter were recorded. The 2017 data collection card was updated to include microplastic, plastics between 1-5mm in size. They can include fragments of larger plastics such as bottles, films from straw wrappers, pieces of foam, and filaments of rope or synthetic fibers. Plastic fragments and foams were the predominant form of microplastic pollution encountered during the 2017 Coastal Cleanup with a total of 7,721 tiny pieces collected (NHDES, 2017b).
 - Blue Ocean Society for Marine Conservation Marine Debris Cleanup and Education Program - A Final Report to the New Hampshire Coastal Program - In 2018, over 127,983 pieces of microplastic were collected out of the 10,492 pounds of litter removed from New Hampshire’s beaches (Kennedy, 2019).

- The Better Beach Alliance was launched in 2018 by the Surfrider Foundation and co-founding partner REEF to expand the impacts of Surfrider’s beach cleanup program and offer an on-line data entry tool for tracking beach cleanup efforts (Surfrider Foundation, 2019).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Significant Changes in Marine Debris Management

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	N
Marine debris removal programs	Y	Y	N

The New Hampshire Fish and Game Department currently has regulations concerning the molestation of lobster traps. RSA 211:31 states that “lobster pots, traps, warps (ropes), cars or buoys are private property, regardless of the location. This includes on the beach and in the rocks. No person except the owner or a conservation officer can possess, lift, molest or disturb them. To do so can result in a fine of \$2,000 and up to one year in jail.” While these regulations can impede coastal clean-up efforts, the Blue Ocean Society for Marine Conservation, along with their project partners New Hampshire Sea Grant and UNH Cooperative Extension, have developed a working relationship with New Hampshire Fish and Game (NHFG) that has allowed for the approved removal of derelict gear on a case-by-case basis. Also, a partnership of the New Hampshire Commercial Fishermen’s Association, New Hampshire Fish and Game, New Hampshire Division of Ports and Harbors, Hampton Public Works Department, New Hampshire Department of Environmental Services and the Great Bay Stewards organizes a yearly cleanup event for commercial fishermen and individuals with a lobster trap licenses to clean up lobster traps and fishing gear (Fosters, 2019). In 2018, 14 tons of lobster/fishing equipment was removed from New Hampshire beaches (NEBF, 2019).

Starting in August 2018 researchers at Keene State College in New Hampshire and the University of New Haven in Connecticut were awarded the NOAA Marine Debris Program Prevention Grant to study using multimedia text messaging to deliver persuasive, positive, humorous messages focused on proper cigarette butt disposal to college students living near National Estuary Programs across the US. The goal is to change the cigarette butt littering behavior of student smokers for the protection of ocean ecosystems and share successful messages with others interested in cigarette butt pollution and marine debris across the US and worldwide (NOAA, 2019c).

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

- a. Describe the significance of the changes;
- b. Specify if they were 309 or other CZM-driven changes; and
- c. Characterize the outcomes and likely future outcomes of the changes.

There have been no significant changes in the marine debris management categories since the last assessment.

Enhancement Area Prioritization:

- 1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____X_____
Low	_____

- 2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Review of Marine Debris Enhancement area did not identify any high priority needs or gaps that are not already being addressed by existing management/volunteer resources and tools. However, given the importance of ensuring that microplastic and other marine debris do not enter the coastal zone and ocean, this enhancement is rated as a Medium priority.

Cumulative and Secondary Impacts

Section 309 Enhancement Objective: Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

- Using National Ocean Economics Program Data on population and housing,⁴ please indicate the change in population and housing units in the state’s coastal counties between 2012 and 2017. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five-year period data is available (2012-2017) to approximate current assessment period.

Trends in Coastal Population and Housing Units

	2012	2017	Percent Change (2012-2017)
Number of people	422,876	436,702	3.27%
Number of housing units	180,037	186,045	3.34%

- Using provided reports from NOAA’s Land Cover Atlas⁵, please indicate the status and trends for various land uses in the state’s coastal counties between 1996 and 2016. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period that the data represent. Also note that Puerto Rico currently only has data for one time point so will not be able to report trend data. Instead, Puerto Rico should just report current land use cover for developed areas and impervious surfaces. The table below depicts the currently available data in the absence of the 2016 CCAP data.

⁴ www.oceaneconomics.org/Demographics/PHresults.aspx. Enter “Population and Housing” section and select “Data Search” (near the top of the left sidebar). From the drop-down boxes, select your state, and “all counties.” Select the year (2012) and the year to compare it to (2017). Then select “coastal zone counties.”

⁵ www.coast.noaa.gov/digitalcoast/tools/lca.html. Note that the 2016 data will not be available for all states until later Summer 2019. NOAA OCM will be providing summary reports compiling each state’s coastal county data. The reports will be available after all of the 2016 data is available.

Distribution of Land Cover Types in Piscataqua-Salmon Falls Watershed 2010

Land Cover Type	Land Area Coverage in 2010 (Square Miles)	Net Change Since 1996 (Square Miles)
Developed, High Intensity	38.04	3.89
Developed, Low Intensity	73.35	6.89
Developed, Open Space	32.23	4.16
Grassland	14.06	4.29
Scrub/Shrub	72.42	19.49
Barren Land	14.59	2.59
Open Water	291.37	0.09
Agriculture	110.63	-0.84
Forested	774.22	-39.21
Woody Wetland	198.28	-1.75
Emergent Wetland	41.65	0.39

3. Using provided reports from NOAA's Land Cover Atlas⁶, please indicate the status and trends for developed areas in the state's coastal counties between 1996 and 2016 in the two tables below. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico currently only has data for one time point so will not be able to report trend data. Unless Puerto Rico has similar trend data to report on changes in land use type, it should just report current land use cover for developed areas and impervious surfaces.

Development Status and Trends for Piscataqua-Salmon Falls Watershed and Region

	1996	2010	Percent Net Change	2015	Percent Net Change
Percent land area developed in Piscataqua-Salmon Falls Watershed*	7.75%	8.65%	+11.61%	--	--
Percent impervious cover area in Piscataqua-Salmon Falls Watershed*	2.68%	2.98%	+11.12%	--	--
Impervious cover area (square miles) in Piscataqua Region Watershed (includes ME) (6% pop. growth)**	--	70.9 sq. mi.	--	72.87 sq. mi.	+2.8%

* (NOAA Land Cover Atlas) ** (PREP, 2018)

⁶ www.coast.noaa.gov/digitalcoast/tools/lca.html. Note that the 2016 data will not be available for all states until later Summer 2019. NOAA OCM will be providing summary reports compiling each state's coastal county data. The reports will be available after all of the 2016 data is available.

How Land Use Is Changing in Coastal Counties 1996 - 2010

Land Cover Type	Areas Lost to Development Between 1996-2010 (square miles)
Barren Land	0.32
Emergent Wetland	0.15
Woody Wetland	0.91
Open Water	0.06
Agriculture	2.18
Scrub/Shrub	1.04
Grassland	0.22
Forested	10.62

*Based on NOAA Land Cover Atlas data through 2010.

4. Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available, include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

Shoreline Type Data 2014

Surveyed Shoreline Type	Miles of shoreline	Percent of Shoreline
Mixed Sand and Gravel Beaches	1.38	0.6%
Exposed Tidal Flats	11.11	5.0%
Salt- and Brackish-water Marsh	163.42	73.6%
Scrub-Shrub Wetlands	0.24	0.1%
Exposed rocky shores	0.51	0.2%
Exposed, Wave-cut Platforms in Bedrock	2.76	1.2%
Fine- to Medium-grained Sand Beaches	0.86	0.4%
Gravel Beaches	7.97	3.6%
Riprap	5.25	2.4%
Sheltered Rocky Shores	4.63	2.1%
Sheltered, Solid Man-made Structures	3.47	1.6%
Sheltered Riprap	7.41	3.3%
Sheltered Tidal Flats	13.13	5.9%

*Based on 2014 NOAA ESI data. Not all coastal miles were mapped.

New Hampshire Inventory of Shoreline Protection Structures 2016

Geographic Area	Percent of Geographic Area Armored (%)	Miles Armored	Total Shoreline Miles
Atlantic Coast	70%	14.78	21.11
Great Bay Estuary	7%	4.51	64.43

Geographic Area	Percent of Geographic Area Armored (%)	Miles Armored	Total Shoreline Miles
Piscataqua River/Portsmouth Harbor	29%	10.40	35.86
New Hampshire Tidal Shoreline	12%	39.75	326

*(NHDES, 2016c)

- Briefly summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality, shoreline hardening, and habitat fragmentation, since the last assessment.

[Piscataqua Region Estuaries Partnership \(PREP\) 2018 State of Our Estuaries Report](#) - See “Phase 1 – Wetlands, Resource Characterization Question 2” response above for a general summary of this report. Related to Cumulative and Secondary Impacts, the report indicates both Great Bay and Hampton-Seabrook Estuaries have declined and are under stress due to a variety of reasons. Demand for built infrastructure and the resulting expanse of impervious surfaces across the Piscataqua Region watershed has placed increased pressure on the estuaries. Nutrient loading remains a high concern, particularly during rainy years when more runoff leads to increased loading. As a result of these stressors, estuaries in New Hampshire are showing signs of becoming much less resilient to change and the stress it brings. Shellfish are at extremely low levels. The average standing stock of oysters decreased by 0.7 million from 2009-2011 to 2012-2016 reporting period. Sedimentation from run-off, stream and river erosion is one of the stressors causing this decline. Clams populations continue to decline most years since 1997. Also eelgrass in Great Bay Estuary shows an overall decline and a clear deterioration in its ability to recover from episodic stress (PREP, 2018).

[NHCP Inventory of Tidal Shoreline Protection Structures Report 2016](#) - This report shows the location, type and size of New Hampshire’s tidal shoreline protection structures in the 17 coastal communities covering 326 miles of tidal shoreline. The dataset creates a baseline of engineered shoreline protection structures paired with data about natural habitats (salt marshes, sandy beaches, natural rocky shores) and is intended to inform integrated shoreline management decisions that optimize the natural function of the shoreline, while protecting inland infrastructure from coastal hazards such as sea-level rise or storm surge that can cause slow or extreme erosion as well as property and infrastructure damage. The results indicated that 12 percent (40 miles) of New Hampshire’s tidal shoreline is armored by some type of engineered structure - See above table, entitled “New Hampshire Inventory of Shoreline Protection Structures 2016” (NHDES, 2016c).

[New Hampshire Nonpoint Source Management Program Plan 2020-2024](#) – See “Phase 1 – Wetlands, Resource Characterization Question 2” for a summary of this report. Related to Cumulative and Secondary Impacts, the report indicates that nonpoint source (NPS) pollution contributes to approximately 90% of the water pollution problems in New Hampshire. The report identifies major sources of NPS pollution (i.e., developed lands, septic systems, lawns and turf grass management activities, chlorides and winter road maintenance activities, hydrologic and habitat modification, and agriculture) and notes that the problems caused by these sources

are compounded by climate change. The Great Bay and Hampton-Seabrook estuaries, Little Bay, Little Harbor, and Rye Harbor, as well as portions of their tidal tributaries have been assigned high priority for watershed restoration and protection by NHDES. Also several dams in the coastal zone were identified as a priority for removal (NHDES, 2019b).

