Margherita Pryor
U.S. Environmental Protection Agency,
Region 1 5 Post Office Square
Boston MA

02109 Dear

June 25, 2025

Margherita:

We are pleased to submit Massachusetts Bays National Estuary Partnership (MassBays') application for funding to implement our Federal Fiscal Year 2025 Section 320 Workplan, a continuation of our FFY24 cooperative agreement. MassBays' Management Committee reviewed and endorsed the tasks and budget included here as important steps toward implementing our CCMP.

Please do not hesitate to contact us if you have any comments, suggestions, or concerns regarding the workplan.

Sincerely,

Pamela A. DiBona

Denise Ellis-Hibbett

Pam DiBona, Director
Massachusetts Bays National Estuary Partnership
Chair pamela.dibona@umb.edu
339-368-0608 (cell)

Denise Ellis-Hibbett
Management Committee

cc: Carol Thornber Dean, UMass Boston School for the Environment

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Acronyms and Abbreviations

ANEP	Association of National Estuary Programs
APCC	Association to Preserve Cape Cod
BCG	Biological Condition Gradient
BHEN	Boston Harbor Ecosystem Network
BU	Boston University
CC	Cape Cod (MassBays Region)
CCC	Cape Cod Commission
CCCD	Cape Cod Conservation District
CCMP	Comprehensive Conservation and Management Plan
CCS	Center for Coastal Studies
CCWRRP	Cape Cod Water Resources Restoration Project
CPR	Coastal Pollution Remediation (CZM Grant Program)
CS	Central Staff (MassBays Boston Office)
CSO	Coastal States Organization *or* Combined Sewer Overflow
CWA	Federal Clean Water Act
NEPCWG	National Estuary Program Coastal Watershed Grant Program
CZM	MA Office of Coastal Zone Management
DBMS	Duxbury Bay Maritime School
DCR	MA Department of Conservation and Recreation
DEP	MA Department of Environmental Protection
DER	MA Department of Fish and Game, Division of Ecological Restoration
DFG	MA Department of Fish and Game
DMF	MA Department of Fish and Game, Division of Marine Fisheries
DPW	Department of Public Works
ED	Executive Director, MassBays
EDA	Estuary Delineation and Assessment
EPA	U.S. Environmental Protection Agency
ENHC	Essex Natural Heritage Commission
EO	Executive Order (specifically those signed between January and June 2025)
ESG	Ecosystem Services Gradient
ETT	Ecohealth Tracking Tool
FTE	Full-time Equivalent
GOMC	Gulf of Maine Council on the Marine Environment
IIJA	Infrastructure and Jobs Act of 2021
IRWA	Ipswich River Watershed Association
ISA	Interagency Service Agreement
LGC	Local Governance Committee
LID	Low Impact Development
LNS	Lower North Shore (MassBays Region)
LOE	Level of Effort
MC	Management Committee
Mass Audubon	Massachusetts Audubon Society
MassBays	Massachusetts Bays National Estuary Partnership
MassDOT	MA Department of Transportation
MassDPH	MA Department of Public Health
MassSMAP	Massachusetts Science and Monitoring Advisory Panel
MB	Metro Boston (MassBays Region)
MCCA	Massachusetts Coastal Condition Assessment
MIT Sea Grant	MIT Sea Grant College Program
MMC	Massachusetts Marine Collective
MOTN	Marine & Oceanographic Technology Network
MS4	Municipal Separate Storm Sewer Systems

MVP	Municipal Vulnerability Preparedness
MVPC	Merrimack Valley Planning Council
MWRA	Massachusetts Water Resources Authority
MRWC	Merrimack River Watershed Council
MyRWA	Mystic River Watershed Association
NECC	Northern Essex Community College
NEP	National Estuary Program
NEPORT	NEP On-line Reporting Tool
NERACOOS	Northeast Regional Association of Coastal and Ocean Observing Systems
NHDES	New Hampshire Department of Environmental Services
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NS	North Shore (LNS + UNS MassBays regions)
NSRWA	North and South Rivers Watershed Association
NU	Northeastern University
NUMSC	Northeastern University Marine Science Center
NWF	National Wildlife Federation
NWR	National Wildlife Refuge
O&M	Operations and Management Plan
OMSAP	Outfall Monitoring Science Advisory Panel
ORD	Office of Research and Development, EPA
OST	Office of Science and Technology, EPA Headquarters
PFAS	Per- and PolyFluoroAlkyl Substances
PIE-Rivers	Parker-Ipswich-Essex Rivers Restoration Partnership
PRNWR	Parker River National Wildlife Refuge
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RC	Regional Coordinator
RCC	Restoration Coordination Center (Cape Cod)
RPA	Regional Planning Agency
RSP	Regional Service Provider
SLL	Stone Living Lab
SLR	Sea Level Rise
SS	Staff Scientist, MassBays OR South Shore (MassBays Region)
SSCW	Salem Sound Coastwatch
SSL	Sustainable Solutions Lab
SSU	Salem State University
STAC	Science and Technical Advisory Subcommittee, MassBays
TNC	The Nature Conservancy
UHI	Urban Harbors Institute
UMB	University of Massachusetts Boston
UNH	University of New Hampshire
UNS	Upper North Shore (MassBays Region)
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WAA	Watershed Action Alliance
WBNERR	Waquoit Bay National Estuarine Research Reserve
WHOI	Woods Hole Oceanographic Institution
WWTP	Wastewater Treatment Plant

A. Summary

2024-2025 Progress and Accomplishments

In our annual ***NEPORT reporting*** to EPA for October2023 through September 2024, MassBays submitted documentation of *1,294 acres of habitat restored,* including eelgrass and salt marsh, and *leveraged funding of more than $3 million*. This translates to more than $3.50 cash and in-kind support secured for every $1 invested by EPA. Leveraged funds are in addition to the 1:1 non-federal resource committed as direct match to EPA's funding under CWA §320.

This Spring, in partnership with the Massachusetts Water Resources Authority (MWRA), NERACOOS, and MIT Sea Grant, MassBays convened more than 150 scientists, data users, managers and policymakers from across the Gulf of Maine for a regional Monitoring and Research Symposium to learn about ongoing water quality and habitat monitoring and research in the Gulf of Maine. Drs. Janet Duffy-Anderson from Gulf of Maine Research Institute and Damian Brady from the University of Maine provided keynotes about the drivers of change in the Gulf of Maine, setting the stage for a series of talks by nearly 40 speakers over two days, with panel discussions following each session. Topics ranged from water quality and habitat and wildlife monitoring to research on the impacts of emerging contaminants and invasive species on local ecosystems. Dr. Jon Witman from Brown University concluded the symposium on a high note as he described how the ecosystems on Cashes Ledge, in the middle of the Gulf of Maine, is gradually recovering from the kelp and biodiversity losses over the past 60 years. This may serve as an example of how the Gulf of Maine can slowly recover with the right actions conducted by devoted scientists, managers and policymakers and continued and sustained funding and support to communities.

MassBays continues to take advantage of our status (marking two years in October 2024) as a Center in the School for the Environment at University of Massachusetts Boston to augment our capacity for fundraising, communications, and staffing. For example, MassBays:

1. Submitted a second successful proposal to Restore America's Estuaries under the National Estuary Program Grants. Pending final award, $475,456 will support a 3-year, MassBays-wide program to demonstrate restoration of eelgrass meadows using seeds. This first-of-its-kind restoration effort in Massachusetts is expected to result in more than four acres of new habitat, and a longer-term effort that will put our meadows on a growth trajectory.
2. Employed two Graduate Assistants, providing work experience and insights into the utility of applied research to affect change and improved environmental conditions. The students assisted with the planning of the Gulf of Maine Symposium, helped to launch the Massachusetts Science and Monitoring Advisory Panel (MassSMAP), a successor to the long-standing Outfall Monitoring Science Advisory Panel previously hosted by EPA and DEP, and analyzed eelgrass habitat data for a joint project with the Cape Cod National Seashore. (More information on these projects is included in Section B).
3. Developed job description for a new MassBays' Director estimated to be posted in July 2025 to fill position by early Fall 2025; developed a job description for a part-time Communications Position. Current Director Pam DiBona has been working part-time since August 2023 due to medical issues. and will be retiring as of September 1, 2025.

Central Staff and Regional Service Providers (RSPs) also advanced the following projects aligned with our CCMP goals:

- Central staff continued work on two grants, the first from Woods Hole Sea Grant to pilot test seed-based restoration of eelgrass, and a second from RAE to prioritize restoration of tide gates to benefit salt marsh health. Both are in their second year of funding, on time and on budget.
- With assistance from EPA's Chelmsford lab and the NS and SS RPS, Central staff launched continuous water quality monitoring systems in Duxbury Bay, Danvers River/Salem Sound, and the Lower Merrimack River.
- The Cape Cod RSP developed the Cape Cod River Herring Monitoring Dashboard, an interactive online tool that delivers near-real-time updates on volunteer counting efforts across the region.

Additionally, APCC led the completion of two stormwater infrastructure constructed on Scargo Lake, Dennis, with final plantings as of spring of 2025.

- The Metro Boston RSP, which coordinates the Boston Harbor Ecosystem Network (BHEN), joined with the MassECAN Salt Marsh Working Group to host a Salt Marsh Science Symposium on April 30th at UMass Amherst's Mt. Ida campus in Newton. Sixty-one attendees heard from panelists (agenda at https://shorturl.at/inOXf) and participated in the discussion.
- The South Shore RSP adopted a new method to recruit, train, and foster long-term connections with volunteers participating in their herring count and horseshoe crab spawning surveys. Using "Volunteerlocal" allowed NSRWA to fill all needed volunteer slots and facilitated uptake of new ArcGIS survey tools for real-time data upload.
- The Upper North Shore RSP staff completed training through the North Atlantic Aquatic Connectivity Collaborative (NAACC) and are now certified to conduct non-tidal assessments, tidal assessments, and culvert condition assessments. Subsequently, they worked with two communities to assess 40 culverts in the MVPC region and supported two other communities in applying for and receiving DER Preliminary Dam Assessment Grants for the Stevens Pond Outlet Dam and Johnsons Creek Dam.
- The Lower North Shore RSP staff carried out post-restoration monitoring of salt marsh vegetation at Salem Collins Cove where they built a living shoreline in the past few years. Results of monitoring as well as monitoring of other salt marshes were put together in a report which is being finalized.

See ***Section B, Completed Major Projects***.

2025-2026 Proposed Work

Selected highlights of proposed new work for the coming year include:

- Pursue funding to expand seed-based restoration of eelgrass along the Eastern seaboard, building on pilot studies funded by WHOI Sea Grant and Massachusetts-specific efforts funded by RAE. (Central Staff)
- Pursue funding to complement monitoring and outreach work on intertidal blue mussel populations to be conducted in SS and LNS MassBays regions (see next items), to better understand historical and current population dynamics as well as regional conservation and restoration potential for this coastal habitat-forming sentinel species. (Metro Boston)
- Develop and launch community science mussel survey to implement blue mussel monitoring at select intertidal/dock areas throughout summer. (South Shore)
- Gather stories from long-time North Shore residents on historic blue mussel abundance, develop and share community science mussel survey, develop and implement blue mussel monitoring at select intertidal/dock areas throughout summer. (Lower North Shore)
- Expand the 2026 Cape Cod State of the Waters report with additional data graphics and develop updated R scripts to generate plots that provide comparisons and trends over time. (Cape Cod)
- Complete a three-pronged effort to improve habitat monitoring: Marsh Edge Erosion Monitoring using UAV-LiDAR and UAV-normal-color imagery, Marsh Wrack Evaluation and Mapping using UAVs, and identifying locations for possible eelgrass restoration based on bathymetry and other spatial parameters using UAV-normal color imagery. (Upper North Shore)

Specific proposed MassBays-wide and regional tasks are described in ***Section C, New and Ongoing Projects***.

Staffing and Management

MassBays' Management Committee sets priorities for the program and fosters many partnerships for engagement in our work. Committee members for the period July 1, 2024, through June 30, 2025, are listed below:

Harlan	Doliner	Marine & Oceanographic Technology Network
Rebecca	Dupont-Coutu	New England Civil Engineering
Kate	Frew	Massachusetts Division of Marine Fisheries
Adrienne	Lennon (through 5/25)	Merrimack Valley Planning Commission
Jerrard	Whitten (from 5/25)	Merrimack Valley Planning Commission
Kylie	Abouzeid (through 3/25)	Massachusetts Department of Transportation
Andrew	Gottlieb	Association to Preserve Cape Cod
Jon	Grabowski	Northeastern University Marine Science Center
Stephen	Kirk	The Nature Conservancy
Denise	Ellis-Hibbett	Massachusetts Water Resources Authority
Elizabeth	Gorrill	Massachusetts Division of Ecological Restoration
Lealdon	Langley	Massachusetts Department of Environmental Protection
Regina	Lyons	U.S. Environmental Protection Agency
Danielle	Boudreau	National Oceanic and Atmospheric Administration
Purvi	Patel	Executive Office of Energy and Environmental Affairs
Juliet	Simpson	MIT Sea Grant
Tyler	Soleau	Massachusetts Office of Coastal Zone Management
Kristin	Uiterwyk	Urban Harbors Institute
Marissa	Gutierrez	Anderson & Kreiger
Samantha	Woods	North and South Rivers Watershed Association
Carol	Thornber	School for the Environment at UMass Boston

Director Pam DiBona is responsible for the overall management of the program, including reports to EPA and other funders, and staff supervision, including oversight of Regional Service Providers in line with contracts. In the coming year she will coordinate the hiring of a new Director and a part-time Communications staff person.

Senior Scientist Prassede Vella leads our continuous water quality monitoring program and is the PI for our tide gate restoration projects. She staffs the Science and Technical Advisory Subcommittee to our Management Committee and collaborates with institutional partners to generate data critical to MassBays CCMP implementation. This year she will mentor a *Graduate Student Assistant* to update our Ecosystem Delineation and Assessment, including primary component statistical analysis (PCA) to confirm ecosystem categories that underpin our CCMP's habitat targets.

Program Manager, Coastal Habitat Restoration and Data Quality Jill Carr leads MassBays' eelgrass monitoring and restoration program, and MassBays' Monitoring Coordinators Network which provides resources, tools and communications to water quality and habitat monitoring program managers. While her salary is not included in this year's budget (her efforts are assigned to IIJA and other funded projects), she will continue to provide critical technical assistance to community-based monitoring groups to make more high-quality data available for State of the Bays reporting.

Regional Service Providers (RSPs) connect MassBays with planning area communities organized into five regions: Upper North Shore, Lower North Shore, Metro Boston, South Shore, and Cape Cod. Under cooperative grants from MassBays, each RSP designates a Regional Coordinator, in turn responsible for identifying regional priorities consistent with the outcomes articulated in the CCMP and implementing an annual workplan at the local level. For FFY2025, the following organizations will serve in this capacity:

- Merrimack Valley Planning Commission (MVPC)/MassBays Upper North Shore Region
- Salem Sound Coastwatch (SSCW)/MassBays Lower North Shore Region
- Northeastern University Marine Science Center (NUMSC)/MassBays Metro Boston Region
- North and South Rivers Watershed Association (NSRWA)/MassBays South Shore Region
- Association to Preserve Cape Cod (APCC)/MassBays Cape Cod Region

FFY2025 Budget Overview

A detailed budget request and narrative are included in ***Section D;*** a summary is included here:

Salary & fringe	$	225,045
Travel	$	0
Supplies	$	0
Contractual	$	0
Other Direct Costs		
RSPs	$	418,972
Healthy Estuaries Grant	$	90,958
Total Direct Costs	$	734,975
Indirect Costs (36.4% on Direct Costs)	$	115,025
Total Request	**$**	**850,000**

B. Completed Major Projects and Activities (July 1, 2024 to June 30, 2025)

MassBays' work for FFY2024 advanced the Goals and Strategies of our CCMP:

Goal 1. MassBays provides new resources to support research and management in the Bays
- Strategy 1.1. Make new data available, especially to address gaps in knowledge
- Strategy 1.2. Support valid (QA/QC) data collection and use
- Strategy 1.3. Analyze and present existing data in multiple formats to document baselines and trends

Goal 2. MassBays reaches all planning-area municipalities with actionable information about coastal habitats
- Strategy 2.1. Support and conduct research to address gaps in knowledge and inform policy and actions regarding ecosystem conditions and functions
- Strategy 2.2. Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics
- Strategy 2.3. Facilitate access to decision making forums by impacted communities

Goal 3. MassBays provides regular and locally informed State of the Bays reporting that reflects the unique characteristics of MassBays assessment units (embayments, rocky shore, barrier beach), and documents progress to inform local action and progress toward target conditions.
- Strategy 3.1. Establish target (improved) water quality and habitat conditions tied to desired uses and ecosystem services, and document progress toward those targets.
- Strategy 3.2. Guide local action to expand habitat and improve water quality according to targets
- Strategy 3.3. Maintain MassBays' National Estuary Program status

Our work is closely aligned with the Clean Water Act Core Programs, which are:
(1) establishing water quality standards
(2) identifying polluted waters and developing plans to restore them (total maximum daily loads)
(3) permitting discharges of pollutants from point sources (National Pollutant Discharge Elimination System permits)
(4) addressing diffuse, nonpoint sources of pollution
(5) protecting wetlands
(6) protecting coastal waters through the National Estuary Program
(7) protecting Large Aquatic Ecosystems.

The following list of accomplishments is organized according to the CCMP Strategies included in our CCMP and completed by June 30, 2025. Each project description includes the following:

Title
CWA core program: Per list (1-7) above
Objective: project-specific objective
Partners: Collaborators not directly funded by MassBays/§320 funds
Status: as of June 2025
Accomplishments and Deliverables: completed products

Strategy 1.1 Make new data available, especially to address gaps in knowledge

Title	**Implement MassBays Monitoring Plan (Central Staff)**
CWA Core Program	Protecting coastal waters through the National Estuary Program
Objective	Compile data sets for MassBays' delineated embayments, toward the goal of comprehensive and specific State of the Bays reporting.
Partners	STAC, DEP, SSCW, SSU, CCS, CZM, DBMS, NSRWA, ACASAK Technologies
Status	Year 3 completed; contract renewed for the final monitoring year: 25 sites in the Nantucket Sound, Vineyard Sound, Buzzards Bay and around the Islands.
Accomplishments and deliverables	
Coastal Acidification Monitoring and Management	Incorporated pCO_2 and pH measurements as part of the continuous monitoring network with purchase of three pCO_2 sensors funded by NROC.
Water quality monitoring	1) In June 2025 deployed three continuous monitoring sensors (Danvers River mouth, Lower Merrimack River, Duxbury Bay) in collaboration with USGS to gather water quality data to answer priority questions in each embayment. September-December 2024 deployed one continuous monitoring system as a pilot. Data are telemetered directly to USGS and transmitted live on the web. Merrimack; DKP: and Danvers. 2) Initiated grab and column profile monitoring in same embayments. Collaboration with partners: EPA Chelmsford Lab, SSCW, SSU & DEP (Danvers River/Salem Sound), Duxbury Bay Maritime School, Center for Coastal Studies, and NSRWA (Duxbury to Plymouth).
Host and manage #MassWrack iNaturalist challenge	Continued monitoring citizen science data entries. Shared opportunities to use data for graduate-level investigation to UMB SFE and Biology students via a proposed joint application (due 6/23/25) to the Massachusetts Environmental Trust.
Explore eelgrass-aquaculture interactions	Scoped and submitted a collaborative proposal for research funding on interactions between eelgrass and recreational/commercial shellfish species to inform policies that may enhance synergies among eelgrass restoration efforts, fisheries, and/or the aquaculture industry. Initial application to NOAA was unsuccessful; a second application was submitted to MIT Sea Grant on 5/23/25.
Causes of eelgrass loss in Wellfleet, MA	Support National Parks Service to study causes of eelgrass loss and potential for recovery along the outer cape shoreline around Wellfleet, analyzing water quality data and of historic stressors. Completed data analysis of historic trends related to nutrients, temperature, oxygen, weather, fishing pressure, boating impacts, and eelgrass health. Final report is in preparation.
Transitioning from Outfall Monitoring Science Advisory Panel to Massachusetts Science and Monitoring Assessment Panel	Developed a draft charter, recruited new members for a Science Advisory Panel that evolves from the existing OMSAP to provide expert input for management of discharges in the Bays. Panel experts will assess results of ambient water quality and biological monitoring carried out by wastewater treatment plants pursuant to NPDES permits, along with other verified and reliable data sources. The work of MassSMAP will support permitting agencies' efforts to protect human and environmental health from adverse impacts of existing and future discharges into the coastal and ocean environment.

Strategy 1.2 Support valid (QA/QC) data collection and use

Title	**Support for Citizen Science Monitoring Efforts (Central Staff)**
CWA Core Program	Identifying polluted waters and developing plans to restore them
Objective	Increase the value and use of citizen monitoring data for decision making across the region.
Partners	Monitoring Coordinators Network, CSA Data Quality and Metadata Working Group, MassRivers Alliance, DEP, EPA EN, EPA Region 1, Eastern Research Group, UMCES-IAN
Status	One-on-one assistance was provided to community-based groups and watershed organizations, as well as engagement in regional and national efforts. Training, outreach and technical support continues to promote the use of AquaQAPP and MassWateR, and the submission of data to WQX.
Accomplishments and deliverables	
Provide AquaQAPP outreach & track use	Presented at local and regional venues to demonstrate AquaQAPP and promote its use in developing Quality Assurance Project Plans. An application to DEP under S.319 for new funding to support necessary revisions to incorporate July 2023 EPA QAPP guidance was unsuccessful; instead, MassBays has committed IIJA funding to this purpose.
EPA Exchange Network project: MassWateR	Provide training, outreach and CoP support for MassBays' popular R package, *MassWateR*, as part of Exchange Network funding for the project *Building Technical Capacity for Data Analysis & Visualization*. *MassWateR* is a robust R-based package developed for analyzing and organizing surface water monitoring data collected by watershed associations and citizen science groups. The objective of the package is to automate and streamline quality control and exploratory analysis of data, and to format data for upload to the national Water Quality Portal via EPA's Water Quality Exchange (WQX). Collaborated with other NEPs in New England to submit a successful proposal for upgrades to, and expansion of *MassWateR* across the region through EPA's Exchange Network funding program. Upgrades to include tools for continuous data. Awaiting EPA contract.
One-on-one tech support & training	Continued to provide training and technical assistance to dozens of water quality and habitat monitoring programs coastwide.
Communication with Monitoring Coordinators	Continued Monitoring Coordinators Network (MCN) communications through newsletters. Developed a new interactive web-based Community of Practice forum to be tested by MCN members and officially released in FY25.

Title	**Support state-wide eelgrass mapping (Central Staff)**
CWA Core Program	Identifying polluted waters and developing plans to restore them
Description/Objective	Conduct field work to ground-truth aerial surveys of eelgrass extent and density via an ISA with DEP.
Partners	DEP, SSCW
Status	First two-year effort completed on schedule; new contract in place for an additional three years with expanded scope to include conducting a geospatial QA/QC of DEP eelgrass polygons.
Accomplishments and deliverables	
Implemented years 1-2 of statewide eelgrass mapping	Boat-based fieldwork for ground truthing of eelgrass maps generated by DEP with aerial imagery. Species presence and condition assessed at approximately 800 stations in each project area, including Salisbury to Marshfield (summer 2023), and the southern shore of Cape Cod and Nantucket (summer 2024). Annual reports and data transfers are completed after each field season.

