
Maine Coastal Program STRATEGIC OUTLOOK 2026 – 2030

Assessment and Strategy under Section 309 of the Coastal Zone Management Act



DRAFT for Public Comment – April 22, 2025

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Introduction

The Maine Coastal Program and The National Coastal Zone Management Program

Maine is one of 36 states and territories that participate in the National Coastal Zone Management Program. The program is a voluntary partnership between the federal government and U.S. coastal and Great Lakes states and territories authorized by the Coastal Zone Management Act (CZMA) of 1972 to address national coastal issues. The program is administered by the National Oceanic and Atmospheric Administration's (NOAA) Office for Coastal Management.

Maine's Coastal Program (MCP) was approved by NOAA in 1978. Maine's coastal zone includes:

- 5,408 miles of coastline
- All municipalities with tidal waters in their jurisdiction
- State-owned submerged lands and islands out to three nautical miles

MCP is a partnership among local, regional, and state agencies for the purpose of managing Maine's coastal resources in a way that balances development and conservation. As of the preparation of this document, the Maine Coastal Program is a Division of the Maine Department of Marine Resources, it is planned that MCP will become a Division of the new Maine Office of Community Affairs in July 2025. MCP distributes federal funds matched by state and local sources—for projects that benefit Maine's coastal communities.

NOAA's Coastal Zone Enhancement Program. To foster innovation and continuous improvement in state coastal programs, NOAA administers the Coastal Zone Enhancement Program referred to as "Section 309 of the CZMA". The program provides incentives to states to enhance their coastal programs in nine key topic areas of national concern as follows:

- Aquaculture – facilitating farming/cultivation of aquatic organisms such as fish, shellfish and plants.
- Coastal Hazards – eliminating or reducing threats to public health, safety and welfare from storms, erosion, etc.
- Cumulative and Secondary Impacts of Development – addressing impacts associated with land development and other stressors.
- Energy and Government Facilities Siting – facilitating sound siting of large-scale essential services.
- Marine Debris – eliminating or reducing trash and other refuse in coastal waters or on shorelines.
- Ocean Resources – planning for existing and potential new uses in coastal waters, including consideration of marine resources (species and habitats), cultural/historic resources, water quality, sand and gravel deposits, dredging, etc.
- Public Access – facilitating public access to the shore.
- Special Area Management Plans – planning for resources or geographic areas of concern.

- Wetlands – protecting, restoring or enhancing wetlands.

Strategic Outlook (Section 309 Assessment and Strategy)

Every five years, the Maine Coastal Program develops a Strategic Outlook (also known as the CZMA Section 309 Assessment and Strategy), assessing the status of the topics above, reviewing our past performance, and meeting with partner organizations, stakeholders and other state agencies to develop priorities and strategies for program innovation and improvement. Initiatives outlined in this document provide a general blueprint to guide MCP's work over the next five years (2026-2030). The document is also intended for use by others to assess opportunities for potential partnerships and joint efforts.

How this Document was Prepared

NOAA requires each state participating in the Section 309 Enhancement Program to develop cursory "Phase I" Assessments for each of the nine topic areas listed on the previous page. For issue areas that are chosen as priorities, a "Phase II", more detailed assessment is required. Finally, for those areas chosen as high priority, states develop strategies for projects for the next five-year period. Interagency teams led by MCP staff developed this draft Strategic Outlook. Draft 309 plans are reviewed by NOAA's Maine project specialist, reviewed by stakeholders, and an interdisciplinary NOAA team, prior to NOAA approval. For detail on the stakeholder and partner engagement process, see Appendix A: Summary of Partner and Stakeholder Engagement.

Public Outreach

To obtain public feedback on the draft MCP priorities and associated strategies, MCP posted the draft document for the 30-day period ending on May 23, 2025. Additionally, MCP sent a survey directly to over 5,920 people and organizations and published a press release encouraging respondents. That press release was also shared with the Maine Legislature Joint Standing Committee on Marine Resources. A summary of the survey results is provided in Appendix B: Summary of Public Comment.

How Priorities were Established

NOAA Section 309 Enhancement Area funds for states are intended to improve state programs. What qualifies as a program improvement is determined by NOAA and includes passage of new or revised state statutes and rules, new or revised municipal plans and ordinances, guidance, agreements, and creation of new funding sources, procedures, policies and agreements. Section 309 priorities cannot address ongoing MCP programming or cover ongoing staffing needs.

MCP's high priority issue areas in this 2026-2030 assessment are Coastal Hazards, Wetlands, and the Cumulative and Secondary Impacts of Development. Other issue areas are still considered to be priority needs for the state as a whole, but not for Section 309 funding. These priority areas – Cumulative and Secondary Impacts of Development, Wetlands and Coastal Hazards were developed by MCP staff teams in consultation with topic experts and

informed by current efforts including *Resilient Maine*, public comments, and in consideration of the 2024 *Maine Won't Wait* report update.

The following table lists the nine issues of national significant identified in the Coastal Zone Management Act and the corresponding priority ratings of the Maine Coastal Program in 2020 and 2025.

| Enhancement Area | 2020 Priority Rating for Section 309 | 2025 Priority Rating for Section 309 |
|--|--------------------------------------|--------------------------------------|
| Aquaculture | Low | Low |
| Marine Debris | Low | Medium |
| Wetlands | High | High |
| Coastal Hazards | High | High |
| Cumulative and Secondary Impacts | High | High |
| Special Areas Management Planning | Low | Low |
| Public Access | Medium | Medium |
| Ocean Resources | High | Medium |
| Energy and Government Facility Siting | Medium | Medium |

Between 2020 and 2025, Marine Debris changed priority rating from Low to Medium, based on partner and stakeholder input on the growing threat and opportunity. Ocean Resources changed from High to Medium, primarily because work on Ocean Resources is supported by non-CZM awards. Aquaculture received a low priority rank in both 2020 and 2025. In 2020, Aquaculture considerations were addressed under the high priority Ocean Resources section with a focus on user conflicts, in 2025, Aquaculture considerations do overlap with considerations in the high priority 2026-2030 enhancement areas of Wetlands and Cumulative and Secondary Impacts of Development.

Summary of Recent Section 309 Achievements

In the period covered by the previous Section 309 Assessment and Strategy (FY2021-2025), NOAA grant funds were expended on three enhancement areas, ranked as “high” priorities in the Section 309 Assessment and Strategy: Wetlands, Coastal Hazards, and Ocean Resources. Below summarizes the major accomplishments within the 309-designated enhancement areas.

Program Changes:

- Wetlands
 - During the 2023-2024 session, the Maine legislature added several new species to the list of state threatened and endangered species and included state threatened and endangered species in the definition of “significant wildlife habitat.” Additionally, the legislature gave the DMR Commissioner authority to issue a stop work order for activities that immediately and substantially

adversely impact protected natural resources. MCP anticipates submitting formal program changes by the end of 2025.

- Coastal Hazards
 - In December 2021, NOAA OCM approved a formal program change which included a law allowing limited, minor expansions of existing structures in a coastal sand dune system through Permit by Rule to increase flexibility in projects that would increase resilience.
 - In September 2022, NOAA OCM approved a formal program change which included creating consistency between NRPA and LUPC exemptions for culvert repairs and replacements and considering sea level rise in determining whether a development project fits harmoniously into the existing natural environment under the Site Location of Development Act.
 - During the 2023-2024 session, the Maine legislature passed several laws, including allowing for the use of biodegradable materials for shoreline stabilization, directing DEP to update regulations with the most recent coastal sand dune and habitat identification maps, and enhancing the state's ability to respond to storm and flooding events. DEP has gone through rulemaking for many of the directives. MCP anticipates submitting formal program changes by the end of 2025.
- Ocean Resources
 - In December 2021, NOAA OCM approved a formal program change which included a law to change state water quality standards to facilitate improvements to enhance restoration of Atlantic salmon to make waters closer to their historically natural chemical quality.
 - In December 2021 and September 2022, NOAA OCM approved formal program changes which included several updates to state aquaculture permitting in response to increased interest. During the 2023-2024 session, the Maine legislature continued to address aquaculture through amendments to leasing laws, creating provisions for finfish mariculture, and minimizing propagation of invasive aquatic plants. MCP anticipates submitting formal program changes by the end of 2025.
 - During the 2023-2024 session, the Maine legislature passed several laws related to renewable energy governance and procurement. MCP anticipates establishing an offshore GLD for the review of BOEM outer continental shelf projects as a formal program change within the next 309 review period. The geographic boundary to be requested is still under internal discussion.

Major Achievements under the Section 309 Enhancement program since the last assessment and strategy include:

MCP and its partners implemented Phase II of the CoastWise Approach for tidal crossing restoration to deliver materials and hands-on trainings geared toward engaging municipal managers, contractors, and professionals that frequently work with municipal clients.

MGS and MCP worked collaboratively with DEP to improve statutory language to incorporate sea level rise and support other regulatory updates related to coastal hazard management including updating Chapter 305 (Permit-by-Rule) and Chapter 310 (Maine Waterbodies and Wetlands Rules) to streamline permitting for shoreline stabilization interventions.

Decision support tools including a Sea Level Rise Ticker and Dashboard and the Maine Beach Mapping Program were updated with more recent data.

MCP and partners provided staff support and technical expertise to the 2024 update of *Maine Won't Wait* to expand resiliency across Maine's coastal zone.

The Southern Maine section of the Maine Coastal Public Access Guide was updated in 2024 to reflect new data and public access sites, and an online map viewer was launched for more easily accessible information on public access to the coastline. The midcoast and downeast sections of the guide will be finalized in 2025.

Two workshops focused on planning for statewide working waterfront inventories were hosted by MCP in fall 2024. Partners from state and municipal government, regional planning organizations, academia, Sea Grant, fishing and aquaculture organizations, land trusts, and non-profits were brought together to discuss needs and potential methods for gathering statewide information about working waterfronts.

Ten regional Storm Response and Preparedness in Working Waterfront Community convenings were organized and hosted by MCP in partnership with Maine Sea Grant, UMaine MARINE, and the Island Institute. The workshops were funded through a grant to Maine Sea Grant from the National Sea Grant office (award #NA24OARX417C0640-T1-01), but MCP devoted considerable staff time to the effort, which started in late summer 2024. The community workshops emphasized the need for local- and regional-level planning, which are services MCP is designed to provide. Capacity, permitting, funding, and insurance limitations were also raised as major issues communities are facing when rebuilding from storms. The convenings took place across the Maine coast from York to Machias, and almost 400 people attended from over 80 Maine municipalities.

The Maine Tidal Marsh Restoration Network formed in 2024 with direct support from MCP. MCP staff facilitate the Outreach and Engagement workgroup to expand the network of practitioners in Maine working on wetland health and connect them to one another for resource sharing, technology exchange, and regional scale restoration planning.

Phase I (High Level) Assessments

Note: The following Phase I Assessments follow a format required by NOAA.

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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 1 (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 (↑, ↓, -, unknown) |
|---|----------------------|----------------------------|--|
| Finfish lease | 25 | Confidential | - |
| Shellfish lease | 138 | Confidential | ↑ |
| Marine algae lease | 30 | Confidential | Unknown |
| Limited Purpose Aquaculture License sites | 773 | Confidential | ↑ |

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 aquaculture activities in the coastal zone since the last assessment.

New England & Mid-Atlantic Region Aquaculture Fact Sheet 2020. NOAA Fisheries Office of Aquaculture.

- In 2018, New England's marine aquaculture production sales totaled \$132.3 Million.

Mason E. Et al, August 21, 2024. "Adaptive capacity of the Maine lobster fishery: insights from the Maine Fishermen's Roundtables". <https://www.facetsjournal.com/doi/10.1139/facets-2023-0193>

- Analyzed 15 years of oral records from the "Maine Fishermen's Roundtables" all to examine the social ecological changes in lobster fishing. Fishermen in general report a general shift in biomass from west- to the eastern region and further offshore. The shifts are thought to be connected to the increase in ocean temperature, decrease in salinity, shift in currents and loss of a predator species. Population decline among lobster could lead to difficulty for both wild caught and raised lobster.

Laclaire, H., & Strout, N. (2019, May 22). "Growth of Maine oyster farming prompts debate, disputes about aquaculture". The Portland Press Herald. Retrieved from <https://www.pressherald.com/>

- Public has concerns about aquaculture farms have negatively affected property values and are hesitant to allow more aquaculture farms within a distance to private properties.

Cole, A., Langston, A., & Davis, C. (2017). Maine aquaculture economic impact report. Retrieved from <https://umaine.edu/aquaculture/wp-content/uploads/sites/572/2017/01/Aquaculture-Econ-Report.pdf>

- Survey given to coastal Maine residents in 2018 to see the general knowledge levels and opinions about aquaculture farms in the area. This data includes demographic data about the residents to reference later trends about what populations were/were not receptive to aquaculture farms.

Alvarez N., et al, (2019), "2019 SEANET Maine Marine Aquaculture Survey: Technical Report". <https://umaine.edu/soe/wp-content/uploads/sites/199/2020/12/2019-Maine-Marine-Aquaculture-Survey-Results-Tech-Report.pdf>

- 2019 annual catch limit implementation- Drastically reduced fishermen catch. The most consistent complaints from the public regarding aquaculture is the size of the farms (many believe the size should be limited) and that large corporations should not be allowed to own aquaculture farms.

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 | N | N | N |
| Other aquaculture statutes, regulations, policies, or case law interpreting these | Y | N | 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.

Aquaculture continues to grow in Maine and accordingly, the state continues to revise statutes and rules regularly in order to facilitate appropriate growth in the sector. Since the previous assessment, a number of statutory and regulatory changes have been made to the aquaculture leasing and licensing program to improve the efficiency of application review, increase opportunities for meaningful public engagement in the lease evaluation process, and facilitate compliance with regulations and lease conditions.

Enhancement Area Prioritization

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

High _____

Medium _____

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

The Aquaculture Division of the Maine Department of Marine Resources is undergoing efficiency updates and capacity building. At this time, it is a low priority for MCP to provide additional support. This decision was supported by stakeholder engagement with nonprofits, land trusts, academia, state and federal government. MCP will continue to focus on working access to the shore for many purposes including aquaculture using non-Section-309 funds.

Cumulative and Secondary Impacts of Development

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 1 (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. Using National Ocean Economics Program Data on population and housing, please indicate the change in population and housing units in the state's coastal counties between 2017 and 2021. 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 (2017-2021) to approximate current assessment period.

Trends in Coastal Population and Housing Units

| | 2017 | 2021 | Percent Change (2017-2021) |
|-------------------------|-----------|-----------|-------------------------------|
| Number of people | 1,005,116 | 1,038,281 | 3.30% |
| Number of housing units | 547,277 | 554,700 | 1.36% |

Population and Housing data from National Ocean Economics Program for Cumberland, Hancock, Kennebec, Knox, Lincoln, Penobscot, Sagadahoc, Waldo, Washington, and York Counties.

2. Using the tables below as a guide, provide information on land cover changes and development trends. Be as quantitative as possible using state or national land cover data.¹⁶ The tables are a suggestion of how you could present the information. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data on land cover changes and development trends are not available, provide a brief qualitative narrative describing changes in land cover, especially development trends, including significant changes since the last assessment.

Distribution of Land Cover Types in Coastal Counties

| Land Cover Type | Land Area Coverage in 2016 (Acres) | Gain/Loss Since 1996 (Acres) |
|---------------------------|---------------------------------------|---------------------------------|
| Developed, High Intensity | 75,756.8 | 8,025.6 |
| Developed, Low Intensity | 237,804.8 | 11,635.2 |
| Developed, Open Space | 49,984.0 | 7,353.6 |
| Grassland | 91,596.8 | 21,408.0 |
| Scrub/Shrub | 292,742.4 | 56,544.0 |
| Barren Land | 74,899.2 | 10,425.6 |
| Open Water | 2,260,051.2 | 1,177.6 |
| Agriculture | 301,952.0 | -2,278.4 |
| Forested | 5,343,436.8 | -107,699.2 |
| Woody Wetland | 1,130,195.2 | -12,550.4 |
| Emergent Wetland | 134,348.8 | 5,984.0 |

Most recent data is from 2016, not 2024 as requested Data retrieved from NOAA's Land Cover Atlas. Counties queried included: Cumberland, Hancock, Kennebec, Knox, Lincoln, Penobscot, Sagadahoc, Waldo, Washington, and York.

Development Status and Trends for Coastal Counties

| | 1996 | 2016 | Percent Net Change |
|---------------------------------|-------|-------|--------------------|
| Percent land area developed | 3.37% | 3.64% | 8.04% increase |
| Percent impervious surface area | 1.10% | 1.23% | 11.84% increase |

Most recent data is from 2016, not 2024 as requested Data retrieved from NOAA's Land Cover Atlas. Counties queried included: Cumberland, Hancock, Kennebec, Knox, Lincoln, Penobscot, Sagadahoc, Waldo, Washington, and York.

How Land Use Is Changing in Coastal Counties

| Land Cover Type | Areas Lost to Development Between 1996-2016 (Acres) |
|------------------|---|
| Agriculture | 6,214.4 |
| Barren Land | 339.2 |
| Emergent Wetland | 268.8 |
| Forested | 15,283.2 |
| Grassland | 940.8 |
| Scrub/Shrub | 2,822.4 |
| Woody Wetland | 947.2 |
| Open Water | 204.8 |

Most recent data is from 2016, not 2024 as requested Data retrieved from NOAA's Land Cover Atlas. Counties queried included: Cumberland, Hancock, Kennebec, Knox, Lincoln, Penobscot, Sagadahoc, Waldo, Washington, and York.

- 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.

According to the Maine Geological Survey (MGS) (Slovinsky, pers. comm.), there are approximately 116 miles of shoreline engineering structures in southern Maine (i.e., York and Cumberland Counties), including features such as sea walls and riprap structures. This number is based on MGS's Coastal Structure and Dune Crest Inventory and Overtopping Potential tool (MGS, 2024), which uses data from NOAA's Environmental Sensitivity Index (ESI) tool (NOAA, 2023) as well as Maine permitting data and visual aerial inspection of the shoreline (Slovinsky, pers. comm.). ESI data are from 2016. Relying on only the ESI tool to query York and Cumberland Counties resulted in about 85 miles of coastal engineering structures (NOAA, 2023), approximately 27% fewer miles than resulted from MGS's tool (MGS, 2024; Slovinsky, pers. comm.). MGS's tool is not available for the entire Maine coast so it could not be relied upon for complete coastal data. NOAA's ESI tool reported 231 miles of armored shoreline for the entire state (NOAA, 2023; Slovinsky pers. comm.). The discrepancy between the ESI and MGS tools in southern Maine suggests that the ESI tool may underestimate the extent of shoreline armoring along the rest of the coast as well, further underscoring the need to better understand the cumulative impacts of armoring across the entire Maine coast (Slovinsky, pers. comm.). Data from multiple distinct periods within the past five years were not available for direct comparison.

4. 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.

State of Maine Department of Environmental Protection, 2024 Integrated Water Quality Monitoring and Assessment Report (DEP, 2024a)

This document fulfills biennial reporting requirements on both a federal and state level. The federal requirement arises from the Clean Water Act (CWA), particularly Section 305(b) (report on the state of waters), Section 303(d) (list of impaired waters), and Section 314 (Clean Lakes Program). Updates to water quality assessments for the 2024 Integrated Report were primarily based on monitoring data collected in 2021 and 2022, although more recent data were consulted where appropriate.

State Wildlife Action Plan (IFW, 2015)

Maine's 2015-2025 Wildlife Action Plan addresses the state's full array of wildlife and their habitats including vertebrates and invertebrates in aquatic (freshwater, estuarine, and marine) and terrestrial habitats. The Plan targets Species of Greatest Conservation Need (SGCN) and covers the entire state. The Department of Marine Resources and Maine Department of Inland Fisheries and Wildlife worked to form the wildlife plan to encourage agencies and partners to prioritize, monitor, collaborate and respond to the threats to wildlife. Fish and wildlife play an enormous role in the lives in Maine people as they provide recreation, employment and enjoyment. Protecting wildlife also protects the culture of Maine. An updated State Wildlife Action Plan is currently being created; the update is due in 2025.

2024

01/03/2024 Review of Regulation of Waste Discharge from Finfish Aquaculture Facilities (DEP, 2024b) ([download PDF](#))

06/17/2022 Maine Combined Sewer Overflow 2023 Status Report (DEP, 2024c) ([download PDF](#))

2023

06/30/24 Maine Combined Sewer Overflow 2022 Status Report (DEP, 2024c) ([download PDF](#))

04/26/2023 Surface Water Ambient Toxics Monitoring Program Report 2021-2022 (DEP, 2024b) ([download PDF](#))

2022

- 05/25/2022 2018/2020/2022 Integrated Water Quality Monitoring and Assessment Report (DEP, 2024a) ([download PDF](#))
06/17/2022 Maine Combined Sewer Overflow 2021 Status Report (DEP, 2024c) ([download PDF](#))

2021

- 05/01/2021 Status of Licensed Discharges (DEP, 2024b) ([download PDF](#))
06/30/2021 Maine Combined Sewer Overflow 2020 Status Report (DEP, 2024b) ([download PDF](#))
06/02/2021 Surface Water Ambient Toxics Monitoring Program 2019/2020 (DEP, 2024b) ([download PDF](#))

2020

- 06/01/2020 Maine Combined Sewer Overflow 2019 Status Report (DEP, 2024b) ([download PDF](#))

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 | Y |
| 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:
 - 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.

Natural Resources Protection Act

The Maine Department of Environmental Protection (DEP) updated rules pursuant to the state's Natural Resources Protection Act (NRPA) (38 MRSA §480-A *et seq.*). DEP updated the following rules on the following dates (DEP, 2024d):

- **Chapter 305: Permit by Rule** Section 16: Beach nourishment and dune restoration or construction activities in coastal sand dunes.