- [New Hampshire Resilient Tidal Crossings Report 2019](#) -- See “Phase I – Wetlands Resource Characterization Question 2” response above for a summary of this report (NHDES, 2019c).
- [Technical Support Document for the Great Bay Estuary Aquatic Life Integrity Use Support Assessments, 2018 305 \(b\) Report/303 \(d\) List](#) – The symptoms of eutrophication reported for the Great Bay Estuary have the potential to impair the Aquatic Life Integrity designated use, which would be a violation of the state water quality standard for nutrients and biological and aquatic integrity so a Technical Support Document was created to address the complexity of the Great Bay estuary and the inherent challenges in assessing it. The document compiles data for the estuary assessment zones including shellfish, eelgrass, chlorophyll-a, dissolved oxygen, water clarity, and total nitrogen data to determine if there is impairment in that area (NHDES, 2018).
- [New Hampshire Wildlife Action Plan](#) (2015) See “Phase 1 – Wetlands, Resource Characterization Question 2” for a summary of this report. This plan and [habitat appendix](#) reports that there are 694 acres of dune habitat in New Hampshire with 285 acres protected. Development has reduced more than 83% of historic dune nesting habitat for shorebirds in New Hampshire. Habitat degradation and mortality from shoreline hardening, oil spills, roads and culverts that restrict tidal flow, sea-level rise, fragmentation, and debris brought in on tides, run-off, direct deposit are all considered High Threats to coastal habitats. Risk assessment results are presented for 27 habitats and 157 Species of Greatest Conservation Need. Overall, pollution was identified as the risk factor that most frequently impacts wildlife, followed by climate change, natural system modifications, invasive and other problematic species, genes and diseases, and residential and commercial development. Salt marshes and dunes were among the habitats identified as having the greatest number of “high” ranking threats. Additionally, when habitats were grouped, coastal habitats (i.e., salt marshes, dunes, estuarine, marine, and coastal islands) were identified as having the greatest number of “high” ranking threats, despite having fewer threats assessed (NHFG, 2015).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Significant Changes in Management of Cumulative and Secondary Impacts of Development

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	Y
Guidance documents	Y	Y	N
Management plans (including SAMPs)	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- Describe the significance of the changes;
 - Specify if they were 309 or other CZM-driven changes; and
 - Characterize the outcomes or likely future outcomes of the changes.

In 2019, [New Hampshire Department of Environmental Services Wetlands Rules](#) were updated to include a new “Coastal Lands and Tidal Waters and Wetlands” section (Chapter 600). See “Summary of Recent 309 Achievements – Wetlands Section” for a general summary. The impetus for updating the wetlands rules was not a 309 or CZM-driven process. The NHCP did, however, play a significant role in the development of the Chapter 600 rules and was involved in the development of other sections of the rules as well. Given that the rules do not become effective until December 15, 2019, it is anticipated that the new rules will increase protections for and enhance the resilience of New Hampshire’s coastal and ocean resources (NHDES, 2019a).

The [New Hampshire Small MS4 General Permit](#) was issued on January 18, 2017. The final permit reflects modifications to the 2013 Draft Small MS4 General Permit and the 2015 Re-noticed permit sections. The permit replaces the 2003 small MS4 general permit for MS4 operators within the state of New Hampshire. This action was not 309 or CZM driven, however, NHCP did play a significant role in coordinating the process. The Seacoast Stormwater Coalition was formed to help coordinate implementation of MS4. The anticipated outcome is better management of stormwater in coastal municipalities (NHDES, 2019e).

The [Alteration of Terrain \(AoT\) Rules Env-Wq 1500](#) were amended in 2017. The AoT Program specifies procedures to protect surface water quality by controlling soil erosion, and managing, treating, and recharging stormwater runoff from development activities. Notable changes include requiring applicants to demonstrate that projects will not cause a net increase of nitrogen or phosphorous if the project could result in a stormwater discharge to impaired surface waters or to Class A or Outstanding Resource Waters. Additionally, the new rules now require that coastal projects demonstrate through narrative that sea-level rise and storm surge have been considered in the design process and increase precipitation amounts by 15% to account for future changes. This action was not 309 or CZM driven, but NHCP contributed to the rule amendments (NHDES, 2017d).

[Chaptered Law 0030 – House Bill 475](#) (2019) established a shoreland septic system study commission. The commission is charged with: developing approaches for achieving cooperation among stakeholders in solving the problem of inadequate septic systems; determining the most appropriate method for identifying potential non-state approved septic systems within 75 feet of surface waters; determining regulatory, educational and financial approaches to remediate septic systems on private property, while being respectful of private property rights; considering climate change impacts such as future groundwater and sea-level rise on the design and location of septic systems. The commission will submit an interim report on or before November 1, 2019 and a final report is due on or before November 1, 2020. This action was not 309 or CZM driven, but NHDES has been appointed to serve on the Commission (NHGC, 2019).

The [New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) – See, “Phase 1 – Coastal Hazards, Resource Characterization Question 2” response for a general summary of this report. In addition to summarizing New Hampshire’s vulnerabilities to projected coastal flood risks, the report provides science-based guidance for the State and 17 coastal zone municipalities to minimize flood risk and enhance resilience. The Commission’s 35 recommendations and associated actions focus on improving science-based understanding of current and future coastal flood risks, completing detailed assessments of coastal vulnerabilities, and implementing actions that protect and adapt New Hampshire’s coastal economy, built structures and facilities, natural resources, and recreational, cultural, and historical resources. This effort was entirely 309 and CZM driven (NHCRHC, 2016).

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____X_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Despite the challenges New Hampshire faces related to Cumulative and Secondary Impacts as reported in the Resource Characterization above, this Enhancement Area is rated as a medium priority. Cumulative and Secondary Impacts are adequately being addressed by existing and ongoing efforts as outlined in the Management Characterization and NHCP is confident that high priority gaps will be addressed as part of the Phase II Assessments and Strategies to be developed for Wetlands and Coastal Hazards.

Special Area Management Planning

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a special area management plan (SAMP) as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea-level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making.”

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
Offshore waters	Offshore structures competition for area used for commercial fishing and the loss of marine habitat.
Great Bay Estuary watershed, Hampton-Seabrook Estuary watershed and the Atlantic Coast	Resources management, living resources and habitat restoration, and land use and habitat protection.
Estuarine waters	Competing use of the waters for shellfish harvest versus recreational boating.
Great Bay Estuary	Habitat loss due to degradation of water quality.
Beaches, state- and town-owned	Differences in sand deposition and erosion leading to costs in nourishing or removing sand from beaches.
Great Bay Estuary watershed	Pollutant reductions required by point and non-point sources.
Coastal Zone	Conflict between development for economic stability versus need to prepare for coastal hazards, especially long-term planning needed due to future sea-level rise, including primary and secondary impacts.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

The State and its federal and local partners have a number of processes in place to proactively manage resources. So far these have been adequate to address potential conflicts without the need for a formal SAMP. These management processes include the following:

- [Winnicut River Watershed Restoration and Management Plan](#) (2017) North Hampton, Stratham, and Greenland, New Hampshire. Watershed-based plans determine the level of pollutant load reduction or habitat restoration required, specific locations where best management practices are needed, and how to measure water quality improvement (NHRC, 2017).
- [Great Bay Ecosystem Services Assessment Final Report: How People Benefit from New Hampshire's Great Bay Estuary](#) (2016) – The report outlined the results of habitat risk assessment modeling, spatial analysis, ecosystem service valuation. Seven ecosystem services were assessed for three habitats: salt marsh, eelgrass, and oyster beds based on a current scenario, future gain and sustain scenario, and a loss scenario with valuation in dollars and acres lost/gained (NHDES, 2016d).
- [Piscataqua Region Estuaries Partnership \(PREP\) 2018 State of Our Estuaries Report](#) (2018)- See “Phase 1 – Wetlands, Resource Characterization Question – See “Phase I - Wetlands, Resource Characterization Question 2” response above for a summary of this SAMP (PREP, 2018).
- [New Hampshire Nonpoint Source Management Program Plan 2020-2024](#) (2019) - See “Phase I – Wetlands Resource Characterization, Question 2 and Cumulative and Secondary Impacts Resource Characterization Question 5” responses for a summary. The Great Bay and Hampton-Seabrook estuaries, Little Bay, Little Harbor, and Rye Harbor, as well as portions of their tidal tributaries have been assigned high priority for watershed restoration and protection by NHDES. Also several dams in the coastal zone were identified as a priority for removal including Beards Creek Dam (Oyster River), Mill Pond Dam (Oyster River), Gonic Dam Pond (Cocheco River), and Sawyers Mill Upper Dam (Bellamy River) (NHDES, 2019b).
- [Piscataqua Region Environmental Planning Assessment](#) (2015) – See “Phase 1, Wetlands Section, Resource Characterization Question 2 and Cumulative and Secondary Impacts Resource Characterization Question 2” for results of this assessment (PREP, 2015).
- [State of New Hampshire Multi-Hazard Mitigation Plan](#) (2018) – See “Phase 1, Coastal Hazards Section, Resource Characterization Question 2” response for a summary of this plan (NHDOS, 2018).
- [New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) – See, “Phase 1 – Coastal Hazards, Resource Characterization Question 2” response for a general summary of this report (NHCRHC, 2016).
- The [Northeast Ocean Plan](#) and [Data Portal](#) (2016) - See “Phase I – Ocean and Great Lakes Resources, Question 2” response above for a summary of this SAMP. The plan and data portal

provide necessary information to protect coastal and ocean resources, enable more effective decision making, reduce potential user conflicts, and facilitate compatible uses (NROC, 2016a and b).

- [Audit of Laws Governing the Coastal Region to Enable Authorities to Take Appropriate Actions to Prepare for Coastal Flood Risks](#) (2016) - See “Phase 1 – Cumulative and Secondary Impacts Management, Question 2” response for a summary (NHDES, 2016a).
- [New Hampshire’s Tidal Crossing Assessment Protocol](#) (2017) provided an assessment methodology used to inventory and prioritize tidal crossing replacements and ecological restoration priorities. The report was prepared by The Nature Conservancy, New Hampshire Chapter, NHDES, and the University of New Hampshire (Steckler, 2017).
- [New Hampshire Coastal Risk and Hazards Commission, Preparing New Hampshire for Projected Storm Surge Sea-Level Rise, and Extreme Precipitation](#). The goals of this report are to understand and establish best available science about coastal hazards, identify assets that are vulnerable to coastal hazards, implement strategies to protect adapt, and sustain our coastal assets, and recommend legislation that leads to actions to reduce vulnerability and adapt to current and future coastal hazards. (NHCRHC, 2016).
- [New Hampshire Coastal Program Guide to Federal Consistency Coastal Zone Management Act § 307](#). This document supersedes Version 2018.1 and includes changes to NHCP’s list of federal financial assistance activities subject to CZMA federal consistency review and changes the NHCP’s list for federally licensed or permitted activities subject to CZMA federal consistency review and revisions to several of NHCP’s enforceable policies. (NHDES, 2019f).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Significant Changes in Special Area Management Planning

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	Y*	Y*	N
SAMP plans	Y*	Y*	N

* NHCP does not develop formal SAMPs but instead develops or provides input on management plans and planning documents that contain the same elements as a formal SAMP.

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

There have been no significant changes in SAMP policies or the types of management plans written since the last assessment. Most of the plans described above are updates to pre-existing plans.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____X_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Review of Special Area Management Planning needs did not identify any high priority gaps or requirements that are not already being addressed by existing management resources and tools. However, given the importance of ensuring that any new planning needs are met and that existing planning tools are updated, this enhancement is rated as a Medium priority.

Ocean and Great Lakes Resources

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources.
§309(a)(7)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),⁷ indicate the status of the ocean and Great Lakes economy as of 2015 (the most recent data) in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

Status of Ocean and Great Lakes Economy for Coastal Counties (2015)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)*	14,902	529	95	3	6,784	11	7,480
Establishments (# of Establishments)	570	25	11	8	44	18	464
Wages (Millions of Dollars)	\$840.3	\$13.6	\$5.3	\$0	\$671.2	\$0	\$150.3
GDP (Millions of Dollars)	\$1,600	\$41.1	\$8.8	\$0	\$1,200	\$0	\$335

* Represents Total Employment (Employed + Self Employed) from ENOW.