Strategy 2.1 Support and conduct research to address gaps in knowledge and inform policy and actions regarding ecosystem conditions and functions

Title	**Investigating eelgrass conditions and water quality in Duxbury-Kingston-Plymouth Bays (Central Staff, South Shore)**
CWA Core Program	Protecting coastal waters through the National Estuary Program
Description/Objective	1) Implement the annual eelgrass rapid assessment with citizen scientists to monitor eelgrass extent and condition and inform efforts to determine the causes of local eelgrass loss. 2) Draw from results of water quality monitoring to collect information on physical conditions that may be contributing to the losses.
Partners	DMF, Town of Duxbury, Town of Plymouth, Volunteers, EPA Region 1 (Chelmsford Lab), SSU, STAC
Status	1) The 7th year of the volunteer-based rapid assessment of eelgrass in DKP at 119 stations was completed. Discussion on capacity to do an 8th year of the survey are underway. 2) The 2nd year of water quality monitoring to sustain eelgrass loss investigation was completed in partnership with EPA Reg ion 1.
Accomplishments and deliverables	
Eelgrass rapid assessment survey	Successfully completed survey for the 7th year including collection and analysis of data. Data analyzed showing continued loss of eelgrass and changes in distribution.
Water quality	Data from the 2024 sampling were analyzed and a brief report for 2023-2024 is being prepared. Presented preliminary results to EPA and developed QAPP and SAPs for 2025 sampling.

Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics

Title	**Gulf of Maine Monitoring & Research Symposium (Central Staff)**
CWA Core Program	Protecting coastal waters through the National Estuary Program
Objective	Convene scientists to highlight and share findings regarding monitoring and research in the GOM
Partners	MWRA, MIT Sea Grant, NERACOOS
Status	Symposium hosted at North Essex Community College (Haverhill MA) on April 8-9, 2025. More than 150 monitoring program coordinators and researchers, data-users, and policymakers attended to learn about ongoing water quality and habitat monitoring and research in the Gulf of Maine [Agenda].
Accomplishments and deliverables	
Symposium held April 8th and 9th, 2025	Highlights included: Drs. Janet Duffy-Anderson from Gulf of Maine Research Institute and Damian Brady from the University of Maine provided keynotes about the drivers of change in the Gulf of Maine 1) A series of talks by 38 speakers over two days, with panel discussions following each topic-specific session. Topics ranged from water quality and habitat monitoring to research on the impacts of emerging contaminants and invasive species on local ecosystems. 2) Dr. Jon Witman from Brown University expanded on research documented by a PBS NOVA series about GOM (an excerpt was presented), describing how the rich ecosystem on Cashes Ledge, in the middle of the Gulf, has suffered losses in kelp and biodiversity over the past 60 years. However, in the past few years he and his team have seen a gradual return to the unique systems which brings a level of hope for the GOM. He called for more work and funding for research to realize progress in this arena. Compilation of presentations and recommendations is in progress and will be available on the MassBays website in the coming weeks.

Title	**Presentations & Publications**
CWA Core Programs	All
Objective	Share MassBays' findings, projects, and expertise with multiple audiences
Partners	multiple
Status	MassBays continues to share case studies, products, and findings with local, regional, and national audiences.
Accomplishments and deliverables	
Central Staff	*Presentations* • *Increasing the Quantity, Quality, and Accessibility of NGO Water Quality Data Through Exchange Network Tools* presented at the E2i: Environmental Information and Innovation conference 9/17-9/19/24, by EPA request. (JC) • Presented about MassBays' public input processes at the ANEP Technical

	Transfer Conference at Stony Brook University. (PD) • Presented at the Restore America's Estuaries Conference held in October 2024, Arlington, VA: *Optimizing Tide Gate Operation and Management to Improve Salt Marsh Health* (PV) • Attended and presented at the NEP Technical Transfer meeting in Stony Brook, NY. *MassBays Continuous Nearshore Monitoring Network* (PV) • Attend NEP Technical Transfer meeting in Stony Brook, NY. Present two sessions on eelgrass seeding and WQX data workflows titled: *Moving toward seed-based approaches to eelgrass restoration and resiliency* and *NEP's and Open Data: Using WQX to archive, share, and disseminate water quality data. (*JC) • Presented at the 2025 Merrimack River Water Quality Roundtable: SECWQALS Monitoring Program. (PV) *Publications* • Published manuscript to *Geosciences* journal, special edition on seafloor mapping. Article titled: *An inter-method comparison of drones, side scan sonar, airplanes, and satellites for eelgrass (Zostera marina) mapping and management*. Accepted on 12/12/24; link forthcoming. (JC) Awards • Director received the Gulf of Maine Council on the Marine Environment's Visionary Award at the Annual Awards ceremony (July 2024) • Senior Scientist received the Gulf of Maine Council on the Marine Environment's Distinguished Service Award at the Annual Awards ceremony (July 2024) • Director attended the Massachusetts Rivers Alliance event to receive a Water Warrior Award.
Upper North Shore	*Presentations* • Gave talk as part of the Essex Shipbuilding Museum's Spring Speaker series focused on the function and future of our saltmarsh systems.
Lower North Shore	*Presentations* • Presented at the Massachusetts Coastal Community Alliance meeting for mayors and town administrators • Presented at the Marblehead Garden Club on Salem Sound and Invasive Species • Presented on Invasive Plant Species at the Nahant Public Library
Metro Boston	*Presentations:* • Hosted and led the fall semi-annual BHEN meeting (11/19/2024) as a workshop focused on coastal and marine biodiversity monitoring, featuring talks on the MA state biodiversity goal setting initiative and the development of an intertidal biodiversity monitoring framework for mixed coarse substrates in the Boston Harbor Islands • Presented on seagrass conservation and restoration at a BHEN seagrass-inspired art exhibition opening. • Led an interactive exhibit about fisheries and society (perceptions of seafood, lobster fishing, and wild vs. farmed oyster harvesting) at the High School Marine Science Symposium.

South Shore	*Presentations* • Presented *"Massachusetts Bays National Estuary Partnership working in the Jones River Watershed: Saltmarshes, eelgrass, tide gates, and more" at* Jones River Watershed Association's 39th Annual meeting. Presentation available at: https://us02web.zoom.us/rec/share/RBpZJYQzEebMLHeiUtPZVqxjjI_BUfPTl6Icj9sxsiqNxYcCoN8RN1_fugMmxkj9.MHY4ehqWkUNbmH6j Passcode: s.tPe%9r • Presented '*Eelgrass and Horseshoe Crabs*' at the Duxbury Senior Center in partnership with Duxbury Bay Maritime School's Lifelong Learning program.
Cape Cod	*Presentations* • Sept 12: Attended and presented at EPA coordinated regional workshop on bog restoration. April served on the steering/planning committee and provided facilitation of small group discussion to identify most useful parameters for monitoring project success to date. Jordan Mora, APCC lead ecologist presented data on completed Childs River restoration. *Publications* • Article in Enterprise on regional stormwater boat ramp project and construction underway at Scargo Lake site in Dennis. Also interviewed by WCAI, new piece pending. • *Massachusetts Association of Conservation Commissions (MACC) 2025 Annual Environmental Conference on March 1:* APCC Lead Ecologist and Science Advisor, Jordan Mora, co-presented with Cristina Kennedy from DER. Their workshop focused on Salt Marsh Restoration through Tidal Restrictions Removal - *Lessons Learned and Project Planning Considerations based on a joint report providing analysis of data from early 2000s through 2020 on 8 salt marshes restored on Cape Cod* • *New England Estuarine Research Society (NEERS) Conference* – APCC restoration and freshwater pond staff attended and presented at the NEERS conference in Provincetown in April 2025.

Strategy 3.1 Establish target (improved) water quality and habitat conditions for each embayment tied to desired uses and ecosystem services

Title	**Develop targets for diadromous fish habitat extent and condition (Central Staff)**
CWA Core Program	Protecting coastal waters through the National Estuary Program
Objective	Establish habitat goals to support diadromous fish migration, spawning, and feeding for MassBays embayments to be realized by 2050.
Partners	EPA ORD, STAC, DMF, River Herring Network, MIT Sea Grant, Comprehensive Environmental
Status	Targets identified; incorporation into ETT underway.
Accomplishments and deliverables	

Diadromous fish habitat targets identified	STAC members and additional subject matter experts used DMF's 2024 diadromous fish layer and interactive map as the basis to set long-term targets for diadromous fish migratory habitat (miles) and spawning habitat (acres). Targets for each of the five regional habitats have been established. Meeting these will require successful implementation, by 2050, of almost 50 restoration projects across MassBays, including fish passage improvement, fishway maintenance, and dam removal. The ETT is currently being updated to incorporate these data.

Strategy 3.3 Maintain MassBays' National Estuary Program status

Title	**Review and update MassBays SOPs (Central Staff)**
CWA Core Program	All
Description/Objective	Update Management Committee SOPs according to needs under the new host and CCMP Goals.
Partners	Urban Harbors Institute, MC
Status	Updated SOPs adopted by the Committee during the December 2024 meeting
Accomplishments and deliverables	
Nominating and Governance Subcommittee presentation to MC September 2024	With coordination assistance from UHI, the Subcommittee proposed changes including: 1) Maximum number of MC members is now increased to 44. 2) Membership list refers to "community representatives" instead of "local government representatives" to allow broader local engagement. 3) A new threshold for out-of-cycle changes to the MassBays budget requiring notice to the MC was set at 10% of individual grant awards, to align with EPA notification requirements. 4) STAC SOPs are reviewed every 5 years (same schedule as the MC SOPs).
Unanimous approval of changes December 2024	SOPs available here.

Title	**Communications implementation (Central Staff, Cape Cod)**
CWA Core Program	All
Description/Objective	APCC Communications staff person assisted MassBays Central Staff with communications implementation
Partners	Program partners
Status	Quarterly newsletters delivered to 900+ subscribers; social media accounts (Facebook, Instagram, LinkedIn) more recently establish and becoming more active; expanding and updating website (massbays.org) as of June 2025 (in progress)
Accomplishments and deliverables	
Quarterly e-newsletters	Four quarterly newsletters posted: Summer 2024 (873 subscribers, 40.2% opening rate) Fall 2024 (872 subscribers, 46.6% opening rate) Winter 2025 (949 subscribers, 49.9% opening rate) Spring 2025 (900 subscribers, 48.2% opening rate)

Social media	Instagram: massbaysnep 35 posts; 39 followers; 19 following LinkedIn: MassBays National Estuary Partnership 87 posts; 227 followers Facebook: https://www.facebook.com/massbaysnep/ 87 posts; 200 followers
Website updates	MassBays updated all massbays.org pages to comply with EOs.

Title	**STAC convening and programming (Central Staff)**
CWA Core Program	All
Description/Objective	Convene and support the Chair and committee that provides input and assistance to MassBays on science and research matters.
Partners	State and federal agency representatives, research scientists
Status	Scope of work (topics and timeline) for 2025-2026 developed
Accomplishments and deliverables	
Compiled RSP/LGC input	At each STAC meeting, the agenda included a brief session for input, updates and/or questions from the RSPs to make sure they can benefit from STAC's guidance and expertise and at the same time share the work and findings that they collect from their respective region to gain input.
Solicited "hot topics" from MC	During the March 2025 MC meeting, the STAC Chair solicited ideas on topics and emerging issues that they would need guidance and more information and work on. Issues included status and trends of intertidal blue mussel populations in the GOM (compared to Massachusetts); technology for monitoring herring and assessing success of herring habitat restoration following dam removal (e.g. eDNA) for the purposes of tracking progress toward targets; and assessing microplastics in sewage discharges. All agreed that STAC will focus on questions and research that has an end point in management, to advance toward the goals in the CCMP.
Provided input for ongoing work by Central Staff and RCs	STAC provided input to the RAE-funded tide gate prioritization project, and the outline for EDA 3.0. STAC has also served as a forum to share best practices and lessons learned; for example, at the request of the RCs for information about salt marsh restoration methods, in February 2025 STAC hosted a presentation by Gregg Moore (UNH) regarding restoration efforts he and his collaborators are conducting in Great Marsh as part of various restoration efforts.

Title	**RC convening and collaboration (Metro Boston, Central Staff)**
CWA Core Program	All
Description/Objective	Convene and support the RCs as they implement their scopes of work, and identify areas of cross-collaboration and efficiencies
Partners	RSPs
Status	Streamlined progress reporting, new opportunities identified and funded
Accomplishments and deliverables	

Established reporting formats to minimize repetition across requirements	Senior Scientist surveyed and met with RCs to determine where reporting was duplicative or not necessary, and established an updated system that will streamline the submission of deliverables, workplans and other materials.
Convened RCs	Metro Boston RC organized an in-person meeting at UMass Boston on 3/13/2025 at which all RCs attended.
Identified cross-region "hot topics"	Topics include reduction in intertidal blue mussel populations and means for documenting and responding; opportunities for eelgrass restoration; need for regional physical oceanography data, especially with regard to observed low-DO areas in Cape Cod Bay and accelerated erosion on the North Shore.
Funding pending for a cross-MassBays eelgrass restoration program	Program Manager for Coastal Habitat Restoration and Data Quality led the development of a joint proposal under the RAE NEP Watersheds Grant Program. Over $475,000 will be applied to conduct multiple eelgrass seeding treatments at sites in three Bays over the course of two growing seasons, with ongoing monitoring. At least four acres of restored meadows are expected.

C. New and Ongoing Projects and Activities (July 1, 2025 to June 30, 2026)

Strategies and Outcomes

MassBays' work over the coming year will implement components of our Interim CCMP and contribute to the following Outcomes:

A. Sustainable NEP
B. Improved habitat continuity and restored hydrology
C. Improved water quality
D. Resilient coastal habitat, including nature-based coastal protection
E. Restored natural communities
F. Robust interagency and interdisciplinary collaboration and partnerships
G. Well-informed, multisector input to decision making

Our proposed work with funding under Federal Fiscal Year 2025 is aligned with and driven by the following Goals and Strategies described in the CCMP:

Goal 1. MassBays provides new resources to support research and management in the Bays.
- Strategy 1.1 Make new data available, especially to address gaps in knowledge
- Strategy 1.2 Support valid (QA/QC) data collection and use
- Strategy 1.3. Analyze and present existing data in multiple formats to document baselines and trends

Goal 2. MassBays reaches all planning-area municipalities with actionable information about coastal habitats
- Strategy 2.1 Support and conduct research to address gaps in knowledge and inform policy and actions regarding ecosystem conditions and functions
- Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics
- Strategy 2.3 Facilitate access to decision making forums by impacted communities

Goal 3. MassBays provides regular and locally informed State of the Bays reporting that reflects the unique characteristics of MassBays assessment units (embayments, rocky shore, barrier beach), and documents progress to inform local action and progress toward target conditions.

Strategy 3.1 Establish target (improved) water quality and habitat conditions tied to desired uses and ecosystem services, and document progress toward those targets.
Strategy 3.2 Guide local action to expand habitat and improve water quality according to targets
Strategy 3.3 Maintain MassBays' National Estuary Program status

Our proposed tasks are also closely related to the Clean Water Act Core Programs, which are:

(1) establishing water quality standards
(2) identifying polluted waters and developing plans to restore them (total maximum daily loads)
(3) permitting discharges of pollutants from point sources (National Pollutant Discharge Elimination System permits)
(4) addressing diffuse, nonpoint sources of pollution
(5) protecting wetlands
(6) protecting coastal waters through the National Estuary Program
(7) protecting Large Aquatic Ecosystems.

The tables of proposed activities below, organized according to MassBays' CCMP Strategies, include the following:

Title (Region), Budget/LOE: Activity name and MassBays geographic region in which it will be carried out, and non-s.320 funding and/or LOE (hours) to be committed by Central Staff or RSP (for region-specific projects)
Description*:* Status (New or Ongoing), project activities and objectives
CWA Core Program*:* Per list (1-7) above
CCMP Outcome*:* Per list (A-G) above
Partners*:* Collaborators not directly funded by MassBays/§320 funds
Timeline & Deliverables*:* Product(s) expected, and the quarter (Q1-Q4) projected for their completion

Strategy 1.1: Make new data available, especially to address specific gaps in knowledge

Title (Region), Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Revise Monitoring Framework (Central Staff) 100h CS	***New*** Revise and update the monitoring framework to reflect habitat targets. Reframe as a Monitoring Framework and Science Plan that includes research needs.	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	STAC	(Q3) Draft revised and updated Monitoring Framework and Science Plan; (Q4) Final revised document incorporating input from STAC and others as needed.
Water quality monitoring (Central Staff, South Shore, Lower North Shore) 200h Senior Scientist 175h SS 10% LNS	***Ongoing*** CS: With FFY25 IIJA funding, expand and maintain continuous monitoring buoys in three locations (details provided in FFY25 IIJA workplan) CS: With FFY25 IIJA funding, conduct grab samples and profile sampling in sites near the continuous monitoring buoys to augment the sampling program. LNS: Assist with continuous water quality monitoring project and grab samples for better understanding of nutrients and water quality in Danvers River estuary and Salem Sound SS: Coordinate 2025 Riverwatch volunteer sampling efforts with NSRWA intern-based sample analysis; support water quality sampling by partners	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	USGS, DEP, Center for Coastal Studies, EPA Chelmsford, Salem State University Volunteers, Towns of Duxbury, Kingston, Plymouth, Hanover, Norwell, Scituate, Marshfield, Beverly, Salem	(Q2-4) Volunteer monitoring completed. (SS) (Q3-4) Technical support to sampling in the bays (SS) (Q3-Q4) Report on water quality sampling for 2025 season (CS)

Research eelgrass-shellfish interactions (Central Staff, Metro Boston) 120h CS 400h MB	***Ongoing/New*** Scope, develop, and submit a collaborative proposal for research funding on interactions between eelgrass and recreational/commercial shellfish species to inform policies that may enhance synergies among eelgrass restoration efforts, fisheries, and/or the aquaculture industry. Begin conducting eelgrass research.	(6) Protecting coastal waters through the National Estuary Program (B) Improved habitat continuity and restored hydrology	MIT Sea Grant, DMF	(Q1) Submit grant proposal on eelgrass-bivalve interactions; (Q3) Host regional workshop and communications with industry, regulators and scientists to document perceptions of the nature of eelgrass-aquaculture interactions.
Bacteria monitoring - Clean Beaches & Streams 5% LNS	***Ongoing*** Identify sources of pathogen pollution to Massachusetts' waters, specifically Salem Sound and its tributaries, particularly illicit sewage discharges and faulty sewer and stormwater systems, and promote their remediation	(6) Protecting coastal waters through the National Estuary Program (B) Improved habitat continuity and restored hydrology	Manchester Coastal Stream Team, Volunteers	(Q1-4) List of remediation actions taken by municipalities (Q3-4) Bacterial levels for 18 - 24 outfalls or streams, results published on SSCW website under approved 2023 QAPP (Q4) All data including past years will be uploaded to WQX
Microplastic Sampling (Upper North Shore) 56h UNS	***Ongoing*** Collect surface water samples from established sites across the Great Marsh system to assess baseline trends in microplastic presence within our estuaries (15 surface water locations)	(6) Protecting coastal waters through the National Estuary Program (G) Well-informed, multisector input to decision making	University of New Hampshire, ETGM LGC, Governor's Academy, volunteers,	(Q2) Table of results of 2025 samples, field and lab data integrated into MVPC internal 8TGM Fieldmap (Q3-4) Microplastic Report for 2025 samples (Q3) Field sheets (spring 2026), field data integrated into MVPC internal 8TGM Fieldmap
Assessing water quality and presence of Sea Brook Trout (Lower North Shore) 2% LNS	***Ongoing*** Continues working with members of the Manchester Coastal Stream Team (MCST) to record temperature at Sawmill and Cat Brooks and sample EDNA for sea brook trout, herring and rainbow smelt. Support cold water fisheries DEP efforts.	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities	MCST volunteers	(Q3-4) Summary of results

Salt Marsh Vulnerability Assessment and Restoration (South Shore) 200h SS	***Ongoing*** Conduct assessments of specific salt marsh units using several field methods including elevation mapping, infrastructure assessments, and parcel ownership assessment; engage the towns and community to initiate plans for pilot-scale saltmarsh restoration projects; conduct education and outreach about the importance of salt marsh restoration and protection; work with volunteers to monitor salt marsh vegetation changes through the dock-based Salt Marsh Sentinels program. ***New*** Develop saltmarsh photo stations and protocol for community participation in monitoring.	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities Resilient coastal habitat, including implementation of nature-based coastal protection measures	UMass Boston, Cohasset Center for Student Coastal Research, Scituate High School, Dock owners, Salt Marsh Working Group.	(Q2-4) Targeted assessments of up to three salt marshes (Q3-4) Results of outreach to dock owners for data collection (Q3-4) Multiple photo stations in place
Horseshoe Crab Spawning Surveys (South Shore) 75h SS	***Ongoing*** Conduct horseshoe crab spawning surveys in Duxbury Bay to assess the population	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities	DMF, Town of Duxbury, Duxbury Beach Reservation Inc.	(Q3) Recruit, train, and schedule volunteers. Conduct horseshoe crab monitoring surveys (field work) (Q4) FY26 data submitted to DMF and included in outreach materials
Horseshoe Crab Community Science (Lower North Shore) 5% LNS	***Ongoing*** Continue year-round community survey to learn more about the local population of the Horseshoe Crab and conduct monitoring of spawning horseshoe crabs and collect environmental conditions data at select beaches mid-April through mid-June	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities	Mass Horseshoe Crab Advocates Steering Committee, volunteers	(Q1-4) Number of sightings reported through survey; list of monitoring days and number of volunteers (Q3-4) International Horseshoe Crab Day on June 20; website, newsletter, social media; survey and monitor training (Q4) Survey and monitoring results

Coastal Acidification Monitoring and management (Central Staff) 20h Senior Scientist	***Ongoing*** Incorporating the measurement of pCO_2 and pH as part of a continuous monitoring network.	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	Town of Duxbury, City of Beverly, towns along the Lower Merrimack River, EPA Region 1, USGS, NROC (funder NOAA IJJA)	(Q1-Q2) pCO_2 sensors deployed near the mouth of the Danvers River, in DKP, and in the Lower Merrimack River. (Q3) Data analysis and sharing to inform scientists and the shellfishing community. (Q4) Results will inform the coastal acidification monitoring plan developed by NECAN, once implemented.
Blue mussel monitoring and restoration (South Shore, Lower North Shore) 100h SS 6% LNS	***Ongoing*** Multi-year restoration of mussels in the near subtidal and low intertidal to benefit migratory shorebirds and restore a crucial hard-bottom species at the mouth of the North and South Rivers (SS) ***New*** Develop and share community science mussel survey, develop and implement blue mussel monitoring at select intertidal/dock areas throughout summer (SS, LNS)	6) Protecting coastal waters through the National Estuary Program Restored Natural Communities	MassAudubon, US Air Force (Hanscom/4th Cliff), volunteers	(Q2-4) Conduct and report on monitoring at 3rd and 4th Cliff (SS) (Q2) Memo on investigation of best methods for mussel monitoring with preferred protocols (Q1-4) Launch, advertise, and maintain iNaturalist project to assess populations (Q3-4) conduct local population monitoring
Monitoring Marine and Wetland Invasive Species (South Shore, Lower North Shore, Upper North Shore) 105h SS 7% LNS 100h UNS	***Ongoing*** Monitor established field sites for non-native species in cooperation with CZM. (all) Assist the Town of Norwell with managing purple loosestrife at Jacobs Pond. (SS) Participation in monthly (seasonal) monitoring of marine invasives as part of the MA EEA led initiative, MIMIC. Includes monthly monitoring of five sites in Ipswich, Essex, Gloucester, and Rockport. Additionally,	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities (G) Well-informed, multisector input to decision making	CZM, communities and volunteers from the regions	(Q3) Organize and train volunteers for 2026 (Q3-4) Conduct monthly MIMIC monitoring (Q4) Data submitted to CZM (all) (Q3-4) Conduct and report on purple loosestrife monitoring (Q3-4) Data from management efforts including maps, photos and data sheets; management areas integrated into MVPC

	participation in other invasive species management efforts including green crab management, Pepperweed & phragmites mapping, etc. (UNS)			internal 8TGM Fieldmap; meeting notes from Green Crab Task Force (UNS)