- Section 16-A only. Updated on December 27, 2022
- Section 16 only. Updated on December 9, 2023.
- Section 16-A only. Updated under an emergency provision on February 2, 2024; update expired on May 2, 2024.
- **Chapter 355: Coastal Sand Dune Rules**
 - Updated on May 22, 2024.

Rules were updated to replace outdated references by citing the most recent Coastal Sand Dune Geology Maps prepared by the Maine Geological Survey and dated most recently from 2023. This reflects the state’s best understanding of where coastal sand dunes, which are protected natural resources, exist on the landscape (DEP, 2024e).

Management Plans

[Maine Nonpoint Source Management Program Plan 2020-2024](#) (Maine DEP, 2019)

[Thatcher Brook Watershed Management Plan](#) (City of Biddeford, 2024). Original plan dated 2015, work and updates are ongoing.

[Kennebunk River Watershed-Based Management Plan 2021-2031](#) (York County SWCD, 2021)

[Mare Brook Watershed Management Plan](#) (Cumberland County SWCD, 2022)

Guidance Documents

[An assessment of accomplishments and gaps in Maine Land Conservation](#) (DACF, 2021)

[Maine Stormwater Best Management Practices Manual](#) (Maine DEP, 2016):

[Volume I. Stormwater Management Manual](#)

[Volume II. Phosphorous Control in Lake Watersheds: A Technical Guide to Evaluating New Development](#)

[Volume III. BMP Technical Design Manual](#)

[Best Management Practices for Forestry: Protecting Maine’s Water Quality – Third Edition](#) (MFS, 2017)

Example Coastal Community Grants

(MPAP, 2024 and Walton pers. comm.)

Fiscal Year (FY) 2024

- City of Bath: Coastal Resiliency Community and Stakeholder Engagement
- Town of North Haven: Coastal Flooding and Drinking Water Vulnerability and Resiliency Planning
- Town of Old Orchard Beach: Assessing tide gate function and operation for enhanced salt marsh, flood mitigation, and community resilience in Old Orchard Beach
- Southern Maine Planning and Development Commission: Nature-Based Solutions for

Stormwater Management and Erosion Control at the Main Beach Parking Lot in Ogunquit

- Town of Stonington: Improving Coastal Waterfront Resilience and Access Along Fifield Point Road

FY 2023

- Town of Kittery: Nitrogen Loading in Spruce Creek
- City of South Portland: 100 Resilient Yards

FY 2022

- Southern Maine Planning and Development Commission: Development of Model Ordinances for Erosion and Sediment Control Plans and Low Impact Development Strategies for Southern Maine MS4 Coastal Communities
- Town of Topsham: Nature Based Solutions for the Topsham Fair Mall Stream Watershed
- Greater Portland Council of Governments Community Intertidal Data Portal

FY 2021

- City of Gardiner: Downtown Master Plan - Reinforcing the City's Connection to Nature
- Southern Maine Planning and Development Commission: Development of Checklist and Technical Standards for Erosion and Sediment Control Plans for Municipal Separate Storm Sewer System (MS4) Communities
- Town of Waldoboro: Septic System Vulnerability Analysis

FY 2020

- Southern Maine Planning and Development Commission: Tides, Taxes, and New Tactics

Enhancement Area Prioritization

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

High X
Medium
Low

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

The population of Maine's coastal zone has steadily increased over the last five years and is expected to continue its growth. During the COVID-19 pandemic, an influx of remote workers and others seeking refuge from the pandemic helped to fuel population growth and development in Maine's coastal zone. A proliferation of short-term rentals has further fueled coastal development, increased housing prices, and led to potential conflicts between longtime residents, new arrivals, investors, and tourists. Maine is facing a statewide housing shortage and growing cost of living. Sea level rise continues to threaten new and existing development along the coast, including working waterfront infrastructure that is integral to the fabric, culture, and history of Maine's coastal communities. With continuous growth comes the challenge of managing cumulative and secondary impacts of development. As a home rule state, land use planning decisions in organized cities and towns are primarily made at the local level. Technical assistance and funding opportunities are available to address coastal issues, but some smaller and under-resourced municipalities continue to struggle to access these resources. The Maine Coastal Program considers Cumulative and Secondary Impacts to be a high priority and stakeholder engagement

in developing this report is supportive of this ranking. This is a cross-cutting issue that is applicable to many aspects of coastal management, and there are numerous opportunities to partner with other organizations.

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 1 (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 energy facilities and activities.

Status and Trends in Energy Facilities and Activities in the Coastal Zone

| Type of Energy Facility/Activity | Exists in Coastal Zone (# or Y/N) | Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unknown) | Proposed in Coastal Zone (# or Y/N) | Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unknown) |
|---|--------------------------------------|--|--|--|
| Pipelines | Y | - | Y | - |
| Electrical grid (transmission cables) | Y | increase | Y | increase |
| Ports | Y | increase | Y | increase |
| Liquid natural gas (LNG) | N | - | N | - |
| Electric Power Facilities (Oil) | Y | - | N | - |
| Electric Power Facilities (Gas) | Y | - | N | - |
| Electric Power Facilities (Coal) | N | - | N | - |
| Electric Power Facilities (Nuclear) | N | - | N | - |
| Electric Power Facilities (Wave) | Y (test site at Castine) | increase | N | - |
| Electric Power Facilities (Tidal) | N | decrease | N | - |
| Electric Power Facilities (Current.ocean, lake, river) | Y | - | N | - |
| Electric Power Facilities (Hydropower) | Y | - | N | - |
| Electric Power Facilities (Ocean thermal energy conversion) | N | - | N | - |
| Electric Power Facilities (Solar) | Y | - | Y | increase |
| Electric Power Facilities (Biomass) | Y | - | N | - |
| Other (please specify) | | | | |

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.

According to the Governor's Energy Office Solar Dashboard, solar facilities are expanding in Maine, with 1,012 MW deployed across 13,683 projects throughout the state. In Maine, distributed generation resources are renewable generators less than 5 megawatts (MW). Distributed solar interconnects to the distribution grid and can provide a variety of benefits to both the entity where electricity is generated – residences, businesses, or other institutions – as well as to the overall electrical grid. Solar photovoltaic (PV) modules are the most common distributed generation in Maine, although other generation sources including biomass systems and hydroelectric are also included.

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 marked changes in the general nature of activities related to federal government facilities since the last assessment. State and local authorities continue redevelopment activities at the Brunswick Naval Air Station, closed as recommended by the federal Base Closure and Realignment Commission (BRAC) before the prior 309 assessments. The Navy continues to maintain and make improvements to the Portsmouth Naval Shipyard's facilities. An upcoming initiative by the Shipyard is to increase reliability, resilience, and capacity of its electric and water utility systems through work both on- and off-base and with Central Maine Power and Kittery Water District in order to better meet current and future utility demands. The anticipated project schedule includes planned mobilization and construction between 2026 and 2031 for separate phases of the project. There have been no significant new federal facilities built or proposed in the coastal zone since the last 309 assessment. Energy infrastructure-related development proposals, which are discussed above, continue to be the main category of foreseeable "activities of greater than local significance" potentially in or affecting the coastal zone. Given the strong and growing interest among lawmakers in in-state renewable energy sources to transition and grow the state economy, proposals for renewable energy facility siting in or potentially affecting the coastal zone are reasonably foreseeable.

As with other developments, changes stemming from energy-related development are experienced more locally, while its benefits may be realized more broadly, at a state or regional scale. Consequently, proposals for siting large-scale energy facilities and related infrastructure, such as transmission lines, may be topics for ongoing dialog and information exchange.

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 interpretations | Y | Y | Y |
| State comprehensive siting plans or procedures | N | N/A | 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.

The legislature passed Public Law 2021, Chapter 407, which applies to commercial-scale projects, not including utility cables.

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.

State-level public policy changes regarding renewable energy and facilities focus on economic and public utilities-related matters regarding which there is not a central role for the Maine Coastal Program (MCP) and which are under the purview of the Governor's Energy Office, Public Utilities Commission, and other agencies, industry organizations, and nongovernmental entities. This factor, not the importance of the state policy regarding energy facilities siting, accounts for its medium priority ranking in this assessment. That said, significant policy work remains to be done to address federal-state coordination and other key issues to facilitate efficient and responsible development, construction, and operation of renewable energy facilities.

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 1 (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 hazard. 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

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*

General Level of Hazard Risk in the Coastal Zone

| Type of Hazard | General Level of Risk (H, M, L) |
|--|---------------------------------|
| Flooding (riverine, stormwater) | H |
| Coastal storms (including storm surge) | H |
| Geological hazards (landslides) | M |
| Shoreline erosion | H |
| Sea level rise | H |
| Great Lakes level change | N/A |
| Land subsidence | L |
| Saltwater intrusion | M |
| Other (superstorm assessment) | H |

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 risk assessment or plan may be a good resource to help respond to this question.

The only general level of risk in this table that has changed since the last 5-year assessment is the flood hazard, from medium to high. This is supported by data below, especially the FEMA table.

- 2023 Maine State Hazard Mitigation Plan (MEMA, 2023)

https://www.maine.gov/mema/sites/maine.gov.mema/files/inline-files/Maine_SHMP2023_Final_full.pdf

- Tier 1 hazards (historically proven to pose risks to Maine communities) = flooding, storm surge, sea level rise, erosion (p. 3-1)

- Science and Technical Subcommittee to *Maine Won't Wait*, 2020

https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/GOPIF_STS_REPORT_092320.pdf

- Plan for 1.5 sea level rise by 2050, 3.9 sea level rise by 2100

- FEMA Disasters and Other Declarations 2020-2024

https://www.fema.gov/disaster/declarations?field_dv2_declaration_date_value%5Bmin%5D=2020&field_dv2_declaration_date_value%5Bmax%5D=2024&field_dv2_declaration_type_value=All&field_dv2_incident_type_target_id_selective=All&field_dv2_state_territory_tribal_value%5B0%5D=ME&page=0

- As shown in the below table, FEMA disaster declarations have been predominantly tied to severe storms and flooding over the last 5 years in Maine. FEMA federal declarations combine both inland and coastal flooding in these incidences, as they are interconnected.

| FEMA Declaration | Incident Date | Type | Total Public Assistance Grants Dollars Obligated |
|---|--------------------|---------------------------|--|
| DR-4647-ME | Oct 30-31, 2021 | Severe Storm and Flooding | \$6,224,787.12 |
| DR-4696-ME | Dec 23-24, 2022 | Severe Storm and Flooding | \$3,600,301.18 |
| DR-4719-ME | Apr 30-May 1, 2023 | Severe Storm and Flooding | \$7,656,700.69 |
| DR-4736-ME | Jun 29, 2023 | Severe Storm and Flooding | \$1,820,948.50 |
| DR-4737-ME | Jun 26, 2023 | Severe Storm and Flooding | \$991,246.83 |
| DR-3598-ME | Sep 15-17, 2023 | Hurricane Lee | \$21,090.56 |
| DR-4754-ME | Dec 17-21, 2023 | Severe Storm and Flooding | \$6,658,000.43 |
| DR-4764-ME | Jan 9-13, 2024 | Severe Storm and Flooding | \$4,795,087.07 |
| DR-4785-ME | Apr 3-5, 2024 | Severe Winter Storm | TBD |
| Total Public Assistance Grants Dollars Obligated 2021-2024 | | | \$31,768,162.38 |

Coastal Storms/Other (Superstorm assessment)

- Large coastal storm events hit Maine in December 2023 and January, March, and April 2024, with the events in January setting water level records. These storms eroded and overwashed beaches and dunes extensively, damaged numerous homes and working waterfronts, and eroded coastal bluffs. This demonstrates the continued High risk to the Maine shoreline. MGS documented inundation and shoreline changes from the January 10 and 13 coastal storm events

at select locations and compared this information with newly adopted FEMA 100-year floodplain mapping. Information was shared with numerous communities and stakeholders in presentations on the impacts of the storm events.

- On May 21, 2024, Governor Janet Mills created, by Executive Order, the Infrastructure Rebuilding and Resilience Commission. It is charged with reviewing and evaluating Maine's response to the large storms of 2023 and 2024, identifying crucial areas for near-term investment and policy needs, and developing the state's first long-term infrastructure plan to ensure that Maine is ready for the harsh storms ahead.
- MGS continues to update storm surge and storm tide statistics using available monthly NOAA CO-Ops water level data. The January 13 event set numerous record water levels along the Maine shoreline.
- MGS worked with the Maine Silver Jackets Team to develop an inundation model for Casco Bay focused on Portland and South Portland. The model included different recurrence interval storm events and sea level rise scenarios and is being used by both communities to inform zoning and ordinance language improvements.
- Communities in York and Cumberland Counties adopted updated FEMA Flood Insurance Rate Maps.

Shoreline Erosion

- MGS continues to update its [Maine Beach Mapping Program](#) (MBMAP) data, which monitors alongshore changes in the vegetation line and mean high water contour. Mapping includes 38 beaches in 17 municipalities.
- MGS continues to work with Maine Sea Grant to maintain the [MGS Collect site for the Southern Maine Beach Volunteer Beach Profile Monitoring Program](#) (SMBPP). Data is collected on a monthly basis by trained volunteers and uploaded monthly and QA/QC'd by Sea Grant and MGS staff.
- Since 2021, MGS published the [2022 State of Maine's Beaches Report](#) and [Conference Posters](#) documenting changes along the shoreline from MBMAP and the SMBPP. Data continues to indicate that natural beach systems have much wider beaches than beaches with seawalls (114 feet vs. 78 feet average).
- At the specific request of municipalities, since 2021, MGS completed coastal bluff map updating for Brunswick, Chebeague Island, Long Island, and Little and Great Diamond Islands. cursory analyses of these map updates indicate that a significant percentage of stable bluffs have become unstable.

Sea Level Rise

- MGS continues to maintain and update its Sea Level Rise [Ticker](#) and [Dashboard](#) which provide information on monthly water levels and long-and-short-term sea level trends. Short-term sea level rise (since 2000) along the Maine coastline is approximately 2-2.5x the historical rate.
- Coastal flooding has increased significantly over the long-term historical trend. In Portland, the average annual rate of flood stage exceedance was about 4 events per year (since 1912). Since 2000, that has been 10 events per year, and since 2010, 13 events per year. As of July 2024, Portland has exceeded flood stage 20 times.
- The *Maine Won't Wait* [Scientific and Technical Subcommittee report](#) in 2024 documents updated sea level rise scenarios and impacts from the coastal storms of 2024.
 - Updated localized sea level rise projections for Maine and guidance on applying them
 - Information on the drivers of extreme flooding in January 2024 (particularly the

contribution of an abrupt increase in sea level)

- Updated extreme water level statistics for the Portland, Bar Harbor, and Eastport tide gauges

Marsh Migration Modeling

- Data from Maine Natural Areas Program supports high risk from coastal storms, sea level rise, erosion, and storm surge. Vegetation monitoring and saltmarsh surveys showing increasing areas of vegetation die-back (browning, ghost forests) because of these increasing conditions in Maine.
- Marsh Migration Modeling, based on MGS's SLR modeling, identifies significant areas of impact to infrastructure, people, services, ecology, and wetland function.

Changing Benthic Conditions

- Maine Coastal Mapping Initiative (MCMI) bathymetric, backscatter, and sediment studies of nearshore bedforms previously described by the Maine Geological Survey helped refine understanding of local sediment budgets and shoreface processes and indicate that nearshore bedforms are stable in the face of sea level rise and enhanced storm energy. MCMI projects also demonstrate that nearshore disposal areas are stable, and that ocean processes are not mobilizing those materials and producing additional hazards to coastal communities or navigation (Dobbs 2016).
- Submerged glacial features can exert influence on coastal currents, wave strength, and energy delivery to nearshore environments. Paleodeltas, moraines, eskers, and other cryosphere features consisting of a range of clast sizes (Dobbs 2017a) tend to mobilize and transport differently, sometimes protecting coastal areas from ocean energy and sometimes funneling it towards shore.

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 | Y | N | N |
| Management of development/redevelopment in other hazard areas | Y | Y | Y |
| Sea level rise or Great Lakes level change | Y | Y | Y |

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 |
| 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 | Significant Changes Since Last Assessment (Y or N) |
|--|---|--------------|--|
| Sea level rise or Great Lakes level change | Y | Y | Y |
| Other hazards | Y | Y | |

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

Maine does not have a specific state-wide definition of “high hazard area”. For beach and dune systems, Maine regulates activities through the Coastal Sand Dune Rules (Chapter 355 of the NRPA), which use a geologic definition of frontal dune and back dunes. Higher hazard areas are velocity zone (V-zone) areas and areas of the frontal dune. New construction and reconstruction are limited in these areas. High hazard areas also include areas of back dunes that are defined as Erosion Hazard Areas, or EHAs (all frontal dunes are EHAs). EHAs are defined as:

Any portion of the coastal sand dune system that can reasonably be expected to become part of a coastal wetland in the next 100 years due to cumulative and collective changes in the shoreline from:

- 1. Historical long-term erosion;*
- 2. Short-term erosion resulting from a 100-year storm; or*
- 3. Flooding in a 100-year storm after a two-foot rise in sea level, or any portion of the coastal sand dune system that is mapped as an AO flood zone by the effective FEMA Flood Insurance Rate Map, which is presumed to be located in an Erosion Hazard Area unless the applicant demonstrates based upon site-specific information, as determined by the department, that a coastal wetland will not result from either (1), (2), or (3) occurring on an applicant's lot given the expectation that an AO-Zone, particularly if located immediately behind a frontal dune, is likely to become a V-Zone after 2 feet of sea level rise in 100 years.*

Additionally, Maine has classified its bluff shorelines as Stable, Unstable, or Highly Unstable. Per Maine’s Mandatory Shoreland Zoning Act (Ch. 1000), areas of the coastline defined as Unstable or Highly Unstable require that development be set back 75 feet from the top of a bluff, instead of 75 feet from the highest annual tide line (which is the standard for stable bluff areas). Some communities (e.g., Brunswick) have increased this required setback to 125 feet.

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:
 - 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.

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

S.P. 863 – L.D. 2035 An Act Regarding Disclosure of Flood Risk by Sellers of Real Estate

- a. Effective August 9, 2024 – Maine state law requires property owners to disclose flood risk to potential buyers of residential and commercial properties, including rentals. Sellers are required to provide a flood risk disclosure statement to buyers when they make an offer to purchase, exchange, or option the property. The disclosure must include two types of content; if the property is in a special hazard area as mapped by FEMA in the most recent digital maps, and if a flood event has occurred on their property.
- b. No
- c. Future outcomes of the change are more transparency and awareness for home buyers on their risk and exposure to flood related hazards.

Significant Changes in Hazards Planning Programs or Initiatives

Shore and Harbor Planning Grants:

- After December 2023/January 2024 winter storms, the grant program was changed to start with a simple and short letter of intent and then a subset of potential applicants were invited back to submit full applications. This reduced the upfront time and effort for applicants and limited the number of unsuccessful applicants to a grant that gets far more applicants than available funding. The Shore and Harbor Planning Grant and the Coastal Community Grant, which is funded by Maine Coastal Program but administered by the Municipal Planning Assistance Program, were combined into a single application. Grant funds are administered by MCP or MPAP, but applicants only had to fill out a single application and their projects were assigned to the better aligned program.
- These are CZM driven changes.
- We gave over \$1.1 million to local municipalities to plan for coastal hazards by designing more resilient infrastructure and improving stormwater management. If funding remains steady, we can expect to give about \$500,000 for coastal hazards grants over the next five years. Making the grant application process as simple and accessible to coastal communities as possible is a priority and future changes will occur with this in mind. We are exploring reducing or eliminating match requirements and will work with other state agencies to develop a grant portal and further streamline the application process over the next five years.

Example Shore and Harbor Planning Grants

(2020)

- Brooksville, \$29,750—Betsy's Cove parking lot repair and expansion: plan construction of new sea wall to withstand current and future flooding, storm surge, and sea-level forecasts while creating additional parking.
- Rockland, \$30,000 - downtown waterfront site design and implementation

(2021)

- Vinalhaven, \$28,125- Preliminary Roadway and culvert assessment to mitigate coastal flooding on North Haven Road- Consultant recommended raising the road and replace the culvert nearby with a larger one in addition to a tide gate to prevent further flooding.
- Belfast, \$29,325 - Breakwater improvements, planning and preliminary design.
- Falmouth, \$15,000 – Conducted a town landing resiliency study
- Gouldsboro, \$29,623 - vulnerability study to identify infrastructure adaptation projects
- Monhegan Island, \$30,000 – assessed town pier and completed a resiliency assessment

(2022)

- Greater Portland Council of Governments, \$48,095 - Protecting and Improving shore access in Casco Bay- The grant studied impacts on shell fishing access sites and created a guidebook was created to assist other towns doing similar work to identify and formalize walk-in shell fishing access locations.
- Chebeague Island, \$47,392 – Chebeague Island Stone Wharf resiliency planning and design
- Long Island, \$50,000 – Ponce's landing redesign. A vulnerability analysis and short-term repair plan was created for the town's commercial fishing pier, and a conceptual design was created for a replacement structure. (2023)
- Belfast, \$29,325: Belfast undertook a study to determine how extending its breakwater impacts sedimentation in and around Belfast Harbor.
- Bucksport, \$50,000 - Plan to develop a plan for the downtown waterfront, considering sea level rise, future precipitation, and storm surge.
- Camden, \$10,000 - Camden will acquire designs for a new landing that will be more resilient to future sea level rise and storm surge conditions.
- Greater Portland Council of Governments, \$22,483- Increasing municipal capacity to improve and preserve working waterfronts and coastal access with help from regional planning
- Stockton Springs, \$40,000 – their town float system and town launch are getting damaged by big winter storms. They are looking into breakwater options to protect their harbor.