⁷<http://www.coast.noaa.gov/digitalcoast/tools/enow.html>

Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2015)

	All Ocean Sectors	Living Resources ***	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)**	7,192	455	73	NA	5,634	-17	970
Establishments (# of Establishments)	54	-2	1	NA	-2	0	52
Wages (Millions of Dollars)	\$690.7	\$12.4	\$4.3	NA	\$631.4	-\$1.3	\$42.7
GDP (Millions of Dollars)	\$1,260	\$38.3	\$6.9	NA	\$1,100	-\$2.8	\$99.5

** Represents trend in Total Employed (Employed + Self Employed) between 2005 and 2015 even though 2015 Total Employed data depicted in ENOW trend graph doesn't include Self Employed data

*** There is no Living Resources data for 2005. All Living Resources trend data represents the period between 2006 and 2015.

- Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports⁸, indicate the number of uses within ocean or Great Lakes waters off of your state. For energy uses (including pipelines and cables, see the "Energy and Government Facility Siting" template following). Add additional lines, as needed, to include additional uses that are important to highlight for your state. Note: The Ocean Reports tool does not include data for the Great Lakes states. Great Lakes states should fill in the table as best they can using other data sources.

Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases (<i>Completed</i>)	0
Federal sand and gravel leases (<i>Active</i>)	0
Federal sand and gravel leases (<i>Expired</i>)	0
Federal sand and gravel leases (<i>Proposed</i>)	0
Beach Nourishment Projects	3 (Hampton Harbor, Little Harbor, Sagamore Creek/Portsmouth Back Channels)
Ocean Disposal Sites	3 (nearshore sites in state waters have been used historically to place dredged material with the expectation that the dredged material would migrate onto adjacent beaches. *)
Principle Ports (<i>Number and Total Tonnage</i>)	1 (Port of New Hampshire); total tonnage – 2,787,884
Coastal Maintained Channels	7
Designated Anchorage Areas	1 (Little Harbor)
Danger Zones and Restricted Areas	0
Other (please specify)	NA

* In August 2019 EPA released for interagency review a draft Environmental Assessment and draft Proposed Rule for the designation of a new ocean dredged material disposal site for the southern Maine, New Hampshire and northern Massachusetts coastal region. EPA is proposing to designate the Isles of Shoals North Disposal Site, located approximately 10.8 nautical miles east of Portsmouth, New Hampshire, pursuant to the Marine Protection, Research and Sanctuaries Act. EPA is proposing to publish the Final Rule in the Federal Register in late January 2020 and anticipates the site being open for use in late February 2020.

⁸ www.coast.noaa.gov/digitalcoast/tools/ort.html.

3. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Significant Changes to Ocean and Great Lakes Resources and Uses

Resource/Use	Change in the Threat to the Resource or Use Conflict Since Last Assessment (↑, ↓, -, unkwn)
Benthic habitat (including coral reefs)	↑ (aquaculture, dredging & dredged material disposal): ↓ eelgrass - (improved water quality – WWTF upgrades)
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	↑ (dredging & dredged material disposal, ocean acidification)
Sand/gravel	- *
Cultural/historic	-
Other (please specify)	-
Transportation/navigation	-
Offshore development ⁹	-
Energy production	-**
Fishing (commercial and recreational)	-
Recreation/tourism	-
Sand/gravel extraction	-
Dredge disposal	-
Aquaculture	↑ use conflicts related to the siting of aquaculture farms in Little Bay; ↑ vibrio bacteria; ↑ harmful algal blooms
Other (please specify)	-

* While there are currently no direct threats to sand/gravel resources in New Hampshire's coastal zone, there is heightened interest in offshore sand/gravel resources as a result of Hurricane Sandy. For example, the Bureau of Ocean Energy Management (BOEM) funded offshore surveys in 2015, 2016 and 2017 to identify and assess new sources of sand and gravel in federal waters (3-8 nautical miles offshore) on the Atlantic Outer Continental Shelf. These geological and geophysical survey activities, known as the Atlantic Sand Assessment Project, were conducted not only to locate new potential sand and gravel resources but to help determine the composition and volume of these resources. BOEM also funded a University of New Hampshire/New Hampshire Geological Survey (UNH/NHGS) study to assess New Hampshire's offshore sand and gravel resources. A summary report entitled "[Assessment of Offshore Sources of Sand and Gravel for Beach Nourishment in New Hampshire](#)" was released in 2016 (UNH, 2016b).

Offshore sand resources are also identified as one of 10 primary ocean resources/activities in the Northeast Ocean Plan (Plan). To help implement the actions identified in the Plan related to offshore

⁹ Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the "energy production" category.

sand resources, the Northeast Regional Ocean Council (NROC) established a Regional Sand Management Subcommittee. The Subcommittee held a workshop in April 2018. The primary goals of the workshop were to establish a shared understanding of the roles, responsibilities, and current practices of state and federal agencies for offshore sand management, and to identify and explore coordination opportunities between agencies to promote responsible offshore sand management (NROC, 2016b).

** In a letter dated January 2, 2019 New Hampshire Governor, Christopher Sununu, requested that the Bureau of Ocean Energy Management (BOEM) establish an intergovernmental offshore renewable energy task force for New Hampshire. The purpose of the task force would be to facilitate coordination and consultation among federal, state and local governments on renewable energy commercial leasing proposals in federal waters offshore of New Hampshire. Because renewable energy development in federal waters offshore New Hampshire could affect natural, socioeconomic, and cultural resources shared by neighboring states, BOEM, in a letter dated April 17, 2019, responded by recommending the establishment of a Gulf of Maine regional task force that includes New Hampshire, along with relevant Maine and Massachusetts governmental entities, and interested federal agencies and tribes. To facilitate the establishment of such a task force, BOEM agreed to solicit the participation of both Maine and Massachusetts, and to prepare a draft charter outlining the purpose of the task force, proposed membership, and planned tasks. BOEM has indicated that it anticipates convening the first meeting of the task force in November 2019.

- For the ocean and Great Lakes resources and uses in the table above that had an increase in threat to the resource or increased use conflict in the state’s or territory’s coastal zone since the last assessment, characterize the major contributors to that increase. Place an “X” in the column if the use or phenomenon is a major contributor to the increase.

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm and Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
Benthic Habitat						X			X		X	
Living Marine Resources									X		X	
Aquaculture			X			X						

- If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

No reports on the status or trends of ocean resources, or threats to ocean resources since the last assessment, are available.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Significant Changes to Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	Y (Wetlands Rules Updates)
Regional comprehensive ocean/Great Lakes management plans	Y (Northeast Ocean Plan)	Y	Y (NE Ocean Plan didn't exist during last assessment)
State comprehensive ocean/Great Lakes management plans	N	N	N
Single-sector management plans	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Statutes, regulations, policies, or case law interpreting these – NHDES Wetlands Rules Updates

In 2019 [New Hampshire Department of Environmental Services Wetlands Rules](#) were updated to include a new coastal section (Chapter 600). – See “Summary of Recent 309 Achievements – Wetlands Section” for a general summary. The last major overhaul of the rules occurred in 1991. The new rules, which become effective December 15, 2019, help to achieve consistency between state and federal program requirements. The rules include a new chapter entitled “Coastal Lands and Tidal Waters/Wetlands”, which was developed based on significant input from New Hampshire Coastal Program (NHCP) staff. This new chapter provides for increased protections for coastal and estuarine resources and supports coastal resiliency by requiring vulnerability assessments for coastal areas. The chapter addresses a number of topics including: aquaculture; avoidance, minimization and compensatory mitigation; beach maintenance and stabilization; dredging; overwater structures (e.g., dock, marinas); sand dunes; and tidal shoreline stabilization, including living shorelines.

The impetus for updating the wetlands rules was not a 309 or CZM-driven process. The NHCP did, however, play a significant role in the development of the “Coastal Lands and Tidal Waters/Wetlands” chapter of the rules and was involved in the development of other sections of the rules as well.

Given that the rules do not become effective until December 15, 2019, the anticipated future outcomes of the new rules will be increased protections for and resiliency of New Hampshire's coastal and ocean resources.

Regional comprehensive ocean management plans – Northeast Ocean Plan

The goal of ocean planning is to protect coastal and ocean resources, reduce potential user conflicts, and facilitate compatible uses. In recent years, there have been major advances in understanding and mapping the resources and uses of New England's coastal and ocean waters. This work has resulted in the [Northeast Ocean Data Portal](#) (Data Portal), a website-based mapping tool, as well as the [Northeast Ocean Plan](#) (Plan). The Plan, which was certified by the Obama-era National Ocean Council in December 2016, serves to guide decisions and practices that advance progress toward regional goals for the management of public ocean resources in New England, including New Hampshire. The Data Portal is an important tool for implementing the Plan by providing user-friendly, easily accessible, expert-reviewed data on human uses and activities for use by a broad range of government agencies, industries, non-government organizations, academic entities, and individuals.

Regional ocean planning activities in the Northeast are currently managed by the Northeast Regional Ocean Council (NROC), a Regional Ocean Partnership originally founded in 2005 by the governors of the New England states and later expanded to include federal agencies. NROC provides a voluntary forum for New England states, regional organizations, and federal partners to coordinate and collaborate on regional approaches that support balanced uses and conservation of the Northeast region's ocean and coastal resources. NROC's Ocean Planning Committee currently leads the region's efforts to implement the Plan. New Hampshire is represented on NROC by the NHCP. The NHCP Administrator currently serves as NROC's state co-chair, while the NHCP Program Coordinator is a member of NROC's Ocean Planning Committee and several NROC subcommittees.

While not driven by a 309 or CZM change, the NHCP is a member of NROC, and as such, has been supporting regional ocean planning efforts in the region since NROC's inception in 2005.

The Northeast Ocean Plan continues to be an important documentation of regional ocean management priorities and activities. It summarizes the ocean planning process and is a guide that helps inform and streamline agency decisions and practices that advance progress toward regional goals for the management of our public ocean resources (NROC 2016a and b).

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	N	Y 2016
Under development (Y/N)	N	N
Web address (if available)	NA	https://neooceanplanning.org/plan/
Area covered by plan	NA	Gulf of Maine to Long Island Sound

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	<u> X </u>
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The certification of the Northeast Ocean Plan in December 2016 and the legislative approval of revised NHDES wetlands rules, which become effective December 15, 2019, constitute significant changes to the management of New Hampshire’s coastal and ocean resources since the last 309 Assessment. While significant, these changes were not led by the NHCP. As stated above, NROC is leading the region’s efforts to implement the Northeast Ocean Plan. Moving forward, the NHCP will continue to support implementation of the Northeast Ocean Plan through its membership in NROC, and more specifically, its participation in NROC’s Ocean Planning Committee.

The NHCP will also continue to support the NHDES Wetlands Bureau in its efforts to implement the new wetlands rules. The NHCP has received a NOAA Project of Special Merit Award entitled “Coast Shift: Changing How the New Hampshire Seacoast Transports, Plans, Permits, and Finances for Resilience” in which NHCP staff is collaborating with NHDES Wetlands Bureau staff and engaging stakeholders to create guidance and conduct outreach for new coastal vulnerability assessment and living shoreline provisions of the coastal wetlands rules.

Given that the NHCP will continue to play a supporting role, not a lead role, in both implementation of the Northeast Ocean Plan and the new NHDES wetlands rules, this enhancement area is rated as a Medium priority.

Energy and Government Facility Siting

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.) Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.*

Resource Characterization:

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports includes existing data for many of these energy facilities and activities.

