

Final Evaluation Findings

New Hampshire Coastal Management Program

September 2006 to September 2016

Published August 2017



Office for Coastal Management
National Ocean Service
National Oceanic and Atmospheric Administration
United States Department of Commerce

Table of Contents

Summary of Findings.....	1
Program Review Procedures.....	3
Evaluation Findings	4
Program Administration	4
Funding and Awards	4
Leadership and Operations.....	5
Findings for Program Administration	6
Resiliency	7
Coastal Management Efforts and Partnerships.....	7
Land Use and Local Decision-making.....	10
Water Quality and Stormwater	10
Findings for Resiliency	11
Habitat Restoration.....	12
Coastal Watershed Invasive Plant Partnership Steering Committee (the partnership).....	12
Stream Connectivity.....	12
Citizen Science - Dune Restoration	14
Finding for Habitat Restoration	15
Evaluation Metrics	15
Metric 1.....	15
Metric 2.....	16
Metric 3.....	16
Conclusion.....	18
Appendix A: Response to Written Comments	19

Summary of Findings

The Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration's Office for Coastal Management to conduct periodic evaluations of the performance of states and territories with federally approved coastal management programs. This evaluation examined the operation and management of the New Hampshire Coastal Program by the New Hampshire Department of Environmental Services, the designated lead agency, for the period from September 2006 to September 2016. The evaluation focused on two target areas: resiliency and habitat restoration. In addition, a section on program administration is included in the findings.

Final evaluation findings for coastal management programs highlight each state's accomplishments in the target areas and include recommendations, which are of two types:

Necessary Actions address programmatic requirements of implementing regulations of the Coastal Zone Management Act. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

The findings in this evaluation document will be considered by the NOAA Office for Coastal Management in making future financial award decisions concerning the New Hampshire Coastal Program. The evaluation came to these conclusions:

Accomplishment: The New Hampshire Coastal Program has been successful every time it has competed for funding under the Projects of Special Merit funding opportunity, and each of these projects has advanced coastal management practices for the seacoast. Additionally, its project proposals for the NOAA Coastal Management Fellowship have consistently been selected, and the fellows have been successfully integrated into the seacoast coastal management community. In fact, the coastal program has hired one of its former NOAA Coastal Management Fellows as the Coastal Resource Specialist, a full-time position.

Accomplishment: The New Hampshire Coastal Program successfully leverages small grants for initiating local projects. This demonstration of value and commitment by the coastal program attracts additional funds from outside the program, allowing partners to pursue larger projects. For example, the coastal program provided seed money for planning the Exeter dam removal and restoration, which then attracted additional funds, including funding from the National Marine Fisheries Service, necessary for implementing the dam removal.

Accomplishment: The New Hampshire Coastal Program has developed, nurtured, and consistently supported a network of coastal management entities and efforts to allow for more resilient coasts and effective coastal management. This has involved fostering partnerships with

and between state, local, and federal agencies, nongovernmental organizations, and municipalities. For example, the coastal program supports and facilitates the success of both the New Hampshire Coastal Adaptation Workgroup and the Coastal Risk and Hazards Commission.

Accomplishment: The New Hampshire Coastal Program contributed to the success of the New Hampshire Coastal Risk and Hazards Commission by providing leadership and staff expertise needed to facilitate a diverse group of stakeholders and develop actionable recommendations to help coastal New Hampshire plan for flood risks, all done without additional financial support from the state. The commission successfully translated science to policy by developing recommendations for the state regarding science, assessment, and implementation, as well as providing recommendations to inform the creation of two laws that will allow the state to ensure that the best available climate science is used for decision-making.

Accomplishment: The New Hampshire Coastal Program provided the leadership to initiate, fund, and staff the development of the New Hampshire Coastal Viewer to provide centralized coastal data sets for better decision-making at the state and local levels. This is an example of the coastal program's capability to build partnerships and implement strategies that meet critical needs.

Accomplishment: The New Hampshire Coastal Program provided critical resources and leadership to significantly reduce unmanaged stormwater runoff in the coastal watershed, and to promote knowledge transfer between municipalities. For instance, by directing resources to local experts, such as the University of New Hampshire's Stormwater Center, the coastal program is able to provide hands-on technical assistance to communities and, together with their partners, has built an extensive catalog of model ordinances, policies, and stormwater designs to share with New Hampshire communities.

Accomplishment: The New Hampshire Coastal Program successfully coordinated multiple state agencies and nonprofit organizations, which led to concrete changes in laws and policies to enable effective invasive species management in the state, and to serve as a model beyond New Hampshire.

Recommendation: The Office for Coastal Management recommends that the Department of Environmental Services continue to work closely with the New Hampshire Coastal Program to identify additional opportunities to leverage state match dollars for competitive grants to benefit the seacoast. Many federal grants require state or local matching funds, and without these resources the coastal program cannot compete for many federal funding sources.