(2024)

- Chebeague Island, \$15,000 - "Understanding and Mitigating Coastal Erosion in Casco Bay's Island Communities"- allows communities to address sea level rise and coastal erosion through engagement and education.
- Blue Hill, \$50,000 - designing future infrastructure to be more resilient to sea level rise impacts
- Kittery, \$40,000 - "Pepperrell Cove Working Waterfront Resiliency Assessment", plans for work in Pepperrell Cove for the towns landing and commercial fishing and aquaculture industries. The town will also explore resilience upgrades for Pepperrell Cove.
- Monhegan, \$50,000 - "Resilient Redevelopment of Monhegan Island's Public Wharf" raising and increasing accessibility at the island's public wharf, which was damaged in the January 2024 storms.
- Vinalhaven, \$50,000 - "Vinalhaven Working Waterfront Infrastructure Preliminary Design and Engineering Report" this project will assess vulnerabilities and costs. There is particular interest in reconstruction of the pier, floating docks and wave attenuator/crib that were damaged in the January 2024 storms.

Example Coastal Community Grants

(2022)

- Bath, \$39,500 – planning for flooding and sea level rise impacts in downtown Bath

- Islesboro, \$40,000 – engineering designs and plans to raise a critical island road
- Midcoast Council of Governments, St. George Working Waterfront Vulnerability Study

(2023)

- North Haven, \$40,000 – studying sea level rise impacts on the town's fresh water source
- Old Orchard Beach, \$50,000 – assessing tide gate function and operation for salt marsh enhancement, flood mitigation, and community resilience
- Southern Maine Planning and Development Commission, \$50,000 – nature-based solutions for erosion control and stormwater management at Ogunquit's Main Beach parking lot
- Stonington, \$50,000 – engineering designs for increasing the resilience of a critical coastal road that is eroding and vulnerable to sea level rise

(2024)

- Surry, \$50,000 – engineering designs to raise a critical road that is vulnerable to sea level rise
- South Portland, \$32,000 – creating a resilience overlay and land use policies to encourage forward-looking resilience strategies for new development in the city
- Gouldsboro, \$50,000 – Conducting vulnerability assessments for sea level rise, storm surge, flooding, and erosion at critical public facilities in Gouldsboro's three harbors.
- Hancock County Planning Commission, \$44,000 – Conducting vulnerability assessments for sea level rise, storm surge, and flooding at critical public facilities in Sullivan and Sorrento
- Frenchboro, \$18,553 – Reviewing and recommending changes to municipal land use laws to address current and future coastal hazards
-

Marsh Migration Modeling (Maine Natural Areas Program 2023)

- Based on sea level rise modeling, identifies areas where marshes may be blocked from migrating due to infrastructure, and therefore unable to expand, move, and adapt to SLR. Marshes play a significant role in mitigating impacts of hazards such as SLR, storm surge, flooding, and erosion. If they are not able to migrate, they will not exist in future decades as SLR continues to drown them out. An important first barrier in such hazards will therefore be eliminated in Maine.
- Funded through Maine Outdoor Heritage Fund, MCP and US EPA.
- Future outcomes of this new modeling support informed decision making at community/local level to support tidal marsh migration in qualifying areas so we do not lose this important resource and its hazard mitigating properties.

Maine Coastal Mapping Initiative (MCMI, 2023)

- The Maine Coastal Program created the MCMI in 2012. In 2023 MCMI was reorganized into DMR's Bureau of Marine Science, Division of Ecology and the Environment, and several longstanding contracted positions were reestablished as full-time staff positions and several new positions created with non CZMA funding sources.
- These are CZM-driven changes.
- MCMI's reorganization into the DMR Bureau of Marine Science has enhanced staffing to allow for an expanded mapping footprint and streamlined data collection and sharing. MCMI can now provide more rapid policy-relevant science to federal, state, regional, and local collaborators and data users. MCMI has accelerated its grab sampling program to target deeper waters and processing samples more quickly while also planning future campaigns based on textural classification models that in turn derive from MCMI's bathymetry and backscatter products. MCMI is now positioned to provide timely and necessary data on seafloor conditions, ecological

communities, substrates, geoforms, and physical oceanography, all coded to CMECS classifications and published on publicly accessible formats such as NOAA's NCEI, the Northeast Ocean Data Portal, and DMR's website. Also, new data from MCMI has found:

- Sand and gravel resource studies from the Maine Coastal Mapping Initiative (MCMI) demonstrate that Maine has offshore sand and gravel resources that could be used to mitigate hazards associated with shoreline erosion including beach nourishment or to support green infrastructure projects such as living shorelines. A study area in federal waters south of the Kennebec River demonstrated accessible sand and gravel resources of at least $42 \times 10^6 \text{ yd}^3$ in this area alone that could be used in efforts to combat erosion driven by sea-level rise or enhanced storm intensity (Dobbs, K. 2017b. Preliminary Sand and Gravel Reservoirs Assessment for Federal Waters: Mid-coast Maine.)

CRCSM (SMPDC and Wells Reserve, 2020-2023)

- CRCSM engaged 10 municipalities (spanning Kittery to Scarborough), local land trusts, regional conservation organizations, and federal and state natural resource entities to assess numerous resource impacts in the region, address regional coastal resilience needs, and develop adaptation strategies and nature-based solutions for increasing resilience to coastal hazards. Through a needs assessment conducted at the start of the project, stakeholders indicated that the coastal hazards they were most concerned with were sea level rise, coastal erosion, and storm surge. Using the [vulnerability web mapping tool](#) developed for the project, [50 key areas](#) across the region were identified as being highly vulnerable to coastal hazards, locally and/or regionally significant, and important for resilience action. From the initial 50 sites, the Working Group and Advisory Committee selected [15 high priority site](#), most of which are representative of common site conditions and vulnerabilities in the region.
- This project was funded by a NFWF National Coastal Resilience Fund grant from 2020 – 2023. Not a CZM driven change.
- This project established resilience plans for a large region of Southern Maine. Its future implications are the ability for Southern Maine communities to move into the implementation phase of increasing community resilience to coastal hazards.

From Theory to Practice: Participatory Approaches to Understanding the Social Dimensions of Managed Retreat (Brunacini, J. (2023). From Theory to Practice: Participatory Approaches to Understanding the Social Dimensions of Managed Retreat. Doctoral Dissertation. Michigan State University.)

- This dissertation explored the social, cultural, political, and psychological aspects of managed retreat in the U.S., with a focus on coastal communities located in Southern Maine. Chapters 2 and 3 used Photovoice, a participatory research method, to understand what long-term residents care most about in the coastal places they are connected to as well as what concerns they have. Nearly all participants shared personal observations of change over time in their photographs, narrative statements, and during focus group discussions. The most frequently cited changes included coastal hazards such as rising sea levels, stronger storms, and increased coastal erosion.
- This project was supported by NOAA's Office of Coastal Management under the Margaret Davidson Graduate Fellows Program from 2020-2022.
- Future outcomes of this program include further support for statewide exploration of managed retreat as a means for Maine communities to get out of harm's way.

Tides, Taxes, and New Tactics (SMPDC, Wells Reserve, GEI Consulting, 2021)

- The Tides, Taxes, and New Tactics project sought to provide the towns of York, Wells, and Kennebunk with vital information about local impacts of existing and future flood hazards, community vulnerabilities, and tailored strategies for towns to address vulnerabilities and enhance coastal resilience. Working with partners from the Wells Reserve, GEI Consultants, and rbouvier consulting, SMPDC and the towns undertook vulnerability assessments investigating municipal and regional impacts of 1.6 feet, 3.9 feet, and 6.1 feet of sea level rise or storm surge on the built, social, and economic landscapes. The assessment found that within the three towns, a total of 3,568 parcels and over \$645.5 million in property value are at risk from just 1.6 feet of sea level rise, the level expected in Maine by 2050.
- CZM driven changes. This project was funded by a Maine Coastal Communities Grant during FY 2020 and the final report was completed in July 2021.

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Maine Sea Level Rise/Storm Surge Viewer and Resource Hub (MGS and GMRI, updated 2024)

- The updated SLR/storm surge viewer and education hub will include new modeling data such as elevation contours, geospatial conversions for VAVD88, MLLW, and HAT vertical datums, FEMA flood zone polygons with flood zone designations (AE, VE, etc.), base flood elevations, context for the time frame for inundation levels, near-term flood forecasting, video tutorials, and additional educational materials for tool use.
- Not a CZM driven change. Project funding through NFWF NCRF.
- These changes will provide more accurate information for users to make planning decisions based on more precise hazard modeling data.

NERACOOS and GMRI Pilot Maine Tide Gauges and Community Science Program

- GMRI and NERACOOS are installing tide gauges to provide direct measurements of coastal water level that can be integrated into the National Weather Service flood forecasting system to add new forecast locations. GMRI has also been running a coastal flooding community science program where community members document impacts of flooding that are tied to water level measured at the nearest gauge. GMRI completed a pilot version of a viewer that brings together tide gauge measurements with flood impact observations, and it will likely be released early-fall 2024.
- This is not a CZM driven change.

Maine Coastal Flood Risk Model (MaineDOT)

- a. Maine DOT is developing a high-resolution, dynamic, and probabilistic model of infrastructure flood risk along the Maine coast from storm events and projected sea level rise. Set to be available in 2024/2025.

Maine Geological Survey

- In 2021, MGS mapped 35 miles of the Kennebec River for bathymetry in support of Department of Marine Resource modeling of the removal of 4 dams along the river.
- In 2021, MGS released its [2nd edition of the Maine Coastal Property Owner's Guide to Managing Erosion, Flooding, and Other Coastal Hazards](#)

- In 2023, new [Coastal Sand Dune Maps](#) were completed by MGS and adopted for use by the Maine Department of Environmental Protection. These maps added approximately 1,500 acres of front-and-back dunes and expanded mapping for all of Maine’s coastal counties.
- In 2023, MGS expanded the geographic limits of the [living shoreline decision support tool](#) to include communities within a portion of the mid-coast and Penobscot Bay (Phippsburg to Schoodic Peninsula). This expanded the tool from just Casco Bay (Cape Elizabeth to Phippsburg).
- In 2023, MGS released a revised version of the [Beach and Dune Best Management Practices](#) to guide homeowners and communities on BMPs in the sand dune system.
- In 2023, MGS released its [Coastal Structure and Dune Crest Inventory and Overtopping Potential Tool](#), which compares dune and seawall crests with FEMA Base Flood Elevations.
- In 2023, MGS and BPL instituted a pilot demonstration project that beneficially reused driftwood at Popham Beach State Park. A similar project was undertaken at Pemaquid Beach in Bristol, ME. In South Portland, MGS tested the use of discarded holiday trees. These were highlighted in [NOAA Restoration site](#).
- In 2024, subsequent to these demonstrations and after the January 2024 storm events, MGS and BPL instituted a demonstration project that beneficially reused discarded holiday trees to restore over 1,500 feet of flattened and eroded dunes. Over 500 Christmas trees were placed. MGS also worked with Bristol Parks and Recreation Department to guide the restoration of sand dunes once again using fallen trees in 2024.
- In 2024, MGS, working with the Maine Floodplain Management Program, released a new [Maine Flood Hazard Map application](#) for viewing adopted FEMA flood maps.
- MGS and other MCP partners participated in various 2024 Maine Won’t Wait efforts, including on the [Scientific and Technical Subcommittee](#), [Coastal and Marine Workgroup](#), and [Community Resilience Workgroup](#).

Enhancement Area Prioritization

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

High X

Medium

Low

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

Maine’s coast experiences a wide range of coastal hazards including flooding, storm surge, landslides, erosion, sea level rise, and many others. These hazards are expected to intensify over the coming decades. Assisting communities with responding and adapting to these hazards is a high priority MCP, a ranking supported through stakeholder engagement and other priority-setting exercises at the state level including the Governor’s Infrastructure Rebuilding and Resilience Commission.

Special Area Management Planning

CZMA 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: *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 |
|-----------------|--|
| Coastwide | Coastal towns will continue to develop Municipal Comprehensive Plans under the Comprehensive Planning and Land Use Regulation Law (CPLURA) and submit plans to the State (DACF/Municipal Planning Assistance Program) for a consistency finding. Plans must address state goals expressed in CPLURA and the State’s Coastal Policies Act. A multi-town resiliency planning effort is now underway in coastal southern Maine, led by the Town of Kennebunkport. Shoreline management plans, beach and bluff management plans and resiliency plans are anticipated to be areas of focus for municipal and regional efforts, supported by MCP as resources allow. |

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.

N/A

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 | N | N | N |
| SAMP plans | N | 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.*

N/A

Enhancement Area Prioritization:

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

High _____

Medium _____

Low X

2. Briefly explain the reason for this level of priority.

Maine has not used a formal Special Area Management Plan designation to date. MCP continues to address the need for comprehensive issues and geography-specific planning through a) financial and technical assistance to towns and regional planning councils; and b) development of special studies to inform state policy (for example, Penobscot Bay Working Waterfront Resiliency Study, 2019, and Protecting Maine's Beaches for the Future: 2017 Update). In addition, several place-based and/or issue-based projects are described in other sections of this assessment. If a formal SAMP designation is determined to be the best approach in a particular geography, MCP will submit a detailed work plan to NOAA/OCM.

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 1 (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, unknown) | Type of Impact (aesthetic, resource damage, user conflicts, other) | Change Since Last Assessment (↑, ↓, unknown) |
|---|--|---|--|
| Beach/shore litter | M | Aesthetic, Harm to Wildlife, Harm to resource through the introduction of plastic trash | Remains pretty much the same with some reduction in areas that have received more frequent cleanup actions. |
| Land-based dumping | L | Harm to resource, aesthetic | Unknown |
| Storm drains and runoff | M-L | There is more impact in urban areas where debris accumulates in roadside drain grates. Most is collected before entering the marine environment | |
| Land-based fishing (e.g., fishing line, gear) | L | There is not a documented impact from land-based fishing activities | Unknown |
| Ocean/Great Lakes-based fishing (e.g., derelict fishing gear) | H | Impacts on both the aesthetics of the coastal environment and on wildlife health, both in ocean waters and on adjacent coastal lands. | There is an increase in the amount of derelict gear and the associated ropes, buoys and plastic lubricant bottles. |
| Derelict vessels | M | Aesthetic, oil and other pollution, use conflicts | Increases attributed to storm events, COVID-19 |

| | | | |
|--|---------|--|---|
| | | | pandemic rise in boat purchases, and housing crisis driven purchases |
| Vessel-based (e.g., cruise ship, cargo ship, general vessel) | L | There is not a documented impact of ship-based debris in Maine coastal waters. The cleanup data does not show a measurable presence of vessel-based trash in the coastal environment, the only noticeable items are single-use beverage bottles from recreational boaters. | |
| Hurricane/Storm | M | There was noticeable debris in Maine coastal waters after the winter storms of 2024. | This is increasing with more frequent damaging storm events. Potential for much greater impacts if hurricane events begin to impact the ME coast more frequently. |
| Tsunami | Unknown | Unknown | Unknown |
| Other (please specify) | | | |

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.

Maine continues to collaborate annually with the International Coastal Cleanup during which volunteers record the items which they collect. Maine contributes all their data to the Ocean Conservancy's Trash Index. Amounts of trash collected and the area covered in Maine along with the items collected can be found for the past five years in the Index.

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 | Y |
| Marine debris removal 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 and likely future outcomes of the changes.

In 2021 Maine banned the distribution of single-use plastic carry bags and the release of balloons. The benefits are a substantial reduction of plastic bags and balloons found as trash on coastal land and in coastal waters.

MCP has been the State Coordinator for the International Coastal Cleanup for over 30 years and remains committed to supporting and facilitating annual Cleanups of Maine coastal beaches and waterways.

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.

Volunteers who engage in the Maine Coastal Cleanup and Organizations who are concerned about the impacts of marine debris on our coast and in coastal waters consistently express the concern and that Maine has a priority need to address derelict fishing gear, much of which is challenging for volunteers or others to remove due to the size and to the laws protecting the gear from “molestation” from anyone other than the licensed owner. The priority level was ranked as medium by stakeholders of MCP given that work on marine debris is covered under other funding pathways than CZMA Section 309.

Ocean and Great Lakes Resources

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

Phase 1 (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), indicate the status of the ocean and Great Lakes economy as of 2021 (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 (2021)

| | All Ocean Sectors | Living Resources | Marine Construction | Ship & Boat Building | Marine Transportation | Offshore Mineral Extraction | Tourism & Recreation |
|--------------------------------------|-------------------|------------------|---------------------|----------------------|-----------------------|-----------------------------|----------------------|
| Employment (# of Jobs) | 49,332 | 33,300 | 258 | 14,423 | 2,185 | 59 | 28,861 |
| Establishments (# of Establishments) | 3,633 | 840 | 41 | 85 | 54 | 14 | 2,599 |
| Wages (Millions of Dollars) | 2.3B | 1.3B | 16.4M | 1B | 103.8M | 3.1M | 933.4M |
| GDP (Millions of Dollars) | 3.6 b | 3.2 b | 21.4 m | 942.5 m | 139.8 m | 13.5 m | 2 b |

Employment data from The Economic Impacts of the Maine Seafood Sector (2023), Middlebury Institute of International Studies at Monterey and Maine Center for Business and Economic Research. All other data from ENOW.

Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2021)

| | All Ocean Sectors | Living Resources | Marine Construction | Ship & Boat Building | Marine Transportation | Offshore Mineral Extraction | Tourism & Recreation |
|--------------------------------------|-------------------|------------------|---------------------|----------------------|-----------------------|-----------------------------|----------------------|
| Employment (# of Jobs) | 10120 | 3142 | 50 | 2222 | 401 | 42 | 14,293 |
| Establishments (# of Establishments) | 915 | 488 | 12 | 3 | -4 | 11 | 554 |
| Wages (Millions of Dollars) | \$972,521,487 | \$150,462,206 | \$11,403,325 | \$26,841,928 | \$112,544,541 | \$102,663 | \$5,762,180,000 |
| GDP (Millions of Dollars) | \$1,572,187,719 | \$315,451,755 | \$2,744,228 | \$259,071,296 | \$37,055,283 | \$456,762 | \$1,106,699,485 |

- 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 Reports, indicate the number of uses within the ocean or Great Lakes waters off of your state. To avoid duplication, energy uses (including pipelines and cables) are reported under “Energy and Government Facility Siting” in the following template. However, feel free to include energy uses in this table as well if listing all uses within ocean and Great Lakes waters in one place is preferred. Add additional lines, as needed, to include additional uses that are important to 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>) | NA |
| Federal sand and gravel leases (<i>Active</i>) | NA |
| Federal sand and gravel leases (<i>Expired</i>) | NA |
| Federal sand and gravel leases (<i>Proposed</i>) | NA |
| Beach Nourishment Projects | 15 |
| Ocean Disposal Sites | 29 |
| Principle Ports (<i>Number and Total Tonnage</i>) | Portland – 8,295,415, Searsport – 1,557,860, Eastport – 440,000 |
| Coastal Maintained Channels | 58 |
| Designated Anchorage Areas | 29 |
| Danger Zones and Restricted Areas | 2 |
| Other (please specify) | NA |

- 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 (↑, ↓, -unknown) |
|--|--|
| Benthic habitat (including coral reefs) | Increasing – Activity impacting benthic habitat is very site specific and impacts from these activities are unknown. |
| Living marine resources (fish, shellfish, marine mammals, birds, etc.) | <p>Increasing (lobster) - Lobster landings reached a record high of 132 million pounds in 2016. Landings have subsequently declined, hitting a 15-year low in 2024 at 86 million pounds. There is concern that environmental conditions are becoming less favorable to maintaining the recent high abundance of this resource.</p> <p>Increasing (shellfish): The threat to shellfish continues to increase due to environmental conditions such as ocean acidification and invasive species.</p> <p>Increasing (groundfish): Threat has increased due to uncertainty about the status of the population, stock structure, and efficacy of management measures.</p> <p>Increasing (marine mammals): There are different trends within this group of species, but concerns about the North Atlantic Right Whale have dominated discussion in Maine. The potential increasing threat is not due to changes in other ocean uses, but a combination of an Unusual Mortality Events in recent years and poor calving rates.</p> <p>Increasing (birds): Coastal and ocean birds are increasingly threatened. Much of the threat is due to availability of prey and loss of breeding habitat. Warming oceans, sea level rise, and coastal storms are also threats.</p> <p>Increasing (submerged aquatic vegetation): Threat level has increased and is expected to continue in this direction. Green crabs, warming ocean temperature, and increases in turbidity and nutrient loading are thought to be factors resulting in eelgrass decline.</p> |
| Sand/gravel | Unknown - There is no known threat to the sand and gravel resource |
| Cultural/historic | Increasing - Culture and historic resources (e.g. archaeological sites, forts) are under increasing threat due to sea level rise and shoreland erosion. |
| Transportation/navigation | Increasing - Use conflict was increasing in certain localized areas between cruise ships and lobster gear. Agreements have developed for recommended approach routes to avoid lobster gear. |
| Offshore development | Unknown |
| Energy production | Unknown |
| Fishing (commercial and recreational) | Increasing – warming ocean temperatures, changes in species distributions, and coastal storms are all threats increasing. |
| Recreation/tourism | Unknown - Tourism and recreation are increasing, but no |

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| | |
|------------------------|---|
| | known increase in use conflicts. |
| Sand/gravel extraction | Unknown – there is no known threat or conflict with sand/gravel extraction |
| Dredge disposal | Increasing - Project specific conflicts regarding the haul route used for maintenance of small, shallow-draft federal navigation projects. |
| Aquaculture | Increasing – there has been a significant increase in aquaculture lease applications to DMR between 2016 and 2023, use conflict includes view shed and wild caught fisheries. |
| Other (please specify) | |

4. For those 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 | | Fishing (Commercial and Recreational) | Aquaculture | Recreation | Marine Transportation | Dredging | Sand/Mineral Extraction | Ocean Acidification | Other (changing conditions) |
|---------------------------|------------------------|----------------------|-----------------|---|---------------------------------------|-------------|------------|-----------------------|----------|-------------------------|---------------------|-----------------------------|
| Living marine resources | | X | X | X | X | X | | X | X | | X | X |
| Benthic habitat | | X | X | X | | | | | X | | | X |
| Cultural/historic | | X | | | | | | | X | | | |
| Transportation/navigation | | X | | | | | | | | | | |
| Dredge disposal | | | X | | X | | | | | | | |
| Fishing | | X | X | X | | | | | | | X | X |

5. 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.