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)
Pipelines	Y	—	N	—
Electrical grid (transmission cables)	Y	—	Y	↑ (Sea coast Reliability Project construction began in May 2019)
Ports	Y	—	N	—
Liquid natural gas (LNG)	N	—	N	—
Other (please specify)	N/A	—	N/A	—
Oil and gas	Y	—	N	—
Coal	N	—	N	—
Nuclear	1	—	N	—
Wind	1	↑ (UNH Offshore Wind Energy Test Facility)*	N	↑ (offshore renewable energy task force established)
Wave	2	↑ (UNH Offshore Wave Energy Test Sites: UNH Pier and Atlantic Marine Aquaculture site)*	N	—
Tidal	1	↑ (UNH Tidal Energy Testing Facility General Sullivan Bridge)*	N	↑ (Living Bridge Project)**
Current (ocean, lake, river)	N	—	N	—
Hydropower	Y	—	N	—

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)
Ocean thermal energy conversion	N	–	N	–
Solar	Y	↑ (Star Island & City of Dover – Children’s Museum and Henry Law Park Indoor Pool)***	Y	–
Biomass	1	–	N	–
Other (please specify)		–		

* These study sites do not produce commercial energy (UNH, 2019c). ** This study site does not produce commercial energy (UNH, 2019d). *** (Seacoastonline, 2019) and (Dover, 2019).

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

- [GSA Inventory of Owned and Leased Federal Government Properties](#) included nine leased properties and one federally owned property. This information has not changed since the last report. Data accessed on July 18, 2019 (GSA, 2019).
- [Marine Cadastre Ocean Report](#) (2019) stated that there is a vast amount of potential energy available off our nation’s coasts, both in state and U.S. federal waters. The production of renewable energy (wind, water, and biofuels) is increasing and can help reduce greenhouse gas production. Wind energy projects are currently planned for the Atlantic Coast (NOAA, 2019b).
- [NOAA Economics: National Ocean Watch Data \(ENOW\)](#) (2019) reported four projects in New England, however, there are no current projects in New Hampshire. The Cobscook BAY OCGEN Power Project is located off Eastport, Maine and is the first operational grid connected tidal energy facility in the U.S. The turbine was deployed in 2012 and plans to continue installations in order to generate up to 5 megawatts of electricity in the project area. Block Island Wind Farms became operational in 2016 and is a 30 megawatt offshore wind farm consisting of five, 6 megawatt wind turbines. The Block Island Transmission System (BITS) interconnects each wind turbine and connects the turbines to Block Island. The BITS is a submarine cable also connects Block Island to mainland Rhode Island. Last the Roosevelt Island Tidal Energy project is located in the East River in New York. It is a pilot project (NOAA, 2019e).
- [The NOAA Report of the U.S. Ocean and Great Lakes Economy](#) (2018) reports that the offshore mineral extraction sector which includes oil and gas exploration and production declined by 17.6 percent in gross domestic product due to sharp declines in oil prices. This decline was concentrated in the Gulf of Mexico and future trends in this sector will be driven by prices and production levels, which are more sensitive to global than national conditions. It should be noted that [SB76](#) was enrolled May 30, 2019 banning offshore oil and gas exploration in New Hampshire. The bill is awaiting the Governor’s signature (NOAA, 2018).

- [New Hampshire Public Utilities Commission Renewable Portfolio Standard 2018 Review](#) (2018) shows that in-state energy resources are increasingly renewable and that technological innovations are helping consumers and businesses produce more of their own energy. This is driving changes in energy infrastructure across the state (NHPUC 2018).
- [Study Pursuant to New Hampshire Chaptered Law 156:228 \(2017\) - Study on the economic viability of renewable portfolio standard Class III biomass electric generation resources in New Hampshire](#) found that New Hampshire's Class III biomass generating facilities are less competitive than other forms of renewable generation. Biomass is a major market for low-grade wood, it is not the only end use. Low-grade wood markets may be able to find alternative uses that do not require ratepayer funded subsidies. Biomass has a history of above market ratepayer subsidies and generators will likely require continued above market ratepayer support to remain in operation (NHGC 2017).
- [Growth of Solar in New England and its Impact on the Wholesale Market](#) (2016) stated that ISO New England forecasts strong growth in solar PV through 2024 with expectations that 2,400 megawatts of solar power will be feeding the grid (Sedlacek 2016).
- [Northeast Offshore Wind Regional Market Characterization, A Report for the Roadmap Project for Multi-State Cooperation on Offshore Wind](#) (2017) states that the New Hampshire Regional Portfolio Standard (RPS) includes wind as a Class I resource, and requires that 6.9 percent of electricity in 2016, rising to 15 percent of electricity in 2025 come from Class 1. The Public Utilities Commission considers approval for long-term Power Purchase Agreements (PPA) between the state's utilities and electricity generators on an ad hoc basis, but no target for achieving RPS with long-term PPAs has been set or anticipated. The report found that there is significant offshore wind potential and the best locations would be over three miles, where floating platforms would be optimal.
- [Report of the Committee to Study Offshore Wind Energy and the Development of Other Ocean Power Technology \(HB 1312 – Chapter 180, Laws of 2014\)](#) (2015) found that wind resource off New Hampshire's coast has the potential to generate significant amounts of electricity (2.8 gigawatt of generation capacity), whereas tidal and wave energy do not. The report found that the best place to develop offshore wind power appears to be three or more miles beyond the Isle of Shoals due to the area's increased wind strength and consistency, reduced boat traffic congestion, and reduced onshore visual impact of tall structures. Floating platforms would be the only viable option due to the depth. Offshore wind development has the potential to generate significant economic activity within Portsmouth Harbor, other coastal communities, as well as inland communities. Supply chain and service needs that New Hampshire businesses and workers could provide include cabling, support services and vessels, substation and shore grid connections, engineering and environmental services, and the operation and maintenance of the wind farm over the long term. New Hampshire will need to engage with the federal Bureau of Ocean Energy Management and working cooperatively with Maine and Massachusetts to develop offshore wind projects (NHLCOWE 2014).

- [An Assessment of Economic Potential of Offshore Wind in the United States from 2015-2030](#) projects New Hampshire will have 2 gigawatt available capacity with unsubsidized economic potential in 2027 (DOE, 2017).
 - On January 2, 2019, Governor Sununu requested the establishment of an intergovernmental offshore renewable energy task force for the State of New Hampshire. The Department of the Interior response was for New Hampshire, Massachusetts, and Maine to work together in the regional Gulf of Maine (GOM) task force. The first GOM task force meeting is anticipated for November 2019.
3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance in the state’s coastal zone since the last assessment.

There have been no changes in the types or numbers of government facilities and activities of greater than local significance in the state’s coastal zone since the last assessment.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Significant Changes in Energy and Government Facility Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
State comprehensive siting plans or procedures	Y	N	N (Offshore Wind)

- [HB626-Chaptered Law 218](#) (2016) established procedures for approval of proposals for energy infrastructure development and designates energy infrastructure corridors. The Department of Transportation must adopt an updated and revised utility accommodation manual (NHGC 2016c).
- [SB76 – Chaptered Law 343](#) (2019) prohibiting offshore oil and natural gas exploration was enrolled May 31, 2019 and became effective in November (NHGC, 2019b).
- [SB167](#) (2019) establishing a clean energy resource procurement commission was vetoed by the Governor on August 2, 2019 (NHGC, 2019c).

- [HB464 – Chaptered Law 327](#) (2019) relative to the definitions of solar energy systems and wind-powered energy systems for assessed value of real estate exemptions and enabling municipalities to adopt a property tax exemption for electric energy storage systems (NT) was enrolled on July 18, 2019 and became effective in October (NHGC 2019d).
 - [HB156, Chaptered Law 149](#) (2019) established a commission to study the establishment of a state department of energy (NHGC, 2019e).
 - [SB168](#) (2019) relative to class 2 obligations under the electric renewable portfolio standards. Governor Sununu, an active supporter of Northern Pass, vetoed Senate Bill 168 which would have increased solar energy requirements to 5.4 percent by 2025, under the state’s renewable portfolio standards, but that target would still have been less than half of what surrounding states require (NHGC, 2019f).
 - As noted previously, New Hampshire is part of the BOEM’s Gulf of Maine Intergovernmental Regional Task Force for Offshore Wind Development. The task force is anticipated to meet in November to look at developing a comprehensive approach to offshore wind development in the Gulf of Maine.
2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- a. Describe the significance of the changes; N/A
 - b. Specify if they were 309 or other CZM-driven changes; and N/A
 - c. Characterize the outcomes or likely future outcomes of the changes. N/A

There have been no significant changes in the Energy and Government Facility Siting management categories since the last assessment.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____ x _____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Given that there are no new energy production or transport facilities in New Hampshire’s coastal zone since the last assessment, but that three new projects have been proposed, the Energy and Government Facility Siting enhancement area is rated as a Medium priority.

Aquaculture

Section 309 Enhancement Objective: Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best-available data. Your state Sea Grant Program may have information to help with this assessment.

Status and Trends of Aquaculture Facilities and Activities

Type of Facility/Activity	Number of Facilities	Approximate Economic Value	Change Since Last Assessment (↑, ↓, -, unkn)
American Oyster – Bottom & Suspended Culture	25	439,497 oysters landed	↑ (+9)
American Oyster – Upweller	4	Economic value is reflected in bottom culture estimate above	↑ (+2)
Blue Mussel – Open Ocean (long-line and Integrated Multi-Trophic)	5	N/A	↑ (+1, research site 2018-2020 – New Hampshire Sea Grant AquaFort for steelhead trout, blue mussels, and kelp)**
Sea Urchins	0	N/A	– (2 oyster farms list green urchins on the species they are allowed to culture)
Steelhead Trout – Open Ocean/Riverine and Integrated Multi-Trophic	2 (1*)	N/A	↑ (+1, research site AquaFort)**
Green Crab	0	N/A	– (New Hampshire Sea Grant Study exploring viability of soft shell green crab fishery)***

* Research facilities only. ** (UNH, 2018a). *** (UNH, 2019f).

Type of Facility/Activity	Number of Facilities	Approximate Economic Value	Change Since Last Assessment (↑, ↓, -, unkwn)
Kelp (Integrated Multi-Trophic)	2 (1*)	N/A	↑ (+1, research site AquaFort)**
Shrimp Land based	1*	N/A	↑ (+1, research site UNH Jackson Estuarine Lab Greenhouse)****

* Research facilities only. ** (UNH, 2018a). *** (UNH, 2019f). **** (UNH, 2019g).

- If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.

In 2018 there were 29 oyster aquaculture licenses issued by New Hampshire Fish and Game. Four of these were licenses for upwellers. Of the remaining 25 licenses, 14 were sites from which there was active harvest of market sized oysters (refer to Table below).

The quantity of harvest from Little Bay, NH harvest area. All product harvest is for raw, half-shell market							
	2012	2013	2014	2015	2016	2017	2018
# oyster farms licensed by F&G	6 licenses (5 farms, 1 upweller)	11 licenses (9 farms, 2 upwellers)	16 licenses (13 farms, 3 upwellers)	19 licenses (16 farms, 3 upwellers)	21 licenses (18 farms, 3 upwellers)	25 licenses (21 farms*, 4 upwellers)	29 licenses (25 farms*, 4 upwellers)
# oyster farms harvesting for sale	2	4	8	11	10	12	14
# harvest requests received by DES	16	126	335	278	278	450	539
# oysters harvested**	7,218***	81,274	164,965	207,024	184,832	329,156	439,497

*All but two oyster farms located in Little Bay. Two farms located in Hampton/Seabrook (established in 2017; no harvest of market sized product in 2017. First market sales occurred late in 2018)

**Data Source: Robert Atwood, New Hampshire Fish and Game Marine Fisheries Division

***high winter mortality late 2011- early 2012 (Robert Atwood, New Hampshire Fish and Game Marine Fisheries Division, personal communication)

[The Northeast Ocean Data Map](#) (2019) reflects the data in the tables above - several areas of oceanic multi-trophic/other and shellfish aquaculture, as well as multi-trophic/other aquaculture operation near New Castle, New Hampshire with the remaining shellfish and multi-trophic/other aquaculture operations located in Little Bay. Two other multi-trophic aquaculture operations are located on the Hampton River and Hampton Harbor (NROC, 2016a).