This evaluation concludes that the New Hampshire Department of Environmental Services is successfully implementing and enforcing its federally approved coastal management program, adhering to the terms of the federal financial assistance awards, and addressing coastal management needs identified in sections 303(2)(A) through (K) of the Coastal Zone Management Act.

Program Review Procedures

The NOAA Office for Coastal Management evaluated the New Hampshire Coastal Management Program in fiscal year 2016. The evaluation team consisted of Pam Kylstra, evaluation team lead; Adrienne Harrison, site liaison; Rebecca Newhall, Northeast regional liaison; Betsy Nicholson, Northeast regional director; and Jessica Grannis, adaptation program manager, Georgetown Climate Center. The support of the coastal program staff was crucial in conducting the evaluation, and this support is most gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to the commissioner of the New Hampshire Department of Environmental Services, and published a notice of “Intent to Evaluate” in the *Federal Register* on August 9, 2016. NOAA also notified members of New Hampshire’s congressional delegation. The New Hampshire Coastal Program posted a notice of the public meeting and opportunity to comment in the *Portsmouth Herald* on August 5, 2016.

The evaluation process included a review of relevant documents and a survey of stakeholders, which helped identify two target areas for the evaluation: habitat restoration and climate resilience. In addition, a section on program administration is included in the findings. A site visit was also conducted and the evaluation team held meetings with staff members and group discussions with stakeholders and program staff members about the target areas. In addition, a public meeting was held on Tuesday, September 20, 2016, at 1:00 p.m. at 222 International Drive, Suite 175, Pease Tradeport, Portsmouth, New Hampshire, to provide an opportunity for members of the public to express their opinions about the implementation of the New Hampshire Coastal Management Program. Stakeholders and members of the public were given the opportunity to provide written comment via email or U.S. mail through Friday, September 30, 2016. The Office for Coastal Management then developed draft evaluation findings, which were provided to the New Hampshire Department of Environmental Services and the coastal program for review, and their comments were considered in drafting the final evaluation findings.

Final evaluation findings for all coastal management programs highlight the program’s accomplishments in the target areas and include recommendations, which are of two types:

Necessary Actions address programmatic requirements of implementing regulations of the Coastal Zone Management Act. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in the Coastal Zone Management Act §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or dates specified.

Evaluation Findings

The New Hampshire Department of Environmental Services continues to successfully implement the federally approved New Hampshire Coastal Management Program. During this evaluation period, the coastal program has undergone staffing redistributions to better integrate into the New Hampshire Department of Environmental Services to increase and streamline coordination with other programs, and worked to strengthen state and local community resilience. In addition, the program was cited by evaluation participants for its state and regional leadership across issue areas, and the program and staff members were commended for being “exemplary,” “creative, flexible, and responsive,” “forward-thinking,” and “the glue” for coastal management partners. Major events affecting the New Hampshire seacoast during this time included the Great Recession of 2008-2009, Superstorm Sandy in 2012, and nine other storms and flooding events that warranted federal disaster declarations, including Hurricane Irene in 2011.

Program Administration

Funding and Awards

Working closely with partners, the coastal program has maximized its ability to stretch the resources it has to influence coastal management. For instance, since fiscal year 2012, the New Hampshire Coastal Program has efficiently and effectively run a competitive grants program that has provided more than \$825,000 to regional organizations, nonprofits, public universities, municipalities, and state agencies. These funds have been used for coordination and project implementation, and to provide seed money that furthers coastal management.

In addition, the coastal program has attracted outside resources. The coastal program has consistently and successfully competed for selection as a NOAA Coastal Management Fellowship host state, and for projects of special merit, which are competitive grants awarded by the Office for Coastal Management to further strategies developed as part of a program’s five-year Section 309 Assessment and Strategy. The coastal program has also been a recipient of regional awards along with sister New England States, including NOAA’s Regional Coastal Resilience Grants Program. Often the coastal program leverages the success of these awards, building on the expertise of seacoast partners.

However, the coastal program is limited in its ability to pursue funding from other sources requiring match because of limited state general fund dollars to use for this purpose. Federal and nonprofit funders often require cash match as a demonstration of commitment by the applicant. There are lost opportunities as a result of New Hampshire not being able to compete because of lack of state match. The Office for Coastal Management is aware that the department is mainly funded through federal funds or fees and not state general funds. Despite this fact, the coastal program has successfully leveraged Coastal Zone Management Act funding for projects. For example, through its creativity and vision, the coastal program aligned its 306a project, so it could serve as match, with goals of a Regional Coastal Resilience Grant application

developed by the Northeast Regional Association for Coastal Ocean Observing Systems (NERACOOS). The grant was awarded to NERACOOS and the New England coastal states in 2016. This enabled New Hampshire to receive funding through the award, and participate in a larger regional strategy on living shorelines, while furthering state goals. Access to state funds would benefit the program and seacoast, as the New Hampshire Coastal Program continues to address emerging and ongoing issues, and leverage knowledge and resources throughout New England and the nation.