Coordinate the Outfall Monitoring Science Advisory Panel (Central Staff) 100h Senior Scientist 40h Director	***Ongoing*** Formally convene MassSMAP to track ambient monitoring data collected pursuant to WWTP permits and conduct the tasks outlined in the draft Charter. Finalize research questions with MassSMAP to help MassBays to address gaps in understanding about cross-system boundary impacts.	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	MassSMAP members	(Q1) convene first meeting of MassSMAP to finalize Charter (Q2) 1-2 meetings to discuss research questions, set parameters, etc. (Q3-Q4) First meeting of MassSMAP to look at annual data from NPDES permitted entity (Timing depends on the issuance of the dual EPA/MassDEP permit)
Monitor Diadromous Fish Runs (Cape Cod, South Shore 280h CC 150h SS	***Ongoing*** provide partners and volunteers with training, data management, QA/QC, reporting, and other assistance. Monitoring data will be translated into recommendations for restoring and protecting diadromous fish habitat,	(2) Identifying polluted waters and developing plans to restore them (B) Improved habitat continuity and restored hydrology (E) Restored natural communities (F) Robust interagency and interdisciplinary collaboration and partnerships	DMF, NOAA Restoration Center, River Herring Network, Cape Cod Conservation District, Cape Cod Cooperative Extension/ WHOI Sea Grant, other MassBays regions, towns (Barnstable, Brewster, Dennis, Eastham, Falmouth, Harwich, Mashpee, Orleans, Sandwich, Wellfleet, Yarmouth), NGOs.	(Q1) Final data report for 2025 herring counts to DMF, Participate in River Herring Network annual fall conference and/or workshops (all) (Q2) Reconnaissance of herring runs for potential blockages. Organize stream clearing activities with towns, herring commissions, DMF, and volunteers. (SS) (Q2-3) training 2026 count coordinators/volunteers (all) (Q3) Conduct Spring 2026 herring counts (all) (Q4) Draft 2026 report to DMF, River Herring Network (all)

Strategy 1.2: Support valid (QA/QC) data collection and application

Title (Region), Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Seeding the future: Restoring eelgrass and building community engagement across the MassBays NEP (RAE Grant) (Upper North Shore) 229h UNS	***New*** Implementing seed-based eelgrass restoration approaches across the MassBays NEP service areas to jump-start the recovery of eelgrass, increase community engagement, test the success of emerging restoration approaches, and build awareness and momentum for this work	(B) Improved habitat continuity and restored hydrology. (C) Improved water quality. (D) Resilient coastal habitat, including nature-based coastal protection.	MassBays, SSCW, Northeastern University, NSRWA, RAE	(Q1-2) Finalized QAPP, finalized restoration and donor bed locations identified and entered into MVPC GIS/fieldmaps, permitting for restoration work (Q3-4) Data from HOBO loggers provided to MassBays and entered into MVPC GIS/fieldmaps, results of on-site field assessments (Q4) Identification of selected treatment plan, summary of work completed (seeds harvested, seeds deployed), outreach materials (no. of attendees, photos, materials, photos) from event shared with MassBays and entered into MVPC GIS/fieldmaps
Using UAV Technology to Enhance Long-term Coastal Monitoring (Upper North Shore) 40h UNS	***New*** Complete three-pronged approach to improve monitoring of coastal systems: (1) Marsh Edge Erosion Monitoring: Acquire UAV-LiDAR and UAV-normal-color imagery at 5 long-term monitoring sites twice annually to evaluate marsh edge erosion. (2) Marsh Wrack Evaluation and Mapping: Monitor large-scale marsh wrack deposition with UAV at two locations twice annually to assess aerial extent and seasonal changes. (3) Eelgrass Suitability	(G) Well-informed, multisector input to decision making	MassBays, Boston University, University of New Hampshire, Local Communities (Essex, Ipswich, Newburyport, Salisbury)	(Q1, Q2) Preliminary data and final results; (Q2, Q3) Final report, development of viewers and maps, summary and or agenda/materials of outreach conducted to community

	Mapping: Identify locations for possible eelgrass restoration within Essex Bay through assessing the bathymetry and other spatial parameters using UAV-normal color imagery.			
Salt marsh monitoring and restoration (Upper North Shore) 70h UNS	Use survey developed in FY25, and protocol developed in FY25 to identify locations for saltmarsh monitoring in August/Sept of FY26. Additionally, support other saltmarsh restoration or monitoring efforts ongoing across the North Shore (e.g. PRNWR, Trustees, Mass Audubon)	(D) Resilient coastal habitat, including nature-based coastal protection	MassBays, CZM, SSCW, NSRWA, PRNWR, MassAudubon, Trustees	(Q1-3) Site Map, data collection field sheets and other materials. (Q4) Datasheets, collected field data integrated into MVPC internal 8TGM Fieldmap

Strategy 1.3 Analyze and present existing data in multiple formats to document baselines and trends

Title (Region), Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Freshwater pond and cyanobacteria data analysis development to determine localized site-specific patterns based on community needs (Cape Cod) 130h CC	Since 2018 APCC has monitored cyanobacteria in more than 100 lakes and ponds that connect to estuaries and serve as diadromous fish spawning habitat. Beginning in 2023, APCC partnered with the Cape Cod Commission on the Cape Cod Regional Pond Monitoring Program (CCRPMP) to conduct monitoring in 50 freshwater ponds as well. This year, the RSP will Utilize these cyanobacteria and freshwater pond data sets to complete site-specific analyses to inform management actions for protection or	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality (G) Well-informed, multisector input to decision making	Cape Cod Commission, Barnstable County, 15 Towns on Cape Cod, and watershed and pond organizations.	(Q1) R program code that can be used to provide information to stakeholders to make informed decisions about management actions R script (text and rmd files) – (Q2) Written summary of methods and analyses (Q1-4) Identify site specific data analysis needs based on town and community concerns and needs, and present suitable outreach.

	improvement of water quality and habitat.			(Q2-4) Outputs from shared products with communities (format TBD)
State of the Waters (SOTW) Report & Data Management (Cape Cod) 135h CC	The "State of the Waters: Cape Cod" (SOTW) reports on the condition of the Cape's coastal and fresh waters and their problems, causes, and possible solutions (https://capecodwaters.org). This project was initiated in 2019 and is designed to be an ongoing project with an annual update. Goals for FY26 are to 1) complete 2026 reporting, 2) update the 2025 SOTW Report with more data graphics and a description of last year's changes to the process which incorporated long-term datasets (2015-2024) from data sources across Cape Cod, and 3) develop R scripts to generate summary plots to review data and provide comparisons and trends over time.	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality (G) Well-informed, multisector input to decision making	Center for Coastal Studies, Buzzards Bay Coalition, Cape Cod Commission, UMass-Dartmouth, towns, WBNERR	(Q1) map outputs showing freshwater, coastal embayment, and drinking water rankings; SOTW Report, including update description of process (R code) and account of changes to data QAQC protocols (Q2-4) R scripts to incorporate more data interpretation graphics (Q4) 2026 SOTW report (Q1-4) Updated and new outreach materials, presentations
Support use of AquaQAPP and WQX templates (South Shore) 20h SS	***Ongoing*** In coordination with Central Staff (IIJA workplan), support monitoring groups in the use of online QAPP generator and data upload tool; use tool to generate new saltmarsh monitoring QAPP	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	DEP, EPA, CSCR, DBMS	(Q1-4) Teach Cohasset Center for Student Coastal Research (CSCR) and Duxbury Bay Maritime School (DBMS) how to upload their WQ data. (Q4) Complete saltmarsh monitoring QAPPs
Data integration (Upper North Shore) 75h UNS	Work to improve digital data collection platform for coastal datasets to integrate all efforts into a comprehensive online data tracking and management system. Additionally, create a new public-facing viewer to share efforts and data with	(G) Well-informed, multisector input to decision making	MVPC	(Q1-3) MVPC Eight Towns and the Great Marsh Inspector (online Fieldmaps platform); Coastal Data Viewer for public (online platform link shared) (Q2-4) Meeting agenda and materials showcasing public

	communities, including municipal reps and decision-makers.			coastal data viewer to 8TGM committee.

Strategy 2.1 Support research to inform policy and actions

Task Title (Region) Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Health Estuaries Grant Program (Central Staff) 200h Senior Scientist	***Ongoing*** Completion of the five projects funded by the 2024-2026 Healthy Estuaries Grants will be conducted including technical, administrative and management support as needed. ***New*** This amount will be bundled with $29,169 in FFY2024 funding for another round of small grants in 2026, making a total of $120,127 available.	(6) Protecting coastal waters through the National Estuary Program (E) Restored natural communities (C) Improved water quality	EPA, Town of Harwich, MPVC, IRWA, SSU, UMB New grantees TBD	(Q1-2) Review progress reports and track deliverables and invoicing, (Q2) close out existing subawards, (Q3) post RFR for new round of grants, (Q4) establish new subawards for new grantees.
Investigating eelgrass conditions, water quality in Duxbury-Kingston-Plymouth Bays (Central Staff, South Shore) 240h CS 190h SS	***Ongoing*** Implement the annual eelgrass rapid assessment with citizen scientists to monitor eelgrass extent and condition and inform efforts to determine the causes of local eelgrass loss. Conduct water quality monitoring to collect information on physical conditions that may be contributing to the losses.	(6) Protecting coastal waters through the National Estuary Program (7) Protecting large aquatic ecosystems (E) Restored natural communities (C) Improved water quality	DMF, Town of Plymouth, Volunteers, EPA Region 1 (Chelmsford Lab), SSU, STAC, DBMS, Town of Duxbury, Town of Kingston, Island Creek Oysters	***Eelgrass rapid assessment survey*** (Q1, Q3) Actions of steering committee meetings (CS); (Q3-4) Number of citizen scientists trained (SS), (Q2) Technical report; 2024 data shared; (Q3-Q4) 7-year assessment of eelgrass conditions and recommendations ***Water quality*** (Q2) Data analysis and number of meetings to discuss findings; report of findings (Q4) Plan for 2026.

Coastal Habitat Research (Metro Boston) 400h MB	***Ingoing/New*** Scope, develop, and submit at least one collaborative proposal for research funding on coastal habitat and/or coastal habitat-forming species (e.g. eelgrass, shellfish, salt marsh). Target topics will include intertidal blue mussel populations, complementing monitoring and outreach work being conducted in other MassBays regions, to better understand historical and current population dynamics as well as regional conservation and restoration potential for this coastal habitat-forming sentinel species. Begin related data collection.	(6) Protecting coastal waters through the National Estuary Program (F) Robust interagency and interdisciplinary collaboration and partnerships	NUMSC, MIT Sea Grant, MA DMF, UMass Boston, SSCW, NSRWA, or other project partners as identified	(Q4) At least one grant proposal submitted.
Legacy Nutrients in Salem Harbor Sediments: Assessment of Phosphorous and Nitrogen Recycling as a Significant Nutrient Influx (Lower North Shore) 2% LNS	***Ongoing*** Collaborate with Salem State University to understand legacy nutrients that may be in the harbor sediments. This research follows up on the identification of phytoplankton causing high biomass that has been documented to be responsible for increased turbidity in Salem Harbor. We are still searching for the appropriate remediation strategies for the improvement of Salem Sound's water	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	SSU	(Q1-4) Memo of actions taken (Q4) List of attendees and summary of outcomes; Agenda, sign-in sheet including subscribers to MassBays' e-newsletter
Salt Marsh & Living Shoreline Monitoring on the North Shore, 13% LNS	***Ongoing*** Conduct monitoring to observe and document changes in salt marsh vegetation, salinity, and erosion	(6) Protecting coastal waters through the National Estuary Program	Friends of Good Harbor, City of Salem, other local stakeholders, Ramboll & USACE	(Q1, Q4) Enter data; field notes, photos; From marsh and living shoreline monitoring

Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics

Task Title (Region) Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Conduct Watershed and Coastal Science Education and Outreach (Cape Cod) 70h CC	***Ongoing*** Communicate about Cape Cod-based activities to the public, including MassBays communities, LGC members and other partners, featuring MassBays' support. The goal is to inform and motivate public action and support collaboration and cooperation to restore and protect coastal ecosystems and water quality. Project descriptions will be disseminated via multiple outlets, including presentations, newsletters, and websites.	(6) Protecting coastal waters through the National Estuary Program (A) Sustainable NEP. (B) Improved habitat continuity and restored hydrology. (C) Improved water quality. (D) Resilient coastal habitat, including nature-based coastal protection. (E) Restored natural communities. (F) Robust interagency and interdisciplinary collaboration and partnerships. (G) Well-informed, multisector input to decision making	Barnstable County Coastal Resources (Sub)Committee (LGC), Cape Cod Commission, EPA SNEP, Cape Cod Cooperative Extension, River Herring Network, DMF, Mashpee Wampanoag Tribe, NOAA Restoration Center, WBNERR, and others.	(Q1-4) List of outreach and recipients (e.g., towns, communities, networks, organizations, volunteers, etc.); List of accommodations made, sample notices to new audiences (Q3-4) TBD - Conference agenda, including MassBays' logo, list of new subscribers to MassBays newsletter (Q1-4) Website URLs and content
Advancing stormwater remediation (South Shore) 25h SS	***Ongoing*** Provide outreach and technical support re: stormwater management, including LID, nutrient reduction, stormwater infrastructure	(6) Protecting coastal waters through the National Estuary Program (C) Improved water quality	MassDEP, South Shore Towns	(Q1-4) Documentation of support provided for stormwater improvement projects and NPDES compliance; Documentation of support provided

Conducting Watershed and Coastal Science Education (South Shore) 50h SS	***Ongoing*** Engage learners in watershed and coastal science education, bring new audiences to MassBays' mission, participate in classroom and field professional development for teachers	(6) Protecting coastal waters through the National Estuary Program (G) Well-informed, multisector input to decision making	Marshfield Community Television, Norwell Community Television, Cohasset Center for Student Coastal Research, MassAudubon, Scituate High School, UMass Boston, Provincetown Center For Coastal Studies	(Q1-4) list of accommodations made, sample notices to new audiences; (Q2) Publication of annual report on monitoring focused on citizen science; (Q3) Documentation of education and outreach efforts; (Q4) List of publications and presentations by title, venue or publication, and date.
Boston Harbor Habitat Atlas (Metro Boston) 320h MB	***Ongoing*** Update and add to the Boston Harbor Habitat Atlas (BHHA), including data migration and updates to species cards.	(6) Protecting coastal waters through the National Estuary Program (G) Well-informed, multisector input to decision making	NU: project partners BHEN: feedback	(Q1-4) New and updated content available online at BHHA website
Support municipal and regional coastal projects using nature-based solutions (Lower North Shore, Metro Boston) 320h MB 10% LNS	***Ongoing*** MB: Support municipal and regional projects that promote resilient coastal habitats and communities using nature-based solutions in the Metro Boston region LNS: Continue working with partners and communities to encourage planning for resilience and adoption of adaptation measures that promote resilient coastal	(6) Protecting coastal waters through the National Estuary Program Assist MassBays municipalities in implementing habitat protection and restoration practices, informed by many stakeholders, including	BHEN groups and municipalities (e.g. Saugus River Watershed Council, City of Lynn, Town of Weymouth, or others) as identified Municipalities in the LNS region Salem, Danvers, Peabody, Manchester, Beverly,	(Q1-4) Dates and locations of site visits; Numbers of participants; (Q4) List of supported proposals (including LOS), including grant program, proposal partners, and requested amount; Assist low-capacity municipal and community-based groups in exploring

	habitats, and use of nature-based solutions for coastal resilience.	communities; More resilient coastal habitat, including implementation of nature-based coastal protection measures	Marblehead, Swampscott, Nahant)	conservation and restoration needs in their watersheds. Share Story Maps created for the projects; list of presentations made
Greenscapes Program (Lower North Shore) 10% LNS	***Ingoing*** Create and disseminate outreach information, activities, and materials on stormwater management to *Greenscapes* member communities; Promote and implement Low Impact Development (LID) and stormwater infrastructure in MassBays communities e.g. Maintain the Commercial Street and Winter Island rain gardens in Salem. Support efforts to install LID and stormwater management projects	(6) Protecting coastal waters through the National Estuary Program	Ipswich River Watershed Association, Merrimack Valley Planning Commission, 28 municipalities in Essex County	(Q2-4) List of participating communities; Links to outreach products; Keeping Water Clean (KWC) school program; Greenscapes presentation: "Why Stormwater Matters," "Greenscapes 101," "Slow the Flow" or other agreed upon topic; List of proposals; Description of one LID demonstration site implemented in the Lower North Shore
Beat the Heat: Heat Modeling for Environmental and Community Resilience (MVP Action Grant) (Upper North Shore) 140h UNS	***New*** This project looks to engage communities at the local level to understand heat concerns and current conditions around extreme heat; develop a probabilistic heat model to inform future conditions; create a Heat Resilience Tool and Tool Box to implement effective resiliency strategies; and foster opportunities for local and regional collaboration, learning and action for a more resilient Merrimack Valley	(6) Protecting coastal waters through the National Estuary Program (F) Robust interagency and interdisciplinary collaboration and partnerships	MVPC, Northern Middlesex Council of Governments, UMass Lowell, Groundwork Lawrence	(Q1-3) Community Engagement and Education Plan, event materials (event info, photos, outreach materials) (Q2-4) Trainings, outreach materials produced for community trainings, engagement for heat mapping events, lived

		(G) Well-informed, multisector input to decision making		experience survey, How Hot mobile app (Q3-4) Sensor deployment locations integrated into MVPC GIS/fieldmaps, photos and attendee numbers from heat mapping events
Upper North Shore Local Governance Committee: 8TGM (Upper North Shore) 75h UNS	***Ongoing*** Continue to convene and advance work of the 8TGM Committee. LGC identified priority actions and projects in FY24. Advance goals through specific projects (e.g. updated signage, explore training opportunities for municipal boards/committees).	(6) Protecting coastal waters through the National Estuary Program (F) Robust interagency and interdisciplinary collaboration and partnerships	MassBays, MVPC, Communities of: Amesbury, Salisbury, Newburyport, Newbury, Rowley, Ipswich, Essex, Gloucester, and Rockport	(Q1-4) Meeting agendas; Deliverables will be specific to project advanced; List of Representatives serving on LGC
Upper North Shore Specific Program Development (Upper North Shore) 150h UNS	***Ongoing*** Partnership building and project development and implementation with partners on the upper north shore. Examples include: PIE-Rivers Steering Committee, ECAN SMWG, NECC, NS Water Resilience Task Force, Green Crab Task Force, Greenscapes	(6) Protecting coastal waters through the National Estuary Program (F) Robust interagency and interdisciplinary collaboration and partnerships	Federal, State, and municipal entities, nonprofits, businesses with environmental and coastal related jurisdiction or management on the north shore and the Great Marsh	(Q1-4) List of networks that include MassBays RC as a member' Quarterly updates to the MassBays Management Committee regarding local initiatives and progress

Strategy 2.3 Increase and maintain input from many partners for CCMP implementation and updates, through MassBays' organizational structure and operations

Title (Region), Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Increase awareness of MassBays' work in the Metro Boston region (Metro Boston) 240h MB	***Ongoing*** Expand the audience for and increase awareness of MassBays' mission and work in the Metro Boston region, especially by engaging low-capacity communities	(6) Protecting coastal waters through the National Estuary Program (G) Well-informed, multisector input to decision making	BHEN	(Q1-4) Monthly newsletters distributed via email to the entire BHEN network; (Q4) Dates and locations of meetings; Numbers of participants; Meeting materials made available to BHEN
Merrimack River Water Quality Improvements (Upper North Shore) 150h UNS	***Ongoing*** Advance regional goals to improve water quality and health of the Merrimack River. Provide administrative and technical support to the Merrimack River Collaborative in collaboration with MVPC, Merrimack River Watershed Council (MRWC) and Northern Middlesex Council of Governments (NMCOG). Support other parallel Merrimack River Efforts (e.g. West Newbury Living Shoreline Technical Committee)	(6) Protecting coastal waters through the National Estuary Program (C). Improved water quality (G) Well informed, multisector input into decision making	MVPC, MRWC, NMCOG, Merrimack River communities, Upper North Shore Legislative Delegation, Northern Essex Community College, Municipal Wastewater Utilities, Merrimack River recreational users	(Q1-4) MRC Annual Report (Q2, Q4) Agenda and meeting materials (Q1-4) MRC water quality monitoring, GI project reports, participation or deliverables from the Living Shoreline Technical Committee, etc.

Strategy 3.1 Establish target (improved) water quality and habitat conditions for each embayment tied to desired uses and ecosystem services

Title (Region), Budget + LOE	Description	CWA core program CCMP outcome	Partners	Timeline & Deliverables
Conduct Watershed and Coastal Science Education and Outreach (Cape Cod, 70h CC	**CC:** Communicate about Cape Cod-based activities to the public, including MassBays communities, LGC members and other partners, featuring MassBays' support, to inform and motivate public action and support collaboration and cooperation to restore and protect coastal ecosystems and water quality.	(4) Addressing diffuse, nonpoint sources of pollution (6) Protecting coastal waters through the National Estuary Program All CCMP outcomes	Barnstable County Coastal Resources (Sub)Committee (LGC), Cape Cod Commission, EPA SNEP, Cape Cod Cooperative Extension, River Herring Network, DMF, Mashpee Wampanoag Tribe, NOAA Restoration Center, WBNERR, and others.	(Q1-4) List(s) of outreach outputs, including target audiences (Q3-4) Assist in organizing and hosting the 2026 Cape Cod Coastal Conference (pending initiation by WBNERR)
Review, update and expand utility of EDA (Central Staff, Metro Boston) 200h Senior Scientist	***New*** Conduct comprehensive revision and update of EDA to develop EDA 3.0.	(6) Protecting coastal waters through the National Estuary Program All CCMP outcomes	STAC, EPA	(Q1) Finalize list of metrics and associated datasets, new and existing as needed; design and build a WebApp to organize and display these layers (Q2-Q3) Statistical analyses of estuarine resources and stressor metrics for all 68 assessment areas. Results will include a geospatial resource-stressor analysis for each assessment area.
Develop Data Visualization Tool (Central Staff) 100h Senior Scientist	***Ongoing (pending funding)*** Select a platform to improve accessibility to quality data about embayments for internal and external users	6) Protecting coastal waters through the National Estuary Program All CCMP outcomes	STAC, EPA OST	(Q1) (Q2-Q3) Phase 2: Develop a WebApp to host EDA 3.0 as well as a stressor analysis tool. WebApp will have the same look and feel as the ETT and include links to transition between EDA 3.0 and ETT.