[NRAC Funding Grows the Northeast Aquaculture Industry](#) (2017) – This Northeastern Regional Aquaculture Center (NRAC) Fact Sheet (Publication No. 219-2017) written by Elizabeth Fairchild states that the NRAC funding of \$146,800 for aquaculture projects in New Hampshire increased the GDP (plus taxes) by \$289,430 by creating 2.5 jobs, provided state and local tax revenue of \$8,739 and federal tax

revenue of \$30,307 (NRAC, 2017a). Current NRAC funded projects as of November 2017: development of a phage-based diagnostic test for the rapid detection of pathogenic *Vibrio* species in bi-valves and white worm, *Enchytraeus albidus*, production and marketing for live aquaculture feed (NRAC 2017b).

It should be noted that aquaculture could expand beyond the coastal zone. In August 2019, EPA issued a draft permit for a pilot aquaculture project in the Gulf of Mexico off the coast of Florida. This project opens the debate about ocean aquaculture and which agency should regulate it (NHPR, 2019).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Significant Changes in Aquaculture Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	Y*	N	N
Other aquaculture statutes, regulations, policies, or case law interpreting these	Y**	N	Y (NHDES Wetlands Rules Revision and U.S. Army Corp of Engineers for the New England District – New Hampshire General Permits Revision)

*NHFG's New Hampshire Marine Aquaculture Strategic Plan (Dec. 1996; Revised Feb. 2012)

** Aquaculture statute (RSA 211.62-e) and Aquaculture Administrative Rules (Fis 807) administered by the New Hampshire Fish and Game Department; Fill and Dredge in Wetlands statute (RSA 482-A) administered by the NHDES Wetlands Bureau; and Shellfish Sanitation Statute (RSA 143:20-28) and Shellfish Sanitation Administrative Rules (He-P 2150.01 – 2150.37) administered by the Department of Health and Human Services

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

Harmful Algal Blooms (HAB) are occurring more frequently in the coastal waters of New Hampshire and Great Bay Estuary and are occasionally impacting blue mussel and less frequently oyster aquaculture. NHGHP monitors for red tide causing algae *Alexandrium* (paralytic shellfish poisoning), *Pseudo-nitzschia* (amnesic shellfish poisoning), and *Dinophysis* (diarrhetic shellfish poisoning). NHCHP is also working with the Beach Inspection Program to collect and analyze cyanobacteria samples for microcystis. When results indicate a problem, aquaculture operations are closed in the affected area.

The [Great Bay National Estuarine Research Reserve Management Plan 2006-2010](#) limits aquaculture to only if it is a long-term pre-existing use and only in buffer areas including Little Bay and the Piscataqua

River. The Reserve has submitted a revised Management Plan to NOAA for review and the plan does not change the geographic extent of allowable aquaculture within the Reserve (Riley, 2019).

[New Hampshire Department of Environmental Services Wetlands Rules](#) (2019) were updated to include a new coastal section (Chapter 600). Summary of Recent 309 Achievements – Wetlands Section” for a general summary. NHCHP played a major role in revising these rules. Significant changes were made to the rules related to aquaculture. Some of the changes include how aquaculture structures will be handled at marinas and residential boat slips. Env-Wt 606.07, 606.10, 606.11 defines when a standard permit is necessary as well the spacing and size requirements for permit exemption (NHDES, 2019a).

Army Corps of Engineers New England District permits for aquaculture in New Hampshire are regulated through the [New Hampshire General Permit GP 16 AQUACULTURE PROJECTS AND FISHERIES](#) which is reissued every five years. The permit was reissued in August of 2017 and included significant changes from the 2012 permit. The changes include no shellfish dredging, including mechanical or hydraulic, in Special Aquatic Sites (SAS). SAS includes inland and saltmarsh wetlands, mud flats, vegetated shallows/submerged aquatic vegetation (SAV), sanctuaries and refuges, coral reefs, and riffle and pool complexes. Also placement of cultch in beds of SAV is not permitted. Depth of cultch or spatted-shell is limited to the minimum necessary for full coverage of the framed bed bottom and must not result in visible degradation of habitat for other aquatic resources. All structures must be marked in conformance with applicable New Hampshire State or U.S. Coast Guard Aids to Navigation. Not Authorized under GP 16 are: permanent or temporary loss in tidal SAS and areas containing shellfish, including SAV. Other changes include the vertical clearance of floating structures and size limitations for floating structures under the Self-Verification requirements and list of work requiring Pre-Construction Notification (Minor/Major) (USACOE, 2018).

- a. Describe the significance of the changes;
- b. Specify if they were 309 or other CZM-driven changes; and
- c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____x_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Given the growth in the commercial marine aquaculture industry since the last assessment, particularly in the American Oyster bottom culture sector, and because the industry is managed effectively via existing state regulations for commercial aquaculture by the combined work of New Hampshire Fish and Game, NHDES Wetlands, and the New Hampshire Department of Health and Human Services, this enhancement area is rated as a Medium priority.

PHASE II (In-Depth) ASSESSMENTS

Wetlands

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP’s ability to protect, restore, and enhance wetlands.

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout your coastal zone, or are there specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea-level rise/Great Lakes level change; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	Geographic Scope <small>(throughout coastal zone or specific areas most threatened)</small>
Stressor 1	Hydrological Alteration	All Salt Marsh (tidal restrictions / ditching)
Stressor 2	Sea-Level Rise	All Salt Marsh
Stressor 3	Development/Fill	All Wetlands

2. Briefly explain why these are currently the most significant stressors or threats to wetlands within your coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Development remains a top stressor for wetlands in New Hampshire’s Coastal Zone; however, for the purpose of this 2020 Phase 2 assessment, development is listed in third position due to improved regulatory protections at NHDES. For instance, the Phase I Wetland Assessment shows that limited wetland impacts permitted by NHDES are moderated by a strong wetland mitigation program. Between 2010 and 2018, 3.83 acres of tidal wetlands and 14.35 acres of freshwater wetlands were permanently impacted by development. In response to these impacts, wetland mitigation efforts through the NHDES Aquatic Resource Mitigation In-Lieu Fee Program replaced functions and values lost by development with 4.64 acres of tidal wetland and 17.61 acres of freshwater wetland gained/mitigated. Based on the results of the Phase I assessment, NHCP concludes that the existing regulatory framework in New Hampshire is adequately protective of direct impacts to wetlands; however, cumulative and secondary impacts to wetlands by development is an ongoing concern as natural resource managers continue to understand the magnitude of indirect effects of development on coastal wetlands.

The primary stressors to wetlands identified by NHCP in this 2020 Phase 2 assessment are related to historic impacts to salt marsh (e.g. ditching and tidal restrictions= hydrological alterations) and existing sea-level rise plus the potential for accelerated sea-level rise by mid-century. These prioritized stressors are also informed by the results of the Resilient Tidal Crossings Project which determined that 80% of tidal stream crossings are restrictive of the tide.

NHCP priorities are also informed by the results of the 2015 Sea-Level Rise (SLR) Affecting Marshes Model (SLAMM) that predict the wholesale loss of salt marsh in the Hampton Seabrook Estuary should SLR increase 6.6 feet by 2100. NHCP prioritized stressors are also informed by the Salt Marsh

Habitat Appendix to the 2015 Wildlife Action Plan (WAP), in which New Hampshire Fish and Game Department describes 23 potential threats to salt marsh habitat that were scored and ranked based on the following factors: factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). The top 5 threats to salt marsh identified by NHFG in 2015 include:

- Habitat degradation from shoreline hardening
- Habitat degradation and mortality from oil spills
- Habitat impacts from roads and culverts that restrict tidal flow
- Habitat degradation from sea-level rise
- Habitat impacts from fragmentation

3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Sea-Level Rise	Tide level monitoring
Understanding Salt Marsh Plant Community Change	Salt Marsh Habitat Change Analysis Geomorphic assessment of marsh loss
Habitat impacts from introduced or invasive animals	Crab Monitoring

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Significant Changes in Wetland Management

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	N
Wetland mapping and GIS	Y	Y	Y
Watershed or special area management plans addressing wetlands	N	N	N
Wetland technical assistance, education, and outreach	Y	Y	N
Other (please specify) Policy	Y	N	Y

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
 - a. Describe significant changes since the last assessment;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

In 2019, NHCP was involved in the publication of three significant geospatial data products as well as the promulgation of new coastal permitting rules that in combination will establish new standards and criteria for management of New Hampshire's most sensitive coastal habitats and wetlands.

TIDAL CROSSINGS: Enabled by multiple Section 309 Assessment and Strategies (2011 and 2016), NHCP advanced a two-pronged (Policy and Assessment) approach to positively affect management of tidal stream crossings in New Hampshire.

TIER 4 CROSSING STANDARDS: As previously mentioned, NHCP provided critical input on the development of new regulatory standards for the replacement of tidal stream crossings. Effective on December 15, 2019, NHDES Wetlands Bureau created a new category (Tier 4) within NHDES Stream Crossing Rules to account for the unique conditions found at the 118 tidal crossings in New Hampshire. According to design criteria described ENV-WT 904.06, Tier 4 Stream Crossings shall be a designed:

- Of sufficient size to accommodate the 100-Year 24-hour design storm.
- To prevent a restriction of tidal flows
- To account for channel morphology
- To account for sea-level rise.

RESILIENT TIDAL CROSSINGS PROJECT: Also in 2019, NHCP published the results of the Resilient Tidal Crossings Project (RTC), which created a comprehensive inventory and replacement prioritization scheme for road crossings structures that convey bi-directional tidal flow. One hundred and eight tidal crossings in New Hampshire were assessed and scored according to a selection of ecosystem, flood hazard, and structure condition criteria. RTC has already enabled The Nature Conservancy to use NFWF funds to coordinate with stakeholders including NHDOT, NHCP and municipalities to advance five high priority tidal crossings through engineering and design processes. RTC will also improve permitting processes by providing site specific ecosystem compatibility characterizations and as well as targets for future potential conditions with sea-level rise. The RTC results are posted to the New Hampshire Coastal Viewer and are available on the Statewide Asset Database Exchange System (SADES) - an ArcGIS based geospatial platform that will enable long term asset management for tidal crossing infrastructure.

HIGH RESOLUTION SALT MARSH HABITAT MAP: In 2019 NOAA's Office for Coastal Management in partnership with GBNERR and NHCP released the High Resolution Salt Marsh Habitat Map, which utilized 2013 high resolution color aerial photographs to map physical features such as pools and creeks and a variety of salt marsh vegetation and assemblages of vegetation. Under development since 2015, this new data product is a coastal management game changer that shows for the first time ever a comprehensive view of salt marsh vegetation and physical characteristics on a statewide

basis. Prior to this data, remote sensing information only provided location, acreage and a limited number of NWI classifiers of salt marsh. Because salt marsh plant community structure is representative of tidal inundation regimes, these maps provide a glimpse of the resiliency of salt marsh in New Hampshire. This glimpse; however, will not come into focus until a change analysis is performed. A significant need at 2023, is to procure high resolution color aerial photos to compare against photos procured in 2013. This ten-year comparison of salt marsh habitat is absolutely critical to understanding salt marsh plant community change; particularly as it relates to the vulnerability of our salt marsh to inundation.

[Living Shorelines](#) - As describes in the Wetlands Section, Resource Characterization Question 2 the Living Shorelines Program. (NHDES, 2019g).

The [Living Shorelines Site Suitability Assessment Mapping Tool](#) provides information about the potential suitability of shoreline sites for living shoreline approaches to improve management of erosion along the New Hampshire shoreline. The tool also shows areas that vulnerable to sea-level rise, areas with social and political concerns, and property tax parcels (NHDES, 2019d).