In addition, the Aquatic Resource Mitigation Fund presents a major new source of funding, and although it cannot be used as nonfederal match, the additional funds are helpful in contributing dollars to projects, therefore lowering overall project costs and required match levels, making projects more financially feasible. The coastal program could consider pursuing these grant funds for additional coastal program projects. Also, the State Revolving Fund's administration funds have proven to be another important source of state match and support, and the coastal program should be commended for working with the legislature to commit these funds to improve monitoring and data management in the seacoast area. The coastal program should continue to leverage the Aquatic Resource Mitigation Fund as a possible future source of direct support and the State Revolving Fund as a state match.

The evaluation team also wishes to acknowledge two additional examples of the coastal program's success in leveraging other funds to benefit coastal communities. The recent reorganization of the department's watershed bureau to connect the coastal program with the shellfish program enabled the coastal program to leverage the general funds to accomplish a number of goals related to aquaculture and water quality. Finally, the department no longer uses Coastal Zone Management Act funds to support multiple staff positions, particularly in the department's Wetlands and Subsurface Bureaus, which are now funded through fees collected by the department. This has allowed Coastal Zone Management Act funds to be used for the coastal program's coastal management work.

In sum, the coastal program has been creative and effective in leveraging state and partner dollars to implement its coastal program and in use of state match to compete for additional funds, particularly given the challenges of limited state general funds. The Office for Coastal Management recommends that the Department of Environmental Services continue to work closely with the New Hampshire Coastal Program to identify other opportunities to leverage state match dollars for competitive grants to benefit the seacoast.

Leadership and Operations

The coastal program leads coastal management in the New Hampshire Seacoast through its ability to leverage the expertise and missions of other programs and organizations by bringing them together with inclusiveness and respect. This operational model underpins the culture of coastal management in the state due in large part to the example of the New Hampshire Coastal Program. The staff members are known across the region to be inclusive and collaborative professionals. It is common practice for the staff to observe what is needed and

work to meet those needs both formally and informally by creating partnerships and dialogue within the seacoast, greater New England region, and maritime Canada. This is seen locally with the New Hampshire Coastal Adaptation Workgroup, discussed throughout this report, and in their leadership with forums that cross borders. For instance, the coastal program led the Tidal Crossings Assessments workshop with the Northeast Regional Ocean Council, Gulf of Maine Council, and North Atlantic Landscape Conservation Cooperative with participation from five New England states and two Canadian provinces to inform the development of the state's tidal crossing protocol. They worked with NOAA Office for Coastal Management to bring in experts from Washington State, exposing the region to successful approaches from another part of the country.

The internal leadership of the program matches the excellence seen by partners and stakeholders. Through an inclusive and flat leadership structure, each staff member is able to help direct the program and its work to best serve the coastal program's partners. During the evaluation period, the coastal program manager was deployed overseas with the military. The New Hampshire Department of Environmental Services and the coastal program worked together to create and implement a plan that ensured that the work of the program continued smoothly during the manager's absence. This speaks to the dedication and ability of the staff, the program's strong organization, the manager's support and empowerment of the staff to lead in his absence, and the support of the department. It should be noted that the Department of Environmental Services received the 2014 Secretary of Defense Employer Support Freedom Award, recognizing its support of service members during deployments to Iraq and Afghanistan.

A number of times during the site visit, stakeholders repeatedly noted the critical role a New Hampshire Coastal Program staff member had in a project, describing them as "irreplaceable." The current staff members are viewed by partners as trusted, highly capable, and reliable. None of the current staff members are currently exploring other employment options, nor are they eligible for retirement. That said, if staff members departed it would mean a loss of program skills, relationships, and knowledge, which are critical to the success of the program. The staff is small with little to no overlap in duties, and a loss of a staff member would leave a gap that would be challenging to fill. Succession planning could help with retention of high-quality staff members, and cross-training within the program and potentially with other parts of the department. Considerations could include identifying and documenting existing knowledge, skills, abilities, and characteristics of a core coastal program embodied in current staff members, mentoring of newer staff, and determining areas appropriate for cross-training. The New Hampshire Coastal Program could seek guidance and additional ideas from the approaches they used during the manager's deployment, tap the department's human resources expertise, and consult the Office for Coastal Management for examples of other states that have done this well.