Waller, J et al. (2023) Reflecting on the recent history of coastal Maine fisheries and marine resource monitoring: the value of collaborative research, changing ecosystems, and thoughts on preparing for the future, *ICES Journal of Marine Science*, 80:8

- Reflection on recent decades of Maine DMR's work and demonstrate how Maine DMR fisheries research programs are preparing for an uncertain future through the lens of three broadly applicable challenges: (1) a rapidly changing marine ecosystem; (2) recommendations driven by state and federal initiatives; and (3) the need to share institutional knowledge with a new generation of marine resource scientists.

In 2022 the Marine Mammals Division of Maine Department of Marine Resources began additional cetacean monitoring programs including aerial surveys, ship-based surveys, and acoustics monitoring. As of 2025, no reports have been released.

The Maine-New Hampshire Inshore Trawl Survey is a fishery-independent survey operated by Maine Department of Marine Resources (DMR) that started in the fall of 2000. The Fall 2024 Survey was completed, and data are available at the DMR [Data Dashboard](#). The Spring 2025 survey will begin in New Hampshire waters on or around April 28, working its way east to finish up about May 30 near Cutler/Lubec.

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 | N | N | N |
| Regional comprehensive ocean/Great Lakes management plans | Y | N | N |
| 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.

No changes to the Statues, Regulations, Policies, or case law interpreting these.

No change in Single-Sector management plans from the last report. Fishery Management Plans for scallop, urchin, and lobster are still under development.

The Maine Department of Marine Resources is undergoing an update to the methodology for completing lobster stock assessments in the Gulf of Maine. This is in response to observed changes in the population distribution of lobster. The report on these changes will be released in 2025. Additional changes in reporting in the lobster fishery were made in Addendum XXVI to the ASMFC Lobster Management Plan, mandating the lobster fishery to scale up from 10% harvester reporting using paper logs to 100% lobster harvester reporting digitally. It used to be only a 10% randomly selected harvester reporting on paper logs. The new reporting scheme resulted in an influx of catch and social-ecological data from lobster license holders in 2023. Maine reports will now account for ~42% of all trip level reports stored in the Atlantic Coastal Cooperative Statistics Program data warehouse. As of 2023, all federal lobster boats also have to have a tracker on their vessels to collect data. The scallop and menhaden fisheries had similar changes in 2023, with harvesters now required to do daily reporting on landings.

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) | N | https://neoceanplanning.org/plan/ |
| Area covered by plan | N | Northeast (ME to CT) |

Enhancement Area Prioritization

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

High ☐

Medium ☒

Low ☐

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

Maintaining healthy sustainable ocean resources is a key priority of the state. It was not given a “high” ranking with stakeholders from nonprofits, land trusts, academia, state and federal government in part because key aspects of ocean resources like intertidal nursery habitat for commercial fish species is covered in other enhancement areas.

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 1 (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 | Cite data source |
|--|---|--|---|
| Beach access sites | 178 | No change | Maine Coastal Public Access Guide Database (MCPAG) |
| Shoreline (other than beach) access sites | 556 <ul style="list-style-type: none"> • 17 new sites added to coastal access guide in Southern Maine • No updated data for Midcoast or Downeast, so total increase in access likely higher than reported | Increase | Maine Coastal Public Access Guide Database & update |
| Recreational boat (power or non- motorized) access sites | 340 | Increase | Maine Coastal Public Access Guide Database & update |
| Designated scenic vistas or overlook points | 32 overlooks 227 mi of scenic byway in the coastal zone | Overlooks – no change Scenic Byway - increase | Maine DOT database Maine DOT Public Map Viewer https://www.maine.gov/mdot/mapviewer/?show=Scenic%20Byways&bbox=-71,43,-67,47.5 Maine DOT scenic overlook data https://exploremaine.org/byways/ |

| | | | |
|---|---|--|---|
| Fishing access points (i.e. piers, jetties) | 645 | Has not been updated since last assessment | MCPAG Database |
| Coastal trails/boardwalks | From Maine Trail Finder: ~580 trails covering ~573 miles | Increase | Maine Trail Finder: https://www.mainetrailfinder.com/ |
| Number of acres parkland/open space | 1,324 miles conserved lands with permanent protection. 29,843 acres of conserved land with permanent protection within 250 ft of coastline. Please note: this data refers to coastline and does not represent the entire coastal zone Acres of land protected for public access using funding from the Land for Maine's Future program: <ul style="list-style-type: none"> - 32,771.75 acres - 1,859.34 acres protected since 2020 | Increase | Data is from an assessment completed by Maine Natural Areas Program and is based on LiDAR based HAT data from Maine Geological Survey. https://www.maine.gov/dacf/mnap/publications/LAPAC_2021techrept.pdf LMF data represents a sum of land protected by fee acquisition and easements. |
| Access sites that are Americans with Disabilities Act (ADA) compliant | 34 Boating facilities (launches, landings, and carry-in sites) <ul style="list-style-type: none"> • 15 fully accessible • 22 partially accessible 24 State Parks & State Historic Sites <ul style="list-style-type: none"> • 5 sites have good access (most features are accessible) • 19 sites have limited access (some features are accessible, some are not) 28 Public hiking trails | Increase | BPL data: https://www.maine.gov/dacf/parks/about/boating_facilities_program/index.shtml State park data: https://www.maine.gov/dacf/parks/visitor_accessibility/access_guide.pdf Maine Trail Finder: https://www.mainetrailfinder.com/ |

Information about data in table:

Note: All queries from the original Maine Coastal Public Access Guide (MPAG) Database were done within the set of sites included in the Guide. The total number of sites included is 717.

- **Beach Access Sites:** Queried MCPAG Database for “Beach.” “Beach” no longer used in MCPAG as an amenity, but the classification is still in database. Based on site visits, and includes cobble beaches, not just sandy beaches.
 - **Shoreline (Other than Beach) Access Sites:** All public access sites in the database, minus the beach access sites. The guide is being updated and new data from Southern Maine were included.
 - **Recreational Boat Sites:** Queried database for hand-carry sites and trailerable boat ramps. This represents the total and new sites were included from the update.
 - **Number of Designated Scenic Vistas or Overlook Points:** This number is based upon Maine Department of Transportation (MDOT)’s records of roadside turnouts and includes only turnouts on the coast (not simply in coastal towns). There may be many other scenic overlooks along Maine’s coast that are outside of the purview of MDOT. The data is up-to-date, and no turnouts have been added in the coastal zone. The scenic byway information was found on the DOT Public Map Viewer and the Maine Scenic Byway website. Maine DOT added 20.5 miles from Eastport to Calais to the Bold Coast Byway in 2021.
 - **Number of fishing access points (i.e. piers, jetties):** In Maine, fishing is a fundamental right that occurs within the intertidal zone. For this figure, we included more than just piers and jetties, because fishing can and does take place at all types of coastal public access locations. We estimated that 90% of Maine’s coastal public access sites, documented in our database can be used for fishing. This is based on the fact that the only real limitation on fishing seems to be physical aspects of the site, which we estimate to be approximately 10% of sites. Examples would include cliffs that are high above the water and do not provide fishing opportunities and coastal nature preserves where trails do not lead directly into the water.
 - **Coastal trails/ boardwalks:** Maine Trail Finder, a public resource for outdoor trail access, was used to identify the number and mileage of trails in the coastal zone. Only trails providing access to or immediately adjacent to tidal waters were included. Not all public hiking trails are captured in Maine Trail Finder and the updated Coastal Access Guide database should be more thorough and will be used in the next reporting period.
 - **Parkland/Open Space:** Maine Natural Areas Program did an analysis around the time of the last review to evaluate acres and miles of protected land near the coast. This report has not been updated since the last Assessment and Strategy. We also reported information from the Land for Maine’s Future Program, which is the state’s primary funding mechanism for conserving land. LMF land conservation before 2021 is included in the Maine Natural Areas Program data.
 - **Access sites that are Americans with Disabilities Act (ADA) compliant sites:** Maine Bureau of Public Lands, the agency managing State Boat Launches, Maine State Parks, and Maine State Historic Sites, reports accessibility of boat launches and State Parks & Historic Sites. Some boat launches are located in state parks, so the totals reported in the table may overlap slightly. Maine Trail Finder reports accessible trails with partial accessibility; often a section of trail is accessible while the remainder may not be.
2. 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,¹¹ the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,¹² and your state’s tourism office.

Demand for public access

Maine Coastal Program does not regularly assess demand for public access. Maine Coastal Program staff are completing a project assessing use at public boating facilities. These results will be completed in late 2024 or early 2025, but this study will not necessarily be repeated.

Anecdotally, demand for public access increased substantially during the COVID-19 pandemic and has remained high ever since. Parking is often a limiting factor at facilities, and the lack of trailer and overnight parking options were mentioned frequently during the public boating facility study. Other data can be used to evaluate demand for public coastal access as well, including the State Comprehensive Outdoor Recreation Plan (SCORP), which is updated every five years.

- **Tourism:** Tourism is one of Maine's largest industries and most of this tourism occurs along the coast. According to the [Maine Office of Tourism](#), in 2023, Maine saw 15,267,000 visitors who spent over \$9 billion while in the state. This supports over 131,000 jobs and has an economic impact of over \$16 billion. The number of visitors was slightly lower in 2023 compared to 2022, but the amount of spending and economic impact was higher. Regional data was not available for this reporting period, but data are updated annually.
- **Recreational Boating:** Recreational boaters (motorized and non-motorized) heavily use public boating facilities, especially in Midcoast and Southern Maine, and on summer weekends. While Maine has many public boating facilities, not all are large, designed for modern use, or have ADA-accessible features. Demand is very high for motorized and non-motorized recreational boating access and also for moorings. Maine's long coastline and 4,600 islands are a huge attraction for resident and non-resident kayak and canoe paddlers. In 2024, the [Maine Island Trail Association](#) had 233 island and mainland sites with over 9,500 members. Since reporting in 2019, this is a 3,000 person increase in memberships and a one site decrease in access.
- **Fishing:** According to data provided by Maine Department of Marine Resources to the Maine [Municipal Planning Assistance Program](#), there were 2,170 non-commercial lobster licenses and 1,984 recreational saltwater fishing licenses distributed in 2023. These numbers do not include commercial fishing licenses, nor do they capture recreational fishing through charter fishing operations. Recreational fishers are substantial users of coast water access facilities.
- **MCP Public Waterfront Facility Study:** This study is being completed, but preliminary results indicate that there is high demand for public boating facilities in Maine, and they are used by both recreational and commercial users, which can lead to conflict among user groups. There is a need to increase the number and capacity of facilities, and also a need for user education to improve efficiency at sites. A lack of parking is often a limiting factor, especially trailer and overnight parking.
- **SCORP:** The [SCORP](#) evaluates national and regional demand for outdoor recreation. The SCORP is being updated, but the most recent version found a high and increasing demand for outdoor recreation, especially in ways that are accessible to older populations and people with disabilities.

Coastal Populations

Maine's coastal population increased by 3.3% between 2017 and 2021, from 1,005,116 to 1,038,281. The vast majority of the state's population lives in coastal counties. Maine's population as a whole is expected to increase 2.6% by 2030, which will increase development pressure and could cause shortages in housing, which is already limited ([Maine Population Outlook to 2030, Office of the State Economist](#)).

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.

Public waterfront inventory: Maine Coastal Program is finishing a study evaluating crowding, conflict, and management needs at public waterfront facilities (state and municipal boat launches and public piers). Results will be finalized in fall 2024 and posted on the Maine Coastal Program website: [Maine Coastal Program | Department of Marine Resources](#). Preliminary results indicate that crowding is increasing at public facilities and stronger and more frequent coastal storms are causing damage and exacerbating existing maintenance issues. The need for additional access and funding to expand and maintain public boating access was clear. A possible connection was raised between short-term rental use and increased crowding and conflict at public boating facilities. Improved signage and user education could alleviate some issues.

An assessment of accomplishments and gaps in Maine Land Conservation: The Maine Natural Areas Program completed this review of land conservation in Maine in 2021. The report outlined accomplishments and gaps in land conservation and included sections on coastal water and island access, as well as undeveloped coastline. The report documented an increase in public coastal access, a high level of access to sandy beaches, and a need for tracking access to mudflats for shellfish harvesting. There is about one public boating access location every two linear miles of the coast, although the report noted large access gaps in Wells, Jonesport/Jonesboro, upper Penobscot Bay, and Lincolnville/Northport. Parking capacity is a frequent constraint on site use, especially in southern and Midcoast Maine where the population is highest. [An assessment of accomplishments and gaps in Maine Land Conservation](#)

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 | N | N | Y |
| Operation/maintenance of existing facilities | N | N | N |
| Acquisition/enhancement programs | 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.

MCP awarded \$286,000 to local municipalities to plan for public access by designing more resilient infrastructure and improving stormwater management. If funding remains steady, we can expect to provide about \$200,000 for coastal hazards grants over the next five years. Making the grant application process as simple and accessible to coastal communities as possible is a priority and future changes will occur with this in mind. We are exploring reducing or eliminating match requirements and will work with other state agencies to develop a grant portal and further streamline the application process over the next five years.

*List of Shore and Harbor Planning Grants since last assessment:
(2020)*

- Bowdoinham, \$30,000 – A master waterfront plan was created for the former municipal works site; this project was later funded for construction through state funding and has been completed.
- Deer Isle, \$7,800- Right of way Discovery Project- Eggemoggin Landing, and Old Wharf Rd; Town will maintain Eggemoggin Landing
- Wiscasset, \$7,500 – The town got cost estimates for expanding the recreational pier, adding utilities, and renovating the Harbor Master's building.

(2021)

- Orrington, \$28,000 – Conceptual designs were created for a new launching facility. Permits and soil testing were completed, and the final design was started.
- Topsham, \$13,000 – A conceptual design with cost estimates and phased construction options was created for a new boat launching facility.

(2022)

- Bar Harbor, \$50,000 – A master plan was completed with phased options to convert the ferry terminal into a public marina with a boat ramp.

(2023)

- Brooklin, \$50,000 – Deed research was done to clarify ownership at one public beach and engineering designs are underway to improve parking and access at the other public beach.

- Stonington, \$50,000 – Designs were created to increase the resilience and convert the former Odd Fellows Hall into public water access in Stonington Harbor.
- (2024)
- Jonesport, \$50,000 – Designs were finalized for the parking lot and new commercial boat ramp that will be built on town-owned property.
3. Indicate if your state or territory has a publicly 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 | N | N |
| Web address (if applicable) | | | |
| Date of last update | In progress | In progress | NA |
| Frequency of update | | | |

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.

Public access to the coast is a key workstream for MCP and our partners and stakeholders. As the coast continues to rapidly develop, dedicated attention must be given to protect access to the coast. It was ranked as “Medium” priority understanding that many issues related to public access can be covered under work within the Coastal Hazards and Cumulative and Secondary Impacts of Development enhancement areas, both of which were advanced to Phase 2 in-depth assessment.

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. 14 of the CZMA Performance Measurement Guidance⁴ 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

1. Using the tables below as a guide, provide information on the status and trends of coastal wetlands. Be as quantitative as possible using state or national wetland trend data.

Current state of wetlands in 2024 (acres): 53,992 (EPA 2023)

Coastal Wetlands Status and Trends (1996 – 2021)

| County | Change in Total Wetland (%) | Change in Freshwater Wetland (%) | Change in Saltwater Wetland (%) |
|--------------|-----------------------------|----------------------------------|---------------------------------|
| York | 0.34 | 0.32 | -0.55 |
| Cumberland | 1.12 | 1.41 | -0.8 |
| Androscoggin | 0.21 | 0.21 | 0 |
| Sagadahoc | 2.48 | 2.56 | -0.04 |
| Kennebec | 0.45 | 0.43 | -6.67 |
| Lincoln | 0.81 | 0.74 | -0.11 |
| Knox | 3.27 | 1.34 | -0.18 |
| Waldo | 0.74 | 0.72 | -1.81 |
| Hancock | 1.61 | 1.42 | -0.07 |
| Washington | 0.79 | 0.86 | -0.28 |
| Total | 11.82 | 10.01 | -10.51 |

Data from NOAA CCAP Land Cover Atlas

How Wetlands Are Changing (1996 – 2021)

| Coastal Zone County | Wetlands changed to Development (acres) | Wetlands changed to Agriculture (acres) | Wetlands changed to Barren Land (acres) | Wetlands changed to Open Water (acres) |
|---------------------|---|---|---|--|
| York | 179.2 | 44.8 | 51.2 | 51.2 |
| Cumberland | 339.2 | 12.8 | 57.6 | 96 |
| Androscoggin | 44.8 | 32 | 12.8 | 25.6 |
| Sagadahoc | 12.8 | 6.4 | 12.8 | 51.2 |
| Kennebec | 76.8 | 19.2 | 25.6 | 166.4 |
| Lincoln | 12.8 | 19.2 | 12.8 | 134.4 |
| Knox | 25.6 | 0 | 25.6 | 115.2 |
| Waldo | 25.6 | 0 | 6.4 | 198.4 |
| Hancock | 38.4 | 12.8 | 44.8 | 697.6 |
| Washington | 64 | 64 | 44.8 | 595.2 |
| Total | 819.2 | 211.2 | 294.4 | 2131.2 |

Data from NOAA CCAP Land Cover Atlas

Additional information on Coastal Wetlands Status and Trends:

The Marine Vegetation Mapping Program of the Maine Department of Environmental Protection was created in 2021 to track changes in extent of salt marsh and eelgrass habitat. The first survey was completed in 2023 in the Midcoast region, with 1/5 of the coast planned for mapping every year going forward. In 2023, a 60% decline in eelgrass was mapped in 2023 in the Midcoast region since the region was last surveyed in 2005.

In March 2023, the US EPA Region 1 published *The Blue Carbon Reservoirs from Maine to Long Island, NY*. For this report, a mapped wetlands inventory was done to reveal, based on available data, 53,992 acres of salt marsh, eelgrass meadows, and saline *Phragmites*, estimated to provide a reservoir of 7,523,568 megagrams of blue carbon, or the equivalent to the annual carbon emissions from over 5,944,024 passenger vehicles.

Most of Maine's 22,000+ acres of tidal marsh have been mapped with a remote landscape analysis using the best available aerial orthoimagery, but accuracy improvements based on high-resolution low tide aerial orthoimagery have been made by the DEP Marine Vegetation Mapping Program for their first survey region (Midcoast Region) in 2023. Accurate baseline maps will function to inform future assessments of marsh migration due to sea level rise at a regional or coastwide scale. A subset of these marsh sites has been the subject of field inventory and added to the MNAP database, Biotics, which serves as the official state record of tidal marsh sites. The Midcoast Region hosts the greatest extent of tidal marshes compared to all other MVMP regions. Approximately 8,865.9 out of 22,175.2 acres of coastwide tidal marsh reside within the Midcoast Region, including 4,206 acres of the state's 4,289 acres of freshwater tidal marshes.

Management Characterization

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

Wetland Restoration Projects

Scarborough Marsh: MCP is working with the Scarborough Land Trust and newly associated Friends of Scarborough Marsh to advance projects to support and rehabilitate wetland habitat. At 3,200 acres, Scarborough Marsh is the largest contiguous salt marsh in Maine. The project is one of three major endeavors concerning the future of the marsh. MCP is a partner with Maine DOT on tidal flow improvements to U.S. Route 1, State Routes 9 and 207 and with the Town of Scarborough on a sea-level rise vulnerability study.

West Branch of the Pleasant River: MCP is partnering with the Sea-Run Fish Section of DMR to provide aquatic organism passage and salt marsh restoration to 410 acres of existing wetlands. Included are six projects to replace insufficient crossing structures, recreate naturally functioning wetlands and remove a failing tide gate. Once all of the projects are complete, the size of the salt marsh component could potentially increase to 508 acres. The Downeast Salmon Federation is MCP's local partner and was awarded more than 1.64M in NOAA BIL/IRA funds. Other sources of BIL/IRA funds and National Coastal Resiliency Funds complement these CZM funds.

Upper Machias River Basin, Middle River, Sunrise trail: MCP is an integral partner with the Town, Sunrise County Economic Commission, Maine DOT, Downeast Salmon Federation and National Oceanographic and Atmospheric Administration in the planning and execution of several interacting projects. Maine DOT is reviewing alternatives for the replacement of Dike Bridge. Coupled with the bridge project is the improvement of the storm-damaged multi-use recreational trail. Several intense winter storms resulted in the complete washout of Dike Bridge and several areas of the multi-use trail.

CoastWise Approach

In 2020, MCP completed a Project of Special Merit to develop and implement the *CoastWise Approach for Tidal Crossing Design*. CoastWise delivers a set of voluntary best practices for crossing design with an emphasis on safety, road crossing resilience, cost-effectiveness, low-maintenance structures, and proven methods for supporting tidal ecosystem quality. CoastWise includes various tools and outreach opportunities for road owners, restoration practitioners, and engineers to use when considering, designing, and constructing tidal road crossings. These include project checklists, methods supporting checklist steps, and outreach and training modules to explain how tidal, and specifically salt marsh, road crossings are complex issues that require consideration of not just the road crossing but also the surrounding environment, both built and natural. Led by the MCP Habitat Restoration Coordinator, a pilot training course at the 'professional' level for engineers and consultants took place in summer 2024, with planning now underway for another pilot training for a municipal audience. Feedback from both trainings is used to refine content to improve future training efforts.

Tidal Restriction Atlas

MCP continues to add and update data for the State of Maine's online Tidal Restriction Atlas. MCP is currently refining the process for tidal restriction assessment to allow for more rapid, efficient, and cost-effective database updates on a regular schedule moving forward.