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

Protection

- *PREP's State of the Estuary* reports are one mechanism for illustrating the effectiveness of protecting coastal wetlands. The reports, which are published every 5 years, describe progress toward achieving PREP's goals. During this reporting process, total land conserved is reported through this the State of the Estuary report. As of May 2017, PREP's goal for the 22 coastal communities in the Piscataqua Region is to conserve 20% of the watershed by 2020 and so far they have conserved 19.6% of land area. Also, PREP has a goal to conserve 75% (124,659 acres) of land identified as conservation focus areas by 2025.

Restoring

- *PREP's State of the Estuary* reports are one mechanism for tracking New Hampshire salt marsh restoration efforts. The reports, which are published every 5 years, describe progress toward achieving PREP's goals. To date, over 280.5 acres of salt marsh have been restored; almost achieving the goal of restoring 300 acres by 2020 (PREP, 2019).
- Dozens of salt marsh restoration projects have been implemented in New Hampshire; however, measuring the effectiveness of each intervention has not been comprehensively performed. In 2001, NHCP began the New Hampshire Marsh Monitors Program (NHMM), which was a volunteer based restoration monitoring program. The NHMM paired UNH and NHCP personnel with volunteers to collect vegetation, nekton and pore water salinity data at approximately 11 salt marsh sites over a seven-year duration. Performing post project monitoring is now necessary to determine the status of salt marsh restoration sites. Project effectiveness monitoring may also help inform best practice of various salt marsh interventions. Based on recent research, we know that the intervention practices known as Open Marsh Water Management (OMWM) has resulted in deteriorating salt

marsh condition. The USFWS Rachel Carson and Plum Island Wildlife Refuges are now undoing certain OMWM practice, such as removal of ditch plugs. There are 11 OMWM sites in New Hampshire with unknown status. To determine restoration project effectiveness, additional monitoring and field assessment is necessary; however, data management considerations need to be resolved. When NHMM was performed in 2001, the NHCP was part of the Office of State Planning. Upon acculturation with NHDES, NHCP's EDAS database was no longer compliant with NHDES data standards. NHMM data was extracted from EDAS but was not compatible with NHDES's Environmental Monitoring Database (EMD), which is designed for water quality sample results. Prior to collecting additional salt marsh monitoring data, NHCP needs to work internally and with external partners to resolve data management considerations for bio/physical data (salt marsh vegetation, nekton, sediment elevation tables). NHCP must also consider assessment methodology and data handling issues that are underway within the NERR on a regional basis.

Enhancing

- Piscataqua Region Environmental Planning Assessment ([PREPA](#) the most recent version) indicates that there is a lack of protections for shoreland and wetland buffers and a lack of structure setback requirements from shoreland within the 52 coastal communities. Recommendation in Municipal guide to assess buffers and setbacks – prioritize where needed (PREP, 2015).

Identification of Priorities:

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. (*Approximately 1-3 sentences per management priority.*)

Management Priority 1: Improve science based decision making potential for understanding salt marsh in New Hampshire Coastal Zone.

Description: The greatest opportunity to improve salt marsh management in New Hampshire is to improve coordination of salt marsh data management. Salt marsh monitoring efforts in New Hampshire are primarily led by GBNERR, which is geographically focused on Great Bay; creating gaps in statewide understanding of salt marsh. NHDES/NOAA, NHDES/EPA, NHDES/USACE have also been involved in salt marsh monitoring; however, there has been inadequate coordination between the various salt marsh monitoring efforts, in terms of assessment methodologies, reporting, analysis, data handling/storage. By aligning salt marsh monitoring efforts, environmental data for salt marsh could be used by NHDES to report on the health of New Hampshire salt marsh under the framework of EPA's Clean Water Act.

Management Priority 2: Expand assessment capacity to better understand salt marsh condition, salt marsh resiliency, salt marsh response to SLR and salt marsh response to management

Description: After a 12-year hiatus, there is an opportunity to implement the New Hampshire Marsh Monitors, a volunteer supported salt marsh restoration monitoring program that was implemented by NHCP at 11 sites between 2001 and 2007. As NHCP builds capacity around monitoring salt marsh restoration sites, there is another opportunity to coordinate and align resources with GBNERR and other partners to expand the geographic scope of GBNERR's salt marsh sentinel monitoring

program. In addition, there is need to think beyond field investigations and continue to invest in geospatial assessment of salt marsh condition, vulnerability and resiliency. Combining field assessment and geospatial analysis will significantly improve understanding of salt marsh in New Hampshire.

Management Priority 3: Improve outcomes of salt marsh management projects through adaptive management

Description: New Hampshire salt marsh has been subjected to a wide array of hydrological alterations. For instance, the Resilient Tidal Crossings Project demonstrated that 80% of tidal stream crossings in New Hampshire are restrictive of the tide. The 2008 Hampton Seabrook Estuary Restoration Compendium, for example, demonstrated that there are 377 miles of ditching within the 4,454 acres of salt marsh in Hampton Seabrook Estuary. Coastal managers have been attempting remedies to these historic impacts for 40 years. Some restoration practices such as fill removal and upsizing culverts have had demonstrated success at improving salt marsh functions and values. Other restoration practices, such as Open Water Marsh Management, are now known through recent scientific literature to be detrimental to salt marsh resilience. New restoration practices, such as ditch remediation and runneling show promise of reversing historic impacts. Adaptive management is an iterative strategy that convenes technical stakeholders to develop and implement a coupled process of restoration implementation and rigorous monitoring to determine practices to restore and sustain salt marsh functions and values. This management priority identifies a need to use an Adaptive Management approach to restoration of coastal habitats.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Research on tidal marsh: nutrient enrichment, invasive crab effects, SLR effects, and sentinel monitoring.
Mapping/GIS	Y	In 2023, perform change analysis of the high resolution salt marsh maps.
Data and information management	Y	With 3 federal agencies (NOAA, EPA, USACE) that through NHDES perform or enable salt marsh monitoring, NHDES has certain data management gaps that need to be resolved, either through creation of NH specific database or through regional partner.
Training/capacity building	Y	Direct outreach and engagement with municipalities to advance protective buffer policy and high priority land conservation
Decision-support tools	N	N/A
Communication and outreach	Y	

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Other (specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes Y
 No

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Management, restoration, regulation, protection, and monitoring of wetlands are central to the mission of the New Hampshire Department of Environmental Services’ Wetlands Bureau, as described in their “2011-2017 Wetland Program Plan”. With the exception of direct regulation, the New Hampshire Coastal Program shares similar priorities. For that reason, a strategy will be developed that synthesizes all priorities of the aforementioned with regard to wetlands.

Coastal Hazards

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP’s ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea-level rise and Great Lakes level change.

1. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards¹⁰ within your coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?

	Type of Hazard	Geographic Scope <small>(throughout coastal zone or specific areas most threatened)</small>
Hazard 1	Coastal storms	Throughout coastal zone; more prevalent in seven communities that abut the open Atlantic Ocean
Hazard 2	Flooding	Throughout coastal zone
Hazard 3	Sea-level rise	Throughout coastal zone; more prevalent in communities with more tidal shoreline

2. Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

The [State of New Hampshire Multi-Hazard Mitigation Plan](#) (2018) identifies coastal flooding as a natural hazard of high risk. While the plan characterizes current risk as high, citing two Major Disaster

¹⁰ See list of coastal hazards on pg. 24 of this assessment template.

Declarations for nor'easter storms along the coast, the plan also identifies the increasing future risk of coastal flooding due to expected changes in sea-level of up to 2 feet by 2050 and up to 6.6 feet by 2100. Multiple levels of government and many agencies were involved in development of the Plan (NHDOS, 2018).

The [New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations](#) (2016) identify risks associated with coastal storms, sea-level rise, and extreme precipitation, including mapped vulnerability to sea-level rise and storms for all coastal zone communities. The report suggests that risks vary for different communities, but overall risk of coastal flooding in New Hampshire's coastal zone is high. This report was developed by a multi-stakeholder Commission and released for public comment (NHCRHC 2016).

The [New Hampshire Coastal Flood Risk Summary, Part I: Science](#) and the [New Hampshire Coastal Flood Risk Summary Part II: Draft for Incorporating Science in Decision-making \(DRAFT\)](#) were published September 2019 by the New Hampshire Science and Technical Advisory Panel. These reports highlight several coastal increasing flood risks, including updated relative sea-level rise estimates, sea-level rise induced groundwater rise estimates, coastal storm information, and extreme precipitation information. The Guidance was developed by a multi-stakeholder committee and public input was solicited (Wake, 2019 and NHCFR, 2019).

Additional stakeholder input to inform this assessment was collected from the New Hampshire Coastal Adaptation Workgroup and the Piscataqua Regional Estuaries Partnership Management Committee, and both entities supported the determination that major coastal hazards include coastal storms, freshwater flooding, and relative sea-level rise.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Sea-level rise induced groundwater rise	Vulnerability assessments of assets at risk in areas likely to experience groundwater rise, such as septic systems, underground hazardous waste sites, and potential for emergent wetlands, among others.
Erosion and sediment transport	Erosion rates for various types of exposed and sheltered shorelines as well as information about sediment transport to inform replenishment decisions.
Cumulative impacts of freshwater and coastal flooding	Modeling that combines knowledge about coastal flooding with freshwater flooding to identify total water levels and other future conditions expected.

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Significant Changes in Coastal Hazards Statutes, Regulations, and Policies

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Shorefront setbacks/no build areas	Y	Y	N
Rolling easements	N	N	N
Repair/rebuilding restrictions	Y	Y	Y
Hard shoreline protection structure restrictions	Y	Y	Y
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	Y
Repair/replacement of shore protection structure restrictions	Y	Y	Y
Inlet management	N	N	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)	Y	Y	Y
Repetitive flood loss policies (e.g., relocation, buyouts)	N	Y	N
Freeboard requirements	Y	Y	Y
Real estate sales disclosure requirements	Y	N	N
Restrictions on publicly funded infrastructure	Y	N	Y
Infrastructure protection (e.g., considering hazards in siting and design)	Y	Y	Y
Other (please specify)			

Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Hazard mitigation plans	Y	Y	Y
Sea-level rise/Great Lake level change or climate change adaptation plans	Y	Y	Y

Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Statewide requirement for local post-disaster recovery planning	N	N	N
Sediment management plans	N	N	N
Beach nourishment plans	N	Y	N
Special Area Management Plans (that address hazards issues)	N	N	N
Managed retreat plans	N	Y	N
Other (please specify)			

Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
General hazards mapping or modeling	Y	Y	Y
Sea-level rise mapping or modeling	Y	Y	Y
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	Y
Hazards education and outreach	Y	Y	Y
Other (please specify)			

- Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state’s management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state’s management efforts?

No studies have been completed to illustrate the effectiveness of the state’s management efforts to address coastal hazards. Progress since the last assessment has been steady, but limited due to a lack of resources and capacity to focus on a more rigorous assessment of effectiveness.

Identification of Priorities:

- Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Develop and communicate a vision for resilience in coastal New Hampshire with tangible metrics and an associated action plan to assist state agencies and coastal communities as they adopt policy changes to address coastal hazards.

Description: Building on the New Hampshire Coastal Risk and Hazards Commission Final Report & Recommendations (2016), progress made to address coastal hazards at state and local levels since its publication, and most recently, the findings of the 2019 New Hampshire Coastal Flood Risk Summary, NHCP plans to develop and communicate a vision and action plan for coastal resilience in New Hampshire that helps state agencies and coastal communities understand the steps needed to maintain or enhance resilience in the face of increasing coastal flooding.

Management Priority 2: Provide direct sea-level rise planning and implementation guidance to state and local decision makers and property owners/managers.

Description: As new wetland regulatory requirements are implemented in 2020, the Coastal Program will play a role in providing technical assistance to stakeholders regarding required consideration of sea-level rise and other coastal hazards. The Coastal Program seeks to enhance its work providing technical expertise and guidance directly to stakeholders, including community decision makers, property owners, residents, and consultants and other professionals. The Coastal Program will draw directly from the New Hampshire Coastal Flood Risk Guidance to be published in March 2020.