Strategy 3.2: Guide local action to expand habitat and improve water quality according to targets

Title (Region), Budget + LOE	**Description**	**CWA core program CCMP outcome**	**Partners**	**Timeline & Deliverables**
Identify and implement coastal restoration, stormwater mitigation, and low-impact development projects (Central Staff, all regions) CS 170h CC	***Ongoing*** Collect information and support regional coordination and communication on ongoing and potential restoration projects. (all) Continue adding to and developing a GIS-based dataset and map(s) of potential projects, incorporating APCC SOTW and other monitoring and assessment data. (CC)	(6) Protecting coastal waters through the National Estuary Program All CCMP Goals	Buzzards Bay Coalition, Cape Cod Commission, CCCD, Barnstable County Coastal Resources (Sub)Committee, Mass Audubon, DER, CZM, DMF, Mashpee Wampanoag Tribe, NRCS, and 15 Cape Cod Towns.	(Q1-Q4) Regional coordination meetings (CC) (Q4) GIS-based dataset used to generate priorities and maps for restoration and protection needs (CC) (Q1-4) quarterly reports on projects and types of technical assistance provided, including grant proposal development, reports produced (all) (Q1-4) Reporting on work at Barnstable Great Marsh (Barnstable), Chase Garden Creek (Dennis/Yarmouth), and Sesuit Creek (Dennis) salt marsh projects and stormwater remediation along Cape Cod Bay (CC)
Implementation and Monitoring of Dam Removals and Fish Passage (South Shore) 120h SS	***Ongoing*** Work with communities and other partners to assess feasibility and seek funding for removal of dams and other barriers and collect ecological data pre- and post-restoration	(6) Protecting coastal waters through the National Estuary Program (B) Improved Habitat Continuity and Hydrology	Sea Run Brook Trout Coalition, Trout Unlimited, DFG, Hanover Mall, NOAA Fisheries, US FWS, DER, Towns of Norwell, Marshfield, Duxbury, Hanover and Pembroke, Mass	(Q4) Fish ladder at Jacob's Pond, Norwell designed and permitted (Q1-4) Documented progress to address Temple Street Dam, Chandler Pond Dam, and Veterans Memorial Park Dam on the South River; public engagement re: removal of Indian Head River Dams; Initiate feasibility study for Pudding Brook cranberry bog

			Audubon, Wildlands Trust	restoration (Q3-4) Fish counting method in place for post removal at Veteran's Park Dam
Maintaining Adequate Streamflow (South Shore) 30h SS	***Ongoing*** Support the Town of Scituate to provide adequate streamflow in the First Herring Brook. ***New*** Support the Town of Kingston and the Jones River Watershed Association (JRWA) to provide adequate stream flow to the Jones River	(6) Protecting coastal waters through the National Estuary Program (B) Improved Habitat Continuity and Hydrology	Town of Scituate, Town of Kingston, JRWA	(Q1-4) Monthly check-ins with JRWA, especially during key migratory fish periods (Q4) Report on previous year's data in outreach materials
Supporting municipal and regional actions that promote resilient coastal habitats and communities (South Shore) 50h SS	***Ongoing*** Coordinate with South Shore groups for joint outreach and education efforts, support the Commonwealth MVP program	(6) Protecting coastal waters through the National Estuary Program Resilient coastal habitat, including implementation of nature-based coastal protection measures	South Shore towns, CZM, MAPC, UMass Boston	(Q1-4) SSCG meeting agendas (Q4) Documentation of MVP community support provided
Salem Greening Gateway Cities Program (Lower North Shore) 5% LNS	***Ongoing*** Outreach partner for Salem's Greening Gateway City program (2400 trees)	(6) Protecting coastal waters through the National Estuary Program	Salem Tree Commission, MA DCR	(Q2-4) Number of trees planted and map of distribution within the designated planting zone on public and private land (Q4) List of activities and social media
Eelgrass Habitat Protection (Lower North Shore)	***Ongoing*** Protect seagrass by mapping extent of eelgrass habitat across Massachusetts Coastline, piloting a new seed-	(6) Protecting coastal waters through the National Estuary Program	Salem Harbormaster & Conservation Commission, MassBays, DMF,	(Q1-4) Finalized QAPP, list of outreach events and number of volunteers, days of field work

5% LNS	based approach for large-scale eelgrass restoration, and piloting restoration of eelgrass habitat		DEP, WHOI, SSCW volunteers	(Q1) Final seed viability data, list of outreach events (Q4) Eelgrass ground truthing schedule
Merrimack Restoration Partnership (Upper North Shore) 200h INS	***Ongoing*** Advance local restoration projects in the Lower Merrimack. This will include identifying and assessing barriers (bridges, dams, culverts) and building local capacity for this work, identifying and supporting ongoing stream barrier removal projects. Develop technology-based data collection systems and inventory tools with MVPC's GIS team	(6) Protecting coastal waters through the National Estuary Program (B) Improved habitat continuity and restored hydrology. (C) Improved water quality. (E) Restored natural communities. (F). Robust interagency and interdisciplinary collaboration and partnerships. (G) Well-informed, multisector input to decision making	DER, MRWC, local communities	(Q1-4) Total number and location of barriers assessed, link to NAACC database with all field data and MVPC's Culvert viewer. Dates and participant information for regional NAACC trainings held; MVPC's Culvert Viewer and integration with other MVPC GIS products. Summary of projects supported, list of groups/meetings attended, deliverables (e.g. plans, grant applications, surveys, reports, etc.)

Strategy 3.3 Maintain MassBays' National Estuary Program Status

Title (Region), Budget + LOE	**Description**	**CWA core program CCMP outcome**	**Partners**	**Timeline & Deliverables**
MassBays Communications implementation (Central Staff, Cape Cod) 1170 CS 372h CC	***Ongoing*** APCC Communications staff will assist MassBays Central Staff with communications plan implementation ***New*** With IIJA funding, new MassBays Science Communications Specialist position will implement elements of the Communications Plan to	(6) Protecting coastal waters through the National Estuary Program All CCMP Goals	MassBays program partners	(Q1-4) Quarterly e-newsletters; social media posts; expand and grow the MassBays website (Q2-3) Science Communication Specialist hired.

	enhance MassBays' outreach, education, and support its communities and partners to reach its CCMP goals.			
MassBays Regional Coordinator Workshop (Metro Boston, Central Staff) 160h MB 40h CS	***Ongoing*** Convene MassBays RCs and central staff to facilitate extended information exchange on current projects and identify potential cross-region collaborations and/or joint proposals	(6) Protecting coastal waters through the National Estuary Program All CCMP Goals	RSPs	(Q2, Q4) List of potential collaborations and/or joint proposals, including grant program and project partners
Convene and support the Local Governance Committees for input on MassBays workplans, and provide input for reporting to EPA (All Regions)	***Ongoing*** Meet the requirements of S.320 Funding Guidance provided by EPA, soliciting community stakeholder input to prioritize yearly workplans to implement the CCMP.	(6) Protecting coastal waters through the National Estuary Program All CCMP Goals	LGCs	(Q1-4) Updates on activities and progress, attendance at quarterly MC meetings; (Q2-3) NEPORT submissions to MassBays; (Q1-4) Acknowledgement of EPA/ MassBays support noted on RSP websites and (as relevant) outreach materials and publications; (Q4) End-of-year reports on progress and proposed ongoing and new activities developed with input from communities and LGCs
Convene STAC and support the Chair and committee that provides input and assistance to MassBays on science and research matters. 40h (Senior Scientist)	***Ongoing*** Convene quarterly meetings of STAC and topic subgroups as needed to provide discussion and input on topics that support MassBays work in its estuaries.	(6) Protecting coastal waters through the National Estuary Program All CCMP Goals	STAC	(Q1-Q4) Meeting summaries, agenda and materials; list of participants. (Q1) Incoming new Chair for next 2 years; select and bring in new Vice-Chair; (Q2) Revised SOPs to incorporate new CCMP goals, update the tasks and goals of STAC, and to make sure they align with the new Management Committee SOPs. (Q3) Final

				SOPs shared with the Management Committee.
Represent MassBays on relevant networks (Central Staff, all RCs)	***Ongoing*** Lead and/or provide input to existing working groups and networks conducting work on topics relevant to MassBays' desired outcomes and/or with the potential to advance CCMP implementation.	(6) Protecting coastal waters through the National Estuary Program 7) Protecting large aquatic ecosystems All CCMP Goals		(Q4) List of networks that include MassBays as a member, along with specific outputs of those networks
MassBays regionwide initiatives (All regions)	***Ongoing W***ork collaboratively with the MassBays program including the central staff and other regional coordinators to advance region-wide efforts and initiatives.	(A) Sustainable National Estuary Partnership (NEP)		(Q1-4) Attendance at meetings, quarterly updates, social media content, committee/task specific deliverables; Participation in ongoing meetings, task specific deliverables (e.g. data, photos, reporting, etc.); Participation at meetings, support in plan or deliverable development

D. Budget

MassBays is requesting reimbursement of pre-award costs, up to 90 days, for the work included in this plan. The work and budget are a continuation of our FFY2024 cooperative agreement.

Narrative
These notes refer to **Table 1, MassBays National Estuary Program Proposed Budget, FFY2025**.

Assumptions
Section 320 funding allocation to MassBays will be $850,000.

Proposed Spending
Salaries for three staff: Director (0.785FTE), Staff Scientist (0. 392FTE), and an Academic Year Graduate Program Assistant (9h/week x 36 weeks). The remainder of staff salaries will be funded under IIJA, as described in a separate workplan, and other supplemental funding (RAE, WHOI Sea Grant, and an ISA with DEP, as well as pending grants through the EPA Exchange Network and a second RAE award).

Fringe benefits: Fringe benefits are negotiated annually between the Commonwealth of MA, UMB and the Department of Health and Human Services (DHHS). Fringe benefits are costs associated with employee related expenses including health plans, pension plans, and workman's compensation expenses, among others. UMB has four fringe rates in accordance with the University's projected FY2026 Fringe Benefits and Payroll Tax Rates and NICRA.

Rate #1 General Fringe, 35.60%
Rate #2 Health and Welfare, $33 Bi-weekly/FTE
Rate #3 Payroll Tax, 2.21%
Rate #4 Worker's Compensation Insurance, 0.17%

These rates are applied based on the personnel appointment type, benefitted/non-benefitted status, period of service, and salary rates. In this case the appointment, benefits status, period of service and applicable rates are as follows:

Personnel	Appointment	Period of service	Applicable Rates
PI Pam DiBona	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Senior Scientist Prassede Vella	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Program Assistant	Graduate Student	Academic	none

Travel
No funds requested.

Supplies
No funds requested.

Contractual
No funds requested.

Other Expenses

- Subawards (Regional Service Providers). This year we request $80,000 to fund each Regional Coordinator, and $18,972 for communications assistance from APCC, for a total of $418,972. These funds will be expended by the RSPs from October 1, 2025, to September 30, 2026. Subawardee budgets and justifications are included in Table 2.

- Healthy Estuaries Grants. MassBays is setting aside $90,958 for the next round of our small-grant program to be announced in the first quarter of 2026.

Indirect Charges
The University of Massachusetts Boston has a Facilities and Administrative overhead rate of 36.4%, which is a federally negotiated indirect cost rate agreement between University of Massachusetts Boston and the Department of Health and Human Services effective 10/02/2020. The indirect rate is charged to expenditures relating to direct costs. For FFY25, no indirect costs are charged against the RSP subawards, as they will continue under this supplemental award. Funds set aside for Healthy Estuaries Program awardees will be subject to indirect because they will most likely be awarded to new partners and will be for amounts less than $50,000 each.

Matching Funds
Grantee match. MassBays will apply $25,782 matching funds to cover the following expenses:

- Travel to conferences, including the National Estuary Program Tech Transfer Conference in Mobile Bay, AL in Fall 2025 and the annual Spring meeting in DC; and regional conferences.
- Supplies, including monitoring and meeting supplies as well as light refreshments for in-person Management Committee and RSP meetings.
- Web-based services, including web application hosting, website content management system, and tools to support monitoring communities of practice.
- A retainer for a web consultant to maintain and update existing apps and provide troubleshooting as required.
- Lab support for water quality monitoring program.
- Unrecovered indirect costs of 36.4% on the above.

Subawardees. Regional partners, in their scopes of work to serve as RSPs to MassBays, identify sources of non-federal match for the program. Match of at least 50% is required; this year a total of $564,155 is offered by the RSPs (Table 3). In addition, Healthy Estuaries grantees will be required to provide 50% match, expected to be $45,479 on the $90,958 to be awarded from this year's funds. Sources of match from subawardees offered include revenue from organizational membership dues, state and local grants, private foundation grants, etc., as well as the work of staff within these organizations on projects specifically related to our estuarine restoration and conservation efforts.

State in-kind spending. MWRA has committed $200,000 in-kind match from their own expenditures on monitoring in Massachusetts Bay.

Total match offered is $850,000, or 100% match, comprised of the following non-Federal categories:

Match amount	**Source**
$ 40,366	applicant
$ 200,000	state
$ 609,634	other
$ 850,000	**Total**

Table 1. MassBays National Estuary Program Proposed Budget, FFY2025

FFY25 Section 320 Supplemental Grant Application Massachusetts Bays National Estuary Program Proposed Expenditures	
Personnel	**Period 1 7/1/25 to 6/30/27**
subtotal, salaries	**$ 169,292**
Fringe benefits	
subtotal, fringe	**$ 55,753**
total, salaries+fringe	**$ 225,045**
Travel *(none)*	
subtotal, travel	**$ -**
Supplies *(none)*	
subtotal, supplies	**$ -**
Contractual (*none)*	
subtotal, contractual	**$ -**
Other (Subawards)	
Healthy Estuaries Grant Program	$ 90,958
Regional Service Providers (5 subawards, 10/1/25 - 9/30/26)	$ 418,972
subtotal, other	**$ 509,930**
Total Direct	**$ 734,975**
Indirect	
36.4% (salaries+fringe, HE grants, travel, supplies, contracts)	$ 115,025
subtotal, indirect	**$ 115,025**
subtotal, request per period	**$ 850,000**
Total Request	**$ 850,000**

Matching funds	
Direct match (Travel, Supplies, MWRA match)	$ 285,845
Subawardees' match	$ 564,155
Total Match, FY25	**$ 850,000**

MassBays National Estuary Partnership

S. 320 Work plan

Attachment

Regional Service Provider and Staff Updates FFY24

Regional Service Provider & Staff Updates
July-September 2024

Regional Service Provider Updates

Upper North Shore – Merrimack Valley Planning Commission

Contact: Hanna Mogensen

- **Gather data on conditions and trends (data gaps)**
  - Collected monthly water samples and continued periodic CSO sampling (July-September) in the Merrimack River in association with Merrimack River Watershed Council to assist with their regional water quality monitoring program.
  - Met with Governor's Academy Science Department to discuss opportunities to collaborate on green crab and eelgrass related research.
  - Received 2024 Healthy Estuary Grant to advance drone integration for long-term salt marsh monitoring efforts. Initiated project planning and coordination.
  - Began monthly marine invasive species (MIMIC) monitoring at 6 locations across the Great Marsh.
  - Advanced efforts to manage invasive pepperweed across Great Marsh through mapping and manual pulling/removal
  - Conducted pre-monitoring of 3 phragmites stands prior to chemical herbicide treatment to assess the impacts of treatment on non-target plant species.
- **Inform state policy and local action.**
  - Continued to coordinate Regional Hazard Mitigation Plan (HMP) update for 15 communities in the MVPC region. Completed all public meetings and public comment period for draft HMP. Final draft was reviewed and approved by MEMA. FEMA is currently conducting their review.
  - Convened Merrimack River Collaborative Leadership team to begin internal planning.
  - Continued to advance the Artichoke Reservoir Watershed Based Plan.
  - MVPC Merrimack Valley Mayors and Managers meeting to share updates, current work, and opportunities for engagement with MVPC communities (9/5)
  - Held meetings with the Town of Salisbury, Senator Tarr's office, and MIT Sea Grant to explore opportunities to install an artificial reef off of the Salisbury Beach
  - Met with the Town of Groveland to discuss funding and technical assistance to repair/remove dams and culverts in Town.
- **Provide Education, training, and technical support.**
  - RC convened the Eight Towns and the Great Marsh (8TGM) Signage Sub-Committee throughout the summer to advance efforts to update educational signage across the region.
  - Continued to advance development of the Early Alert Tool for the Merrimack River, which is now publicly available on the MVPC website: The Early Alert Tool | MVPC
  - RC initiated NAACC Culvert Assessment Training Certification.
  - RC attended Great Bay National Estuarine Research Reserve (NERR) saltmarsh monitoring training on rapid assessment protocol (8/22)
  - Hosted Trails and Sails event: It's a Hard Dock Life- Finding and identifying invasive species with Maritime Gloucester (and participation from City of Gloucester and CZM) (9/15)
- **Key meetings attended:**
  - HMP Public Meetings with Haverhill (6/18), West Newbury (6/20), Methuen (6/20), Amesbury (6/25), Lawrence (7/2)
  - Merrimack River Beach Alliance, led by Senator Tarr (6/21)
  - 8TGM June Meeting (6/27) and sub-committee meetings (7/9, 7/29, 9/3)

- PIE Rivers Steering Committee meeting, led by Ipswich River Watershed Association (7/11)
- Info Session on Draft Thin Layer Placement (TLP) Guidance, led by MassDEP (8/19)
- Great Marsh Artists Residency update meeting, led by Manship (8/22)
- MassBays Regional Coordinators Meeting (8/26)
- MIT Sea Grant Artificial Reef Meeting (9/10)
- Green Crab Task Force Meeting (9/10)

Lower North Shore – Salem Sound Coastwatch
Contact: Barbara Warren

- **Gather data on conditions and trends**
  - Working on the eelgrass seed experiment with MA DMF and MassBays under the WHOI grant: Modeling and piloting a new seed-based approach to large-scale eelgrass restoration in Massachusetts.
  - Alison Frye worked with Jill on the MassBays eelgrass ground-truthing for MassDEP
- **Environmental Change**
  - Applied with the City of Salem to continue the Winter Island Park Pathway and Bank Restoration Project for a FY25-26 MA CZM Coastal Resilience Grant. https://publicinput.com/d3486
  - Applied with the Town of Marblehead for a FY25 MA CZM Coastal Resilience Grant for the State Street Landing and Harbormasters Resilience Plan
  - Partnered in two other MA CZM Coastal Resilience Grants applications FY25-26: Beverly Obear Park: Living Shoreline for Erosion Prevention and Salem Bridge Street Neighborhood Resilience Project

- **Reduce Stormwater Discharge**
  - Applied for a MassDEP MS4 grant to continue and expand the Social Research to Target Pet Waste – Knowing Your Audience
  - Conducting COASTSWEEP clean ups
  - Stenciled 120 storm drains in downtown Salem with volunteers
  - Completed bacterial monitoring under our Clean Beaches & Streams program at streams and outfalls across the watershed.
  - Continuing to sample tributaries with the EPA Stormwater Toolbox
- **Manage Invasive Species**
  - Completed a marine invasive species monitoring MIMIC schedule
  - Pulled Pepperweed across the watershed
  - Removed Dodder from the Commercial Street rain gardens all summer
- **Education and Outreach**
  - Conducted summer programs and marine science boat trips

- **Technical assistance:** RC actively involved in the following:
  - Working with Manchester Coastal Stream Team and cold-water fisheries resource

Metro Boston – Northeastern University Marine Science Center
Contact: Diana Chin

- **Address Data Gaps**
  - NOAA Fisheries: We submitted a research pre-proposal to the Saltonstall-Kennedy program regarding interactions of oyster aquaculture with eelgrass, aimed at informing aquaculture management and permitting.

- TNC: We are examining the degree to which oyster aquaculture provides important ecosystem services, including enhancing water quality and providing habitat for fish and crustaceans. We are also conducting surveys of coastal communities throughout Massachusetts and the eastern seaboard to examine barriers to aquaculture.

- **Gather Data on Conditions and Trends**
  - Eelgrass reproduction research: As part of pre-funding research activities and in collaboration with MassBays, DMF, NPS, and other groups conducting funded research on eelgrass reproduction and seed use in restoration, conducted two eelgrass reproductive shoot collection events during peak seed maturity in Provincetown under new federal, state, and local permits and assisted with later seed processing and methods assessment. Assisted with DMF's annual SeagrassNet sample processing.
  - Lobster Sea Grant Program: We are examining the impacts of the range expansion of black sea bass and blue crabs on lobsters and the lobster fishery in the Gulf of Maine. This research uses experiments, field monitoring, and surveys of the lobster industry to assess their ecological knowledge.
- **Technical Support and Communication**
  - Conferences, meetings, and workshops: 1) Met with Emerald Tutu at their East Boston facility, Piers Park, and the NU MSC to discuss status and opportunities for collaboration; 2) Attended a public Swampscott Conservancy beach seining event to discuss eelgrass ecosystems and restoration; 3) Attending a site visit at Great Marsh and Crane Beach regarding large scale salt marsh restoration; 4) Participating in a MassECAN Salt Marsh Working Group meeting.
- **Education and Outreach**
  - Boston Harbor Ecosystem Network (BHEN): 1) Held a BHEN Steering Committee meeting; 2) Coordinated field trip (June 12) with MA CZM at Rowes Wharf, Boston to observe and discuss marine invasive and range-expanding species (12 attendees); 3) Continued output of monthly newsletters compiling resources, events, funding, and job opportunities from across BHEN and related networks.
  - Boston Harbor Habitat Atlas: Continued GIS migration and updates to the Boston Harbor Habitat Atlas, which continues to be used for Beach Sisters activities (audience: middle and high school youth in Lynn) focused on watersheds and water pollution, and to bolster students' familiarity with local habitats.
- **Other**
  - Began hosting regular discussion meetings open to the MassBays RCs.