Focus Areas of Statewide Ecological Significance

BwH has recently mapped [Focus Areas of Statewide Ecological Significance](#), including those in the Coastal Zone and will be updating the description sections of the Focus Areas over the next year. Though Focus Areas occupy only about 11.5% of Maine's land area, collectively they include examples of over 85% of rare, threatened, and endangered plant and animal species. Other map resources being updated in the coastal zone include Beginning with Habitat Undeveloped Blocks, high value aquatic habitat networks, and potentially other landscape design elements that help prioritize conservation actions.

Marsh Migration Model

The Maine Natural Areas Program (MNAP) has developed an [online tool](#) that allows creation of 'bathtub' models of coastal areas that can have a variety of inputs regarding marsh migration and storm surge. In concert, MNAP has written [Marsh Migration in Maine 2023: Using the best Science to Build Tools for Coastal Marsh Conservation](#). Use of this mapping and improving methodology will improve resiliency planning and remediation. MNAP is also undertaking an update of mapping Maine's high value wetlands.

Maine Tidal Wetland Restoration Network

MCP is an active partner in starting and developing a working association called the Maine Tidal Wetland Restoration Network. MCP is part of the steering committee for the group. Members of the group come from Federal and State agencies, NGO's, educational institutions, and consultants. The intentions of the group are to create a wide-reaching communication forum to keep members and others apprised of the status of statewide restoration projects, restoration techniques, monitoring efforts, permitting requirements and all topics dealing with tidal wetlands.

Tidal Stream Crossing Grants

Maine has a legislatively approved funding program for the Municipal Stream Crossing Upgrade Grant Program. The program has been recently transferred from the Maine Department of Environmental Protection to the Maine Department of Transportation.

Salt Marsh Sentinel Sites

MNAP and MCP have partnered together over the last 6+ years to establish and implement long term monitoring at a set of 11 salt marsh "sentinel" sites from York to Lubec, Maine. The primary goal of multiple-indicator, long-term monitoring on these State of Maine sentinel sites is to determine, over the long-term, the extent to which saltmarshes are keeping pace with sea level rise and monitor changes in vegetation and habitat. Established methodologies across the sites include biennial vegetation plot monitoring as well as annual sediment and accretion monitoring through the reading of rod-surface elevation tables (RSETs) and marker horizon plots. In September 2024, MNAP began its sixth year of RSET measurements and its second year of vegetation monitoring.

Landscape-scale Natural Resource Assessments

MNAP and the Maine Department of Inland Fisheries and Wildlife completed landscape level natural resource assessments in a number of "biophysical regions" throughout the state of Maine. These assessments aim to identify new locations of rare plants, rare animals, and exemplary natural communities through a three-stage process: 1) landscape analysis, 2) landowner identification, and 3) field inventory.

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.

Non-Point Source Pollution and Wetlands

- The DEP Watershed Management Unit added salt marsh restoration priorities to its 5-year plan, specifically "Investigate ways to protect and restore tidal marshes/eelgrass beds and their high-carbon storage capacity, where negatively impacted or threatened by NPS pollution and habitat modification."
- Not a CZM driven change.
- High potential for future progress on wetland restoration and watershed conservation. MCP is actively working with the Watershed Management Unit, based on this new goal, to establish impairment indicators for wetlands that would allow salt marshes to have specific listing criteria on the DEP Threatened Marine Waterbody list, opening those sites up to additional funding streams for restoration and conservation.

Thin Layer Placement Pilot Project

- The Rachel Carson National Wildlife Refuge is piloting a thin layer placement restoration effort in a Wells Harbor marsh, the first of its kind in Maine. The Refuge received a special permit for the effort. A goal is for future restoration efforts of this kind using beneficial dredge material to be more easily permissible after a successful pilot.
- Not a CZM driven change.
- Likely outcomes will be a revision to marsh restoration permitting processes to allow for the use of beneficial dredge material to raise marsh platforms to keep pace with sea level rise and decrease prevalence of mega pools.

A Regional Coastal Resilience Plan for Southern Maine

- A 2.5-year planning project by the Southern Maine Planning and Development Commission

focused on enhancing coastal resilience planning, fostering collaboration, and advancing adaptation action within Maine’s ten southern-most coastal communities. Resulted in a [Regional Coastal Resilience Plan](#) with 15 priority vulnerable areas selected for nature-based adaptation projects.

- Not a CZM driven change.
- Outcomes will lead to increased case studies involving nature-based design in wetlands. Strategies from this work transferable to other regional planning organizations and councils of government. Based in part on priorities identified in this effort, USGS developed a scientific framework for supporting decision-makers who actively research and manage changes in coastal resilience and vulnerability: [“Science to Support Marsh Conservation and Management Decisions in the Northeastern United States.”](#)

Coast Wise Training and Technical Assistance

- Training for professionals, practitioners, and municipal staff on basic ecology of tidal marshes, CoastWise best practices and design criteria, project management, funding and financing, and permitting.
- CZM driven change
- In future, Coast Wise technical assistance could be extended to municipal audiences and DOT engineers more comprehensively.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?
High **X**
Medium
Low
2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Wetlands are a current high priority system in Maine. This is emphasized by recent grant allocations for salt marsh restoration, the formation of the Maine Tidal Marsh Restoration Network, the formation of the Maine Seagrass Consortium, the adding of blue carbon ecosystems in the 2024 DEP Emissions Budgeting, and other stakeholder and partner projects. In addition to the projects discussed above, MCP is partnering with various entities to complete tidal wetland restoration and tidal crossing work. As opportunities and funding are revealed over time, MCP will continue to seek out opportunities for tidal wetland restoration.

Phase II (In-Depth) Assessments

Note: The following Phase II Assessment follow a format required by NOAA.

Wetlands

In-Depth Resource Characterization:

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

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).

| | Stressor/Threat | Geographic Scope (throughout coastal zone or specific areas most threatened) |
|------------|---------------------|---|
| Stressor 1 | Coastal development | Entire coast, predominantly Southern Maine |
| Stressor 2 | Sea level rise | Entire coast |
| Stressor 3 | Invasive species | Entire coast |

1. 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.

Coastal Development

The Maine Tidal Restriction Atlas catalogues 1,036 tidal restrictions in the coastal zone including road crossings, tidal dams, and dikes. These tidal restrictions pose a direct threat to the health of wetlands in Maine, and the transition of these restrictions to "CoastWise" tidal crossings is a priority for MCP, natural resource agency partners, and engaged stakeholders like land trusts and conservation nonprofits. As shown in the Phase 1 Wetlands Assessment of this report, from 1996 – 2021 Cumberland and York Counties lost more wetland acreage to development (518.4 acres) than all the other coastal counties combined (300.8 acres).

Maine's in lieu fee compensatory mitigation program is the Maine Natural Resource Conservation Program (MNRCP), administered by DEP. Between 2020 – 2023, over 115 acres of wetlands have been impacted by a mix of permanent fill, shading, and conversion, predominantly in the Southern Maine and Midcoast regions (see below table).

Summary of MNRCP In-Lieu Fee Projects 2020 - 2023

| Year | # of Projects | Acres of Impact | Highest # of Projects |
|-------|---------------|-----------------|-----------------------|
| 2020 | 34 | 24.24 | Southern Maine |
| 2021 | 35 | 52.22 | Midcoast |
| 2022 | 39 | 9.1 | Midcoast |
| 2023 | 56 | 29.47 | Midcoast |
| Total | 164 | 115.03 | -- |

Sea Level Rise

Sea level rise in Maine is predicted to reach 1.1 to 3.2 ft by 2050. At the same time, coastal development in Maine has increased significantly in the last few decades. This creates a scenario called “coastal squeeze” in which wetlands naturally migrate upland due to rising seas but are met with impassable development choking off their ability to adapt and create new habitat. A study by the Maine Natural Areas Program titled *Marsh Migration in Maine 2023* found that on average across all sea level rise scenarios and across the coast, only 31% of marsh migration space is currently on conserved lands. Maine Natural Areas Program updated its [marsh migration model](#) highlighting the lost opportunity that development in marsh migration space presents in a sea level rise scenario. A University of Maine study published in 2018 by Jack McLachlan titled *High net loss of intertidal wetland coverage in a Maine estuary by year 2100* predicts that in Merrymeeting Bay alone, one of the largest estuaries in Maine, net loss of intertidal wetland could range from 28% to 57% by 2100 as a result of coastal squeeze. As outlined in the Phase 1 Wetlands Assessment of this report, 2,131.2 acres of wetlands in Maine have become open water in under 30 years. This is an underestimate as the data goes only until 2021 and does not capture large storms between 2021 and 2025 that information gathered from MCP stakeholders and partners confirm caused wetland damage from effects including erosion and sediment smothering.

Invasive Species

Input from local communities, property owners, restoration practitioners, fishers, and the newly formed Maine Tidal Marsh Restoration Network also point to invasive species, namely green crabs (*Carcinus maenas*) and the common reed (*Phragmites australis*) as a critical factor threatening the health and long-term resilience of Maine marshes. In 2014, the Governor’s Task Force on the Invasive European Green Crab identified a significant increase in green crabs found by fishers and harvesters in only two years. As a result, in 2014 some municipalities initiated green crab control programs but there has been no effort since to expand or monitor those initiatives. In 2025 there remains no dedicated state green crab survey. Conversations with harbormasters, fishers, and Manomet Conservation Sciences and information shared at the Maine Seagrass Summit in January 2025 emphasized that green crabs remain a threat to larval fishery populations, bivalve populations, salt marshes, and eelgrass meadows. In 2024, Manomet Conservation Sciences collected observations from fishers and harvesters along Maine’s coast that point to a possible slight decrease in the number of green crabs encountered in summer 2024 but that the size of those green crabs has increased. One of the biggest factors contributing to green crabs’ status as a threat to wetlands is how much work still needs to be done to understand their impact at an ecosystem scale. The invasive common reed *Phragmites australis* is found extensively in Maine wetlands. Research in 2005 from the National Estuarine Research Reserve (NERR) Technical Report Series titled *Native and Non-native Phragmites: Challenges in Identification, Research, and Management* document the immense expansionary power of the common reed in Northeastern wetlands, a trend confirmed by MCP partners including the Maine Natural Areas Program and stakeholders including the Maine Tidal Marsh Restoration Network. The NERR Technical Report Series also highlighted decreases in species count and soil salinity as a result of common reed invasions in marsh wetlands.

2. 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 |
|--|--|
| Green crabs | Survey, management planning, local support |
| Thin layer placement for assisting wetland in keeping pace with sea level rise | Regulatory and permitting structure |
| Measuring cumulative impact | Research linking intervention with cumulative impact (e.g. loss of ecosystem function and value). Regulatory guidance to permitting and project review staff at the state level. |

In-Depth Management Characterization:

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

- 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 | Y |
| Wetland mapping and GIS | Y | Y | Y |
| Watershed or special area management plans addressing wetlands | Y | N | Y |
| Wetland technical assistance, education, and outreach | Y | Y | Y |
| Other (please specify) | | | |

- 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.
 - Describe significant changes since the last assessment;
 - Specify if they were 309 or other CZM-driven changes; and
 - Characterize the outcomes or likely future outcomes of the changes.

In 2023 the DMR created the Nearshore Marine Resources Program with an additional emphasis on habitat monitoring and the development of a mini-grant program. One significant change in the program is that now all resource surveys will be geotagged to enable future spatial analysis. The program gathers long-term data on species abundance in intertidal ecosystems and will lead research on marine worms, blue mussels, and wild harvested seaweed.

- Not a CZM driven change

- Potential future studies on habitat quality of intertidal mudflats. Potential integration into how DEP characterizes “cumulative impact” when permitting shoreline stabilization in Maine.

In 2024 the Maine Natural Resource Conservation Program (MNRCP), Maine’s in lieu fee program, awarded \$1.3 million for 4 projects across Maine that will restore, enhance, or protect wetlands and other important natural resources. Projects include removal of tidal restrictions in freshwater tidal marsh in Merrymeeting Bay, freshwater wetland restoration and creation at a conservation property in southern coastal Maine and a salt marsh enhancement project on USFWS National Wildlife Refuge. In 2025, MNRCP is working with MCP and the Maine Seagrass Consortium on applicability of the program funding to eelgrass and new guidance for managing those projects.

- Not a CZM driven change
- MCP is currently working with MNRCP and the Maine Seagrass Consortium to better utilize in lieu funds for eelgrass restoration, currently under funded in Maine.

Wetlands mapping significantly expanded in capacity in 2021 with the creation of the Marine Vegetation Mapping Program (MVMP), run by DEP. It maps 1/5 of the coast every year for marsh and eelgrass extent.

- Not a CZM driven change
- This program has great potential for impact and expansion, as wetland systems are dynamic and would benefit from regular mapping at increased frequency. In 2024, DEP received grant funding to explore machine learning technology using satellite and aerial imagery to improve the state’s ability to map wetland extent.

In 2023, Maine partners in salt marsh research and restoration including the Wells National Estuarine Research Reserve, the Gulf of Maine Coastal Program, and the Rachel Carson National Wildlife Refuge came together to form a training and applied research program for partners to work collaboratively on Salt Marsh Adaptation & Resiliency Teams (SMARTeams) to address salt marsh restoration on a large scale.

- Not a CZM driven change
- SMARTeams increases the number of qualified professionals able assess the legacy impacts of agricultural activity on salt marshes in need of restoration and rehabilitation. These assessments are critical to properly restoring hydrological function in impaired marshes.

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?

MVMP recent report to the Joint Standing Committee on Environment and Natural Resources 131st Legislature: [2024 MVMP Legislative Report Final.pdf](#). This report details the extent of salt marsh and seagrass from Phippsburg to St. George, a new effort under 38 M.R.S. §1805 that greatly enhances the ability of the state to manage these ecosystems. For the first time in the state there is a schedule of mapping that will return to marshes and seagrass beds every five years to track change, managed by the Maine Department of Environmental Protection.

A report published in 2020 by Adamowicz et al on *Farmers in the Marsh: Lessons from History and Case Studies for the Future* identified legacy agricultural impacts on several New England salt marshes and present a four-step process to restore hydrological function using innovative restoration practices. This

new understanding of the effect of legacy agriculture, including ditching and runneling, changes the scope of work in which salt marsh management practitioners undertake rehabilitation. It also broadens understanding in the state of why certain techniques do and do not work.

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: Expand the capacity to monitor, conserve, and restore wetlands.

Description: Wetlands in Maine including marshes, eelgrass meadows, and flats are changing rapidly in regard to quality, extent, and longevity. While monitoring programs exist in the state, they need increased capacity and continued funding to remain effective and responsive to the cumulative effect of development, invasive species, and other compounding threats. Conservation and restoration efforts are likewise hampered by a lack of capacity, resource sharing, and support from communities and cannot proceed to full affect without adequate and consistent monitoring.

Management Priority 2: Improve the state's ability to manage wetlands at the landscape scale.

Description: There are many diverse partners and stakeholders working to conserve, restore, and protect all types of wetlands in Maine. Increased coordination, state-level planning, and watershed approaches are necessary to leverage disparate efforts and expand the impact of funding and resourcing.

Management Priority 3: Work at the local and practitioner level to incentivize low-impact development.

Description: Support to municipalities for wetland protection governance through strategies like zoning regulations, ordinances, and tax incentives. Continued technical assistance to address barriers to upsizing tidal road crossings throughout the state, a priority that will require dedicated and repeated attention over the years.

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 | Long-term monitoring of marsh elevation, improved understanding of why certain eelgrass beds are more resilient than others |
| Mapping/GIS | Y | Statewide marsh and eelgrass restoration plans, increased capacity to map rapidly changing wetland extent, study on potential of machine learning and other automated mapping techniques |

| Priority Needs | Need? (Y or N) | Brief Explanation of Need/Gap |
|---------------------------------|-------------------|---|
| Data and information management | Y | Better data sharing among wetland partners, improved ability to distribute accessible data to practitioners and local project partners |
| Training/capacity building | Y | Needed for updating tidal road crossings using Coast Wise approach, needed for mapping and monitoring of wetlands, important that training and capacity building done repeatedly and consistently regarding low impact development and other conservation or restoration techniques |
| Decision-support tools | N | |
| Communication and outreach | Y | Needed for all management priorities that rely on local action including around the prevalence and importance of eelgrass and the importance of wetlands in hazard mitigation |
| 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.

Wetlands are a critical habitat in Maine and support a large and diverse portion of our economy including nursery fishing habitat, subsistence livelihoods, and tourism. MCP partners and stakeholders identified wetlands as important to prioritize in the next 5-year Assessment and Strategy. There is great potential to build on the momentum of wetland conservation, protection, and restoration already happening in state and leverage it into long-term resilience.

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 hazards 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 |
|----------|-------------------|---|
| Hazard 1 | Shoreline Erosion | 2000+ miles of Maine coastal dunes, beaches, marshes, and coastal bluffs are eroding with land loss threatening development and existing natural resiliency |
| Hazard 2 | Flooding | Since 2021 there have been 7 FEMA Disaster Declarations for flooding in Maine |
| Hazard 3 | Sea Level Rise | Over the past few decades, the rate of SLR in Maine has accelerated to about 1 foot/ century (3 to 4 mm/year) |

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.

Shoreline Erosion

Coastal beaches, dunes, salt marshes, and bluffs are likely to experience increased erosion, landward movement, land loss and sediment redistribution due to long-term sea level rise. A 1.6-foot sea level rise will submerge two thirds or 67% of Maine's coastal sand dunes and reduce the dry beach area by 43%, which may happen by 2050 or earlier depending on the amount of sea level rise and available natural sand supply. This is supported by MGS data including the MBMAP, SMBPP, the 2022 *State of Maine's Beaches* report, and the *Maine Won't Wait* report.

Flooding

Since the last 5-year Assessment and Strategy, Maine's flood hazard risk has increased from medium to high risk. As noted in the [2023 Maine State Hazard Mitigation Plan](#), prepared by the Maine Emergency Management Agency (MEMA), all counties in Maine have experienced at least eight floods substantial enough to warrant Disaster Declarations with nearly \$300M in cumulative damages from flooding alone. Additionally, as shown in the below table, FEMA disaster declarations have been predominantly tied to severe storms and flooding over the last 5 years in Maine.

Additionally, Maine's statewide annual precipitation (rainfall and snowfall) has increased by 6 inches (152 mm) since 1895, with the unusually wet interval 2005-2014 significantly influencing this increase. Annual precipitation surpluses are mostly due to increased rainfall in summer and early fall. Most models project that Maine will continue to get wetter over the next century as increased heating intensifies the hydrologic cycle.

| FEMA Declaration | Incident Date | Type | Total Public Assistance Grants Dollars Obligated |
|---|--------------------|---------------------------|--|
| DR-4647-ME | Oct 30-31, 2021 | Severe Storm and Flooding | \$6,224,787.12 |
| DR-4696-ME | Dec 23-24, 2022 | Severe Storm and Flooding | \$3,600,301.18 |
| DR-4719-ME | Apr 30-May 1, 2023 | Severe Storm and Flooding | \$7,656,700.69 |
| DR-4736-ME | Jun 29, 2023 | Severe Storm and Flooding | \$1,820,948.50 |
| DR-4737-ME | Jun 26, 2023 | Severe Storm and Flooding | \$991,246.83 |
| DR-3598-ME | Sep 15-17, 2023 | Hurricane Lee | \$21,090.56 |
| DR-4754-ME | Dec 17-21, 2023 | Severe Storm and Flooding | \$6,658,000.43 |
| DR-4764-ME | Jan 9-13, 2024 | Severe Storm and Flooding | \$4,795,087.07 |
| DR-4785-ME | Apr 3-5, 2024 | Severe Winter Storm | TBD |
| Total Public Assistance Grants Dollars Obligated 2021-2024 | | | \$31,768,162.38 |

Sea Level Rise

Over about the last century, sea levels along the Maine coast have been rising at about 0.6 to 0.7 feet/century (1.8 to 2 mm/ year) or two times faster than during the past 5,000 years. Over the past few decades, the rate has accelerated to about 1 foot/ century (3 to 4 mm/year) or three times the millennial rate.

- 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 |
|--|---|
| Wildfire | Vulnerability assessments, effective risk communication |
| Compound flood risk (coastal, fluvial, and pluvial) | Effective risk communication, advance planning mechanisms, financing/funding support, regional hydrological assessments |
| Saltwater intrusion (increased drought events combined with SLR) | Vulnerability assessments at the local scale |

In-Depth Management Characterization:

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

- 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 | N | Y |

| 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) |
|---|---|---|--|
| Rolling easements | N | N | N |
| Repair/rebuilding restrictions | N | N | N |
| Hard shoreline protection structure restrictions | Y | N | Y |
| Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure) | Y | N | Y |
| Repair/replacement of shore protection structure restrictions | Y | N | 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 | N | Y |
| Repetitive flood loss policies (e.g., relocation, buyouts) | N | N | N |
| Freeboard requirements | N | N | N |
| Real estate sales disclosure requirements | Y | N | Y |
| Restrictions on publicly funded infrastructure | Y | N | N |
| Infrastructure protection (e.g., considering hazards in siting and design) | Y | N | Y |
| Other (please specify) | N | N | N |

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 adaptation plans | N | N | Y |
| Statewide requirement for local post-disaster recovery planning | N | N | N |
| Sediment management plans | N | N | N |
| Beach nourishment plans | N | N | N |
| Special Area Management Plans (that address hazards issues) | N | N | N |
| Managed retreat plans | N | N | N |
| Other (please specify) | | | |

Discussion of significant changes

Hazard Mitigation Plans

- 2023 Maine State Hazard Mitigation Plan
- A 2024 workshop series by MCP on Natural Hazards and Land Use Planning provide guidance to municipal audiences on integration of comprehensive plans with hazard mitigation plans in partnership with the Maine Emergency Management Agency.
- The Infrastructure Rebuilding and Resilience Commission was created by Executive Order of Governor Janet Mills on May 21, 2024. It is charged with reviewing and evaluating Maine's response to the recent storms, identifying crucial areas for near-term investment and policy needs, and developing the state's first long-term infrastructure plan to ensure that Maine is ready for the harsh storms ahead. An [Interim Report](#) on findings was published in November 2024.