Findings for Program Administration

Accomplishment: The New Hampshire Coastal Program has been successful every time it has competed for funding under the Projects of Special Merit funding opportunity, and each of

these projects has advanced coastal management practices for the seacoast. Additionally, its project proposals for the NOAA Coastal Management Fellowship have consistently been selected, and the fellows have been successfully integrated into the seacoast coastal management community. In fact, the coastal program has hired one of its former NOAA Coastal Management Fellows as the Coastal Resource Specialist, a full-time position.

Accomplishment: The New Hampshire Coastal Program successfully leverages small grants for initiating local projects. This demonstration of value and commitment by the coastal program attracts additional funds from outside the program, allowing partners to pursue larger projects. For example, the coastal program provided seed money for planning the Exeter dam removal and restoration, which then attracted additional funds, including funding from the National Marine Fisheries Service, necessary for implementing the dam removal.

Recommendation: The Office for Coastal Management recommends that the Department of Environmental Services continue to work closely with the New Hampshire Coastal Program to identify additional opportunities to leverage state match dollars for competitive grants to benefit the seacoast. Many federal grants require state or local matching funds, and without these resources the coastal program cannot compete for many federal funding sources.

Resiliency

Coastal Management Efforts and Partnerships

The New Hampshire Coastal Program has consistently provided leadership, vision, and support to a network of government entities, nongovernmental organizations, and academic partners grappling with the challenges of coastal resiliency. This is best seen through support for the New Hampshire Coastal Adaptation Workgroup. The Coastal Adaptation Workgroup is a collaboration of 24 member organizations, including academic, nonprofit, regional planning organizations, and state government, to promote coastal resilience through providing support and technical assistance to coastal communities in New Hampshire.

The New Hampshire Coastal Program should be commended for its vision, initiative, and leadership in establishing the New Hampshire Coastal Adaptation Workgroup to serve as a platform for collaboration to assist coastal New Hampshire communities with adaptation planning. Because of the success of the Coastal Adaptation Workgroup in facilitating the development of tools, resiliency planning at the local level, and educational opportunities, the coastal program has supported its continuation by dedicating staff members to participate and coordinate the group, and funding for the members to participate and for their organizations to work on collaborative projects.

The Coastal Adaptation Workgroup enables the expertise and resources within its member organizations to have a greater impact than any of the organizations would have individually. By working together and developing a shared vision and messaging, the Coastal Adaptation Workgroup members are able to help New Hampshire coastal communities through

complementary technical assistance, outreach, and sharing of information and data. Since the New Hampshire Coastal Program was able to pull together such a strong collaborative group that is able to look at resiliency and adaptation from multiple perspectives, it is able to turn to this group for its own strategic thinking. The New Hampshire Coastal Program uses the Coastal Adaptation Workgroup as a forum to assess and understand coastal management needs within the seacoast. For instance, the coastal program included the Coastal Adaptation Workgroup in developing priorities for the most recent 309 Assessment and Strategy document that guides the coastal program's work over a five-year period.

Examples of Coastal Adaptation Workgroup projects and community engagement supported by technical assistance and funding from the coastal program:

- Community Resilience in the Seacoast, September 2015-March 2017: Assessing climate change impacts to natural systems and the built environment for ten coastal communities. Results will help municipalities incorporate climate impact data into infrastructure upgrades and priorities, permit processes, codes, and regulations.
- Participate in Community Planning:
 - 2014, Rye Climate adaptation workshops and outreach. Coastal program staff members provided funding and staff assistance.
- Hampton-Seabrook Dune Restoration, March 2014-June 2015 (see description in Habitat Restoration section)
- New Hampshire Shoreline Management Conference, December 2014: coastal program staff members served on the conference planning team, provided promotion and outreach for the conference, facilitated conference sessions, and participated in a follow-up planning session. Conference started collaborative discussion in New Hampshire about shoreline management issues and best management practices used in other parts of the country.
- New Hampshire Shoreline Structure Inventory, May-October 2015
- Taking Action for Resilient Natural and Built Communities in New Hampshire through Applied Modeling and Development of a User-driven Toolbox—Project of Special Merit:
 - Preparing for Climate Change community workshops. As part of project of special merit, coastal program staff members helped facilitate workshops.
 - Coastal Hazards Data Viewer. Coastal program provided input on design and data acquisition.
- Water, Weather, Climate, and Community Workshop Series, ongoing: Coastal program staff assists with planning and outreach as well as workshop facilitation.
- New Hampshire Coastal Climate Summit, annually since May 2011: To share latest science and resiliency efforts throughout the seacoast. Co-hosted with Great Bay National Estuarine Research Reserve. At the 2014 summit, the coastal program convened 100 people from coastal communities outside New Hampshire to share lessons learned and stories.
- King Tides Photo Contest, 2014: Partnered with the Gulf of Maine Council. Coastal program staff helped with planning and publicizing the event, prize donations from local businesses, and in managing the photo judging process.
- Climate and Resilience Programming in Elementary Schools: The project partners

discovered that the parents of schoolchildren were not being reached by their existing outreach efforts. This project was specifically designed to engage parents as well.