South Shore – North and South Rivers Watershed Association
Contact Alex Mansfield

- **Make new data available, especially to address specific gaps in knowledge**
  - Monitor Diadromous Fish Runs
    - Compiled 2024 volunteer herring run data which were submitted to MA DMF to determine run size estimates. Results were reported in NSRWA eNews https://www.nsrwa.org/2024-river-herring-count-results/
  - Water Quality Monitoring
    - Conducted 6 rounds of Citizen-Science "RiverWatch" water quality monitoring. This program is in its 30th year of monitoring bacterial concentrations throughout the summer at 10 sites. The program uses volunteers to collect water samples and water-quality data. NSRWA interns, in collaboration with Cohasset Center for Student Coastal Research (CCSCR), conduct the analysis of bacteria concentrations in the samples. The results are reported to the community through NSRWA eNews, web posts, and social

media. Example of results posting https://www.nsrwa.org/riverwatch-results-for-july-29-2024-and-rapid-response-water-quality-results-for-july-30-2024/

- Salt Marsh Vulnerability and Assessment
  - Extensive vegetation surveys of 10 saltmarsh sites in Scituate, Norwell, Marshfield, Duxbury, and Kingston.
  - Sediment transport and elevation measurements across 5 survey sites. This work included collaborations with MassBays, NSRWA, UMass Amherst, UMass Boston, Cohasset Center for Student Coastal Research (CCSCR), and Scituate High School.
- Horseshoe Crab Surveys
  - In Duxbury, MassBays and NSRWA completed their 16th year of Horseshoe crab monitoring. Duxbury is one of 16 sites across the state that are part of the Massachusetts Horseshoe Crab Spawning Surveys managed by the Massachusetts Division of Marine Fisheries.
  - At least 35 individual volunteers attended a series of training sessions and then conducted 23 different surveys from May 5th to June 23rd.
  - The Horseshoe crab data was analyzed and submitted to MA DMF in July. Results were also shared with the public through NSRWA eNews https://www.nsrwa.org/2024-horseshoe-crab-survey-results/
- Marine Invasive Species
  - NSRWA interns conducted 13 surveys across 6 sites as part of CZM's Marine Invader Monitoring and Information Collaborative (MIMIC) program. Results will be provided to CZM and to the public in late September or October. https://www.instagram.com/reel/C-FsirPO91c/?igsh=MWlnYXBoMzY1eXUzMw==

- **Research To Inform Policy & Actions**
  - Dam Removal Monitoring and Implementation
    - Advanced fish ladder design plan for Jacob's Pond on Third Herring Brook thorough discussions with engineering consultants, town, and DMF.
    - Advanced Chandler Pond Dam removal plans on the South River through meetings with property owners and DER. Worked with DER on setting up streamflow gauges and monitoring schedule for logger downloads.
    - Advance Veteran's Park Dam removal through attendance of pre-bid meeting for construction contract.
  - Eelgrass
    - Successfully completed the 7th year of eelgrass monitoring in Duxbury/Kingston/Plymouth Bays. NSRWA interns and volunteers collected data at all 119 target sampling sites. The surveys were conducted across 8 survey days on 6 different boats.
    - Staff are currently working on the final results from the surveys and will deliver those to MA DMF in September. Preliminary results show a slight overall increase (+1.7%) in eelgrass density and coverage relative to 2023.
  - Blue Mussels
    - Continued the summer survey of blue mussels on 3rd and 4th cliffs in Scituate. This is ongoing work with Mass Audubon to support assessment of habitat conditions for the federally listed Red Knots (*Calidris canutus*) who stopover on this federally owned property.
    - Conducted surveys of mussel distribution, density, and growth during the low tides of July, August, September. Reporting deliverables will be submitted in October.
- **Technical Support & Communications**

- Represent Mass Bay in Networks
  - Participated in the Natural Resources Conservation (NRCS) 2024 Northeast Cooperative Soil Survey Conference 7/31/2024
  - Panelist for the UMass Boston Harbor Boot Camp Watershed Panel 8/28/2024.
  - Mass Rivers Connects- Scientists/Monitors Group 9/11/2024.
  - "Eastern Massachusetts Coalition for Water Quality Monitoring and Regional Standardization" Working Group Meeting 9/12/2024
- Watershed and Coastal Science Education
  - Continued development of salt marsh curriculum with Scituate High School.

- **Local Action for Habitat & Water Quality**
  - Adequate Streamflow
    - Data logger maintenance in First Herring Brook, Scituate and continued discussion with Scituate water managers.

Cape Cod – Association to Preserve Cape Cod

Contact: April Wobst

In June 2024 Dr. Jo Ann Muramoto retired from her role as APCC Science Director and MassBays Regional Coordinator for Cape Cod. Starting in July of 2024, the role of regional coordinator shifted to April Wobst, APCC's Restoration Program Manager with additional support from APCC staff as part of APCC's scope as Regional Service Provided for Cape Cod. April has worked at APCC since 2015 managing the restoration program work while working closely with Jo Ann to support regional collaboration, capacity building, granting writing, project management, and outreach. Additional APCC staff supporting this workplan are: Jordan Mora, Lead Ecologist and Science Advisor; Michael Palmer, Restoration Ecologist; Lynn Francis, Pond and Cyanobacteria Operations Manager; and Dee Marsh, Assistant Education and Outreach Coordinator.

Tasks 1. and 2 Cyanobacteria and Freshwater Pond Initiative Data Synthesis to Inform Restoration Planning

- Cyanobacteria monitoring across Cape Cod is ongoing. The main monitoring season wrapped up in August with additional fall sampling for a subset of contracted lakes and ponds.
- Freshwater pond monitoring is ongoing, to collect monthly data from each of 50 ponds.
- Analysis of data was completed for APCC's annual state of the waters report.
- APCC team met to review current data analysis and reporting ongoing for cyanobacteria monitoring on Cape Cod to discuss additional analysis that could be added and how to integrate the output of this analysis into Task 5 to build a dataset and map priority restoration project needs.
- The Cape Cod Ponds Network met for an in-person meeting on August 8th to network across ponds and lakes groups in the region with presentations by Steve Hurley of MassWildlife, Julie Hambrook of APCC on cyanobacteria and pond monitoring and the Cape Cod Commission on the broader Cape Cod Freshwater Initiative.
- April Wobst was interviewed by WCAI about beach closures in freshwater ponds resulting from poor water quality: https://www.capeandislands.org/local-news/2024-08-19/hows-the-water-quality-at-your-local-swimming-spot

Task 3. Monitor Diadromous Fish Runs on Cape Cod

- Data from spring 2024 herring counts was QA/QC'd and entered for submission to DMF.
- Training for new APCC staff to manage the volunteer count program following Jo Ann Muramoto's retirement was scheduled with draft documents and meeting in early September

- APCC communication with DMF about the transition of roles and coordination on 2025 monitoring planned for fall 2024

Task 4. Conduct Watershed and Coastal Science Education and Outreach

- April Wobst interviewed by Lower Cape TV for news piece on restoration across the region: https://www.capeandislands.org/local-news/2024-08-19/hows-the-water-quality-at-your-local-swimming-spot

Task 5. Support resilient habitats and communities through restoration

- In person meeting and site tour of Oyster Pond in West Falmouth on August 5 with salt marsh restoration regional partners (DER, CCCD, NOAA) to coordinate on funding opportunities, priorities and project updates. This is part of regular monthly and bimonthly coordination with these partners on salt marsh restoration in the region.
- Discussion within APCC on approach to development of GIS-based dataset and map to incorporate data from tasks 1, 2, and 3 with restoration project details to identify priority restoration projects.
- Barnstable Great Marsh (Barnstable): Proposed ditch remediation/runneling project led by Mass Audubon. APCC completed monitoring in July and August including vegetation and sampling of markers horizons at plots established in 2023. Design plans are under further review before this project will proceed with permitting.
- Chase Garden Creek (Dennis/Yarmouth): Vegetation monitoring by APCC completed at Chase Garden Creek in August along newly established transects to inform planning and design for restoration of this marsh. Sediment sampling ongoing under contract to APCC by Center for Coastal Studies. This is year two of this project to assess and identify vulnerabilities and develop a restoration plan for this site. APCC met with Mass Audubon on September 4 to discuss potential collaboration on watershed scale restoration of habitat (salt marsh and retired cranberry bogs) at Chase Garden Creek (Dennis/Yarmouth).
- Sesuit Creek salt marsh (Dennis): Tidally restored in 2008. In July, APCC completed monitoring of a 2018 pilot planting study of *Spartina alterniflora* at Sesuit creek in Dennis including plant cover, survival and marsh surface elevation. In September, APCC is completing additional mapping of vegetation relative to persistent bare areas in the restored marsh along with monitoring of long-term vegetation plots. This will be drafted into proposed plan for additional planting in spring of 2025 to be partly funded by DER.
- Scargo Lake stormwater remediation (Dennis): Design plans for installation of two green infrastructure stormwater systems along Scargo Lake were completed in June. Development and revision of technical and front-end specifications along with bid documents were completed in July and August and the project was put out to bid by the town in August. Bid opening and contracting will be completed in September for October construction start. Scargo Lake is the headwaters for Sesuit Creek and is the spawning habitat for the Sesuit creek herring run which is being restored by the town and DOT with construction to get underway fall of 2024 to replace culverts under Route 6A restricting fish passage to Scargo Lake. Together these projects are part of a watershed scale approach to restoration within this system to improve habitat, water quality and fish passage.
- APCC has been awarded $15M from the NOAA transformational habitat restoration grant for five projects across the region including two salt marsh restoration projects and three bog restoration projects. While outside of the MassBays region award is truly transformational and will support the restoration team and these five large scale projects through design, permitting and implementation.
- APCC has been recommended for $2.5M in funding from the NOAA Tribal and Underserved Community restoration grant for the Mashpee River fish passage and bog restoration project.

This site is not within the MassBays region but again part of APCC restoration program ongoing work to support large watershed scale projects and partnerships. For this grant APCC will be partnering closely with the Mashpee Wampanoag Tribe, the town of Mashpee and Waquoit Bay National Estuarine Research Reserve.

- On August 12, APCC along with close to 50 attendees will participate in a regional workshop on bog restoration coordinated by EPA. The concept for this workshop was proposed by April Wobst and taken up by EPA. April has served on the steering/planning committee and will provide facilitation of some of the small group discussion to identify most useful parameters for monitoring project success to date.
- APCC circulated to regional projects and partners with the DER Ch 268 funding opportunities available for salt marsh and bog restoration projects.

Task 7. Communications and Outreach Support

- APCC's outreach specialist Dorria ("Dee") Marsh continues to work with MassBays staff to support newsletter, social media, website and other outreach and communication needs
- April Wobst provided input to Dee in July for the MassBays newsletter as well as bio for the webpage.

MassBays Staff Updates

MassBays Director

Pam DiBona

- **Administration**
  - Submitted IIJA workplan and for Federal Fiscal Year 2024 to EPA; award received August 20, 2024.
  - Submitted Section 320 Budget Narrative and abbreviated workplan (including Central Staff tasks only) to EPA August 5th. Final, comprehensive scope of work is still in development. Subawards to Regional Service Providers are lagging but in process at UMB.
  - Met with Urban Harbors Institute staff to review documentation needed for the Finance Plan and prepare the draft Structure & Operating Procedures for MC discussion.
  - Met with the new Dean of the School for the Environment (SFE, MassBays' host entity), Carol Thornber, to describe our program and request continued and increased support to MassBays, especially with the Office of Research and Sponsored Programs (ORSP). A recent reorganization of staffing in SFE and ORSP should smooth the path going forward.
  - Met with Dean to share goals for the coming year, in preparation for future performance evaluations.
  - Met with Senior Scientist and Coastal Data Scientist individually to review their goals for the coming year.
- **Program Support**
  - Attended weekly check-ins with staff.
  - Attended meetings with MWRA and MassBays Central Staff to plan a Gulf of Maine Monitoring & Research Symposium, developed a task list and tracking spreadsheet for a mid-March event.
  - With the Senior Scientist and DEP, finalized a proposed draft Charter for the Massachusetts Science & Monitoring Advisory Panel, successor to the Outfall Monitoring Science Advisory Panel.
  - Attended kick-off meeting with advisors to MassBays' tide gate prioritization project.
- **Other**

- Attended Gulf of Maine Council on the Marine Environment's Annual Awards ceremony to receive a Visionary Award(!), and support the Senior Scientist, who received a Distinguished Service Award(!!).

Senior Scientist
Prassede Vella

- **Address data gaps**
  - SECWQALS: In the last week of August USGS and MassBays deployed the first of what will be a series of continuous water quality monitoring systems. The first system was deployed dockside on the pier near the mouth of the Danvers River in Beverly. Signage will be added soon. USGS is working to get the data live streamed so that data can be shared through USGS' and MassBays' websites. Because of delays beyond our control, it was decided to deploy one system this year, for 2 months. In 2025 systems will be deployed in Danvers River, DKP, and Merrimack. Over the winter we will be working to have the systems ready for a May start together with contemporaneous grab sampling: SSCW in Danvers area, EPA in DKP, Merrimack (TBD).
  - Ocean Acidification: The CM will include OA monitoring. Funding for the purchase of three pCO2 sensors is being provided by NROC as part of their OA efforts. Contract is almost finalized and once funds have been provided, the sensors will be purchased.
  - Diadromous Fish Habitat BCG and target: The subgroup met for further discussion following input from STAC on the proposed targets. CEI has been working to get the ETT ready to receive the data and will be available soon.
  - Development of MassSMAP – MassBays and DEP met with current OMSAP members to discuss the prospectus and the future of MassSMAP (the name of the new panel). Based on input MassBays has developed a draft Charter which will guide the convening of the panel. The Charter is currently being reviewed (see Pam's update).
- **Applied research**
  - Duxbury-Kingston-Plymouth: (1) Led the monthly steering committee meetings for the eelgrass survey by volunteers in 2024. With funding from DMF South Shore RC led a very successful survey that collected data from all 119 stations. Data analysis is underway, preliminary results indicated some losses but also some gains. A report will be available in the coming months. The steering committee is currently discussing: (i) looking back over 7 yrs of the survey and compiling the data into one report with trends and next steps; and (ii) looking for funding for additional years of survey since this was the final year of DMF funding. Thanks to EPA we have water quality samples for the 2nd year as part of the investigation of eelgrass loss (EPA Chelmsford Lab).
  - Optimizing local tide gate operations & management to improve salt marsh health: Contracts are in place. Work on the update of the TideGateway viewer has started. The Science Advisory Committee had its first meeting in August. We are still looking for a member from USACE. The next meeting will be in late fall. Field work will be starting very soon.
- **Administration**
  - Worked with ORSP to develop:
    - subawards for the RCs for FY25 (in process and looking to be finalized shortly)
    - JFA contract with USGS for SECWQALS
    - Submit a proposal to DEP's 319 grant program to review and update AquaQAPP to update to EPA's new QAPP standards (PI: Jill Carr).
    - Contract with CSSF/NROC on funding for the purchase of the three pCO2 sensors

- **STAC meetings**
  - Next STAC meeting will be in late October. Poll for the date will be sent out to STAC this week.
- **Collaborations and partnerships**
  - NERACOOS – attended ExCom meetings (~ monthly) and Financial Committee meetings.
  - Salt Marsh Working Group – attended quarterly meeting (9/17/2024).
  - NROC Ocean and Coastal Ecosystem Health Committee – Attend and participate at monthly meetings.
- **Communications**
  - Weekly meetings with Dee Marsh to plan communication tasks.
  - Provided material with Dee to post on social media (FB, LinkedIn, Instagram).
  - National Estuaries Week (9/21-9/28) - Currently working on materials to post during next week. We encourage you all to recognize this important week and share something related to estuaries.
  - Published the summer newsletter. Updated the e-newsletter signup sheet. Next newsletter is scheduled late fall - Dee will be in touch with the RCs.
  - **ASKING MC members** - please "like us"/"follow us" and share the MassBays website and social media with your constituents as we are trying to get more "Likes" and "Followers" as part of our communications strategy. Facebook: Massachusetts Bays National Estuary Partnership | Boston MA | Facebook. Instagram: MassBays National Estuary Partnership (@massbaysnep) • Instagram photos and videos. We also have LinkedIn but have a glitch which we are addressing so will share link with you as soon as available.
- **Other**
  - Compiled data provided by RCs to submit to EPA in the **NEPORT** database. Data include leveraged dollars and acres of habitat restored. Will share numbers with you at the next meeting.
  - Participate in the team to plan a GOM Symposium in spring 2025.

Coastal Data Scientist

Jill Carr

- **Support valid (QA/QC) data collection and use**
  1. Notified of selection for new funding from EPA Exchange Network grant program to expand MassWateR R tool with new functions to increase use in other states, and develop a Shiny App to increase access for users not interested in using R code. Project will also build a Shiny App for QC/analysis of continuous data. Extensive training and support also proposed. This is a partnership of four New England NEPs with Casco Bay NEP as the lead, and subawards to MassBays, PREP, and NBEP. MassBays' award is $250K with subawards to Ben Wetherill and Marcus Beck from the original MassWateR team. Project duration 10/1/24-9/30/27. Official announcement coming soon!
- **Address data gaps**
  1. SECWQALS steering committee meetings and activities to plan and install the first continuous monitoring station on the Danvers River in Beverly. Purchase/send instruments to USGS.
  2. Participate in diadromous fish work group and prepare data layers to establish targets and plan for data layers to be added to the EcoHealth Tracking Tool.
  3. Continue work on WHOI Sea Grant to study seed-based approach to large-scale eelgrass restoration in Massachusetts. Conduct field sampling of reproductive eelgrass shoots from Gloucester to Duxbury. Finalize permitting.

4. Continued oversight of IIJA-funded project titled *Building infrastructure to support seed-based eelgrass restoration* which built dedicated tank infrastructure to support an eelgrass seed bank at DMF's Cat Cove Marine Lab. Help oversee and train technicians (SSU Co-Op students).
5. Steering committee meetings to plan for continuation of DKP Cit Sci eelgrass monitoring project.
6. Submit LOI proposal to NOAA S-K Grant with lead Diana Chin to study eelgrass-aquaculture interactions.

- **Convene and partner with others to support and improve monitoring outputs.**
  1. Complete 15 days of eelgrass map groundtruthing under contract with MassDEP; sampled 800+ stations along the southern shore of Cape Cod and Nantucket in Aug-Sept 2024.
  2. Manage MassBays' Community of Practice forums for MassWateR and the Massachusetts Seagrass Working Group.
  3. Represent Massachusetts on the steering committee of the East Coast Submerged Aquatic Vegetation Collaborative.
  4. Partner with regional NEPs on EPA grant described above.
- **Presentations and publications**
  1. *Increasing the Quantity, Quality, and Accessibility of NGO Water Quality Data Through Exchange Network Tools* presented at the E2i: Environmental Information and Innovation conference 9/17-9/19/24, by EPA request.
  2. Submitted manuscript for review to *Geosciences* journal, special edition on seafloor mapping. Article titled: *An inter-method comparison of drones, airplanes, satellites, and side scan sonar for eelgrass (Zostera marina) mapping*
  3. Provided tour of IIJA-funded lab tank facility at Cat Cove to the Swampscott Conservancy and ConCom.
- **Other**
  1. Manage grant subawards and fiscal status.
  2. Continue to gather info on options for MassBays boat use. Work with UMB facilities on in-house options. Coordinate servicing of SSU vessel.
  3. Assist with social media planning and GoM Science forum brainstorming.

Regional Service Provider & Staff Updates
October-December 2024

Regional Service Provider Updates

Upper North Shore – Merrimack Valley Planning Commission

Contact: Hanna Mogensen

- **Gather data on conditions and trends (data gaps)**
  - Begin drone flights for the 2024 Healthy Estuary Grant to advance drone integration for long-term salt marsh monitoring efforts.
  - Finished monthly marine invasive species (MIMIC) monitoring at 6 locations across the Great Marsh and sent data to CZM for regional reporting.
  - Conducted non-tidal culvert assessments on 16 barriers in the Johnsons Creek Watershed.
  - Collected monthly water samples in the Merrimack River in association with Merrimack River Watershed Council to assist with their regional water quality monitoring program.
  - Completed field mapping of marsh wrack across great marsh.
  - Assisted with securing funding for Chebacco Lake Water Quality Assessment
- **Inform state policy and local action.**
  - Continued to coordinate Regional Hazard Mitigation Plan (HMP) update for 15 communities in the MVPC region. FEMA and MEMA have approved Plan. RC is working to coordinate local adoption for the 10 participating communities.
  - Continued to convene Merrimack River Collaborative Leadership team for internal planning.
  - Continued to advance the Artichoke Reservoir Watershed Based Plan through holding a technical presentation and review for neighboring municipalities.
- **Provide Education, training, and technical support.**
  - RC completed NAACC Non-Tide Culvert Assessment Training Certification and initiated tidal Assessment Training.
  - Assisted two communities in submitting applications to the USFWS National Fish Passage Program and DER Preliminary Dam Assessment Program.
  - RC attended Great Bay National Estuarine Research Reserve (NERR) saltmarsh monitoring training on saltmarsh migration (9.19.24)
  - Provided Keeping Water Clean Programming to fifth grade students at the Donaghue School
  - Attended two field days with the SMART Team to restore saltmarsh hydrology at PRNWR (10.30.24 and 11.2.24)
- **Key meetings attended:**
  - 8TGM Monthly Meeting (9.19.24, 10.31.24, 11.21.2024)
  - PIE Rivers Steering Committee meeting, led by Ipswich River Watershed Association (11.19.24)
  - MassBays Regional Coordinators Meeting (11.22.2024)
  - Merrimack River Collaborative Meetings (10.10.24, 12.03.24)
  - MIT Sea Grant Artificial Reef Meeting (10.8.24)
  - North Shore Water Resiliency Task Force Meeting (10.9.24, 11.25.24)
  - Essex Heritage Fall Meeting (10.10.24)
  - Pepperweed Management Debrief Meeting (10.22.24)
  - Attended ANEP Tech Transfer Conference (11.13-11.15.24)
  - Salt Marsh Working Group Meeting (12.10.24)
  - Hampton-Seabrook Estuary Collaborative Meeting (12.11.24)
  - North Shore Coastal Coalition (12.17.24)
  - MA DOT PROTECT grant for RT 133 Causeway in Essex

Lower North Shore – Salem Sound Coastwatch
Contact: Barbara Warren

- **Gather data on conditions and trends**
  - Completed phase 1 of the eelgrass seed experiment with MA DMF and MassBays under the WHOI grant: Modeling and piloting a new seed-based approach to large-scale eelgrass restoration in Massachusetts. Alison Frye with Endicott College intern set out packets of eelgrass seeds off Winter Island Park, Salem.
  - Conducted water quality testing of tributaries in Manchester, Beverly, Danvers, Peabody and Salem using the EPA Stormwater Toolbox. Collected temperature, salinity, conductivity, dissolved oxygen, pH, surfactants, chlorine, and ammonia. Water samples were also tested for Enterococcus. Data submitted to WQX and reported to the appropriate staff in each municipality
  - Conducted salt marsh monitoring at Gloucester's Good Harbor marsh, Beverly's Endicott College marsh, Salem's Collins Cove living shoreline and Forest River Park restoration
- **Environmental Change**
  - Contracted to work with the City of Salem to on FY25-26 MA CZM Coastal Resilience Grant Phase 2 of the Winter Island Park Pathway and Bank Restoration Project. https://publicinput.com/d3486
  - Leading the FY25 MA CZM Coastal Resilience Grant for Marblehead's State Street Landing and Harbormasters Resilience Plan
  - Joined Salem's Collins Cove Resilient Together FY25-26 MA CZM Coastal Resilience Grant project team
- **Reduce Stormwater Discharge**
  - Conducted 12 COASTSWEEP clean ups with 182 people
- **Education and Outreach**
  - Held a winter waterfowl birding event on December 7th
  - Planning 2025 Underwater in Salem Sound Lecture Series

- **Technical assistance:** RC actively involved in the following:
  - Attended Beverly's MS4 Stormwater Committee meeting
  - Met with Salem Mayor Pangallo to discuss seawall maintenance & bank erosion
  - Presented at the Massachusetts Coastal Community Alliance meeting for mayors and town administrators
  - Continued working with Manchester Coastal Stream Team and cold-water fisheries resource
  - Alison Frye attended the National Estuary Tech Transfer at Stonybrook for SSCW and spent two days at Parker River National Wildlife Refuge being trained on marsh runneling and ditch remediation techniques
  - Assisting the Friends of Good Harbor with project submissions for the Gloucester Gas Light Company Manufactured Gas Plant settlement Cape Ann Restoration Plans

Metro Boston – Northeastern University Marine Science Center

Contact: Diana Chin

- **Address Data Gaps**
  - TNC: We are examining the degree to which oyster aquaculture provides important ecosystem services, including enhancing water quality and providing habitat for fish and crustaceans. We are also conducting surveys of coastal communities throughout Massachusetts and the eastern seaboard to examine barriers to aquaculture.
- **Gather Data on Conditions and Trends**
  - Lobster Sea Grant Program: We are examining the impacts of the range expansion of black sea bass and blue crabs on lobsters and the lobster fishery in the Gulf of Maine. This research uses experiments, field monitoring, and surveys of the lobster industry to assess their ecological knowledge.
- **Technical Support and Communication**
  - Conferences, meetings, and workshops: We 1) Represented MassBays and the Metro Boston region at meetings of the MA Seagrass group, MassECAN Salt Marsh Working Group, a Mass Oyster Project oyster restoration symposium, and the Association of National Estuary Programs (ANEP) Tech Transfer Conference in Stony Brook, NY; 2) Attended a variety of external meetings to keep abreast of news and projects relevant to BHEN partners and to provide feedback when relevant, including a dam removal/fishway site visit in Braintree and public meetings for local, state, and Federal initiatives; 3) Participated in workshops and meetings to communicate results from ongoing research on oyster reef and aquaculture provision of ecosystem services (TNC-China Ministry of Fisheries Joint Workshop on Shellfish Aquaculture) and efforts to map fisher knowledge of present and past cod habitat in the Gulf of Maine (NOAA Collaborative Research Office).
- **Education and Outreach**
  - Boston Harbor Ecosystem Network (BHEN): We 1) Held the fall semi-annual BHEN meeting (November 19) as a workshop focused on coastal and marine biodiversity monitoring, featuring talks on the MA state biodiversity goal setting initiative and the development of an intertidal biodiversity monitoring framework for mixed coarse substrates in the Boston Harbor Islands (21 attendees); 2) Continued output of monthly newsletters compiling resources, events, funding, and job opportunities from across BHEN and related networks; 3) Began planning joint MassECAN Salt Marsh Working Group and BHEN salt marsh research symposium in spring 2025; 4) Conducted BHEN outreach by tabling at the Friends of Belle Isle Marsh Harvest Festival and presenting a talk on seagrass conservation and restoration at a BHEN member's seagrass-inspired art exhibition opening.
  - Boston Harbor Habitat Atlas: We have completed primary migration of BHHA's structure and GIS components in preparation for additional updates.
- **Other**
  - We continued hosting regular discussion meetings for the MassBays RCs.