Sea level rise or adaptation plans

- 2020-2023 CRCM (additional information in Phase 1: Coastal Hazards)
- 2024 update to *Maine Won't Wait*

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) | | | |

Discussion of all significant changes

General hazards mapping or modeling

- See MGS mapping updates in Phase 1: Coastal Hazards.
- 2024/2025 DOT Maine Coastal Flood Risk Model

Sea level rise mapping or modeling

- 2024 MGS and Maine Floodplain Management Program's updated Maine Flood Hazard Map (see Phase 1: Coastal Hazards).
- MNAP Marsh Migration Model projecting wetland extent changes as a result of sea level rise (See Phase 1: Wetlands)

Hazards monitoring

- NERACOOS and GMRI tide gauge installation expansion (see Phase 1: Coastal Hazards)
- MGS updated its Maine Beach Mapping Viewer with 2024 data to monitor changes in Maine's dunes and beaches and track beach erosion.

Hazards education and outreach

- Natural Hazards and Land Use Planning Series: The MCP NOAA Coastal Management Fellow produced and facilitated an introductory series of webinars and in-person workshops on

minimizing the impacts of natural hazards and enhancing community resilience. MCP staff assisted in implementing the series.

2. 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?

In 2024, a four-year update to the statewide adaptation plan *Maine Won't Wait* was released. Maine Coastal Program, state agencies, nonprofits, academia, and other partners and stakeholders participated in the [Scientific and Technical Subcommittee](#), [Coastal and Marine Workgroup](#), and [Community Resilience Workgroup](#).

Identification of Priorities:

1. 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: Improved coordination, resource sharing, and systemic support for and between existing hazard mitigation and planning partners, including but not limited to Code Enforcement Office, Floodplain Management Program, Municipal Planning Assistance Program, and Maine Emergency Management Agency.

Description: With many recent updates to state data on hazards and many new tools available to interpret that data, improved coordination both between state-level partners and in how training is delivered at local levels is necessary. Municipal staff often hold multiple positions so capacity building in anticipation of regulatory changes is necessary for effective implementation.

Management Priority 2: Research and implementation of coastal hazard resilience techniques including nature-based solutions and retreat and relocation strategies.

Description: The predominant strategy Maine coastal public and private landowners take when faced with current or future damage from hazards is to armor against the threat using grey infrastructure. More work is needed to support the implementation of alternative strategies which offer more lasting resilience and provide critical habitat connectivity. Review of strategies employed in other states, identification of areas in Maine most likely to need retreat and relocation strategies due to hazards and sea level rise, community conversations to socialize nature-based design and "getting out of harm's way," improved case study access for practitioners and property owners, and improvements to state-level rulemaking, permitting, and financing/funding nature-based design and retreat and relocation.

Management Priority 3: Improved post-storm recovery and response mechanisms.

Description: Enhanced monitoring and management of post-storm impacts through collaborative public/private partnership including but not limited to model validation of FEMA flood zone

mapping with stormwater surge, planning assistance for more resilient local rebuilds and development, and direct assistance to communities in compiling necessary information to receive federal funding for disaster aid.

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 | Needed for managed retreat/relocation and collaborative long-term monitoring especially post-storm |
| Mapping/GIS/modeling | Y | Needed alignment of FEMA flood modeling with observed storm surge and flood levels, potential need for mapping of areas most vulnerable to sea level rise and coastal hazards for retreat/relocation strategy development |
| Data and information management | Y | Needed for coordination of information sharing between hazard mitigation and planning partners |
| Training/Capacity building | Y | Needed especially in implementing floodplain management at the local planning level |
| Decision-support tools | N | |
| Communication and outreach | Y | Needed across all management priorities to ensure outcomes are primed for community support |
| 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 were identified by a convened group of multi-disciplinary stakeholders as a top priority for the state over the next five years. It remains a key issue in the latest update to *Maine Won't Wait*, the state's 4-year adaptation plan. After major storms hit Maine in rapid succession at the beginning of 2024, gaps in community ability to respond and rebuild became all the clearer, necessitating more coordination and support from the full network of partners serving those communities. MCP is in a strong position to facilitate that coordination and support.

Cumulative and Secondary Impacts of Development

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP's ability to address cumulative and secondary impacts of coastal growth and development.

1. What are the three most significant existing or emerging cumulative and secondary stressors or threats within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone, or are there specific areas that are most threatened? Stressors can be coastal development and impervious surfaces; polluted runoff; agriculture activities; forestry activities; shoreline modification; or other (please specify). Coastal resources and uses can be habitat (wetland or shoreline, etc.); water quality; public access; or other (please specify).

| | Stressor/Threat | Coastal Resource(s)/Use(s) Most Threatened | Geographic Scope (throughout coastal zone or specific areas most threatened) |
|------------|---------------------------|--|---|
| Stressor 1 | Shoreline armoring | Intertidal habitat, submerged aquatic vegetation, wetlands, coastal bluffs, sand dunes | Entire coast |
| Stressor 2 | Non-point pollution | Nearshore habitat, wetlands, tidal rivers, SAV, water quality, biological resources | Entire coast |
| Stressor 3 | Rapid coastal development | Wetlands, coastal forest, public access, working waterfront access, housing | Entire coast |

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

Shoreline armoring – The MGS Coastal Bluffs Maps show at least 238 miles of armored shoreline in Maine. This is an underestimate as the dataset has outdated and sparse mapping north of Bangor, does not include the rapid influx of shoreline armoring after large coastal storm events in 2023 and 2024, and most islands are not included. Aerial imagery combined with DEP permitting documentation indicate extensive use of seawall and riprap along the entire coast. Shoreline armoring or “grey engineered shoreline” inhibits natural sediment transport, a necessary function of a healthy coastal ecosystem and one that increases the resilience of wetland and sand dunes. Natural resource agency staff from DEP, MGS, DMR, DACF that serve on review panels for shoreline stabilization permit applications report an increase over time in requests to armor shorelines using grey infrastructure like seawalls and riprap. After large storms in December 2023 – March 2024, there was a marked surge in permit applications for grey shoreline stabilization infrastructure.

Nonpoint pollution – According to NOAA Office for Coastal Management, impervious surface area in the U.S coastal zone has increased 12% between 1996 and 2016. A study done by the DEP Division of Environmental Assessment titled *Impervious Cover Change in Maine (2001-2019) & Major Proposals* documented an increase in impervious surfaces in Maine between 2001-2019 concentrated in tidal watersheds, southern Maine, and around I-95/I-295 road corridors. This rise in impervious ground increases the risk of nonpoint pollution entering watersheds. Additionally,

increased average annual precipitation like Maine is currently experiencing can overburden even more natural and pervious flood plains and exacerbate non-point pollution concerns, especially if extreme precipitation events occur during winter months when the ground is still frozen. In the *DEP Maine Nonpoint Source Management Program Plan 2024-2029*, nonpoint source pollution is identified as a primary source causing impairment of marine waters and contributes to bacterial impairment and other adverse effects in approximately 300 acres of wetlands.

Rapid coastal development – The population of Maine is growing rapidly and the highest development pressure is expected in the coastal zone. U.S. Census Bureau data released in 2023 shows Maine experienced a population increase of approximately 32,500 residents (2.4%) between April 1, 2020, and July 1, 2023. The Office of the State Economist in their report *Maine Population Outlook 2020 to 2030* project all counties in Maine's coastal zone will experience significant population increase by 2030 with the highest increases in Waldo (7%), Washington (8%), and York (6.5%). Between 2020-2023, over 115 acres of wetlands were impacted by development, as noted in the Phase 1: Wetlands section of this assessment. Additionally, rapid coastal development makes housing a pervasive challenge coastwide, especially affordable workforce housing for those who work on or near the shorefront. According to the 2021 Island Institute report *The Critical Nature of Maine's Working Waterfronts and Access to the Shore*, 30% of all homes sold in Maine in 2020 were purchased by out-of-staters; and the median home price jumped \$31,000 in just one year. Public and working access becomes a challenge in this scenario as does conservation of important coastal habitat. Out of 5,300 miles of mapped shoreline in Maine, the Island Institute classified only 20 miles as accessible for working waterfront in their report *The Last 20 Miles*. Clear guidance and accessible resources are lacking to support municipalities in addressing competing land use issues in a way that preserves housing access, working waterfront, public access, and supports landscape scale conservation. Sea level rise and increasing storm surges are also damaging coastal infrastructure, which can lead to losses in working waterfronts if property owners sell to non-commercial users when they cannot keep up with maintenance needs. Once public and working access are lost, they rarely if ever come back.

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 |
|---|--|
| Best management practices for land use planning in high hazard areas, such as wildfire risk areas, floodplains, and erosion hazard areas, are in conflict with each other and hard to implement at the local level. | Guidance on how to balance conflicting BMPs for wildfire prevention, flood risk reduction, and erosion BMPs which contradict in core approach |
| Housing access | Access to housing is critical for maintaining access to the coast for public and working use and for workforce growth in nature-based engineering and design |

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the cumulative and secondary impacts (CSI) enhancement objective.

1. For each additional cumulative and secondary impact management category below that is 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 to 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) |
|--|--|---|---|
| Methodologies for determining CSI impacts | Y | N | Y |
| CSI research, assessment, monitoring | Y | N | Y |
| CSI GIS mapping/database | Y | N | Y |
| CSI technical assistance, education and outreach | Y | Y | Y |
| Other (please specify) | | | |

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.

Methodologies for determining CSI

- Statewide Total Maximum Daily Load (TMDL) for Nonpoint Source Pollution
 - o In 2016 DEP received EPA approval for the *Maine Statewide TMDL for Nonpoint Source Pollution*. In September 2021, the EPA approved an Addendum to the Statewide NPS TMDL adding 13 additional streams. DEP also developed a Prioritization Framework for EPA's *2022-2032 Vision for the Clean Water Act Section 303(d) Program* which includes methods for addressing waters impaired or in need of protection due to NPS pollution.
 - o Not a CZM driven change
 - o Likely outcomes include an application of the Goals and Focus Areas addressed in the DEP Prioritization Framework.

CSI research, assessment, and monitoring

- State Wildlife Action Plan Revision (2025 – 2035)
 - o MCP and other partners are involved in revision the State Wildlife Action Plan, to be completed by October 2025. Assessment of CSI impacts to both habitats and Species of Greatest Conservation Need are underway and will be included in the report update.
 - o Not a CZM driven change

- Likely outcomes include an expansion in the number of Species of Greatest Conservation Need identified in the state based on increased severity of threats including the cumulative and secondary impacts of development.
- DMR Nearshore Marine Resources Program
 - Assists towns in managing their flats and shellfish. Marine Resource Scientists help towns with their conservation areas, reseeding, surveying, town license allocations, shellfish ordinances, warden programs, and more. Additionally, this program manages at the state-level: mussels, marine worms, periwinkles, whelks, and subtidal resources, including the New Meadows quahogs. Staff from this program also work on seaweed research and surveys.
 - Not a CZM driven change
 - Data from this program are critical for understanding how nearshore development and changes in coastal sediment transport affect mudflat resources including softshell clams. Staff have begun geotagging survey locations for better integration with future study.

CSI GIS mapping/database

- Mapping shoreline armoring (MCP and DEP)
 - Contractors with MCP and DEP spent six months reviewing permit data for approved shoreline stabilizations in Casco Bay. Information including type, length, and date installed were transformed into a geodatabase to visualize the extent of armoring in Casco Bay.
 - CZM driven change
 - This project identified gaps in the state's ability to map shoreline stabilizations. Many stabilizations visible in aerial imagery were not connected to an identifiable permit. Furthermore, the process of mapping using permit data is cumbersome and has high potential for machine learning.

CSI technical assistance, education and outreach

OUR SHORE (DEP)

- DEP in consultation with partners including the Maine Coastal Program created the OUR SHORE guide to shoreline stabilization for property owners and contractors. The guide provides a checklist of property features that culminates in the best option for stabilization, a catalogue of different techniques with easily accessible information on whether it needs a permit or not, and case studies of nature-based design principles.
 - Not a CZM driven change
 - There is a lot of future potential for the OUR SHORE program to encourage more living shorelines and nature-based design in Maine. The principles in the guide will be taught at the new DEP Nature-based Solutions Training Center which certifies and re-certifies contractors in the state in erosion control techniques.
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 addressing cumulative and secondary impacts of development since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state and territory's management efforts?

No specific reports or studies have been made on the state's ability to address cumulative or secondary impacts of development. There is gap in our ability to measure cumulative impact of

development as is usually relies on reliable and combinable time series data on the impact field in question. Efforts to improve mapping of development impacts to, for example habitat extent, are underway and being expanded. Additionally, MCP has partnered with DEP to use permit data to map the extent and change in shoreline stabilization statewide and those efforts will continue moving forward.

Identification of Priorities:

1. Considering changes in cumulative and secondary impact threats and 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 the effectiveness of its management effort to better assess, consider, and control the most significant threats from cumulative and secondary impacts of coastal growth and development. (*Approximately 1-3 sentences per management priority.*)

Management Priority 1: Assistance to municipalities in adapting and adopting model ordinances.

Description: Model ordinance development has long been a tool of state government to help municipalities, under home rule, adopt higher standards for development and conservation. Model ordinances are helpful to towns, but there remains a significant gap in their widespread adoption and they need to be regularly (every few years) updated to remain consistent with new science and changing state regulations. Support and collaboration are needed from the beginning of the planning process all the way through to implementation.

Management Priority 2: Integrate high priority multidisciplinary fields into landscape scale model comprehensive planning.

Description: There is great opportunity to improve the effectiveness of local level comprehensive planning and development siting by connecting habitat connectivity, open space planning, mixed-use development, and housing. All of these issues remain of critical importance in Maine but are rarely combined into effective landscape scale planning and implemented at scale.

Management Priority 3: Resilience of critical coastal infrastructure.

Description: While Maine is in the process of analyzing and proposing changes to state statutes and rules to increase coastal resiliency, towns need guidance and direct assistance to increase the resilience of critical coastal infrastructure including shoreline stabilization, working waterfront infrastructure, and critical roads adjacent to protected habitat.

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 | Needed at the case study level for nature-based design, mixed-used development and resilient critical coastal infrastructure. |

| Priority Needs | Need? (Y or N) | Brief Explanation of Need/Gap |
|---------------------------------|-------------------|--|
| Mapping/GIS | Y | Needed to identify key habitat connectivity areas to build off existing conserved lands including Focus Areas of Ecological Significance, COBRA areas, and land trust lands. |
| Data and information management | Y | Needed to better compile and share case study and model ordinance information for a variety of topics. |
| Training/Capacity building | Y | Needed at the local and practitioner level for the adaption and adoption of programs and tools produced by CZM partners. |
| Decision-support tools | N | |
| Communication and outreach | Y | Needed to socialize and encourage nature-based design, landscape-scale planning, and resilient coastal infrastructure design. |
| 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.

The cumulative and secondary impact of development in Maine is a broad category that encompasses some of the state's most pressing challenges. Water quality, access to housing, resilient infrastructure, healthy nearshore habitat, cultural preservation, public access – all are impacted by the way in which coastal Maine develops, and all can be improved upon to great benefit. Stakeholder and partner engagement early in the process of developing this Strategic Outlook identified Cumulative and Secondary Impacts of Development as a critical and impactful enhancement area to develop strategies for.

Strategies

Note: The following Strategies follow a format required by NOAA.

Coastal Hazards Strategies

Coastal Hazards Strategy 1: Develop and pilot a training program at the state and local level on existing and new hazard mitigation statutes, standards, and rules and support adoption of new policies for risk reduction where possible.

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 | |

B. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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:**

There are numerous systems set up in Maine meant to support coastal communities in hazard mitigation. Furthermore, many of these systems, including but not limited to, the Community Resilience Partnership, Department of Environmental Protection, and the Maine Emergency Management Agency, are increasing staff capacity to deliver that support. This Section 309 strategy will work with programs of the Maine Office of Community Affairs including the Code Enforcement Training & Certification Program and Floodplain Management Program to create training materials and guidance to ensure hazard mitigation standards, statutes, and other regulatory mechanisms are understood and enforced by new and existing staff at state and local levels.

This strategy will catalog the existing tools, policies, and regulations related to hazard mitigation and work to strengthen their application. At state, regional, and local levels this will include onboarding programs for new staff, guidance materials, and support and encouragement to access and use existing hazard mitigation tools and programs, especially at the local level. Local government authorities interested in going beyond state minimum standards related to risk reduction, including for example Maine Chapter 1000 on guidelines for Municipal Shoreland Zoning Ordinances, will be supported through development and adoption of new policies leveraging training materials and guidance created under this strategy.

III. Needs and Gaps Addressed

While there are programs in place in Maine to address the significant and emerging threats laid out in the Coastal Hazards in-depth resource characterization, there remains a gap in the uptake of tools such as map viewers and model ordinances. Additionally, through stakeholder engagement in the process of developing this 2026-2030 Strategic Outlook, MCP partners identified need at the state and local level for training on existing regulatory mechanisms related to coastal hazards and how they have or will change as a result of ongoing regulatory reform. This strategy will also support the emerging threats of wildlife, compound flood risk, and saltwater intrusion identified in the Coastal Hazards in-depth resource characterization through increased understanding and coordination given these threats require action across multiple levels and fields of government.

IV. Benefits to Coastal Management

Improved training and understanding of what regulatory mechanisms can be leveraged and what opportunities exist for new policies in risk reduction will address existing and emerging threats at both the state and local level. As new staff are brought into state, regional, and local governance and planning and as regulatory reform continues at the state level, additional capacity in training on hazard mitigation statutes, standards, and rules will benefit coastal management by a) reducing the time necessary to familiarize new hires with Maine statutes, standards, and rules, b) improving regulatory innovation at the local level, and c) directly addressing the Coastal Hazards Management Priority #1: Improved coordination, resource sharing, and systemic support for and between existing hazard mitigation and planning partners.

V. Likelihood of Success

There is a high likelihood of success of attaining the strategy goal and program change. In 2024, Governor Mills create the Maine Office of Community Affairs to bring together Maine Coastal Program, Community Resilience Partnership, Maine Floodplain Management Program, Municipal Planning Assistance Program, Housing Opportunity Program, Code Enforcement Training and Certification Program, Volunteer Maine, and Resilience Maine Office. Efforts of this strategy to train staff across coastal hazard regulatory mechanisms will be directly supported by a new

working network of state agency staff focused on support to municipalities. This arrangement will facilitate understanding of how state policy affects municipal partners and of opportunities to create new municipal and state policies for risk reduction.

VI. Strategy Work Plan

Strategy Goal: Formalize a training program on existing coastal hazard regulations and resources targeted at state and municipal staff and regional service providers through new policies, MOUs, etc. Leverage increased understanding of coastal hazards statutes, standards, and rules across levels of government to support and adopt new hazard risk reduction governance mechanisms and management policies at the state and local levels.

Total Years: 5

Year(s): FY2026-2028

Description of activities: Development of training program at state and local levels with the Maine Office of Community Affairs and other relevant partners and stakeholders, outreach to municipalities on regulatory reform and innovation, and agreement reached with partners to pilot training program materials.

Major Milestone(s):

- Creation of accessible plain language materials and methods for understanding and implementing hazard mitigation statutes, standards, policies, and other relevant regulatory mechanisms
- Delineation of training roles and responsibilities across partners
- Targeted municipal outreach plan developed for implementation at the local level
- Pilot training program started with state and local staff
- Hazard risk reduction governance/management innovations discussed at both state and municipal levels through avenues like the Maine Office of Community Affairs and the DEP Regulatory Reform Forum and through more local and regional avenues.

Year(s): FY2028-2030

Description of activities: Incorporation of training program into standard operations at state and local levels and where possible, support for adoption of new hazard risk reduction regulation and management at the local level.

Major Milestone(s):

- Onboarding program institutionalized for new hires at state and local levels
- Hazard mitigation training and/or program adopted in at least one municipality, could include:
 - o National Flood Insurance Program
 - o Training in GIS resources at the local level
 - o Integration of hazard mitigation plans and comprehensive plans
- New policies, MOUs, or training programs to encourage interagency collaboration on hazard mitigation at the state level
- New hazard risk reduction policies, programs, or other governance mechanisms enacted in at least one municipality and also at the state level.

VII. Fiscal and Technical Needs

- A. Fiscal Needs:** CZMA Section 309 should be sufficient to fully fund this strategy, but if not, there are other options for creative financing through pathways like leveraging administrative capacity at the new Maine Office of Community Affairs.
- B. Technical Needs:** Maine has the technical expertise to deliver trainings on its own regulatory mechanisms and reforms, but work will be supplemented with contractors, trained facilitators, and communications specialists to create engaging training materials that are adaptable and high-quality.

Coastal Hazards Strategy 2: Facilitate strategy development for retreat and relocation in Maine.

VIII. Issue Area(s)

- C. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):
- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 | |
- D. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):
- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input checked="" type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input checked="" type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

IX. Strategy Description

- C. 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.

D. Strategy Goal:

Retreat and relocation away from high hazard coastal areas is part of a suite of coastal hazard adaptation strategies including “Avoid, Protect, Accommodate, and Retreat.” Relevant retreat approaches that are likely suitable for Maine include: conserving undeveloped coastal land; using zoning to prevent redevelopment or new development in increasingly hazardous areas; and/or relocating people, property, and infrastructure out of harm’s way through a voluntary property acquisition and buyout program. In some coastal areas of the state, retreat is likely the only viable long-term option for reducing exposure to current and future coastal hazard risks.