In 2013, the New Hampshire legislature enacted RSA 483-E establishing the New Hampshire Coastal Risk Hazards Commission charged with improving planning for projected sea level rise and other coastal hazards and implementing measures to increase coastal resilience. The commission conducted work in four phases: fact-finding; assessing vulnerability; obtaining stakeholder input, including from researchers, lawmakers, municipal officials, and state and local planners; and developing recommendations. The coastal program staffed the commission, administered commission meetings, developed a website, and helped draft the commission's reports. This was all accomplished without additional financial resources from the state. The coastal program recognized the importance of representation of diverse perspectives among the members of the commission and successfully facilitated disparate groups and voices on the commission. The support from the coastal program was critical to the success of the commission. Coastal program support included creation of a coastal resilience specialist position, filled by a former NOAA Coastal Management Fellow, who participates in the New Hampshire Coastal Adaptation Workgroup, supported the commission, and is building the coastal program's resiliency work.

In its support of the commission, the coastal program provided valuable process design and engaged stakeholders across the full political spectrum in the process, providing a platform for consensus in the state. Since the end of the evaluation period, the commission's report was released, providing recommendations that include assessment and implementation of actions to improve the resilience of the economy, built environment, and natural, recreational, cultural, and historic resources. The commission sunsetted in December of 2016 and is followed by the Setting SAIL (Science, Assessment, Implementation, Legislation) Project that the commission put in place to support state and municipal implementation of their recommendations. The coastal program successfully competed for a NOAA Project of Special Merit to fund the Setting SAIL project. The Office for Coastal Management commends the New Hampshire Coastal Program for recognizing the commission as a strategic opportunity to design and advance coastal resilience, and a method to inform and guide legislative changes.

The state legislature has underscored the profound value of the commission's work by passing two pieces of legislation that ensure it continues to be built upon after the commission came to a close. The first, SB 374 (2016,) allows a science and technical advisory panel to convene to review the current state of climate science to update storm surge, sea level rise, extreme precipitation, and other relevant climate projections, and provide planning guidance at least every five years. A similar panel was instrumental for enabling the commission to agree on target ranges for sea level rise. The second, SB 452 (2016), will allow state agencies to review whether existing state statutes and rules adequately permit state agencies and municipalities to prepare for and adapt to climate impacts using best available climate science, and to make recommendations for amendments of new regulations when necessary. The New Hampshire Coastal Program will lead what will be a considerable effort of reviewing the New Hampshire Department of Environmental Service's rules and providing recommendations for amendments.

Land Use and Local Decision-Making

A number of seacoast communities have been interested in improving their land-use decision-making, particularly in relation to flooding. The coastal program, together with New Hampshire Coastal Adaptation Workgroup members, have provided communities with information, maps, and other data sources they need. For example, the coastal program became aware that although locally relevant spatial data were being developed and made available by many different sources, there was no single place that these data existed. The program provided staff time and funding through a NOAA Project of Special Merit grant to New Hampshire GRANIT to develop the New Hampshire Coastal Viewer. The viewer is an online mapping and screening tool that provides a single point of access to 150 coastal resources and hazards-related geospatial data sets for New Hampshire's 42 coastal watershed communities. Additionally, the coastal program has provided New Hampshire GRANIT with funding for maintenance and evaluation of the tool to ensure that the coastal viewer continues to be a valuable tool for municipal officials' decision-making. As additional data sets become available, they may be added to the viewer, for example the social vulnerability work done by the coastal program's NOAA Coastal Management Fellow in conjunction with University of New Hampshire and the Piscataqua River Estuary Program.

Water Quality and Stormwater

The New Hampshire Coastal Program has made great strides at reducing community stormwater-related flooding and pollution risk during the reporting period through technical or financial assistance. They have been successful at communicating this achievement by including the support they provide to four communities as one of the state's 2012-2017 evaluation metrics within NOAA's reporting requirements.

EXAMPLE: Great Bay Municipal Bioretention Program

One of the projects takes place in Durham, New Hampshire, at a site identified as a high priority due to its large expanses of impervious area and unmanaged stormwater. It was the largest unmanaged expanse of directly connected impervious area on the University of New Hampshire campus at 3.5 acres. With coastal program funding, the University of New Hampshire Stormwater Center and the town of Durham Public Works Department installed a bioswale to manage uncontrolled stormwater runoff. The result will be improved stormwater quality and quantity through innovative stormwater management. Additionally, a template was developed to communicate project results and promote knowledge transfer to other municipalities.