South Shore – North and South Rivers Watershed Association

Contact Alex Mansfield

1.1 Make new data available, especially to address specific gaps in knowledge

1.1.1 Monitor Diadromous Fish Runs

- Participated as steering committee member for the 2024 River Herring Network meeting.

1.1.2 Water Quality Monitoring

- Collaborated with X-Cel Conservation Corps to provide training as part of their workforce development program through water quality sampling on Third Herring Brook. Data will be used to assess WQ changes as a results of restoration activities in Third Herring Brook.
- Completed 604(b) Headwaters tracking project. Final report submitted to DEP. Presentations provided to Hanover DPW, DPH, and ConsCom

1.1.3 Salt Marsh Vulnerability and Assessment

- Data analysis of GIS and vegetation surveys of 10 saltmarsh sites in Scituate, Norwell, Marshfield, Duxbury, and Kingston.
- Supported MassBays tide gate prioritization project through site visits with CEI at sites in Kingston, Marshfield, and Scituate.

1.1.5 Marine Invasive Species

- Submitted 2024 data to CZM's Marine Invader Monitoring and Information Collaborative (MIMIC) program.

2.1 Research to Inform Policy & Actions

2.1.7 Dam Removal Monitoring and Implementation

- Advanced Chandler Pond Dam removal plans on the South River through meetings with property owners and DER. Worked with DER on streamflow readings and developing a rating curve.
- Kickoff of Veteran's Park Dam removal. Groundbreaking ceremony on 11/15/2024 https://www.nsrwa.org/south-river-dam-removal-groundbreaking-ceremony/

2.1.8 Eelgrass

- Submitted 2024 eelgrass report to DMF https://www.nsrwa.org/2024-eelgrass-survey-results/

2.1.9 Blue Mussels

- Submitted 2024 report of mussel monitoring on 3rd and 4th cliffs in Scituate. This is ongoing work with Mass Audubon to support assessment of habitat conditions for the federally listed Red Knots (*Calidris canutus*) who stopover on this federally owned property.

2.2 Technical Support & Communications

2.2.11 Represent Mass Bay in Networks

- Attended Restore America's Estuaries Conference in DC.
- Steering committee member for the 2024 River Herring Network meeting.
- Participated in quarterly Saltmarsh Working Group meetings.
- Participated in the quarterly Seagrass Working Group meeting in Provincetown
- Participated in the NOAA BWET Community of Practice

2.2.12 Watershed and Coastal Science Education

- Continued development of salt marsh curriculum with Cohasset Center for Student Coastal Research.

2.3 Decision making by underserved communities

- Collaborated with X-Cel Conservation Corps to provide training as part of their workforce development program through water quality sampling on Third Herring Brook.

3.2 Local Action for Habitat & Water Quality

3.2.14 Adequate Streamflow

- Data logger maintenance in First Herring Brook, Scituate and continued discussion with Scituate water managers.

Cape Cod – Association to Preserve Cape Cod
Contact: April Wobst

- **Make new data available**
  - Released State of the Waters Cape Cod Report inclusive of analysis of cyanobacteria and pond monitoring data collected by APCC
  - Released and distributed results from 2024 Herring Run volunteer monitoring program counts and DMF run size estimates
  - Attended and provided updates on fish passage projects and 2024 herring run counts to attendees at the annual River Herring Network meeting on Nov. 12
  - Key results from the 2024 Cape Cod river herring monitoring:
    - Monitoring effort: There were more than 6,600 observations collected by over 500 volunteers across Cape Cod in 2024. The 2024 sampling effort was slightly greater than the 2023 effort.
    - The raw data: Over 54,000 returning herring were observed at 19 different sites. The overall number of observed herring across all sites declined compared to 2023.
    - Run size indices: The Division of Marine Fisheries uses the raw observations to calculate run size indices using a mathematical model. The model accounts for the number and timing of observations and provides a relative index of population trends over time. While six of the monitored runs experienced increases over 2023 run estimates, the median percent change across all runs was -28%, indicative of overall declines in 2024.
    - Overall status: The 2024 herring run indices are below the long-term averages for most sites, indicative of depleted populations.
- **Outreach and Education, Collaboration and Technical Support**
  - Sept 12: Attended and presented at EPA coordinated regional workshop on bog restoration. April served on the steering/planning committee and provided facilitation of small group discussion to identify most useful parameters for monitoring project success to date. Jordan Mora, APCC lead ecologist presented data on completed Childs River restoration.
  - Collaborating with Mass Audubon and other regional partners on alternative techniques to salt marsh restoration (e.g. ditch remediation, runneling, thin layer placement) through Cape Cod Restoration Action Team.
  - Monthly coordination with Cape Cod Conservation District and MA Division of Ecological Restoration on salt marsh restoration projects on Cape Cod with primary focus on tidal restorations and priority projects identified under NRCS funded Cape Cod Water Resources Restoration Project (see map for detail and status on salt marsh, fish passage and stormwater projects).
  - Article in Enterprise on regional stormwater boat ramp project and construction underway at Scargo Lake site in Dennis. Also interviewed by WCAI, new piece pending.
  - APCC's outreach specialist Dorria ("Dee") Marsh continues to work with MassBays staff to support newsletter, social media, website and other outreach and communication needs
- **Habitat and Water Quality Improvement Restoration**
  - Compiling existing data from pond monitoring and potential restoration sites for development of GIS-based dataset and map to identify priority restoration projects.
  - Chase Garden Creek Salt Marsh (Dennis/Yarmouth): Completing sediment sampling with Center for Coastal Studies to wrap up year 2 of project to assess and identify vulnerabilities and develop a restoration plan for this large system.
  - Sesuit Creek salt marsh adaptive management (Dennis): Completed additional mapping of vegetation relative to persistent bare areas in the restored marsh along with monitoring of long-

term vegetation plots. Analyzed data informed draft plan for additional planting originally proposed for 2025 but now anticipated for spring of 2026.

- Scargo Lake green infrastructure stormwater remediation (Dennis): Construction is underway on installation of green infrastructure stormwater systems at two locations on Scargo Lake. Scargo Lake is the headwaters for Sesuit Creek and is the spawning habitat for the Sesuit creek herring run. Immediately adjacent to this site, the town and DOT are completing replacement of two culverts under Route 6A restricting fish passage to Scargo Lake Construction on stormwater and culverts will wrap up in 2025. Together these projects and work at Sesuit Creek salt marsh are part of a watershed scale approach to restoration within this system to improve habitat, water quality and fish passage.

MassBays Staff Updates

MassBays Director

Pam DiBona

- **Administration**
  - Met three times with Office of Research and Sponsored Programs staff at UMB to discuss aspects of grant applications and establishment, subaward processing, and changes in the Uniform Funding Guidance released by the U.S. Office of Management and Budget. Worked closely with EPA Region 1 to make sure all is aligned.
  - Met with Urban Harbors Institute staff to review final draft Structure & Operating Procedures for MC vote, and provide input on Communications Plan.
  - Drafted IIJA workplan for MC review.
  - Hosted MC Member Orientation session for new members, worked with the Nominating Subcommittee Chair, Outgoing MC Chair, and new Chair to identify and recruit a new Vice Chair.
  - Secured a new account to collect donations via the UMB website.
  - Attended Association of National Estuary Programs (ANEP) meeting at Stony Brook University to discuss the ANEP budget and hear from ESP Associates about changes anticipated with the next Administration.
- **Program Support**
  - Attended weekly check-ins with staff.
  - Launched Habitat Potential Index work with CEI, Inc.. Scarcity of site-specific data will require some reworking of the initial vision for this effort, that work is underway in-house and with CEI before we bring a new proposal to the RCs and STAC.
  - Attended biweekly meetings with MWRA, MIT Sea Grant, and MassBays Central Staff to plan the Gulf of Maine Monitoring & Research Symposium to be held on April 8-9 2025.
  - Met with DEP and Coastal Data Scientist re: renewing the eelgrass ground-truthing ISA for another three years, clarifying expectations.
  - Identified a new NSF trans-disciplinary funding opportunity working with UMB's Georgia Mavrommati and the Mass. Bureau of Underwater Archaeology' Director David Robinson, draft proposal is in process with regular meetings and planned outreach to potential Native American partners.
  - Presented about MassBays' public input processes at the ANEP Technical Transfer Conference at Stony Brook University.
- **Other**
  - Attended Massachusetts Rivers Alliance event to receive a Water Warrior Award(!).

Senior Scientist

Prassede Vella

- **Address data gaps**
  - SECWQALS: The continuous monitoring system in Danvers River has been working successfully. Data are being transmitted in real time here Danvers River at Beverly Pier at Beverly MA - USGS Water Data for the Nation. MassBays is working to have the data be streamed on our website as well. The system will be pulled out by the end of December for maintenance and servicing before redeployment in Spring 2025. MassBays and USGS will be meeting to discuss how things went in 2024, lessons learnt, and planning for 2025.
  - Ocean Acidification: Funding was provided by NROC (BIL funds) to purchase three pCO2 sensors. The sensors are in the process of being procured and will be deployed in Spring 2025 in collaboration with USGS. They will be deployed at the same stations as SECWQALS. This is timely as it will tie in with NECAN's ocean acidification monitoring plan currently under review Ocean Acidification Monitoring Plan and Proposed Outreach Strategy Available for Review – Northeast Regional Ocean Council (NROC).
  - Diadromous Fish Habitat BCG and target: The subgroup met for further discussion following input from STAC on the proposed targets. CEI has been working to get the ETT ready to receive the data and will be available soon.
  - Habitat Potential Index: See Pam's notes.
- **Applied research**
  - Duxbury-Kingston-Plymouth Eelgrass Loss Study: (1) In January 2025 steering committee will reconvene to: assess the 2024 data; make decisions for 2025 beyond (we want to continue but need funding); start planning for a look back over 7 yrs of the survey and compiling the data into one report with trends and next steps; looking for funding for additional years of survey since this was the final year of DMF funding. (2) Thanks to EPA we have water quality samples for the 2nd year as part of the investigation of eelgrass loss (EPA Chelmsford Lab). MassBays, DEP and EPA met to discuss the WQ data. 2023-2024 data will be included in the report.
  - Optimizing local tide gate operations & management to improve salt marsh health: Field work has been completed by CEI with assistance from some of the regional coordinators and locals as well. The next Science Advisory Committee will be held in January to present initial findings and priorities. MassBays and CEI are working on these next steps.
- **Administration**
  - Worked with ORSP to develop:
    - subawards for the RCs for FY25
    - contract with CSSF/NROC on funding for the purchase of the three pCO2 sensors
- **STAC meetings**
  - Next STAC meeting will be in January. Poll for the date will be sent out to STAC this week.
- **Collaborations and partnerships**
  - NERACOOS – on December 5 I was voted in for a second term as Board member and Secretary for the next 3 years
  - NROC Ocean and Coastal Ecosystem Health Committee – Attend and participate at monthly meetings.
- **Communications**
  - Weekly meetings with Dee Marsh to plan communication tasks. Currently planning how to continue working on the website to prepare to bring in all the work that MassBays does in the coming months.
  - Provided material with Dee to post on social media (FB, LinkedIn, Instagram).
  - Dee and I published the fall newsletter and updated the constant contact list. Please share and encourage colleagues and contacts to sign up at this link: MassBays Newsletter | Massachusetts

Bays/ Next newsletter is scheduled for January 2025. Newsletter schedule: January, April, July, October (2nd Tuesday)
    - **ASKING MC members** - please "like us"/"follow us" and share the MassBays website and social media with your constituents as we are trying to get more "Likes" and "Followers" as part of our communications strategy. Facebook: Massachusetts Bays National Estuary Partnership | Boston MA | Facebook. Instagram: MassBays National Estuary Partnership (@massbaysnep) • Instagram photos and videos.
    - Developing a communications schedule and associated guidance for RCs to streamline the materials they have to provide including quarterly updates (which also serve to fulfil part of our reporting obligation to EPA), highlights for the newsletters, NEPORT, deliverables, workplans/accomplishments, etc.
    - Helping oversee the development of a Communications Plan for MassBays.
- **Presentations**
    - Presented at the Restore America's Estuaries Conference held in October 2024, Arlington, VA: *Optimizing Tide Gate Operation and Management to Improve Salt Marsh Health*
    - Attended and presented at the NEP Technical Transfer meeting in Stony Brook, NY. *MassBays Continuous Nearshore Monitoring Network*
- **Others**
    - Interviewed and hiring a UMB grad student to provide support in planning and convening of MassSMAP in 2025. Student will begin in January – May 2025.
    - Developed draft charter for MassSMAP which is under review at MassDEP.
    - Assist in the planning for the GOM Monitoring and Research Symposium planning including meetings every two weeks.

Coastal Data Scientist

Jill Carr

Support valid (QA/QC) data collection and use

1. Kicked off EPA Exchange Network project to expand MassWateR R tool with new functions to increase use in other states, and develop a Shiny App to increase access for users not interested in using R code. Project will also build a Shiny App for QC/analysis of continuous data. This is a partnership of four New England NEPs with Casco Bay NEP as the lead, and subawards to MassBays, PREP, and NBEP. Project duration 10/1/24-9/30/27. Work already completed includes needs assessments and discussions among each state's department of environmental protection, and preliminary code development. A new MassWateR training video is now available here. A training workshop was provided on 11/22.
2. Provided one-on-one support and training to groups on QAPP development and data upload to WQX.

Address data gaps

1. Transition from field work to data QA/QC and analysis for WHOI Sea Grant study looking at seed-based approach to large-scale eelgrass restoration.
2. Continued oversight of IIJA-funded project titled *Building infrastructure to support seed-based eelgrass restoration* which built dedicated tank infrastructure to support an eelgrass seed bank at DMF's Cat Cove Marine Lab. Help oversee and train technicians (SSU Co-Op students).
3. Support technical aspects of first SECWQALS continuous monitoring station installation on the Danvers River in Beverly.
4. Participate in diadromous fish work group and prepare data layers to establish targets and plan for data layers to be added to the EcoHealth Tracking Tool.
5. Steering committee meetings to plan for continuation of DKP Cit Sci eelgrass monitoring project.

Convene and partner with others to support and improve monitoring outputs.

1. Manage eelgrass map groundtruthing ISA project with MassDEP; data analysis and reporting on 800+ sampling stations along the southern shore of Cape Cod and Nantucket sampled in Aug-Sept 2024.
2. Coordinate and schedule a region-wide field debrief meeting of ~15 organizations who implemented the MassBays/EPA Eelgrass Flowering Phenology Protocol (to be held 2/4/25)
3. Oversee MassBays' Community of Practice forums for MassWateR and the Massachusetts Seagrass Working Group.
4. Represent Massachusetts on the steering committee of the East Coast Submerged Aquatic Vegetation Collaborative.

Presentations and publications

1. Published manuscript to *Geosciences* journal, special edition on seafloor mapping. Article titled: *An inter-method comparison of drones, side scan sonar, airplanes, and satellites for eelgrass (Zostera marina) mapping and management.* Accepted on 12/12/24; link forthcoming.
2. Led a MassWateR Training Workshop on 11/22/24 in-person at MassWildlife Headquarters and attended by 16 watershed organizations.
3. Lead tour of eelgrass tank infrastructure at Cat Cove Marine Lab for the CZM staff meeting.
4. Attend NEP Technical Transfer meeting in Stony Brook, NY. Present two sessions on eelgrass seeding and WQX data workflows titled: *Moving toward seed-based approaches to eelgrass restoration and resiliency* and *NEP's and Open Data: Using WQX to archive, share, and disseminate water quality data.*
5. Attend Oyster Restoration symposium, PIE RIVERS annual meeting, and Long Island Sound Eelgrass Collaborative winter meeting.
6. Assisted metro Boston RC with BHEN meeting at EPA Boston.

Other

1. Manage grant subawards and fiscal status.
2. Interview and hire UMB grad student to begin Jan 2025 and work on eelgrass projects through at least the end of summer 2025.
3. Continue to gather info on options for MassBays boat use. Work with UMB facilities on in-house options.
4. Assist with social media planning and GoM Science forum planning.

Regional Service Provider & Staff Updates
January – March 2025

Regional Service Provider Updates

Upper North Shore – Merrimack Valley Planning Commission
Contact: Hanna Mogensen

- **Gather data on conditions and trends (data gaps)**
  - Continued drone flights for the 2024 Healthy Estuary Grant to advance drone integration for long-term salt marsh monitoring efforts. Flights this quarter focused on mapping potential eelgrass habitat in Essex Bay.
  - Collected monthly water samples in the Merrimack River in association with Merrimack River Watershed Council to assist with their regional water quality monitoring program.
  - Completed field mapping of marsh wrack across great marsh.
  - Began mapping hot spot flooding locations within region using local planning documents.
- **Inform state policy and local action.**
  - Completed local adoption and received final approval from FEMA for the Merrimack Valley Region Multi-Hazard Mitigation Plan update.
  - Continued to convene Merrimack River Collaborative Leadership team for internal planning.
  - Begin planning for the annual Merrimack Water Quality Round Table which will be held virtually on Tuesday, April 29th from 9:00-11:30am.
  - Submitted and received final approval from DEP for the Lower Artichoke Reservoir Watershed-Based Plan.
  - Submitted collaborative RAE Expression of Interest with MassBays team to advance state-wide eelgrass techniques and restoration.
- **Provide Education, training, and technical support.**
  - RC completed NAACC culvert conditions training with DER.
  - Two communities in which RC assisted successfully received DER Dam Reconnaissance Grant funding (Lawrence and Groveland, MA)
  - Provided Keeping Water Clean Programming to fifth grade students at Salisbury Elementary School, Sargent Elementary School (Andover) and Atkinson Elementary School in North Andover
- **Key meetings attended:**
  - 8TGM Monthly Meeting (1.30.25, 2.28.25)
  - PIE Rivers Steering Committee meeting, led by Ipswich River Watershed Association (1.6.25)
  - MassBays Regional Coordinators Meeting (1.31.25)
  - Merrimack River Collaborative Meetings (2.19.2025)
  - Hampton-Seabrook Estuary Collaborative Meeting (1.29.25)
  - Held local community meetings to offer technical support (2.11.25, 2.19.25)
  - MassBays STAC Quarterly Meeting (2.27.25)
  - Greenscapes Monthly Meetings (1.30.25,2.27.25)

- Attended ResilientCoasts Public Meeting (3.3.25)
- Supported regional Dam removal assessment projects (1.21.25, 2.7.25, 2.11.25, 2.28.25, 3.6.25)
- Salt marsh Restoration Outreach Working Group Meeting (3.18.25)

Lower North Shore – Salem Sound Coastwatch
Contact: Barbara Warren

- **Gather data on conditions and trends**
  - Started year 2 of the WHOI SeaGrant eelgrass seed experiment with MA DMF and MassBays: Modeling and piloting a new seed-based approach to large-scale eelgrass restoration in Massachusetts. Continued analyzing seed viability data, monitoring seed germination experiment, and scheduling spring crab trapping field work.
  - Completed water quality testing report of tributaries in Manchester, Beverly, Danvers, Peabody and Salem using the EPA Stormwater Toolbox. Data entered in the EPA CDX and was published on SSCW website, final report submitted to EPA, DEP, and Municipalities.
  - Completed 2-season analysis and report for Horseshoe Crab community science survey
  - Completed and submitted salt marsh report for MA DER, completed report for monitoring Good Harbor Marsh (Gloucester) with funding from Bruce J. Anderson Foundation grant
- **Environmental Change**
  - As project manager with the City of Salem to on FY25-26 MA CZM Coastal Resilience Grant Phase 2 of the Winter Island Park Pathway and Bank Restoration Project. https://publicinput.com/d3486 Held on-site day-long meeting with project team, met ecological design team on-site to discuss issues and solution
  - Co-project manager for the FY25 MA CZM Coastal Resilience Grant for Marblehead's State Street Landing and Harbormasters Resilience Plan. Working on site data collection and stakeholder interviews.
  - Salem's Collins Cove Resilient Together FY25-26 MA CZM Coastal Resilience Grant. Developed resident flooding survey, interviewing stakeholders, held public virtual meeting, and hosted a park meet-up. https://publicinput.com/a72475
  - Presented on coastal resilience projects on the lower North Shore at the SSCW Underwater in Salem Sound lecture series, March 19th "Saving our Shoreline"
- **Education and Outreach**
  - Developed new birding program, "Salem Sound Birdwatch," hosted a training, and conducted birding events with volunteers on January 26th and a Salem Sound survey on March 9th
  - Hosted two Underwater in Salem Sound Lectures (Living Seawalls, eDNA)
  - Presented at the Marblehead Garden Club on Salem Sound and Invasive Species
- **Technical assistance:** RC actively involved in the following:
  - Attended Regional Resilience: Assessing Economic & Flood Vulnerability in Essex County, presentations by CZM, NOAA, UMass Amherst Gloucester Marine Station
  - Attended MA DMF 2025 Massachusetts Horseshoe Crab Science Meeting
  - Attended Salt Marsh Working Group
  - Continued working with Manchester Coastal Stream Team and cold-water fisheries resource
  - Wrote letter of support for MAPC's Application for EEA's Drought Resiliency and Water Efficiency Grant Program.
  - Wrote and submitted letter of support for Eelgrass as Massachusetts' official marine flora
  - Member of the Manchester Hazard Mitigation Planning Group