Management Priority 3: Create programmatic opportunities at state and local levels to fund the sustained implementation of coastal resilience projects in coastal New Hampshire.

Description: In 2019, the NHCAW Coastal Climate Summit focused on funding coastal resilience work. Lessons gathered for that event and from the ongoing New Hampshire Coastal Management Fellowship project will inform the Coastal Program’s priority to create new and better access existing funding mechanisms to help communities pay to integrate coastal hazards resilience in projects.

2. Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Improved understanding of cumulative flood impacts; improved understanding of living shoreline effectiveness and techniques; improved understanding of economic and social drivers of relocation/property value changes.
Mapping/GIS/modeling	Y	Completion of Coastal Zone mapping of sea-level rise induced groundwater rise; hydrodynamic modeling and mapping of total water levels under different sea-level rise scenarios and storm scenarios, including information about wave dynamics.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Data and information management	Y	Data about property values, sales, and other economic indicators of sea-level rise adaptation; data about coastal resilience program effectiveness/evaluation
Training/Capacity building	Y	Staff to train/build capacity among local decision makers focused on long-term managed retreat/relocation of the most vulnerable assets in the coast; training and capacity building for organizations working with socially vulnerable populations; training for state and municipal staff focused on Coastal Flood Risk Guidance.
Decision-support tools	N	N/A
Communication and outreach	Y	Dedicated staff to enhance communication and outreach about Coastal Flood Risk Guidance, sea-level rise science, and other factors.
Other (specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes X
 No

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Coastal Hazards have been a core component of NHCP work for the past five years. As the program work has matured, staff have identified an emerging need for a focused, strategic vision with target metrics and action plans to advance coastal resilience. This vision for resilience in coastal New Hampshire will provide the basis for legislative proposals and local ordinances grounded in risk and vulnerability information. The 309 Coastal Hazards Strategy will focus on developing the vision for resilience and associated metrics to provide the basis for coastal resilience technical assistance for the next five years.

STRATEGIES

1. Salt Marsh Monitoring to Improve Management

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input checked="" type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. **Strategy Goal:** The goal of this strategy is to improve and optimize salt marsh monitoring processes and data management frameworks to improve understanding and management of salt marsh in New Hampshire Coastal Zone.

C. **Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above.** The 2020 Strategy for Wetlands is to develop and implement a statewide salt marsh monitoring plan and associated data management framework that seeks to align state and federal resources behind the common goal of improving understanding of salt marsh through coordinated data management, continued characterization of salt marsh and through newly created metrics of salt marsh change. The salt marsh monitoring plan will also explore opportunities to expand field and geospatial assessment.

Improved data management and an expanded dataset will enable stakeholders and restoration practitioners to enact science-based adaptive management of salt marsh in New Hampshire.

III. Needs and Gaps Addressed

The primary stressors to wetlands identified by NHCP in the 2020 Phase 2 assessment are related to historic impacts to salt marsh (e.g. ditching, remnant berms, and tidal restrictions) and accelerated sea-level rise.

According to 2015 outputs of the Sea-Level Affecting Marshes Model (SLAMM), rapid sea-level rise poses significant risk to the existence of salt marsh in New Hampshire. If sea-level rises at a rate of 6.6 feet by 2100, SLAMM predicts that less than 300 of the current 6,039 acres of salt marsh will survive. As the marsh becomes inundated more frequently, various changes (vegetative, geomorphic, and habitat) are expected; however, our understanding of these changes and our ability to detect them is not fully optimized.

Various entities in New Hampshire are involved in monitoring salt marsh for a variety of reasons. For instance, GBNERR has been successfully implementing a Sentinel Monitoring Program at three salt marsh sites in Great Bay since 2010. In addition, NHCP implemented the New Hampshire Marsh Monitors, a volunteer supported salt marsh restoration monitoring program at 11 sites between the years 2001 and 2007. Also, the NHDES Water Quality Planning Section periodically monitors salt marsh in collaboration with EPA's National Wetland Condition Assessment. In addition, various entities are involved in project effectiveness monitoring at restoration/ mitigation sites. Among these known salt marsh monitoring initiatives, there has been little to no alignment between entities on methods, data management, and reporting. NHCP believes there is a significant opportunity to improve and optimize salt marsh monitoring processes and data management frameworks to improve understanding of salt marsh in New Hampshire Coastal Zone by leveraging resources of the involved parties. For example, this 2020 Wetland Strategy proposes to explore possible alignments between NOAA supported monitoring efforts with the programs, resources, and enabling authorities of the EPA Clean Water Act, such as through [NHDES 305\(b\) Report and 303\(d\) List](#) and the State of Our Estuaries Report published every 5 years by PREP.

The 2020 Strategy also seeks to improve science based decision making of salt marsh restoration practices. Dozens of salt marsh restoration projects have been implemented in New Hampshire; however, measuring the effectiveness of each intervention has not been comprehensively performed. Performing post project monitoring is proposed in this 2020 Wetlands Strategy through the reestablishment of the New Hampshire Marsh Monitors. Based on recent research, we know that the intervention practices known as Open Marsh Water Management (OMWM), which had been implemented at 11 sites in New Hampshire, has resulted in deteriorating salt marsh condition. Throughout the region, restoration practitioners are implementing projects to un-do certain OMWM practices. This strategy proposes to improve understanding of OMWM sites in New Hampshire through direct assessment and to determine options to remediate impairments in the marsh. Modelled after the New Hampshire River Restoration Task Force that convenes restoration practitioners and regulatory agencies around dam removal decisions, NHCP proposes to create a Salt Marsh Management Task Force that will establish a standing venue for the evaluation of publically funded projects that pro-actively manage jurisdictional coastal habitats. The Salt Marsh Management Task Force will convene technical stakeholders to develop and implement a coupled process of restoration implementation and rigorous monitoring to determine practices to restore and sustain salt marsh functions and values.

IV. Benefits to Coastal Management

- Improve understanding of salt marsh habitat.
- Leverage resources and authorities of multiple state and federal agencies.
- Advance science of salt marsh management by further developing best salt marsh management practice

V. Likelihood of Success

NHCP has proposed an ambitious strategy to work across state and federal agencies in effort to align and integrate monitoring and assessment efforts related to salt marsh. Achieving this strategy requires a combination of coordination, stakeholder engagement, technical assessment and expert knowledge. As with any plan that proposes changes to the status quo, some of the outcomes are uncertain. For instance, we cannot predict the data management outcome between three federal agencies and two state agencies. On the other hand, activities that are entirely within the control of NHCP, such as the re-establishment of the New Hampshire Marsh Monitors, have a high likelihood of success. Regardless of outcome for each component of the strategy, NHCP proposes to implement a stakeholder engagement process to work toward improved efficiency and decision making related to salt marsh management.

VI. Strategy Work Plan

Strategy Goal: The goal of this strategy is to improve and optimize salt marsh monitoring processes and data management frameworks to improve understanding and management of salt marsh in NH Coastal Zone.

Total Years: 5

Total Budget: \$205,000

Year(s): 1-2

Description of activities:

- Establish a committee (Salt Marsh Task Force) comprised of Great Bay National Estuarine Research Reserve, NHDES (Wetlands, Coastal, Water Quality Planning), New Hampshire Fish and Game, and New Hampshire Natural Heritage Bureau to convene a limited series of meetings, including some with federal partners, municipalities and non-governmental organizations (NGO's), to evaluate the current state of the practice of salt marsh monitoring and develop a statewide salt marsh monitoring strategy based on findings from staff/contractor supported inquiries, described in tasks 1.1.2 and 1.1.3.
- Consolidate information (data, metadata) of all existing salt marsh monitoring conducted in New Hampshire and establish geodatabase depicting sampling stations, monitoring parameters, monitoring types (sentinel, effectiveness monitoring) and a library of monitoring reports and protocols.

- Determine procedures for integrated data storage, handling and quality control. Consider the creation of a salt marsh monitoring module and associated data management plan for NHDES Environmental Monitoring Database.
- Create Statewide Salt Marsh Monitoring Strategy provide recommendations for monitoring that adequately characterize New Hampshire salt marsh

Major Milestone(s):

- Committee established
- Monitoring geodatabase created
- Monitoring strategy finalized

Budget: **\$59,000**

Year(s): 1-5

Description of activities:

- Implement New Hampshire Marsh Monitors (NHMM), a volunteer supported salt marsh restoration monitoring program implemented by the NHCP at 12 sites between 2002-2007.
- If recommended in the Salt Marsh Monitoring Strategy, establish additional sentinel monitoring sites and procure field data in the salt marshes of the Piscataqua, Atlantic Coast, and Hampton Seabrook estuaries based on scientifically supported sampling methodologies.
- Conduct change analysis of salt marsh habitat map, including procurement of high resolution aerial photos in 2023, geospatial analysis of 2023 habitat and change from 2013 mapping product, and development of salt marsh habitat change metric.

Major Milestone(s):

- NHMM Data Management Plan approved
- Monitoring transects re-established
- Technical services contract for NHMM support enacted
- 3 Years of NHMM monitoring complete
- Final NHMM technical report complete
- Aerial photos procured
- Final habitat map and change analysis published

Budget: **\$96,000**

Year(s): 1-5

Description of activities:

- The Salt Marsh Task Force will provide a venue for coordinated evaluation, technical guidance, and stakeholder input on proposed and completed coastal habitat management projects.
- Consolidate information (data, metadata) of all known salt marsh intervention projects and publish coastal habitat restoration geospatial layer. Maintain a list of coastal habitat

management projects and relevant project information (i.e. site location, project goals, performance criteria)

- Conduct geo-spatial analysis to determine high priority salt marsh and coastal wetlands in need of intervention (e.g. marsh units with highest ditch density, public ownership, low condition scores, high resiliency scores).
- Advance preliminary assessment, stakeholder engagement, design, and permitting at salt marsh sites identified as high priority for intervention.
- Present preliminary designs to New Hampshire Salt Marsh Management Task Force for input.
- Develop final designs and permits.
- Seek grant funding to support construction.

Major Milestone(s):

- Committee convened annually
- Restoration geodatabase updated
- High priority restoration sites identified
- Preliminary restoration designs for high priority sites developed
- Final designs and permits complete

Budget: \$40,000

VII. Fiscal and Technical Needs

A. Fiscal Needs:

This dynamic strategy includes a variety of components that require sustained NHCP personnel capacity, costs for which will be carried within existing budgets. In contrast, some portions of the strategy require the re-establishment and/or build-out of monitoring programs that require additional personnel, equipment, and technical services, which will require outside funding.

B. Technical Needs:

NHCP has the administrative positioning and aptitude to coordinate among and between state and federal agencies to align resources to improve data gathering, data management. Some portions of this wetland strategy require specialized expertise related to mapping, surveying, database management, salt marsh and science.

VIII. Projects of Special Merit (Optional):

None

2. Advancing a Vision for Coastal Resilience in New Hampshire

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input checked="" type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. Strategy Goal:

The goal of this strategy is to create a vision, target metrics, and an action plan to achieve and evaluate tangible advances in coastal resilience at municipal and state government levels in New Hampshire.

C. **Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above.**

Building on the New Hampshire Coastal Risk and Hazards Commission Final Report and Recommendations (NHCRHC2016) and the final version New Hampshire Coastal Flood Risk Guidance, the Coastal Program will develop a vision, target metrics, and an action plan to achieve and evaluate tangible advances in coastal resilience at municipal and state government levels in New Hampshire. The NHCRHC report included a high-level vulnerability assessment for coastal New Hampshire and laid out broad recommendations to address future coastal flood risks through science, assessment, implementation, and legislation. The Guidance provides a set of mechanical steps for using best available coastal flood risk science.