EXAMPLE: Building Resilience to Flooding and Climate Change in the Moonlight Brook Watershed

The coastal program provided funding and staff assistance for a project to address flooding in the town of Newmarket. The Moonlight Brook watershed is heavily urbanized with over 40 percent impervious cover and has experienced substantial flooding. The project built on previously developed flood studies and watershed models refined for Moonlight Brook. The work identified locations along Moonlight Brook that are considered high risk for flooding and developed designs for green infrastructure practices to implement in the watershed to reduce

the risk of flooding in these high risk areas. An additional benefit of the project results is decreased pollutant load into the brook and ultimately Great Bay. One of the major findings is that redevelopment and effective zoning contributes to long-term resiliency at little to no cost to the municipality's overall budget.

These projects exemplify the coastal program's successful translation from a pilot project with a specific community to promotion of broader policy changes that link stormwater management and water quality to the health of the Great Bay. For example, the coastal program supported the Southeast Watershed Alliance in working with the University of New Hampshire Stormwater Center to incorporate what was learned from projects like the bioretention project in Durham discussed above to develop the Model Stormwater Standards for Coastal Watershed Communities, and working with communities to adopt the standards to facilitate compliance with MS4 permits.

Findings for Resiliency

Accomplishment: The New Hampshire Coastal Program has developed, nurtured, and consistently supported a network of coastal management entities and efforts to allow for more resilient coasts and effective coastal management. This has involved fostering partnerships with and between state, local, and federal agencies, nongovernmental organizations, and municipalities. For example, the coastal program supports and facilitates the success of both the New Hampshire Coastal Adaptation Workgroup and the Coastal Risk and Hazards Commission.

Accomplishment: The New Hampshire Coastal Program contributed to the success of the New Hampshire Coastal Risk and Hazards Commission by providing leadership and staff expertise needed to facilitate a diverse group of stakeholders and develop actionable recommendations to help coastal New Hampshire plan for flood risks, all done without additional financial support from the state. The commission successfully translated science to policy by developing recommendations for the state regarding science, assessment, and implementation, as well as providing recommendations to inform the creation of two laws that will allow the state to ensure that the best available climate science is used for decision-making.

Accomplishment: The New Hampshire Coastal Program provided the leadership to initiate, fund, and staff the development of the New Hampshire Coastal Viewer to provide centralized coastal data sets for better decision-making at the state and local levels. This is an example of the coastal program's capability to build partnerships and implement strategies that meet critical needs.

Accomplishment: The New Hampshire Coastal Program provided critical resources and leadership to significantly reduce unmanaged stormwater runoff in the coastal watershed, and to promote knowledge transfer between municipalities. For instance, by directing resources to local experts, such as the University of New Hampshire's Stormwater Center, the coastal program is able to provide hands-on technical assistance to communities and, together with

their partners, has built an extensive catalog of model ordinances, policies, and stormwater designs to share with New Hampshire communities.

Habitat Restoration

Coastal Watershed Invasive Plant Partnership Steering Committee (the partnership)

Recognizing the need to stop the spread of invasive plants in New Hampshire's coastal watershed, in 2008 the coastal program convened 11 state and federal agencies and nonprofit conservation groups to form the Coastal Watershed Invasive Plant Partnership Steering Committee for a five-year period. The partnership was established to provide education, outreach, and technical assistance to communities regarding invasive plant species issues, how they outcompete native species and reduce natural diversity, and how to assess and control invasive plant populations. The coastal program's strong leadership served a critical role in developing the partnership, achieving the partnership's goals, and building relationships for invasive species collaboration that continue beyond the lifespan of the partnership. This partnership was successful in accomplishing its initial goals for advancing invasive plant species management in New Hampshire and has since dissolved.

Realizing that the pesticide application rules were outdated and actually created obstacles in controlling invasive plant species, the partnership appealed to the pesticide board for rule changes. Coastal program staff members participated in the partnership to provide information to the Division of Pesticide Control about how rule changes would enable the state to better control invasive plant species. For instance, as the rule was originally written, if a plant species was not listed specifically on a herbicide's label, it could not be used on that plant, which prevented the effective control of an invasive plant species like Oriental Bittersweet. The rule change allowed the label to describe use by habitat rather than for specific plants. Now the coastal program is starting to successfully control Oriental Bittersweet in Odiorne Point State Park. This example illustrates the approach taken by the partnership to inform multiple rule changes that have resulted in more effective invasive plant species management. Additionally, the partnership mapped areas to which invasive plant species could potentially spread, allowing coastal managers to employ preventative measures.