Metro Boston – Northeastern University Marine Science Center
Contact: Diana Chin

- **Address Data Gaps**
  - MassBays IIJA Funding: We are coordinating with the MassBays central staff on an award to NU and Emerald Tutu for a research project to build and test a simple nursery system in East Boston for propagating salt marsh cordgrass from seed within biomass-based mats, which could be deployed as urban living shoreline prototypes (~$99,770).
  - Atlantic Coastal Fish Habitat Partnership: With Cohasset Center for Student Coastal Research, we submitted a research proposal to conduct pilot-scale seed-based eelgrass restoration in Cohasset Harbor with a primary emphasis on education, training, field work, and outreach by CCSCR's high school students (~$108,850 with $178,710 non-Federal match).
  - Restore America's Estuaries NEP Watersheds: As part of a MassBays-wide collaboration, we contributed to a research pre-proposal to conduct pilot-scale seed-based eelgrass restoration and outreach in four MassBays regions that has now been encouraged for full proposal. We led and submitted a separate research pre-proposal, which has also been encouraged for full proposal, to extend and update the results of the MassBays Ecosystem Delineation Assessment (EDA) by characterizing critical thresholds for coastal habitat area, impervious surface cover, and water quality to guide strategic planning in several Metro Boston communities.
  - MIT Sea Grant: In collaboration with MassBays and MIT Sea Grant staff, we led and submitted a research pre-proposal regarding interactions of shellfish aquaculture and seagrass, aimed at informing aquaculture siting and management. We continued to coordinate with MA DMF on these topics.
  - TNC: We are examining the degree to which oyster aquaculture provides important ecosystem services, including enhancing water quality and providing habitat for fish and crustaceans. We are also conducting surveys of coastal communities throughout Massachusetts and the eastern seaboard to examine barriers to aquaculture.
- **Gather Data on Conditions and Trends**
  - Lobster Sea Grant Program: We are examining the impacts of the range expansion of black sea bass and blue crabs on lobsters and the lobster fishery in the Gulf of Maine. This research uses experiments, field monitoring, and surveys of the lobster industry to assess their ecological knowledge.
- **Technical Support and Communication**
  - Conferences, meetings, and workshops: We 1) Represented MassBays and/or the Metro Boston region at meetings of the Tide Gates Science Advisory Committee and the MassECAN Salt Marsh Working Group; 2) Attended a variety of external meetings to keep abreast of news and projects relevant to BHEN partners and to provide feedback when relevant, including an update on the state of several Belle Isle Marsh resilience projects; 3) Continued to connect Metro Boston partners on interdisciplinary areas of mutual interest, such as an NU professor in the College of Arts and Media Design with the Charles River and Mystic River Watershed Associations regarding shoreline mapping, and with Boston Harbor Now and a local artist regarding scientific bases for artistic interpretation of seagrass in a proposed art installation.
- **Education and Outreach**
  - Boston Harbor Ecosystem Network (BHEN): We 1) Continued planning the joint MassECAN Salt Marsh Working Group and BHEN salt marsh science symposium, to be held in person April 30 at the UMass Mt Ida campus in Newton, featuring presentations from eight New England practitioners on current science, tools, and application of salt marsh monitoring metrics and salt marsh migration modeling; 2) Continued output of monthly newsletters compiling resources, events, funding, and job opportunities from across BHEN and related networks.

- High School Marine Science Symposium: We conducted an interactive exhibit about fisheries and society (perceptions of seafood, lobster fishing, and wild vs. farmed oyster harvesting) at the High School Marine Science Symposium.

- **Other**
  - We continued hosting regular discussion meetings for the MassBays RCs.
  - We organized a workshop for the MassBays RCs and central staff to convene on upcoming and future potential areas for cross-region collaboration.

South Shore – North and South Rivers Watershed Association

Contact Alex Mansfield

1.1 Make new data available, especially to address specific gaps in knowledge

1.1.1 Monitor Diadromous Fish Runs

- Participated as steering committee member for the 2024 River Herring Network meeting.
- Panelist for MA DMF River Herring Workshop 3/12/2025.
- Recruiting of the 2025 herring counts volunteers for five South Shore sites. Seventy-four volunteers registered as of 3/17/2026. Counts begin on March 23rd at early run sites, remaining counts begin April 1st.

1.1.2 Water Quality Monitoring

- Hired summer interns for WQ testing.
- Organized a coalition and "summit" of interested entities for Duxbury/Plymouth/Kingston Bay. Summit was held at Duxbury Bay Maritime School on March 6, 2025. Coalition includes: Duxbury Bay Maritime School, Friends of Ellisville Marsh, Island Creek Oysters, Jones River Watershed Association, MA Coastal Zone Management, MA Department of Environmental Protection, MassBays National Estuaries Partnership, North and South Rivers Watershed Association, Provincetown Center for Coastal Studies, Southeastern Massachusetts Pine Barrens Alliance, Town of Duxbury, Town of Kingston, Town of Plymouth, Wildlands Trust

1.1.3 Salt Marsh Vulnerability and Assessment

- Data analysis of GIS and vegetation surveys of 10 saltmarsh sites in Scituate, Norwell, Marshfield, Duxbury, and Kingston.
- Supported MassBays tide gate prioritization project focusing on South Shore sites.

1.1.4 Horseshoe Crab Surveys

- Participated in the DMF Horseshoe crab science meeting (3/13/25)
- Initiated planning and scheduling for 2025 HSC surveys at Duxbury Bay

2.1 Research to Inform Policy & Actions

2.1.7 Dam Removal Monitoring and Implementation

- Advanced Chandler Pond Dam removal plans on the South River through meetings with property owners and DER. Worked with DER on streamflow readings and developing a rating curve.
- Weekly monitoring of Veteran's Park Dam removal.

2.1.8 Eelgrass

- Pursued funding for ongoing Duxbury/Plymouth/Kingston Bay eelgrass monitoring through multiple grant proposals and requests for private foundation funding.
- Submitted grant proposal to Restore America's Estuaries for a two-year, seed-based eelgrass restoration project in Duxbury/Plymouth/Kingston Bay

2.1.9 Blue Mussels

- Developed scope of work and budget for monitoring mussel beds at 4th Cliff Scituate. This is ongoing work with Mass Audubon to support assessment of habitat conditions for the federally listed Red Knots (*Calidris canutus*) who stopover on this federally owned property.

- Conducted mussel extent survey on Mar 30, 2025.

2.2 Technical Support & Communications

2.2.11 Represent Mass Bay in Networks

- Panelist DMF River Herring counting meeting,
- Attended: DMF Horseshoe crab science meeting.
- Steering committee member for the 2025 River Herring Network meeting.
- Participated in quarterly Saltmarsh Working Group meetings.
- Participated in the quarterly Seagrass Working Group meetings
- Participated in the NOAA BWET Community of Practice
- Participated in monthly "Mass Rivers Science Connects" meetings
- Participated in MassBays Science and Technical Advisory Committee meetings.
- South Shore Resiliency Network (SSRN) Planning Committee

2.2.12 Watershed and Coastal Science Education

- Presented *"Massachusetts Bays National Estuary Partnership working in the Jones River Watershed: Saltmarshes, eelgrass, tide gates, and more" at* Jones River Watershed Association's 39th Annual meeting. Presentation available at https://us02web.zoom.us/rec/share/RBpZJYQzEebMLHeiUtPZVqxjjI_BUfPTl6Icj9sxsiqNxYcC0N8RN1_fugMmxkj9.MHY4ehqWkUNbmH6j Passcode: s.tPe%9r
- Continued development of salt marsh curriculum with Cohasset Center for Student Coastal Research.

3.2 Local Action for Habitat & Water Quality

3.2.14 Adequate Streamflow

- Data logger maintenance in First Herring Brook, Scituate and continued discussion with Scituate water managers.

Cape Cod – Association to Preserve Cape Cod

Contact: April Wobst

Make new data available

- **River herring monitoring coordination**: 20 Cape Cod runs for spring migration
  - Volunteer recruitment and coordination efforts are being promoted through newsletters, websites, and social media platforms.
  - Held remote training on March 4 for Stony Brook, Brewster volunteers to familiarize them with the shift sign-up system and provide an introductory overview of the sampling protocol (in-person training scheduled for 3/18).
  - Held remote count coordinator training on March 6 to onboard new coordinators, refresh returning coordinators, introduce updated protocols, and reinforce key sampling concepts.
- **Cyano, freshwater, and restoration database development**
  - APCC is working to integrate cyanobacteria, freshwater water quality, herring, and restoration program datasets to help inform priorities for restoration and protection.
  - Our cyanobacteria data has undergone reformatting and restructuring to create a combined dataset of all years and all sites, and this combined dataset is being reviewed for trends and meaningful correlations among the cyanobacteria data.
  - As part of the initial meetings late 2024, the team came to several important conclusions regarding how the database would be constructed and what data would be selected for inclusion:
    1) The spatial unit of measure which would allow the program datasets to crosstalk, a necessary step for developing monitoring and management plans, would be the watershed and sub-watershed boundaries (provided by the Cape Cod Commission).

2) The Carlson Trophic Index (CTI; already used in the State of the Waters Report) would be the best choice for analyzing and comparing freshwater resources across Cape.
3) The Buzzards Bay Eutrophic Index (EI; also used in State of the Waters) will be incorporated for understanding water quality of coastal embayments.
4) The combined database will pull CTI, EI, watershed/sub-watershed, herring counts, and restoration sites into one application which staff can query for future restoration priorities and identify monitoring stations near completed or pending projects to track changes over time.

- APCC is working to update GIS data layers to pull together restoration project, cyanobacteria, ponds/lakes, and herring data along with land management planning parcels developed by APCC into a comprehensive GIS database to inform resource conservation and restoration planning.

- **Outreach and Education, Collaboration and Technical Support**
  - **Massachusetts Association of Conservation Commissions (MACC) 2025 Annual Environmental Conference on March 1:** APCC Lead Ecologist and Science Advisor, Jordan Mora, co-presented with Cristina Kennedy from DER. Their workshop focused on Salt Marsh Restoration through Tidal Restrictions Removal – Lessons Learned and Project Planning Considerations based on a joint report providing analysis of data from early 2000s through 2020 on 8 salt marshes restored on Cape Cod
  - **Mashpee STEAM night Feb 27:** APCC Restoration Ecologist, Mike Palmer participated in this local school function providing outreach, and education on river herring and the monitoring program, and to garner community interest in three river restoration projects
  - **Cape Cod Natural History Conference March 8:** Salt Marsh Specialist Molly Autery presented updates on the Chase Garden Creek salt marsh restoration assessment and planning
  - **MA DMF Herring Monitoring Workshop on March 12**: The workshop will review and discuss the various methods used to monitor river herring populations, including traditional visual counts, electronic counting technologies, and cutting-edge AI-assisted analysis. The workshop will provide a venue to have a conversation with attendees about the future of river herring monitoring in Massachusetts. APCC has worked with DMF on planning and agenda for the workshop and will present on experiences coordinating river herring monitoring programs on Cape Cod including APCC's role in monitoring, review of some of the data that has been collected, challenges, and future program direction.
  - **MassBays Outreach:** APCC's outreach specialist Dorria ("Dee") Marsh works with MassBays staff to support outreach including coordination of the quarterly newsletter, support of social media updates, maintenance of the MassBays website and planning and coordination of the Gulf of Maine Symposium on April 8-9.
- **Habitat and Water Quality Improvement Restoration**
  - **Chase Garden Creek Salt Marsh:** APCC has been working to analyze data collected by us and the Center for Coastal Studies during the summer of 2024. This data was summarized in an annual Chase Garden Creek report in January 2025, which included the methods and results employed and acquired from the 2024 field surveys and sampling efforts as well as a discussion of the results and implications for future work.
  - **Sesuit Creek Salt Marsh**: APCC is finalizing a Request for Proposals to release in the next month to hire a consultant to complete design and permitting for a 2026 planting of *Spartina alterniflora* in persistent bare areas in this tidally restored salt marsh. This builds on a pilot planting completed in 2018, and subsequent monitoring 2018-2024 to develop a plan for this more expansive planting to improve the recovery rate of this marsh.

- **Scargo Lake Stormwater Remediation**: Construction is picking up again with warmer weather with final paving and installation of plants and seeds planned over the next two months. This includes two sites: a town boat ramp and a beach parking area with installation of porous pavement, two bioretentions, and underground infiltrating chambers. APCC also monitors this lake for pond water quality and cyanobacteria providing data to track improvements following stormwater management and integrating work across our restoration and freshwater monitoring program areas.

MassBays Staff Updates

MassBays Director
Pam DiBona

- **Administration**
  - Submitted Federal Fiscal Year 2025 Infrastructure and Jobs Act (formerly BIL) workplan (Year 4 of 5) to EPA.
  - Finalized job description for Science Communications Specialist in collaboration with UMass Boston HR department and the SFE Dean. Subsequently met with HR and the Dean to discuss MassBays staffing.
  - Contributed to and edited MassBays' winter newsletter
  - Participated in regular School for the Environment Faculty and Directors meetings.
- **Program Support**
  - Joined weekly check-ins with staff.
  - Attended February 2025 Outfall Monitoring Science Advisory Panel (OMSAP) meeting, presented draft Charter for the Massachusetts Science and Monitoring Advisory Panel (MassSMAP), the proposed successor organization to OMSAP.
  - Attended biweekly meetings with MWRA, MIT Sea Grant, and MassBays Central Staff to plan the Gulf of Maine Monitoring & Research Symposium to be held on April 8-9 2025. Sent direct invitations to the event to coastal congressional and State House staffers, and environmental reporters. Administered scholarship program funded by NERACOOS.
  - Participated in monthly meetings of UMB Institutes and Centers Directors, joined a team to raise the profile of Centers on campus and on the university's website.
  - Participated in a faculty search committee for a new associate professor of remote sensing, bringing needs for applied research and collaboration to the online interviews. Narrowed down a list of 30 semi-finalists to 10 interviewees, three of whom will visit the campus in April for final interviews.
  - With the Senior Scientist, submitted a joint proposal to NOAA with two UMB professors, entitled *SEA-CARE: Socio-environmental knowledge Engagement and Adaptation for Coastal Acidification Resilience in Duxbury Bay*. Funding is included for the new Communications staffer; MassBays Director is a co-PI.
  - Attended the in-person RC meeting coordinated by the Metro Boston RC.

Senior Scientist
Prassede Vella

- **Address data gaps**
  - Ocean Acidification: The three pCO2 sensors have been purchased and delivered to USGS to be deployed in Spring 2025 at the mouth of the Danvers River, in the lower Merrimack River, and in DKP (between Duxbury and Kingston). Funding was provided by NOAA via NROC. This is timely as it will tie in with NECAN's ocean acidification monitoring plan currently under review Ocean

Acidification Monitoring Plan and Proposed Outreach Strategy Available for Review – Northeast Regional Ocean Council (NROC).

- Diadromous Fish Habitat BCG and target: The subgroup met for further discussion following input from STAC on the proposed targets. CEI has been working to get the ETT ready to receive the data and will be available soon.

- SECWQALS: Continue leading planning for the 2025 continuous monitoring program including deployment of monitoring stations with USGS as well as managing and planning for grab sampling with RCs and EPA in the relevant regions. Support technical aspects of first SECWQALS continuous monitoring station installation on the Danvers River in Beverly. This will include the deployment of three pCO2 monitors.

- **Applied research**
  - Duxbury-Kingston-Plymouth Eelgrass Loss Study: (1) The steering committee reconvened to assess the 2024 data and discuss next steps since the mitigation funds have been used up. The team is looking for additional funding for the 2025 season and will be planning for a look back over 7 yrs of the survey and compiling the data into one report with trends and next steps. (2) Working with EPA on the possibility of having water quality samples for a 3rd year as part of the investigation of eelgrass loss (EPA Chelmsford Lab). Analysis of 2023-2024 data currently in progress to discuss with EPA on 3/20/2025 as part of the decision for continued support. EPA will also be assisting with lab analysis of field samples from Danvers River mouth (collected by SSCW), DKP (collected by EPA), and lower Merrimack River (collected by TBD).
  - Optimizing local tide gate operations & management to improve salt marsh health: The Science Advisory Committee met in January to discuss initial findings and priorities. Region-specific meetings are currently ongoing with RCs and SAC members for a deeper dive before going out to the operators and municipalities. Had a conversation with DER on additional aspects to consider as well as learning more about upcoming call for technical support (grant).
- **Program support**
  - Worked with ORSP to develop:
    - contract with CSSF/NROC on funding for the purchase of the three pCO2 sensors
    - extending JFA between UMB and USGS to extend the time of SECWQALS
  - Manage grant subawards and fiscal status.
  - Attended February 2025 Outfall Monitoring Science Advisory Panel (OMSAP) meeting, co-presented draft Charter for the Massachusetts Science and Monitoring Advisory Panel (MassSMAP), the proposed successor organization to OMSAP.
  - Supervised intern to coordinate next steps in the finalization of the MassSMAP charter and convening the MassSMAP.
  - Co-lead the planning for GOM symposium, including: program/agenda development (with coastal data scientist), notifying speakers and presenters and setting up pre-symposium meeting with keynote speakers, event location coordination and technical assistance, webpage development and social media, and attendee registration.
  - Assisting Director with the IIJA work plan development by providing pertinent information.
- **STAC meetings**
  - STAC met on 2/27/2025. The main part of the agenda was dedicated to a presentation provided by Gregg Moore, Ph.D. from UNH who talked at length about runnel and channel work conducted in the Great Marsh and possibility of applying the methods at other marshes in MA.
- **Communications**
  - Weekly meetings with Dee Marsh to plan communication materials. Currently planning how to continue working on the website to prepare to bring in all the work that MassBays does in the coming months.

- Worked with Dee on social media (FB, LinkedIn, Instagram).
- Supervised the development and publication of the winter newsletter
- **ASKING MC members** - please "like us"/"follow us" and share the MassBays website and social media with your constituents as we are trying to get more "Likes" and "Followers" as part of our communications strategy. Facebook: Massachusetts Bays National Estuary Partnership | Boston MA | Facebook. Instagram: MassBays National Estuary Partnership (massbaysnep) • Instagram photos and videos.
- **ASKING MC members -** Please share and encourage colleagues and contacts to sign up at this link: MassBays Newsletter | Massachusetts Bays/ Next newsletter is scheduled for April 2025.

- **Grants**
  - With the Director, submitted a joint proposal to NOAA with two UMB professors, entitled *SEA-CARE: Socio-environmental knowledge Engagement and Adaptation for Coastal Acidification Resilience in Duxbury Bay*.

Coastal Data Scientist
Jill Carr (Jillian.Carr@umb.edu)
Support valid (QA/QC) data collection and use

- Continue progress on EPA Exchange Network project to expand MassWateR R tool with new functions to increase use in other states and develop a Shiny App to increase access for users not interested in using R code. Project will also build a Shiny App for QC/analysis of continuous data. This is a partnership of four New England NEPs with Casco Bay NEP as the lead, and subawards to MassBays, PREP, and NBEP. Note, funding is not yet in hand due to backlogs at EPA.
- Provided one-on-one support and training to groups on QAPP development and data upload to WQX.

Address data gaps

- Kick off study led by National Park Service to investigate eelgrass loss and barriers to recovery along the outer Cape (Wellfleet / Billingsgate area). MassBays is leading an assessment of historic stressors that may have been responsible for severe losses 20-30 years ago. Datasets undergoing analysis will include water quality, fishing pressure, disease and predation.
- Continue data QA/QC, analysis, and modeling for WHOI Sea Grant study looking at seed-based approach to large-scale eelgrass restoration. On 3/13/25, hosted a regulatory workshop attended by MassDEP, CZM, MEPA, the Army Corps, DMF and several town Conservation agents to discuss permitting workflows for large scale seed-based eelgrass restoration efforts.
- Continued oversight of IIJA-funded project titled *Building infrastructure to support seed-based eelgrass restoration* which built dedicated tank infrastructure to support an eelgrass seed bank at DMF's Cat Cove Marine Lab. Help oversee and train technicians (SSU Co-Op students) who will be presenting their work at scientific conferences this month, including EPA's Zosterapalooza.
- Support technical aspects of first SECWQALS continuous monitoring station installation on the Danvers River in Beverly. Assist in planning for deployments in Duxbury and Newburyport.
- Lead development of a pre-proposal (accepted) and now full proposal for a cross-region eelgrass restoration pilot project. Due to RAE 4/4.
- Assist in development of proposals led by NU for eelgrass restoration in Cohasset (submitted to ACFHP) and for aquaculture-eelgrass study (submitted to MIT SeaGrant).

Convene and partner with others to support and improve monitoring outputs.

- Secure and develop new Interagency Service Agreement with MassDEP for eelgrass mapping project. For the next 3 years, MassBays will lead field ground-truthing and assist with polygon QA/QC review for the following mapping areas: Buzzards Bay & Marthas Vineyard, Cape Cod Bay, and Boston & North Shore. Each year, 800+ sampling stations are visited in Aug-Sept and sampled for eelgrass presence and condition.
- Led a region-wide field debrief meeting of ~15 organizations who implemented the MassBays/EPA Eelgrass Flowering Phenology Protocol to discuss results, experiences and plan for next steps.
- Oversee MassBays' Community of Practice forums for MassWateR and the Massachusetts Seagrass Working Group.
- Represent MassBays on the steering committees for: East Coast Submerged Aquatic Vegetation Collaborative, DKP Cit Sci eelgrass monitoring project, Merrimack River living shoreline project, STAC

Presentations and publications

- Co-lead the planning for GoM research and monitoring symposium: secure hotel block, food vendors, network event location, program development.

Other

- Manage grant subawards and fiscal status.
- Train and oversee UMB graduate student to work on eelgrass projects through at least the end of summer 2025.
- Assist with social media planning.
- Manage and track annual retainer contract for software developer Ethan Mick.

Regional Service Provider & Staff Updates
April-June 2025

Regional Service Provider Updates

Upper North Shore – Merrimack Valley Planning Commission
Contact: Hanna Mogensen
Gather data on conditions and trends

- Worked with the other Massachusetts Regional Planning agencies to identify and track areas of flooding concern across the Commonwealth through the development of a state-wide Flooding Hot Spot viewer.
- Submitted a regional application for MVP Action Grant funds titled, "Beat the Heat" which looks to pair citizen science heat mapping with the creation of a probabilistic heat model using updated climatic and mapping technology through a partnership with UMass Lowell.
- Resumed regional culvert and stream crossing assessments, completing a total of 20 assessments this spring in collaboration with Haverhill Municipal Staff.
- Continued drone flights for our 2024 Healthy Estuary Grant to advance drone integration for long-term salt marsh monitoring efforts. Flights this quarter focused on mapping marsh edge erosion and chronic marsh wrack.
- Begin 2025 microplastic sample collections in surface waters across the Great Marsh.
- Collected monthly water samples in the Merrimack River in association with Merrimack River Watershed Council to assist with their regional water quality monitoring program.
- Collaborated with MassBays to submit an Eelgrass Restoration Grant through Restore America's Estuaries (RAE) to test the success of seagrass seeding methods.