Maine does not yet have an adequate program or strategy that integrates retreat as a component of effective hazard adaptation at state or local levels. In part, this is because any program or strategy would need community support to succeed, and that work has only just begun in Maine. This 309 Strategy would determine the feasibility of retreat and relocation in Maine, facilitate community and stakeholder involvement to propose programs or strategies, and work to advance regulatory reform for proposed programs or strategies.

X. Needs and Gaps Addressed

Coastal hazards in Maine continue to intensify with statewide annual precipitation increasing, storms becoming more damaging and more frequent, and sea levels rising. Community-driven relocation is a strategy increasingly discussed throughout the state as property damage and maintenance costs climb from coastal hazards. But that attention is limited, and no strategies have been pursued in large part because pathways forward are unclear and emotionally charged. This strategy will address the significant coastal hazards threats identified in the in-depth resource characterization of shoreline erosion, flooding, and sea level rise by facilitating thoughtful community-driven conversations around the coastal hazards mitigation strategy of relocation.

This strategy directly supports Coastal Hazards Management Priority #2: Research and implementation of coastal hazards resilience techniques including nature-based solutions and retreat and relocation strategies.

XI. Benefits to Coastal Management

Community-driven relocation strategies are one of the tools available to Maine and its communities in response to intensifying coastal hazards. Facilitating conversations at the community level early and proactively is necessary if Maine intends to consider relocation as a hazard mitigation option. This strategy will benefit coastal management by engaging communities impacted most by coastal hazards in the process of developing strategies for guidance and recommendations statewide. Program changes anticipated through this strategy include but are not limited to MOUs between communities on retreat and relocation strategies, new programs to acquire and manage land for relocation, and state-level administrative decisions on methods for managing community-led retreat and relocation strategies.

XII. Likelihood of Success

There is a high likelihood of success of attaining the strategy goal and program change. The Wells National Estuarine Research Reserve has done important foundational work through community and coastal management workshop series and engagement alongside MCP with the Community Resilience Working Group of *Maine Won't Wait*. Community conversations will be implemented but the results of those conversations and the resulting recommendations cannot be assured, nor should they be.

XIII. Strategy Work Plan

Strategy Goal: Facilitate strategy development regarding retreat and relocation in Maine
Total Years: 5

Year(s): FY2026-2028

Description of activities: Community-driven relocation strategies for Maine will be explored through research and community conversations facilitated by MCP and/or partners. Careful consideration will be given for the timeline of activities and will be adjusted as necessary to ensure trust and engagement is maintained with communities throughout the activities. Initial strategies and pilot programs will be co-created with communities with input from necessary partners and stakeholders.

Major Milestone(s):

- Additional capacity hired or subawarded to facilitate the deep community work necessary for this strategy
- Research completed on potential retreat and relocation strategies that have worked for other states
- Necessary social, political, economic, and cultural assessment completed to inform what relocation could mean for places that implement it, from the standpoint of what might be lost (e.g. tax revenue) and what might be gained (e.g. increased public access to the coast).
- Community conversations held to determine support for strategies and solicit new ideas
- Potential strategies or programs to be piloted are finalized with partners through co-creation with communities, necessary partners, and stakeholders
- Recommendations written to support the integration of community-driven relocation and new development in receiving communities

Year(s): FY2028-2030

Description of activities: The second phase of this strategy will be to assess the outreach and implementation potential of community-driven relocation strategies developed in the first phase. If possible in this timeline and with additional community conversations facilitated as necessary, a pilot program will be developed to implement one or more strategies.

Major Milestone(s):

- Finalized strategies or programs presented to interested and engaged audiences at state and local levels
- Additional community conversations held if needed for outreach and education

- Pilot program developed

XIV. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding will likely be insufficient to fully fund this strategy work plan, especially given the long time horizon of effort it requires. That said, there is a growing number of partners in Maine including those from nongovernmental sources that are interested in supporting conversations around community-driven relocation.

B. Technical Needs: MCP and its partners, including the Wells National Estuarine Research Reserve have the technical expertise to facilitate these conversations and develop recommendations, but additional support may be brought in from contractors and from out-of-state experts who have implemented similar programs in their jurisdictions.

Coastal Hazards Strategy 3: Build resilience of critical coastal infrastructure pre- and post-storm through regulatory reform, education, and outreach.

XV. Issue Area(s)

E. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 | |

F. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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 | |

XVI. Strategy Description

E. 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.

F. Strategy Goal:

The Maine Infrastructure Rebuilding and Resilience Commission (IRRC) released an [interim report](#) in November 2024 (with a final report expected in May 2025) recommending strategies to reduce the risk of damage from extreme storms and floods, and action to improve Maine’s ability to respond and recover from disasters. Much of Maine’s coastal infrastructure is vulnerable to coastal hazards but is critical to the functioning of communities, economies, and emergency services. This 309 Strategy will work to implement recommendations from the Maine IRRC to increase the resilience of critical coastal infrastructure including roads, working waterfront, and other public or private facilities that are essential to local economies. This includes:

- Expediting state permitting for post-disaster rebuilding
- Identifying and strengthening critical vulnerable infrastructure
- Assisting communities to reduce risk and proactively prepare for disasters

XVII. Needs and Gaps Addressed

Much of Maine’s critical infrastructure exists in or adjacent to protected natural resources including but not limited to wetlands and sand dunes. There is no clear regulatory mechanism or guidance for supporting the adaptation of that infrastructure over time and regulations often require rebuilding to previous dimensions rather than updating designs to adapt to changing conditions. The state also lacks adequate monitoring of pre- and post-storm impacts to help communities apply for aid and accurately report damages.

This strategy will address threats identified in the Coastal Hazards in-depth resource characterization of sea level rise, shoreline erosion, and flooding through increased understanding of the impacts of coastal hazards on critical infrastructure, capacity building in existing state permit review systems after extreme events, and direct planning and implementation support at the local level for critical infrastructure resilience and siting reforms. This strategy directly supports the Coastal Hazards management priority #3: Improved post-storm recovery and response mechanisms.

XVIII. Benefits to Coastal Management

Enhancing the resilience of Maine’s critical infrastructure to coastal hazards will provide many benefits to coastal management in the state. The unique needs of, for example, working waterfronts and island access roads do not adequately fit into existing regulatory frameworks. Through monitoring, education, capacity building, and direct technical assistance, this strategy will better enable communities to prepare for coastal hazards and streamline natural resource agency efforts to respond to extreme events. Results of this strategy include improved pre- and post-storm monitoring, regulatory reform on critical infrastructure and nature-based solutions for

infrastructure resilience, and new local programs or implementing ordinances aimed at increasing the resilience of critical coastal infrastructure including water-dependent working waterfronts.

XIX. Likelihood of Success

There is a high likelihood of success of attaining strategy goals and program changes, including expedited permitting, new implementing ordinances, and regulatory reform. MCP partners identified critical infrastructure considerations as a key issue in adapting to coastal hazards and the Coastal and Marine Working Group of *Maine Won't Wait* recommended increased monitoring capacity pre- and post-storm in the 2024 plan update. Additionally, this strategy draws directly from recommendations in 2024 of the Governor's Infrastructure Rebuilding and Resilience Commission.

XX. Strategy Work Plan

Strategy Goal: Expedite state permitting for post-disaster rebuilding, identify and strengthen critical vulnerable infrastructure, and assist communities to reduce risk and proactively prepare for disasters.

Total Years: 5

Year(s): FY2026-2028

Description of activities: Inventories of existing monitoring programs, critical infrastructure in coastal hazard areas, and issues to be addressed in permitting and siting critical infrastructure. Potential regulatory and development reform will be explored at the state and local level to balance needs of water-dependent infrastructure and coastal hazard resilience.

Major Milestone(s):

- Inventory of existing coastal monitoring programs and collaboration on implementation strategy for pre- and post-storm habitat, water-quality, and infrastructure damage monitoring.
- Needs and gaps assessment completed with DEP on how to increase permit review capacity post-disaster
- State grant programs aligned so that appropriate permitting procedures in an emergency response are facilitated by existing grant program incentives
- Inventory of critical roads in protected coastal habitats completed and regulatory reform mechanisms to expedite rebuilds explored
- Mapping and collaboration on the potential for working waterfront development in areas where residential or other business use is being discouraged. Priority geographies identified for model case studies and examples of this in practice.
- Identify pathways for private homeowner support in strengthening resilience to hazards

Year(s): FY2028-2030

Description of activities: Building off the expansion in monitoring and reforms explored in the first phase of this strategy, this phase will work to embed monitoring programs within

community programs, implement regulatory reform, and develop local regulatory mechanisms to consider the unique needs of water-dependent and critical infrastructure.

Major Milestone(s):

- Integration of participatory science in pre- and post-storm coastal monitoring program
- Impacts from at least one major storm documented and made into usable format for local and/or county government to inform response and rebuilding
- Regulatory reform concerning critical road rebuilds in protected coastal habitats, opportunities for related nature-based infrastructure design standards communicated with practitioners
- Model zoning ordinance developed distinguishing the unique considerations necessary for working waterfront to remain resilient to sea level rise and coastal storms

XXI. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding will likely be insufficient to fully fund this strategy work plan. That said, the question of how to adapt Maine’s critical infrastructure to coastal hazards is being asked by other management bodies within the state as well including the Infrastructure Rebuilding and Resilience Commission. It is possible that state funds could be found to support this strategy.

B. Technical Needs: MCP and partners have the necessary technical expertise to implement activities of this strategy, but contractors may be hired to support activities such as capacity building for permit review, development of materials and outreach resources, and expansion of monitoring efforts pre- and post-storm. Input from other states may be solicited on special regulatory considerations for critical and water-dependent infrastructure.

Cumulative and Secondary Impacts of Development Strategies

Cumulative and Secondary Impacts of Development Strategy 1: Develop tools including statewide plans and model municipal ordinances that enhance habitat connectivity and enable residential development to meet state housing needs.

I. Issue Area(s)

G. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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 | |

H. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 checked="" type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

G. 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.

H. Strategy Goal:

Improved habitat connectivity and access to housing were two priorities identified in the recently updated *Maine Won't Wait* plan and reinforced by partner and stakeholder consultations for the MCP Strategic Outlook. The two issues are linked through effective comprehensive planning and development siting. This 309 Strategy will work to create a state-wide blueprint to balance conservation and development, produce resources for municipal-level adaption and adoption, and examine possibilities for mixed-use development in areas highly valued by a diverse set of stakeholders.

III. Needs and Gaps Addressed

There are many competing demands on coastal space in Maine. There remains a gap in best management practices available to municipalities and regional planning organizations on mitigating land use conflicts, planning for multi-use areas, and ensuring habitat connectivity and housing needs are both met by planning and development efforts. This strategy addresses the threat of rapid coastal development identified in the in-depth assessment of Cumulative and Secondary Impacts of Development by providing assistance in comprehensive planning and development siting to ameliorate threatened coastal resources like habitat and housing access. The 2024 update to *Maine Won't Wait* specifically called for the development of a landscape conservation blueprint for the conservation and management of key places. This strategy will help fill that gap. This strategy will also address two Cumulative and Secondary Impacts of Development management priorities: 1) Assistance to municipalities in adapting and adopting model ordinances and 2) Integrate high priority multidisciplinary fields into landscape scale model comprehensive planning.

IV. Benefits to Coastal Management

The benefits to coastal management achieved through this strategy will include increased capacity at the municipal and regional levels in balancing conservation and development, the creation of tools including model ordinance that can be adapted to different communities statewide, and a partner-driven statewide planning effort to address critical habitat connectivity corridors and areas of opportunity to meet state housing needs in an affordable way. A statewide conservation blueprint will be developed and at least one municipality will pilot the use of landscape scale conservation planning to site housing units.

V. Likelihood of Success

There is a high likelihood of attaining the strategy goal and program change. As mentioned, this strategy builds directly out of recommendations of *Maine Won't Wait*. Key implementation partners including the Beginning with Habitat program of the Department of Inland Fish and Wildlife and the Maine Coast Heritage Trust have already begun conversations with other partners regarding pathways forward for achieving this strategy.

VI. Strategy Work Plan

Strategy Goal: MCP and partners will develop tools including model ordinance and a statewide plan that balance needs of habitat connectivity and housing in Maine.

Total Years: 5

Year(s): FY2026-2028

Description of activities: Beginning with research and conversations with other states and jurisdictions, MCP and partners will work to incentivize balanced habitat connectivity and housing concerns at the regional or municipal level. Lessons from this effort will be used to develop the statewide landscape-scale plan.

Major Milestone(s):

- Catalog existing habitat conservation blocks (Focus Areas of Ecological Significance, Wildlife Reserves, CBRS areas, etc.) and prioritize connectivity areas
- Collect and distill lessons from other jurisdictions on landscape-scale planning balancing conservation and development
- Draft a landscape-scale plan with interested community that addresses habitat connectivity and housing siting (with emphasis on affordability)
- Work with ongoing efforts at Maine Department of Economic and Community Development and elsewhere to incentivize low- and moderate-income household development

Year(s): FY2028-2030

Description of activities: Work will continue with interested regional or municipal partners to implement landscape-scale planning and additional technical assistance surrounding financing housing not in conflict with critical habitat corridors will take place. Work will commence on developing a statewide conservation blueprint using lessons learned from other activities in this strategy.

Major Milestone(s):

- At least one municipality adopts a landscape-scale plan including habitat connectivity and housing pathways (with emphasis on affordability)
- Training materials produced and at least one workshop held on how to actively seek developers for housing units
- Case studies produced
- Statewide conservation blueprint drafted
- Regulatory mechanisms explored to enhance access to housing

VII. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding may be insufficient to fully fund this strategy work plan, but the work is supported by *Maine Won't Wait* and other sources of state funding can be explored.

B. Technical Needs: MCP and its partners, including Beginning with Habitat and the Maine Coast Heritage Trust have the technical expertise to deliver this strategy. Additionally, support from the Maine Office of Community Affairs will be sought to enhance the ability of strategy activities to reach regional and municipal audiences. Additional contractors may be brought on as needed.

Cumulative and Secondary Impacts of Development Strategy 2: Create new data products, outreach materials, policies, regulatory reforms, and supporting mechanisms to inform resilient and, where appropriate, nature-based shoreline stabilization.

I. Issue Area(s)

- I. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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 | |

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

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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

- I. 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.

J. Strategy Goal:

In response to threats of flooding and erosion, coastal property owners are increasingly armoring their shorelines with grey infrastructure techniques including seawalls and riprap. While

appropriate in some instances, grey infrastructure is not the best solution for maintaining ecosystem health and long-term resilience to hazards in many cases. This 309 Strategy will catalog the current extent and types of shoreline stabilization in Maine, develop an easily accessible index of case studies on effective nature-based design, support training of practitioners in nature-based design, and increase outreach and education capacity on resilient shoreline stabilization.

III. Needs and Gaps Addressed

Coastal property owners are increasingly seeking to armor their shoreline resulting in an exacerbation of the threat of rapid coastal development identified in the in-depth resource characterization of Cumulative and Secondary Impacts of Development. Additionally, the stressor of shoreline armoring itself can have both acute and cumulative impact on surrounding environments. While work has begun in the state to encourage nature-based infrastructure where appropriate, there remains a need to define how different natural agencies will work together to accomplish the goals of this strategy. Work has already begun with MCP and DEP to catalog the extent of shoreline stabilization along Maine's coastline, but this was for a select geography only and has great potential for expansion. Even with existing state efforts to limit shoreline armoring, there is limited uptake of nature-based design principles in part because of lack of confidence and available design, engineering, and installation practitioners. Although the comprehensive reasoning behind the slow adoption of nature-based infrastructure is still unclear. This strategy directly supports Cumulative and Secondary Impacts of Development management priority #3: Improving resilience of critical coastal infrastructure.

IV. Benefits to Coastal Management

This strategy will benefit coastal management through the facilitation of nature-based design infrastructure adoption along the shoreline. Extensive installations of seawalls and riprap have documented negative implications for habitat and resilience to coastal storms but the demand remains high. This strategy will build on existing efforts at MCP, DEP, and MGS to identify gaps in understanding and outreach, provide technical assistance to coastal property owners, and offer accessible materials highlighting the efficacy of various stabilization techniques.

V. Likelihood of Success

There is a high likelihood of success in attaining the strategy goal and program change, including MOUs between property owners to pilot neighborhood-scale shoreline stabilization, new guidelines to implement and enforce assessment of cumulative impacts in shoreline stabilization, and new programs to support private landowner adoption of nature-based solutions. This last piece is critical and not something done systemically in Maine, although over 80% of the Maine coast is privately owned. As mentioned, this work is already supported by a range of natural resource agencies. Additionally, MCP has a long and successful history of working to advance nature-based shoreline stabilization in Maine.

VI. Strategy Work Plan

Strategy Goal: Inform resilient, and where appropriate, nature-based shoreline stabilization in Maine. MCP and partners will identify and fill gaps in implementing nature-based shoreline stabilization at the state, practitioner, and property owner levels. Potential incentive programs for multi-property nature-based stabilization will be piloted and lessons learned published for replication in other communities.

Total Years: 5

Year(s): FY2026-2028

Description of activities: For the first phase of work in this strategy, MCP and partners will identify gaps in implementation of nature-based shoreline stabilizations at the community level and support state level planning and permitting streamlining and cumulative impact assessments.

Major Milestone(s):

- Determine the gap in assessing cumulative impact in shoreline stabilization projects and work to implement existing Department of Environmental Protection (DEP) standards in this area
- Catalog current extent and types of shoreline stabilization along the Maine coastline
- Surveys and meetings with nature-based design practitioners including contractors and code enforcement officers to determine gaps in implementation of nature-based stabilizations, building off past efforts to identify gaps by DEP
- Support the building of an online dashboard for nature-based stabilization case studies
- Support the DEP Nature-based Design Training Center
- Research incentives for multi-property neighborhood-level shoreline stabilization projects
- Research funding options for private property nature-based design

Year(s): FY2028-2030

Description of activities: For this second phase of work, cumulative impact assessment will be incorporated into regular natural agency review of shoreline stabilization projects and effective outreach and incentives to coastal properties and stabilization practitioners will be rolled out.

Major Milestone(s):

- Cumulative impact assessments incorporated into shoreline stabilization review
- Gaps identified by nature-based design practitioners on implementation of nature-based stabilizations filled to degree possible
- Online case-study dashboard rolled out and outreach plan implemented
- Multi-property stabilization incentive rolled out in at least one neighborhood; pilot published on online nature-based design dashboard.
- Funding option for private property nature-based design implementation identified and piloted in at least one community, communicated to regional planning organizations and interested networks

VII. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding should be able to fully fund this strategy work plan, but if not, support can be found from existing state natural resource agencies and other funders already interested in advancing nature-based solutions in Maine.

B. Technical Needs: MCP will develop an advisory team comprised of networked partners already engaged in state efforts to streamline nature-based infrastructure adoption including but not

limited to DEP, DMR, MGS, and IFW. Contractors will be brought in to support strategy activities where necessary.

Cumulative and Secondary Impacts of Development Strategy 3: Provide technical assistance to communities including volunteer committees and municipal staff on adapting and adopting existing and new model ordinances.

I. Issue Area(s)

- A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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 | |

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

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input 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

- K. 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.

L. *Strategy Goal:*

Model ordinance development has long been a tool of state government to help municipalities adopt higher standards for development and conservation. This 309 Strategy will support the adaption and adoption of existing and new model ordinances from planning through to implementation, while building on existing networks and partnerships. This strategy will build off *Cumulative and Secondary Impacts of Development Strategy 1: Develop tools including statewide plans and model municipal ordinances that enhance habitat connectivity and enable residential development to meet state housing needs*. It will also include the creation of case studies and outreach efforts to share examples and lessons learned from successful implementation efforts.

III. Needs and Gaps Addressed

This strategy directly supports Cumulative and Secondary Impacts of Development management priority #1: Assistance to municipalities in adapting and adopting model ordinances. Model ordinances are helpful to municipalities, but there remains a significant gap in their widespread adoption, and they need to be regularly (every few years) updated to remain consistent with new science and changing state regulations. Support and collaboration is needed from the beginning of the planning process all the way through to implementation. This will provide dedicated capacity to help pilot communities succeed and help clarify needs to help other communities also succeed.

IV. Benefits to Coastal Management

Municipal government is often overburdened and understaffed to a point where adapting and adopting new ordinances every few years is difficult. This strategy and the technical assistance it will provide will enhance the long-term ability of municipalities to use state planning tools like model ordinances to best meet their unique community needs. This will be achieved through direct support throughout the process, effectively training municipal staff, and the successful adaption and adoption of new ordinances. New ordinance will be adapted and adopted by at least one interested municipality to the direct benefit of that locality's coastal management.

V. Likelihood of Success

This strategy has a high likelihood of success in achieving the goal and program changes. There is increased attention currently at the state level to offer improved technical assistance to municipal partners and MCP will be able to draw on the expertise of the Municipal Planning Assistance Program and the Community Resilience Partnership, both housed within the Maine Office of Community Affairs.

VI. Strategy Work Plan

Strategy Goal: Adaption and adoption of new and existing model ordinances at the municipal level.

Total Years: 5

Year(s): FY2026-2028

Description of activities: Outreach and priority setting with relevant partners and engaged municipalities. A training program will be developed on how to adapt and adopt model ordinance to unique municipal needs and opportunities to implement model ordinance adaption and adoption will be identified with municipal partners.

Major Milestone(s):

- Training program on adapting and adopting model ordinances built
- Specific model ordinances to be highlighted identified by relevant partners
- Training program rolled out with existing technical assistance providers including but not limited to the Community Resilience Partnership
- At least two municipalities identified for interest in moving model ordinance through adaptation and adoption

Year(s): FY2028-2030

Description of activities: Direct technical assistance will be provided by MCP and partners to municipalities in adapting and adopting model ordinance that aligns with Strategy 1 and Strategy 2 of Cumulative and Secondary Impacts of Development.