Stream Connectivity

The New Hampshire Coastal Program has provided critical technical assistance and leadership to improving marine and aquatic ecosystems and water quality through addressing stream connectivity issues. New Hampshire coastal communities have benefited from the coastal program's expertise when planning and implementing large-scale dam removal projects, which can easily span a decade from initial consideration to final removal and restoration of a stream. The program has also shown valuable leadership and support in developing protocols and guidance for evaluating and replacing stream crossings and tidal culverts. This includes using a NOAA Project of Special Merit to model hydrologic conditions of culverts to address sea level rise and storm surge. New Hampshire is pushing the boundaries of the work done around tidal culverts, and as such is serving as a national and international model.

EXAMPLE: The Great Dam Removal

The Great Dam in Exeter historically provided power to the town's mills and, later after coal and oil power came to Exeter, to other businesses as well for over 150 years. After the factories and dam were sold in 1981 and there was no remaining need for it, the dam fell into disrepair. In 2000, the New Hampshire Department of Environmental Services advised the town about the safety, flooding, water quality, and low fish number issues posed by the dilapidated dam and the 1960s-era fish ladder.

The coastal program served on the technical committee for the dam removal and provided small grant funding for critical studies needed to analyze the feasibility of water supply alternatives. The results of these studies served as a catalyst for helping the town determine whether repairing the dam or dam removal was the best option. For instance, concerns about drinking water supply to the town became the key deciding factor in this case. The results of a coastal program funded study found that groundwater recharge is a viable option to supply drinking water to the town. Those results enabled the town to consider dam removal project design in a way that addressed drinking water supply and fish passage concerns while preserving the town's historic character. The coastal program also helped the town coordinate across state and federal agencies to get the necessary permits and approvals for removing the dam, and to adaptively manage the contract when it was discovered that a change order would be required to address a condition that only became apparent after the dam was removed.

The project also included installation of interpretive signage along the walkway above the project site. These signs give viewers information about the history and cultural significance of the dam, as well as about the fish species that are now reconnected with their historical spawning areas. There is an opportunity for the coastal program to consider, as appropriate, this type of interpretive education as a component of projects they fund to help commemorate historical and cultural values of a site, as well as demonstrate to the community the project's environmental and social value.

The story of how the worsening condition of dams heightens flood safety and fish passage concerns is similar for many of the 1,000 dams in coastal areas of New Hampshire, especially since an amendment to state dam safety rules that went into effect in 2005 regarding discharge requirements for existing dams has meant many dams in the coastal zone are out of compliance. The coastal program staff is encouraged to institutionalize the process they used on the Great Dam project so it can be applied to future dam removal projects. This will allow for better coordination across agencies and to routinely incorporate formative evaluation and adaptive management to determine design success prior to completing dam removal projects to address unanticipated design issues.

Another issue with dam removal is the impact of the sediment released from behind the dam on water quality and downstream resources. The New Hampshire Coastal Program was critical to the development of a sediment management protocol, *Guidance for Assessing Sediment Dams/Barriers*, that dam owners can use to figure out the steps necessary to pursue dam

removal, the amount of sediment impounded behind the dam, and the level of effort it will take to remove. This guidance document reflects lessons learned from prior dam removal projects and will provide dam owners and consultants with consistency, increase permitting efficiencies, minimize project costs, and further institutionalize the dam removal process. New Hampshire is one of the first states in the nation to develop guidance for dam removals.

Citizen Science – Dune Restoration

New Hampshire has lost over 80 percent of its native dunes, and the remaining remnant dunes are in danger of destabilization from informal trails created by beach visitors and changes to their sand supply, which has been shifted by nearby jetties and seawalls. Although the dune systems have an important role in the resiliency of New Hampshire's shoreline, it is hard to compete on a national level to restore what remains. In response to this challenge, New Hampshire Sea Grant and the coastal program, through their cooperative agreement, have funded dune restoration events that have engaged, through the New Hampshire Coastal Adaptation Workgroup workshop series, 43 community leaders and local community members in Hampton and Seabrook in planting workshops. In addition to funding, the coastal program provided staff members who served on the project's technical advisory committee and managed the project, which involved engaging the towns and state agencies in decision-making at every step of the process, facilitating public meetings, assisting with outreach, and providing permitting application guidance and support.

The participants in the restoration project in Hampton and Seabrook have increased the resiliency of their dune system by installing fencing, planting 20,000 plants in two acres of remnant dunes, and collecting monitoring data. Additionally, 227 students and 14 teachers have attended in-class lessons that included dune ecology and function, current and historic distributions of dunes in New Hampshire, and an overview of restoration methods. As a companion to the in-class lessons, students and teachers went into the field with Sea Grant staff to participate in the restoration efforts. Place-based citizen science projects are difficult to obtain funding for, which is why the funds from the New Hampshire Coastal Program are critical for demonstrating how citizen science projects contribute to informed decision-making in communities.