As our understanding of potential flood risks has increased with advances in science and analysis, the Coastal Program and its partners recognize a need to establish a clear vision for a resilient Coastal Zone under a future of increasingly challenging flood conditions. This Strategy lays out a process to enhance use of best available future coastal flood risk science, develop a vision for a resilient future, create an action plan that lays out the program and policy changes needed in order to achieve that vision with incremental targets, and begin efforts to implement those changes. By articulating characteristics of a desired future state for New Hampshire's Coastal Zone and pairing that vision with the set of actions needed in order to achieve that future state, this Strategy is expected to clarify both the urgency for action on coastal flood hazards and the need for significant additional state and local resources and coordination to address increasing flood risks.

The Strategy will be executed by the Coastal Program and its partners, with consistent stakeholder engagement throughout the process. The Vision will be published as a formal New Hampshire Department of Environmental Services document.

III. Needs and Gaps Addressed

This Strategy will advance progress on resilience at a pace that is consistent with scientific projections associated with relative sea-level rise and other climate change-related coastal hazards. State and local policy change, program establishment, and infrastructure projects take significant time and sustained resources. Concerns have been expressed by NHDES leadership that state and local progress to adapt to projected coastal flood risks is not keeping pace with relative sea-level rise and associated climate changes.

IV. Benefits to Coastal Management

This Strategy will benefit coastal management by fulfilling a demonstrated need (see III.) to encourage action to adapt to changing coastal flood hazards. Coastal communities will benefit from incorporating best available future flood risk science into existing decision making processes by avoiding inefficient or ineffective investment in risky areas, protecting the resources they value and that serve them, and prioritizing future investment in safe places.

V. Likelihood of Success

This Strategy is supported by full time Coastal Program staff and by a myriad of partners who are bought in to its advancement. Significant time has been allocated to develop this Strategy based in programmatic priorities, and NHDES leadership has indicated that this Strategy is a priority. As a result, the Coastal Program is confident that the Strategy will be supported, funded, and completed.

VI. Strategy Work Plan

Strategy Goal: The goal of this strategy is to create a vision, target metrics, and an action plan to achieve and evaluate tangible advances in coastal resilience at municipal and state government levels in New Hampshire

Total Years: 5

Total Budget: \$125,000

Year(s): 1-5

Description of activities:

- Provide outreach and assistance to implement the Coastal Flood Risk Guidance with state and local stakeholders;
- Following year 1, gather lessons learned about barriers associated with implementing the Guidance and enhancement needs;
- Assist local and/or state government agencies to adopt the Guidance as is or in amended form as policy, regulation, or standard operating procedure, ensuring required consideration of projected coastal flood risks in development and other decisions.

Major Milestone(s):

- More than eight outreach events or meeting coordinated on the Coastal Flood Risk Guidance;
- Guidance formally adopted by at least two state and/or local government agencies;
- Outreach evaluated and lessons compiled about Coastal Flood Risk Guidance implementation.

Budget \$10,000

Year(s): 2

Description of activities:

- Create a small committee to oversee vision development and refine the scope of the vision, action plan, and targets, led by NHCP resilience staff;
- Solicit input from stakeholders via workshop and other formats, including other NHDES programs, the State Environmental Resilience Group, New Hampshire Silver Jackets, Piscataqua Region Estuaries Partnership, and New Hampshire Coastal Adaptation Workgroup members about target metrics for resilience;
- Develop a vision, metrics, and action plan outline for DES and stakeholder review.

Major Milestone(s):

- Committee established;
- Input collected from stakeholders;
- Vision, proposed metrics, and action plan outline completed for review.

Budget \$20,000

Year(s): 3

Description of activities:

- Finalize and publish the New Hampshire Vision for Coastal Resilience;
- Amend this 309 Strategy to incorporate the Vision and elements of the action plans that are achievable within the remaining timeframe.
- Provide and evaluate outreach to communicate the vision, target metrics, and action plan.

Major Milestone(s):

- New Hampshire Vision for Coastal Resilience published and incorporated in amended 309 Strategy;
- More than two outreach events completed and evaluated.

Budget \$20,000

Year(s): 4-5

Description of activities:

- Assist state agencies and communities to implement action plans through technical assistance;
 - prioritizing actions that will result in formal adoption of new policy/guidelines by state and local government agencies, and
 - prioritizing actions that will result in new or revised authorities at state and/or local government levels.
- Evaluate outlook at the end of year 5.

Major Milestone(s):

- Applications for grants solicited and/or applications submitted to external opportunities.
- Outlook evaluated.

Budget \$60,000

VII. Fiscal and Technical Needs

A. Fiscal Needs:

- a. Low barrier to entry grants (low match) are needed to assist with Coastal Flood Risk Guidance outreach, implementation, and adoption as policy.
- b. Funding for neutral facilitation/consulting services to assist with Vision development.
- c. Funding will be needed to enhance capacity in order to achieve action plan targets, however, specific estimates are unknown until action plans are created.

B. Technical Needs:

- a. Neutral facilitation expertise to assist with the development of the Coastal Resilience Vision and action plan(s), allowing Coastal Program staff to participate more actively in brainstorming and vision content development.
- b. Improved, high resolution modeling and mapping of coastal hazards and associated risks to enable action plan design (see Phase II Assessment).
- c. Completed modeling of groundwater rise for unmapped communities and associated groundwater rise vulnerability assessments.

- d. Legal expertise to ensure recommendations and action plans are defensible under New Hampshire legal authorities.

VIII. Projects of Special Merit (Optional)

- a. A Project of Special Merit proposal will be developed to enhance Coastal Flood Risk Guidance outreach, implementation, and adoption as policy.
- b. A Project of Special Merit proposal will be developed to (in part) support neutral facilitation/consulting services to assist with Vision development.
- c. A Project of Special Merit proposal may be developed to (1) complete groundwater rise modeling, (2) assist with development of hydrodynamic flood modeling and risk assessment information, (3) fill other technical gaps as needed.
- d. A Project of Special Merit proposal may be developed to enhance capacity in order to achieve action plan targets, however, specific estimates are unknown until action plans are created.

3. Development of 309 Assessment and Strategy

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input checked="" type="checkbox"/> Wetlands |
| <input checked="" type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. **Strategy Goal:** To develop the next 309 Assessment and Strategy, including identification of new emerging issues for coastal management.

C. **Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above.**

Development of the next 309 Assessment and Strategy in 2025 will assess progress on the known issues identified in this report, develop more information and interest in those issues, and identify additional issues for future strategy updates. New coastal management concerns will be identified and prioritized in cooperation with NHCP partners including CAW, PREP, NHDES, the Gulf of Maine Council, and NROC, as well as through attendance at regional meetings and conferences. Once top management priorities have been agreed on, NHCP will work with its coastal partners to address these issues and create program change. NHCP staff will review the Assessment annually to ensure that progress is being made toward achieving program goals.

III. Needs and Gaps Addressed

New coastal management needs are constantly coming to light as science, policy and environmental threats change, and known management priorities change frequently as some problems are solved and others take on increased importance. The five-year assessment provides an opportunity to

reflect on NHCP's progress and determine where future efforts will have the greatest impact on New Hampshire's most significant coastal concerns.

IV. Benefits to Coastal Management

The process of gathering information to complete the 309 Assessment and Strategy report will allow NHCP staff to remain abreast of numerous state and regional coastal efforts on wetland restoration, river restoration, stormwater management, habitat restoration, invasive species and water quality. Partnerships and relationships built through this task will also make implementation of other tasks run more smoothly. The result will be a revised 309 Assessment and Strategy.

V. Likelihood of Success

This task has a high likelihood of success based on prior experience. The 309 Assessment and Strategy process has helped build many of the partnerships that assist NHCP staff not only identify issues but also build the support necessary to achieve program changes. Other state agencies and communities have come to depend on the NHCP to participate in planning efforts and to provide coordination.

VI. Strategy Work Plan

Strategy Goal: An updated Section 309 Strategy and Assessment report along with the benefits of coordination and information transfer among NHCP partners that result from the identification of coastal management priorities.

Total Years: 5

Total Budget: \$30,000

Year(s): 1-4

Description of activities:

- Track progress on tasks and strategies, develop annual work plan and revise strategies as necessary.
- Participate in conferences, workshops, CAW meetings, Gulf of Maine Council events, etc. to identify issues and needed partners for 309 program changes.

Major Milestone(s): Annual work plans submitted.

Budget: \$10,000

Year(s): 4-5

Description of activities:

- Identify emerging issues and coastal management priorities during one or more workshops or meetings with NHCP partners, as well as through informal interviews with NHCP partners and stakeholders.
- Reassess the *2021 Section 309 Assessment and Strategy* document.
- Develop new 309 strategies.
- Develop a *2026 Section 309 Assessment and Strategy* draft document.
- Post the *2026 Section 309 Assessment and Strategy* draft document for public review.

- Finalize the *2026 Section 309 Assessment and Strategy* report and submit to OCRM for review.

Major Milestone(s):

- Management priority setting meetings held with NHCP partners and stakeholders.
- *2026 Section 309 Assessment and Strategy* document submitted.

Budget: \$20,000

VII. Fiscal and Technical Needs

A. Fiscal Needs:

NHCP utilized a portion of an employee's time from another section within the NHDES Watershed Management Bureau to create this current assessment. This methodology works well as it brings in an environmental professional familiar with general water issues in New Hampshire, but who is not part of the NHCP, for an objective assessment.

B. Technical Needs:

NHCP has most of the technical skills necessary to complete most of this strategy, and can draw on the knowledge of its partners and other NHDES staff to answer any other technical questions.

VIII. Projects of Special Merit (Optional)

None

4. 5-Year Budget Summary by Strategy

At the end of the strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year.

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Salt Marsh Monitoring to Improve Management	\$64,500	\$44,500	\$42,000	\$34,500	\$19,500	\$205,000
Advancing a Vision for Coastal Resilience for NH	\$10,000	\$30,000	\$30,000	\$40,000	\$40,000	\$150,000
Development of 309 Strategy	\$2,500	\$2,500	\$5,000	\$2,500	\$17,500	\$30,000
Total Funding	\$77,000	\$77,000	\$77,000	\$77,000	\$77,000	\$385,000

SUMMARY OF STAKEHOLDER/PUBLIC COMMENT

Identification of emerging and critical issues, management priorities and strategies for this report were developed through a comprehensive planning process by NHCP staff during the fall and winter of 2019 and 2020 in cooperation with NHCP partners and stakeholders. NHCP staff conducted multiple informal interviews with NHDES colleagues and external partners to determine the priorities of other programs, major gaps in knowledge or resources, and where NHCP could most effectively work in cooperation with these programs to accomplish mutual goals.

More formally, stakeholders and partners were also involved in the 309 assessment process through facilitated input sessions. The enhancement area prioritization was guided and supported by members of CAW and the management committee of PREP. PREP and CAW include representatives from the NHFG-Great Bay National Estuarine Research Reserve; New Hampshire Sea Grant; UNH Jackson Estuarine Laboratory; Rockingham Regional Planning Commission; Strafford Regional Planning Commission; City of Exeter; City of Portsmouth; U.S. EPA; Seacoast Science Center; NHFG-Marine Fisheries Division; Conservation Law Foundation; The Nature Conservancy and Town of Durham. At the CAW meeting and PREP Management Committee meetings, meeting attendees confirmed the Wetlands and Coastal Hazards enhancement areas as high priority focus areas for the next five years.

Additional support for priorities and strategies for this Assessment came through the *2010 PREP Comprehensive Conservation and Management Plan* (PREP, 2010) as well as the *2020-2024 New Hampshire Nonpoint Source Management Program Plan* (NHDES, 2020). Because both management plans are based on input from stakeholders and prioritize issues and strategies, they, too, serve as stakeholder and public guidance on Section 309 activities.

Upon completion of the draft *2021 Section 309 Assessment and Strategy* in February 2020, the report was subjected to a 30-day public comment period. No comments were received.

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