Major Milestone(s):

- At least two municipalities adapt and adopt model ordinances identified as priority by the community and relevant partners
- Training program on adaption and adoption provided to at least four regional technical assistance providers and housed in accessible online location
- New model ordinances drafted that address Strategy 1 and Strategy 2 in Cumulative and Secondary Impacts of Development.

VII. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding will likely be able to cover some but not all the activities of this strategy, MCP will look to the Maine Office of Community Affairs for potential in-kind support and additional funding pathways.

B. Technical Needs: MCP and partners have the expertise to assist municipalities in adapting and adopting model ordinance. Additional expertise will be brought in from local partners who have had success in using state tools including model ordinances to share lessons learned and help identify needs and gaps.

Wetlands Strategies

Wetlands Strategy 1: Enhance coordination within State of Maine Sentinel Site network and facilitate inter-organizational data and methodology sharing.

I. Issue Area(s)

K. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 | |

L. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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

M. 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.

N. Strategy Goal:

MCP and the Maine Natural Areas Program (DACF) have partnered together over the last 6+ years to establish and implement long term monitoring at a set of 11 salt marsh “sentinel” sites from

York to Lubec, Maine. The primary goal of multiple-indicator, long-term monitoring on these sentinel sites is to determine the extent to which saltmarshes are keeping pace with sea level rise and monitor changes in vegetation and habitat. The Sentinel Site Network in Maine provides critical data on the condition of Maine's wetlands over time. This 309 Strategy will enhance the Sentinel Site Network in Maine by establishing a Scientific Advisory Committee and Sentinel Site Monitoring Plan. The Committee and Monitoring Plan will formalize the Sentinel Site Network as a managed system and coordinate site activities including how to handle restoration activities and interstate and intrastate collaboration. Enhanced structure and management of the Sentinel Site Network will facilitate inter-organizational data and methodology sharing across other long-term saltmarsh monitoring efforts. Through this 309 Strategy the Sentinel Site Network will identify gaps, observe and share trends, and report statewide results on the response of Maine salt marshes to sea level rise.

III. Needs and Gaps Addressed

While the existing Sentinel Site Network provides critical data on the condition of salt marshes, there is currently no plan in place for how to best integrate that data into management planning or other relevant long-term monitoring efforts in the state. To maximize implementation potential, the Sentinel Site Monitoring Plan must be developed with expert and practitioner partners. Establishing a Scientific Advisory Committee will fill this gap and enable the creation of an effective Monitoring Plan that enables integration with other long-term monitoring efforts and salt marsh management plans.

This strategy directly addresses two stressors identified in the in-depth resource characterization of Wetlands: sea level rise and coastal development. Sea level rise in Maine is predicted to reach 1.1 to 3.2 ft by 2050. At the same time, coastal development in Maine has increased significantly in the last few decades. This creates a scenario called "coastal squeeze" in which wetlands naturally migrate upland due to rising seas but are met with impassable development. A study by the Maine Natural Areas Program found that on average across all sea level rise scenarios and across the coast, only 31% of marsh migration space is currently on conserved lands. The capacity of Maine salt marshes to migrate and continue buffering the coast from coastal hazards needs to be increased. This strategy also directly addresses the Wetlands management priority #1: Expand the capacity to monitor, conserve, and restore wetlands.

IV. Benefits to Coastal Management

Coastal salt marshes are a critical component of the coastal ecosystem and provide benefits to both natural and built systems. Expanding the implementation potential of salt marsh elevation and health parameter data will benefit coastal management in Maine through more integrated and holistic management, conservation, and development planning. The new management program of the Scientific Advisory Committee and the formalized Monitoring Plan will create much needed structure and guidance for salt marsh conservation and restoration. This strategy will build on the Sentinel Site Network's understanding of the health of Maine's marshes and their potential to change as a result of sea level rise. Expansion in the capacity of the Sentinel Site Network and continued support for its activities will enable effective strategies to support coastal salt marsh resilience.

V. Likelihood of Success

There is a high likelihood of attaining the strategy goal and program change of a new management program for the Sentinel Site Network and a formalized Monitoring Plan integrated with other statewide monitoring efforts. This strategy builds on the statewide salt marsh monitoring effort that began in 2017 to install marsh elevation tables at 11 sentinel sites spanning the coast. Data has been successfully collected for over 6 years and used to inform a statewide marsh migration model by the Maine Natural Areas Program. Establishing an Advisory Committee will pull from existing experts in salt marsh ecology from within the state and the creation of a Monitoring Plan is already supported by the newly formed Maine Tidal Marsh Restoration Network. Additionally, *Maine Won't Wait* identifies habitat monitoring as a priority for Maine. MCP will involve its existing network of coastal scientists and managers to ensure activities within this strategy align best with partner needs and leverage complementary efforts.

VI. Strategy Work Plan

Strategy Goal: MCP and its partners, including the Maine Natural Areas Program will enhance coordination within the State of Maine Sentinel Site network and among other complementary long-term coastal monitoring efforts.

Total Years: 5

Year(s): FY2026-2028

Description of activities: MCP and its partners will establish a Sentinel Site Scientific Advisory Committee to comprehensively review the data collected at sentinel sites, identify opportunities for expansion and streamlining, and draft the Sentinel Site Monitoring Plan. Protocols will be adjusted as necessary and monitoring under the framework of the Monitoring Plan will take place.

Major Milestone(s):

- Scientific Advisory Committee (SAC) established with Charter
- Sentinel Site Monitoring Plan formalized and approved by SAC in collaboration with relevant partners
- 3 full years of monitoring completed

Year(s): FY2028-2030

Description of activities: MCP partners have identified the need to connect sentinel site data with other long-term monitoring efforts for a more holistic view of salt marsh condition change as a result of sea level rise. The Sentinel Site Scientific Advisory Committee will convene relevant partners to coordinate other long-term monitoring efforts and provide input on expansions to the sentinel site network to best align restoration and management planning.

Major Milestone(s):

- Modifications or additions to sentinel site network approved (e.g. establishment of additional sentinel site(s), addition of metrics)
- Working meetings had with relevant partners on coordinating other long-term monitoring efforts
- 10-year Sentinel Sites monitoring results report shared with SAC, partners, to inform management and restoration planning
- 2 full years of monitoring completed

VII. Fiscal and Technical Needs

A. Fiscal Needs: CZM Section 309 funding should be sufficient to fully fund this strategy work plan, but the efforts are supported by a large network of partners and stakeholders. If outside funding sources become necessary, there are pathways to explore.

B. Technical Needs: Technical support on data acquisition and management will be provided to MCP primarily by the Maine Natural Areas Program, which has partnered with MCP on sentinel site monitoring for years. Other expertise for the Scientific Advisory Committee can be sourced from within the state.

Wetlands Strategy 2: Research and monitoring of existing and emerging threats to all wetlands and the potential for new programs aimed at remediation and protection.

I. Issue Area(s)

M. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) (*check no more than two*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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 | |

N. The proposed strategy or implementation activities will also support the following enhancement areas (*check all that apply*):

- | | |
|--|--|
| <input type="checkbox"/> Aquaculture | <input checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and 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

O. 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.

P. Strategy Goal:

Maine's intertidal ecosystems are universally threatened by sea level rise, development pressure, and the spread of invasive species more resilient to changing coastal conditions; however, these ecosystems are predominantly studied and managed in silos in Maine. This 309 Strategy will assess threats across wetland systems, identify overlapping trends, research the potential for watershed-scale interventions in remediation and protection that could affect multiple wetland types, and begin the work of standing up new programs to address common threats. MCP anticipates that effective new management programs, state/local policies, and guidelines that focus on key critical pathways to benefit multiple wetland systems simultaneously will take time. During this five-year period, MCP and partners will identify cross-cutting threats to intertidal wetlands through stakeholder convenings and workshops. Based on partner and stakeholder feedback into this report, it is likely that an initial cross-cutting stressor for discussion will be the threat of the invasive green crab which erodes salt marsh through burrowing, degrades eelgrass meadows by clipping shoots while foraging, and decimates mudflat softshell clam populations. After identifying key stressors, MCP and partners will work to fill gaps in understanding and implementation stressor mitigation activities including but not limited to innovative financing, participatory science and management, education and outreach, and regulatory reform.

III. Needs and Gaps Addressed

Sea level rise, coastal development, and invasive species are identified as three major stressors to wetlands in Phase 2 of this assessment. Dedicated research and assessment on the impacts of those stressors predominantly occurs in marsh ecosystems. Other wetland types including seagrass meadows and intertidal flats, while still a priority in Maine, are not given the same level of funding or attention from state, local, or public sector partners. Furthermore, the study and management of these ecosystems in silos does not integrate well with landscape-scale state planning or comprehensive municipal town planning.

Local and municipal governments in Maine already seek support for developing comprehensive management plans to best meet their community needs. There are many different demands on space within these jurisdictions from development, conservation, public use, and other land use types. This 309 strategy will fill a gap in the ability of Maine communities to balance these use conflicts by providing direct technical assistance and guidance on critical key actions that result in the most far-reaching benefits to human and natural communities. Wetlands management priority #2 is the Improve the state's ability to manage wetlands at the landscape scale, this strategy will support that priority by standing up new management programs and implementing ordinances that build off of the work of Cumulative and Secondary Impacts of Development Strategy 1 and Strategy 2. Additionally, this strategy addresses Wetlands management priority #3: Work at the local and practitioner level to incentivize low-impact development.

IV. Benefits to Coastal Management

The protection and rehabilitation of wetland areas provides protection from storms, refugia for commercially and culturally important species, carbon sequestration, nutrient and toxicant retention and remediation, and feeding and spawning areas for wildlife. Unfortunately, wetlands in Maine are under threat and recent significant declines in the extent of eelgrass highlight the need to rapidly leverage resources to address stressors across the intertidal zone. This strategy will benefit coastal management by:

- Refining the breadth of knowledge in Maine on stressors affecting all wetland types.
- Distilling management actions to those most effective and easy to implement.
- Working directly with Maine communities to implement lessons learned in ways that most reflect local needs.

V. Likelihood of Success

This strategy has a high likelihood of attaining the strategy goal and program change. With the exception of mudflats, there are already networks of partners established in Maine working to convene around specific wetland ecosystem types. Alongside the Casco Bay Estuary Partnership, MCP convenes and facilitates the Maine Seagrass Consortium, a statewide network of seagrass scientists, restoration practitioners, harbor masters, municipal officials, and state natural resource agencies. MCP also sits on the Steering Committee of the Maine Tidal Marsh Restoration Network, a similarly diverse set of partners focused on leveraging and connecting disparate restoration activities statewide. Mudflats do not have a dedicated network of partners, but MCP works with the DMR Nearshore Marine Resources Program to better understand changing clam flat conditions. The Maine Blue Carbon Network looks across intertidal ecosystem types to study and support blue carbon sequestration in the state, facilitated by MCP. These networks will be leveraged to inform and deliver activities within this strategy.

VI. Strategy Work Plan

Strategy Goal: Assessment of threats affecting all wetland types, identification of critical stressor remediation pathways that maximize benefit to wetlands and communities, and co-development of innovative remediation and protection mechanisms in at least one region or municipality.

Total Years: 5

Year(s): FY2026-2028

Description of activities: Workshops and convenings of multidisciplinary experts and partners across wetland types (marsh, eelgrass, mudflat, etc.) will be facilitated to assess cross-cutting ecosystem threats. Gaps in knowledge will be identified and additional monitoring undertaken or facilitated to fill those gaps. Then through an iterative process with regional and municipal input, guidance on critical pathways for landscape-scale intertidal remediation, conservation, and/or sustainable development will be created.

Major Milestone(s):

- Convening of partners and stakeholders across wetland types
- Gaps in monitoring and assessment of wetland habitats identified by partners
- Additional monitoring is undertaken to fill gaps
- Draft comprehensive wetland guidance is created focused on overlapping themes, threats, and cross-cutting remediation and protection mechanisms

Year(s): FY2028-2030

Description of activities: MCP and partners will provide technical assistance at the regional and municipal scale on adapting and adopting guidance on multi-stressor remediation for wetlands. Municipalities or Regional Planning Organizations currently or soon to be updating management plans will be encouraged to attend workshops and identify monitoring or planning needs they have. With at least one interested region or municipality, MCP and partners will stand up program changes (see above) that have cross-cutting intertidal benefits to human and natural communities.

Major Milestone(s):

- At least two municipal or regional level workshops for local-level threats assessments and possible paths forward for remediation and protection mechanisms
- Resources on cross-cutting best management practices for protection of all wetland types published in accessible places
- At least one new program simultaneously benefiting at least two wetland types planned for pilot in at least one region or municipality, with necessary monitoring completed

VII. Fiscal and Technical Needs

A. Fiscal Needs: CZMA Section 309 funding may be insufficient to fully fund this strategy work plan, however there are many partners in Maine supportive of this work. Many already do direct outreach to municipalities and Regional Planning Organizations on landscape-scale planning and this strategy supports that effort.

B. Technical Needs: The Maine Tidal Marsh Restoration Network, the Maine Seagrass Consortium, and the Maine Blue Carbon Network all represent groups of scientists, natural resource agencies, nonprofits, local government officials, and other partners with deep expertise in intertidal wetland systems. Maine also has existing experts in municipal assistance including the Governor's Office of Policy Innovation and the Future, the Maine Office of Community Affairs, and the Municipal Planning Assistance Program to support municipal and regional engagement.

Appendix A. Summary of Partner and Stakeholder Engagement

Partners and stakeholders of MCP were engaged early in the development of the 2026-2030 Strategic Outlook and remained involved throughout assessment compilation, priority setting, and strategic development. This ensured the report's development was iterative and the final product represented the needs and gaps identified by key experts and practitioners. In July 2024, MCP formed small teams of issue experts to inform each of the nine enhancement area assessments. In August 2024, MCP held its first partner and stakeholder meeting to present enhancement area assessments and engage in a criteria rating exercise with the 40+ attendants from nonprofits, land trusts, academia, state and federal government.

Summary of Criteria Rating Responses – August 27, 2024 Partner & Stakeholder Meeting

Partners and stakeholders were asked to rate each enhancement area based on how well they achieved various criteria including how much momentum already exists for work in that area, what partnerships and networks exist to support work in that area, what funding gaps exist in that area, and whether additional funding could be leveraged to boost others efforts for greater impact.

Partner and stakeholder input was used to prioritize Coastal Hazards, Wetlands, and Cumulative and Secondary Impacts of Development for the 2026-2030 Strategic Outlook. Each of these areas was rated highly in momentum, rated as needing networked support, rated as having funding gaps and as being able to leverage small investment to greatest effect. Of note is Marine Debris was rated as having high potential to leverage a small investment/initiative. As mentioned previously in this report, marine debris activities are already covered by MCP in core funding sources outside of Section 309. Another note is the relatively high priority rankings received by Public Access. MCP took that input and included loss of access to the coast as an “impact” under the high priority area of Cumulative and Secondary Impacts of Development.

Development of Strategies under the three high priority areas for the 2026-2030 engaged, through draft iteration, key implementation partners at the Maine Office of Community Affairs, Maine Municipal Planning and Assistance Program, Maine Geologic Survey, Maine Natural Areas Program, Maine Floodplain Management Program, Maine Emergency Management Agency, Maine Department of Marine Resource, Maine Department of Agriculture Conservation and Forestry, Maine Department of Inland Fish and Wildlife, Maine Department of Environmental Protection, Maine Coast Heritage Trust, and Wells National Estuarine Research Reserve.

Appendix B. Summary of Public Comment

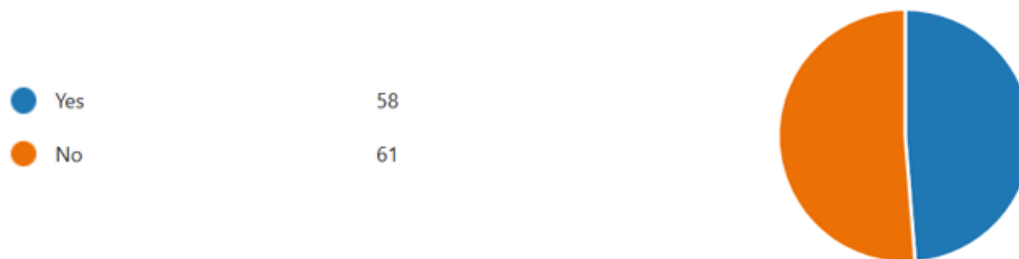
As part of the update to *Maine Won't Wait*, the University of Maine Mitchell Center for Sustainability worked with 21 organizations to conduct 69 engagement activities, including focus groups, surveys, and conversations. MCP used lessons from this extensive public engagement process to inform the identification of priority enhancement areas and the development of strategies in the 2026-2030 Strategic Outlook.

MCP also sent a survey directly to over 5,920 people and organizations and published a press release encouraging respondents. That press release was also shared with the Maine Legislature Joint Standing Committee on Marine Resources.

Summary of Responses to MCP Public Survey – 2024

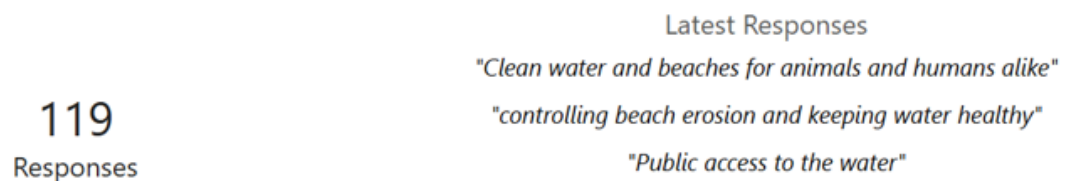
Question 1

Had you heard of the Maine Coastal Program before taking this survey?



Question 2

When it comes to Maine's coast, what do you care about most?



Question 2 Summary of Comments

Answers to this foundational question were broad, as anticipated. Commentors voiced the importance of access to the ocean for working and public access, protecting the fishing heritage of Maine, healthy ecosystems, and habitat protection.

Question 3

Which of these three areas (Coastal Hazards, Cumulative and Secondary Impacts of Development, and Wetlands) do you think is most important for Maine to take action on in the next 5 years?

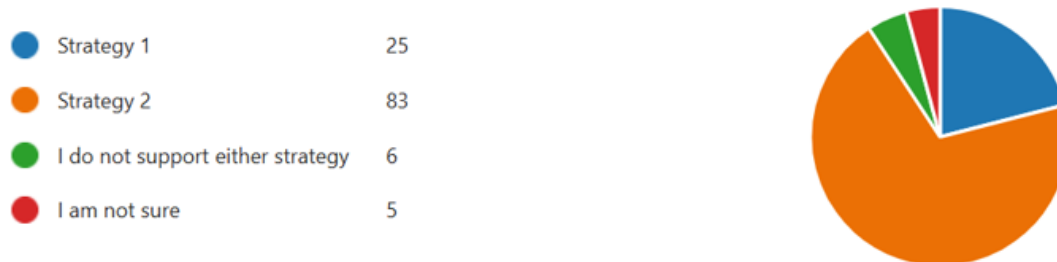


Question 4

Which of these strategies do you most support? *

Two strategies currently proposed in Maine concerning Coastal Hazards are:

- Provide training and support at the municipal level on how to integrate emergency response with town planning to bolster preparedness during hazardous events.
- Identify, conserve, and monitor essential habitats that increase local resilience to coastal hazards through floodwater retention, water filtration, fish stock replenishment, and more.



Question 4 Summary of Comments

While the strategies presented in Question 4 are not verbatim those that eventually were drafted in the report, they compared different themes in Coastal Hazards (emergency preparedness and ecosystem services) as a helpful guide for what to build out in the final strategies. As a follow-up to Question 4, respondents were asked what other strategies concerning Coastal Hazards they think would be good for Maine. Commenters voiced support for managed retreat, invasive species management, critical infrastructure resilience, and navigating use conflict in marine spaces.

Question 5

Which of these strategies do you most support? *

Two strategies currently proposed in Maine concerning the Cumulative and Secondary Impacts of Development are:

- Provide land-use planning support to municipalities on how to manage growth while promoting affordable housing and natural resource conservation.
- Strengthen availability of information and technical assistance on “nature-based solutions” to coastal development challenges, including coastal erosion and water quality protection.

| | |
|----------------------------------|----|
| Strategy 1 | 53 |
| Strategy 2 | 51 |
| I do not support either strategy | 7 |
| I am not sure | 8 |



Question 5 Summary of Comments

While the strategies presented in Question 5 are not verbatim those that eventually were drafted in the report, they compared different themes in Cumulative and Secondary Impacts of Development (land use planning and nature-based solutions) as a helpful guide for what to build out in the final strategies. As a follow-up to Question 5, respondents were asked what other strategies concerning Cumulative and Secondary Impacts of Development they think would be good for Maine. Commenters voiced support for watershed management, limited coastal zone development, electrification of marine industry, the connection between housing access and working waterfront access, and nonpoint source pollution control.

Question 6

Which of these strategies do you most support? *

Two strategies currently proposed in Maine concerning Wetlands are:

- Support municipalities in upgrading roads and bridges that cross wetlands to reduce flooding impacts and improve tidal marsh habitat.
- Offer assistance to property owners through funding and education, and provide workforce training in the use of wetlands as a protection measure against erosion and flooding.

| | |
|----------------------------------|----|
| Strategy 1 | 78 |
| Strategy 2 | 30 |
| I do not support either strategy | 3 |
| I am not sure | 8 |



Question 6 Summary of Comments

While the strategies presented in Question 6 are not verbatim those that eventually were drafted in the report, they compared different themes in Wetlands (critical infrastructure and wetland ecosystem services) as a helpful guide for what to build out in the final strategies. As a follow-up to Question 6, respondents were asked what other strategies Wetlands they think would be good for Maine. Commenters voiced support for more stringent development restrictions in wetlands, increased wetland setbacks for development, protected marsh migration areas, improved land use management to improve water quality and reduce erosion, eelgrass conservation, and plastic pollution mitigation.