The coastal program supported Sea Grant in obtaining permission from the New Hampshire Department of Resources and Economic Development to create a native beach grass community garden in Hampton to provide a local source for dune restoration efforts. Beachfront homeowners have access to the plants in the community garden at no cost to use on their property and receive hands-on planting support from the coastal program. Sea Grant has identified the next steps for building on the success of this project to engage other coastal communities in dune restoration to increase the resilience of their communities. For example, with support from the coastal program, in fall of 2017, New Hampshire Sea Grant will be expanding the beach grass community garden into a substantial program by engaging local conservation commissions to use the garden as a source for plants for homeowners to use in mitigation projects.

Finding for Habitat Restoration

Accomplishment: The New Hampshire Coastal Program successfully coordinated multiple state agencies and nonprofit organizations, which led to concrete changes in laws and policies to enable effective invasive species management in the state, and to serve as a model beyond New Hampshire.

Evaluation Metrics

Goal: Informed and resilient coastal communities.

Metric 1

Objective: By 2017, five communities in the coastal zone are informed about the threats of coastal hazards and what resources are available to help plan for the impacts of storm surge, sea level rise, and increased flooding.

Strategy: The Adaptation Program Creation and Support strategy for achieving this goal can be found in the 2011-2015 Coastal Zone Management Act 309 Assessment and Strategy.

Performance Measure: The number of communities in the coastal zone that have conducted at least one outreach project in their town to raise awareness of coastal hazards as a result of technical or financial assistance from the coastal management program.

Target: Five communities in the coastal zone have conducted at least one outreach project in their town to raise awareness of coastal hazards as a result of technical or financial assistance from the coastal management program during the five-year review period 2012-2017.

Year	Number of communities who have completed at least 1 outreach project
Year 1, FY12	1 community (Portsmouth) completed 1 outreach project
Year 2, FY13	3 communities (Rye, Rockingham, Durham) completed 3 outreach projects
Year 3, FY14	3 communities (Seabrook, Hampton, Hampton Falls) completed 3 outreach projects
Year 4, FY15	3 communities (Durham, Hampton, Seabrook) completed 3 outreach projects
Cumulative	7 communities completed 10 outreach projects

Discussion: The New Hampshire Coastal Program has exceeded its target of five communities. Through technical assistance and funding, the coastal program has assisted seven communities in conducting outreach projects ranging from coastal resiliency initiatives to climate adaptation workshops and planning.

Metric 2

Objective: By 2017, coastal zone communities have completed four projects to reduce risk from coastal hazards.

Strategy: The Adaptation Program Creation and Support strategy for achieving this goal can be found in the 2011-2015 Coastal Zone Management Act 309 Assessment and Strategy.

Performance Measure: The number of completed projects to reduce future damage from hazards as a result of technical or financial assistance from the coastal management program.

Target: Four projects to reduce future damage from hazards as a result of technical or financial assistance from the coastal management program, completed during the five-year review period 2012-2017.

Year	Number of projects to reduce future damage from hazards
Year 1, FY12	2 projects
Year 2, FY13	0 projects
Year 3, FY 14	1 project
Year 4, FY 15	1 project
Cumulative	4 projects

Discussion: By providing technical assistance and funding, the New Hampshire Coastal Program has met its target of four projects. These have included climate adaptation and hazards planning and development of a climate adaptation chapter of a town’s hazard mitigation plan.

Metric 3

Objective 3: By 2017, coastal zone communities have completed four projects to reduce flooding and pollution risk from stormwater runoff.

Strategy: The Adaptation Program Creation and Support strategy for achieving this goal can be found in the 2011-2015 Coastal Zone Management Act 309 Assessment and Strategy.

Performance Measure: The number of completed projects to reduce stormwater runoff as a result of technical or financial assistance from the coastal management program.

Target: Four projects to reduce stormwater runoff as a result of technical or financial assistance from the coastal management program, completed during the five-year review period 2012-2017.

Year	Number of stormwater reduction projects
Year 1, FY12	1 project
Year 2, FY13	0 projects
Year 3, FY14	1 project
Year 4, FY15	1 project
Cumulative	3 projects

Discussion: Through technical assistance and funding, the New Hampshire Coastal Program is making excellent progress toward its target of four projects to reduce stormwater runoff. The project in Durham, New Hampshire, is highlighted in these findings on page 14.

Conclusion

For the reasons stated herein, I find that the New Hampshire Department of Environmental Services is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of its approved coastal management program.

These evaluation findings contain one recommendation that must be considered before the next regularly scheduled program evaluation. Program recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the New Hampshire Coastal Management Program that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.

signed: Dr. Jeffrey Payne
Jeffrey L. Payne, Ph.D.
Director, Office for Coastal Management

August 23, 2017
Date

Appendix A: Response to Written Comments

The NOAA Office for Coastal Management received no written comments regarding the New Hampshire Coastal Management Program.