Inform state policy and local action.

- MVPC hosted the Annual Merrimack River Water Quality Roundtable on Tuesday, April 29th. This year, the event was another wonderful opportunity to connect! We had over 70 people register to attend the event, and the day featured 12 dynamic speakers who provided insights into projects, monitoring and research across the River.
- MVPC is partnering with Senator Tarr's Office and the Green Crab Task Force to plan a Green Crab symposium to be held in August. The event will bring together scientists, researchers, policy makers, municipal staff, fishers, and those working in established or emerging industries to discuss the challenges of the invasive green crabs and explore sustainable market pathways for future management.

Provide Education, training, and technical support.

- Gave talk as part of the Essex Shipbuilding Museum's Spring Speaker series focused on the function and future of our saltmarsh systems.
- Submitted an application to the DOER Regional Energy Planning Assistance (REPA) Grant to continue supporting electric vehicle initiatives, clean energy projects, and MVPC's work assisting communities with Green Communities reporting and grant applications.
- Continued to support and participate in DER Dam Reconnaissance studies for Stevens Pond Outlet Dam (Lawrence) and Johnsons Creek Dam (Groveland) which will be wrapping up on 6/30.
- Provided Keeping Water Clean Programming to fifth grade students at the Page School (West Newbury), Upper Molins Elementary School (Newburyport), and Franklin Elementary School (North Andover).

- Assisted West Newbury in submitting an MVP Action Grant to advance further design of River Road (along the Merrimack River).
- Supported North Andover and Salisbury in the review of their draft Open Space and Recreation Plans.
- Attended Amesbury's inaugural Earth Day event, held on April 12th to demonstrate stormwater runoff impacts to local waterways.
- Began serving on the Living Shoreline Technical Committee to advise West Newbury on next steps for their River Road project.

Key meetings attended:

- 8TGM Monthly Meeting (3.27.25, 4.24.25, 6.17.25)
- PIE Rivers Steering Committee meeting (3.13.25, 5.27.25)
- MassBays Regional Coordinators Meeting (3.13.25, 5.30.25)
- Merrimack River Collaborative Meetings (3.14.25, 4.17.25,5.21.25)
- Hampton-Seabrook Estuary Collaborative Meeting (3.26.25, 5.28.25)
- MassBays STAC Quarterly Meeting (3.19.25)
- Greenscapes Monthly Meetings (3.27.25, 4.24.25, 6.6.25)
- Regional Dam removal assessment Meetings (4.3.25, 4.10.25, 6.10.25, 6.11.25)
- Salt marsh Restoration Outreach Working Group Meeting (3.18.25)
- Living Shoreline Technical Committee Meeting (3.19.25, 5.7.25)
- 2025 Estuary & Shellfish Health Event (3.19.25)
- Collaborative MA/NH Coastal Conservation Commission Roundtable (3.25.25, 4.20.25)
- BHEN, Mass ECAN, SMWG Saltmarsh Science Symposium (4.30.25)
- Green Crab Task Force Meeting (3.25.25, 6.12.25)
- Gulf of Maine Research Symposium (4.8-4.9.25)

Lower North Shore – Salem Sound Coastwatch

Contact: Barbara Warren and Alison Frye

Gather data on conditions and trends

- WHOI SeaGrant eelgrass seed study with MA DMF and MassBays: Modeling and piloting a new seed-based approach to large-scale eelgrass restoration in Massachusetts. Continued crab trapping April – May and monitored, surveyed, and processed seed germination.
- Published Horseshoe Crab report on SSCW website, held a well-attended horseshoe crab community scientist survey training session, over 100 reports of horseshoe crabs over 2 months of monitoring via community scientist survey, monitoring of environmental conditions at targeted locations, and discussed beach grooming practices with Cities of Salem and Beverly, resulting in limited beach grooming at one of the spawning hotspots!
- Began continuous water quality monitoring (SECWQALS) of Danvers River and Salem Sound with SSCW staff and 3 DEP volunteers
- Began investigating methods for monitoring blue mussel distribution and populations

Environmental changes

- As project manager with Salem's FY25-26 MA CZM Coastal Resilience Grant Phase 2 of the Winter Island Park Pathway and Bank Restoration Project. https://publicinput.com/d3486
- Held public meeting to introduce project and preliminary strategies for shoreline stabilization, held invasive plant workshop and removal event, and completed Story Map.

- Co-project managed FY25 MA CZM Coastal Resilience Grant for Marblehead's State Street Landing and Harbormasters Resilience Plan. Working on site data collection and stakeholder interviews. Providing technical assistance to write FY26-27 grant application.
- Continuing Salem's Resilient Together: Collins Cove Park Neighborhood Resilience Project FY25-26 MA CZM Coastal Resilience Grant. Developed and distributed door signs for resident flooding survey, hosted a park meet-up event, completed Story Map, and held a public meeting. https://publicinput.com/a72475

Reduce Stormwater Discharge

- Conducted beach clean ups
- Trained 24 water quality technicians for bacterial sampling this summer under our Clean Beaches & Streams program at streams and outfalls across the watershed
- Received another EPA Stormwater Toolbox to conduct tributary sampling
- Purchased dog waste signs for the Commercial St rain garden where there is a problem
- Began planning a North River in the water cleanup with Peabody and Salem

Manage Invasive Species

- Completed a marine invasive species monitoring (MIMIC) training workshop and set monthly schedule for five locations
- Pulled Pepperweed across the watershed
- Removed Dodder from the Commercial Street rain gardens

Education and Outreach

- Hosted two Underwater in Salem Sound Lectures (Wastewater Treatment and Black Sea Bass Migration)
- Presented on Invasive Plant Species at the Nahant Public Library
- Built fish weirs with Salem's 300 fourth graders with members of the Massachusetts tribe.

Technical assistance: RCs actively involved in the following:

- Attended Salt Marsh Working Group and Seagrass Group meetings
- Attended Gulf of Maine Symposium
- Continued working with Manchester Coastal Stream Team and cold-water fisheries resource
- Wrote and submitted comment letter for Beverly Beach Management Plan
- Submitted comment letter for SESD NPDES permit.
- Member of Salem's Jefferson Ave Corridor Study Group
- Member of the Manchester Hazard Mitigation Planning Group
- Provided letter of commitment for Beverly Harbormaster's application to the Nationwide Fishing Trap Removal, Assessment and Prevention Program (TRAP)
- Wrote a letter of support for MAPC's Drought Resiliency and Water Efficiency application to EEA and now on their advisory committee
- Helping The House of the Seven Gables with a CZM resilience grant application to begin relocating their campus buildings
- Working on a CZM Coastal Habitat and Water Quality grant application for Gloucester's Good Harbor Ecosystem
- Attended the first Massachusetts Coastal Relocation Workshop

Metro Boston – Northeastern University Marine Science Center

Contact: Diana Chin

Address Data Gaps

- MassBays IIJA Funding: We are coordinating an award from MassBays to NU and Emerald Tutu for a research project to build and test a simple nursery system in East Boston for propagating salt marsh cordgrass from seed within biomass-based mats, which could be deployed as urban living shoreline prototypes ($99,774).
- Restore America's Estuaries NEP Watersheds: We will be collaborating with three other regions on a MassBays-led research project to conduct pilot-scale seed-based eelgrass restoration and outreach (NU: ~$92,000 with $29,000 match). We also led and submitted a separate research proposal, which was encouraged for full proposal but not funded, to extend and update the results of the MassBays Ecosystem Delineation Assessment (EDA) by characterizing critical thresholds for coastal habitat area, impervious surface cover, and water quality to guide strategic planning in several Metro Boston communities.
- MIT Sea Grant: In collaboration with MassBays and MIT Sea Grant staff, we led and submitted a full research proposal regarding the interactions of shellfish aquaculture and seagrass, aimed at informing aquaculture siting and management (~$284,000 with $109,000 match).
- TNC: We are examining the degree to which oyster aquaculture provides important ecosystem services, including enhancing water quality and providing habitat for fish and crustaceans. We are also conducting surveys of coastal communities throughout Massachusetts and the eastern seaboard to examine barriers to aquaculture.

Gather Data on Conditions and Trends

- Lobster Sea Grant Program: We are examining the impacts of the range expansion of black sea bass and blue crabs on lobsters and the lobster fishery in the Gulf of Maine. This research uses experiments, field monitoring, and surveys of the lobster industry to assess their ecological knowledge.

Technical Support and Communication

- Conferences, meetings, and workshops: We 1) Represented MassBays and/or the Metro Boston region at meetings of the MA Seagrass workgroup and East Coast SAV Collaborative; 2) Participated in workshops to keep abreast of news and projects relevant to BHEN partners and to provide feedback when relevant, including the Gulf of Maine Monitoring and Research Symposium, an NE CASC workshop regarding knowledge gaps in coastal and marine environmental change adaptation, and a NERRS Science Collaborative workshop on seed-based eelgrass restoration; 3) Continued to support Metro Boston communities on potential planning and infrastructure projects, including the Town of Weymouth on potential salt marsh assessment and tide gate projects.

Education and Outreach

- Boston Harbor Ecosystem Network (BHEN): We 1) Held BHEN Steering Committee meetings and adopted an updated BHEN governance document; 2) Organized the spring semi-annual in-person BHEN meeting jointly with the MassECAN Salt Marsh Working Group as a Salt Marsh Science Symposium (April 30), featuring talks on salt marsh monitoring metrics and salt marsh migration by colleagues from NH, MA, and RI (61 attendees); 3) Continued output of monthly newsletters compiling resources, events, funding, and job opportunities from across BHEN and related networks.
- Museum of Science: We represented the MassBays Metro Boston region, BHEN, and the NU MSC at a hands-on activity table at a Museum of Science event based around the work of Dr. Robin

Wall Kimmerer (*Braiding Sweetgrass*, *The Serviceberry*).

Other

- We continued hosting regular discussion meetings for the MassBays RCs.

South Shore – North and South Rivers Watershed Association

Contact Alex Mansfield

Make new data available, especially to address specific gaps in knowledge

- **Monitor Diadromous Fish Runs:**
  - Managed the 2025 herring count volunteers at five South Shore sites.
  - Conducted six in-person, and one online, training sessions.
  - Over 100 volunteers participated in the volunteer counts from April 1st through June 15th.
  - Worked with NSRWA interns to stay up-to-date on data entry. By mid-June all herring count data will be submitted to MA DMF for statistical processing.
  - Worked with MA DMF to monitor stream flows in Third Herring Brook. Recent restoration projects have provided upstream passage for herring but may have revealed new features or obstacles at certain flow rates.
  - Tracked unprecedented herring migration through the active dam removal project at Veterans Park on the South River, Marshfield.
- **Water Quality Monitoring**
  - Initiated the annual Citizen-Science water quality monitoring program "RiverWatch". This program starts its 31st year on June 16, 2025, and will monitor bacterial concentrations throughout the summer at 10 sites.
  - Developed an updated QAPP for Riverwatch monitoring. QAPP approved by EPA R1 on 6/2/2025.
  - Kicked off MassBays support of EPA water quality sampling in Duxbury/Plymouth Bay.
- **Salt Marsh Vulnerability and Assessment**
  - Completed reporting of the MA CZM funded 'South Shore Salt Marsh Prioritization" project.
- **Horseshoe Crab Surveys**
  - Kicked off the 2025 HSC surveys at Duxbury Bay. Conducted two in-person training sessions. Fifty-six unique volunteers (most ever!) cover 24 different surveys with teams of 3-6 members from May through June.
  - NSRWA interns are keeping up with data entry and expect to have all results complete by late-June.
- **Marine Invasive Species**
  - Participated in on-site training for CZM's Marine Invader Monitoring and Information Collaborative (MIMIC) program in Duxbury on 6/5/2025.

Research to Inform Policy & Actions

- **Dam Removal Monitoring and Implementation**
  - Advanced fish ladder design plan for Jacob's Pond on Third Herring Brook thorough discussions with engineering consultants, town, and DMF.
  - Advanced Chandler Pond Dam removal plans on the South River through meetings with property owners and DER.
  - Weekly monitoring of Veteran's Park Dam removal. This includes tracking the unprecedented migration of herring upstream of this site in May 2025.

- **Eelgrass**
    - Initial planning for 2025 DKP eelgrass surveys.
    - Received confirmation of award from Restore America's Estuaries for a two-year, seed-based eelgrass restoration project in Duxbury/Plymouth/Kingston Bay
- **Blue Mussels**
    - Finalized the scope of work and subaward for monitoring mussel beds at 4th Cliff Scituate. This is ongoing work with Mass Audubon to support assessment of habitat conditions for the federally listed Red Knots (*Calidris canutus*) who stopover on this federally owned property.
    - Conducted mussel surveys in April, May, and June.

Technical Support & Communications

- **Represent Mass Bay in Networks**
    - Attended: Gulf of Maine Symposium in Haverhill, MA 4/8 & 4/9
    - Attended: New England Estuarine Research Society (NEERS) meeting in Provincetown, MA 4/24 – 4/26.
    - Attended: East Coast SAV Collaborative meeting on 4/22/2025
    - Attended: Saltmarsh Working Group Meeting at UMass Mt Ida 4/30/2025
    - Attended: Mass Seagrass Working Group meeting 5/15/2025
- **Watershed and Coastal Science Education**
    - Presented 'Eelgrass and Horseshoe Crabs' at the Duxbury Senior Center in partnership with Duxbury Bay Maritime School's Lifelong Learning program.

Local Action for Habitat & Water Quality

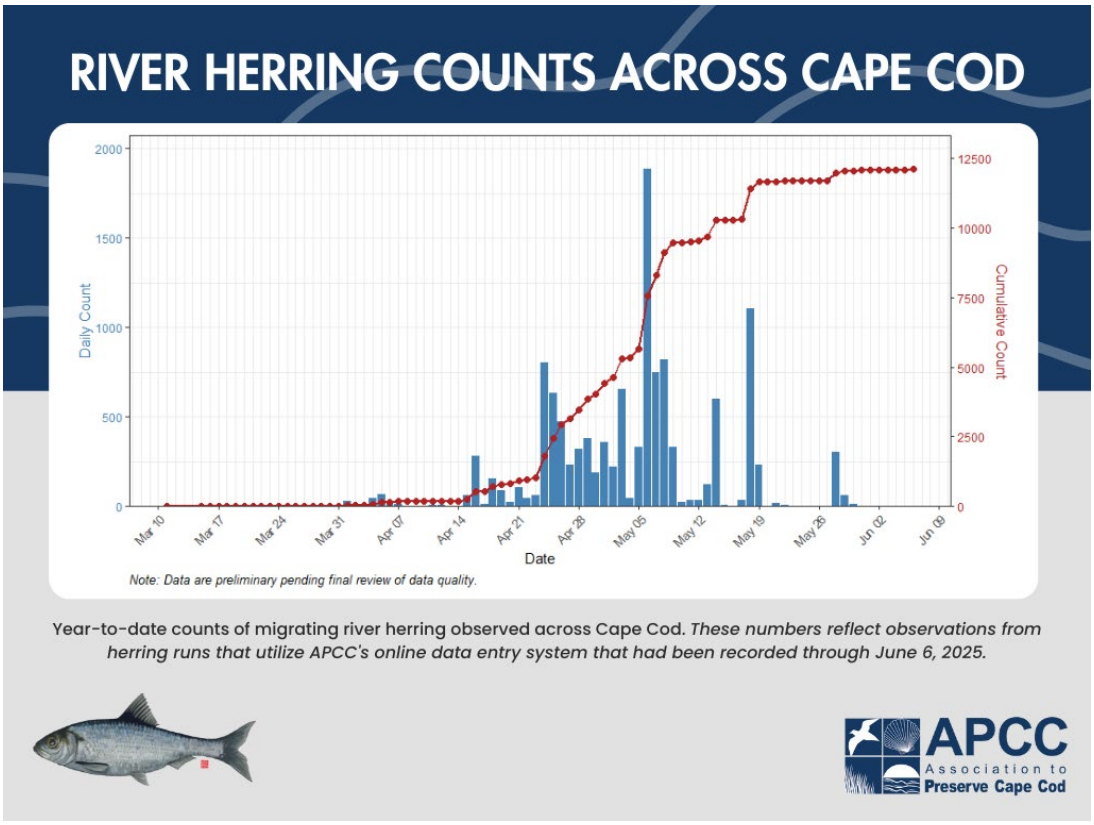
- **Adequate Streamflow**
    - Data logger maintenance in First Herring Brook, Scituate. A wet spring with high flows has generally avoided streamflow issues thus far in 2025.

Cape Cod – Association to Preserve Cape Cod

Contact: April Wobst and Dee Marsh

Make new data available

- **River herring monitoring coordination**: 20 Cape Cod runs for spring migration
    - Herring run counts are declining with some sites halting counts by June after 5 consecutive days of zero counts. All run counts will end June 15.
    - Developed and maintained the Cape Cod River Herring Monitoring Dashboard (https://apccorg.shinyapps.io/herring_monitoring/) as a means of delivering near-real time in-season updates on counting efforts.



- **Cyano, freshwater, and restoration database development**
  - APCC is working to integrate cyanobacteria, freshwater water quality, herring, and restoration program datasets to help inform priorities for restoration and protection.
  - Analysis and summary of cyanobacteria data has been completed, and freshwater pond scores are being integrated into GIS-based database to build regional priorities.
  - Restoration project database updated for inclusion in GIS. Last GIS update 2020.

Habitat and Water Quality Improvement Restoration

- **Sesuit Creek Salt Marsh**: APCC hired Woods Hole Group to complete design and permitting for a 2026 planting of *Spartina alterniflora* in persistent bare areas in this tidally restored salt marsh. This builds on a pilot planting completed in 2018, and subsequent monitoring 2018-2024 to develop a plan for this more expansive planting to improve the recovery rate of this marsh. Project kick off meeting was held on June 9th with site visit planned for end of month. APCC awarded $210K from DER Priority Project Advancement Grant to support this 2026 planting and will be working with DER, the Cape Cod Conservation District and Town of Dennis on this project.
- **Scargo Lake Stormwater Remediation**: Construction wrapped up in May with final paving and planting. This project includes two sites: a town boat ramp and beach parking area with installation of porous pavement, two bioretentions, and underground infiltrating chambers. Scargo lake is the headwaters pond providing habitat for the herring run and discharging to Sesuit Creek and Sesuit Harbor on Cape Cod Bay. APCC also monitors this lake for pond water quality and cyanobacteria providing data to track improvements following stormwater management and integrating work across our restoration and freshwater monitoring program

areas. These are the first two sites completed out of 20 priority sites identified under a regional public boat ramp stormwater project. APCC is working to secure funding for the next three sites to move to construction over the next year and a half.

Outreach and Education, Collaboration and Technical Support

- **New England Estuarine Research Society (NEERS) Conference** – APCC restoration and freshwater pond staff attended and presented at the NEERS conference in Provincetown in late April.
- **Gulf of Maine Symposium:** Attended MassBays hosted symposium on April 8.
- **MassECAN Salt Marsh Working Group and Boston Harbor Environmental Network Salt Marsh Science Symposium:** Attended jointly-hosted salt marsh symposium April 30.
- **Honor the Earth Faire**: APCC attended this annual event in May hosted by the Mashpee Wampanoag Tribe to speak about restoration and three ongoing projects in the town of Mashpee underway with planning with the town and Tribe.

MassBays Staff Updates

MassBays Director
Pam DiBona
Administration

- Prepared Federal Fiscal Year 2025 S.320 workplan (continuation of FFY2024) for MC review prior to submission to EPA.
- Convened Search Committee, finalized job description for MassBays Director. Reviewed by UMass Boston HR department and the SFE Dean, awaiting posting.
- Contributed to and edited MassBays' spring newsletter.
- Participated in regular School for the Environment Faculty and Directors meetings.
- Participated in Association of National Estuary Program's discussion focused on administration/advocacy needs, and dues rates. Dues are currently $4500y (and have been for 18 years); the Finance Committee is recommending an increase to $8000/year. MassBays has been paying only for the past several years, out of our return on indirect costs.

Program Support

- Joined weekly check-ins with staff.
- Reviewed applications and met with the selection committee for the Outfall Monitoring Science Advisory Panel (OMSAP).
- Served as an emcee at the Gulf of Maine Monitoring & Research Symposium on April 8-9, 2025. As a result of targeted outreach, WBUR reporter Barbara Moran was present in person for most of the program, and Senator Markey's staff attended some portions via Zoom.
- Reviewed final draft proposal submission to RAE for a Bays-wide eelgrass seeding program.
- Attended BHEN/Salt Marsh Working Group Salt Marsh Science Symposium at UMass Amherst's Mt Ida campus (4/30)

Representing MassBays

- Participated in monthly meetings of UMB Institutes and Centers Directors, joined a team to raise the profile of Centers on campus and on the university's website.
- Participated in onsite interviews for three finalists to become associate professor of remote sensing in SFE, contributed input to final recommendation.

- Attended Spring NEP-EPA workshops (3/25-26), which were held virtually this year.
- Attended ResilientMassachusetts Forum at UMass Boston (3/27), one of several international events hosted by the Pontificate's Panel on Science.

Senior Scientist

Prassede Vella

Address data gaps

- Diadromous Fish Habitat BCG and target: The 2050 targets (migratory habitat miles and spawning habitat acres) have been set for fish runs by region. They will be shared with STAC for any final feedback and will be available on the ETT in the coming weeks.
- SECWQALS – continuous monitoring: Planning and preparations continue for the 2025 continuous monitoring program. The continuous monitoring dockside multisensor at the mouth of the Danvers River on the Beverly Pier, offshore buoys in Duxbury and Merrimack are in process. pCO2 monitors from NOAA/NROC are being deployed at the same locations.
- SECWQALS – grab sampling: Seasonal monitoring commenced in Duxbury and Danvers/Salem, Lower North Shore RC and SSCW, Salem State U., Beverly and Salem Harbor Masters, and DEP make up the Danvers/Salem team; South shore RC, NSRWA interns and DBMS make up the Duxbury team. Conducted training at both locations. MassBays staff and intern also participated. CCS will analyze the DKP samples while EPA Region 1 will analyze the Danvers samples. QAPPs have been developed and approved with a quick turnaround by EPA. Sampling in lower Merrimack is still being set up.
- Finalized purchase of a YSI sonde – parts are arriving and will be assembled and prepared for use! This will also be available for use by the RCs.
- Funding from EPA Headquarters for EDA 3.0 is still in process (hopefully July); interviewed and hiring a graduate student.
- Facilitating the development of a proposal for funding from the Massachusetts Environmental Trust.

Applied research for decisionmaking

- Optimizing local tide gate operations & management to improve salt marsh health: Based on input from the Science Advisory Committee and region-focused meetings worked with consultant to develop a priority list of tide gates based on tide gate condition (infrastructure, feasibility of restoration with respect to salt marsh acreage gained or restored, and community/owner support). The top five tide gates will advance to the next step, starting conversations with operators/owners to develop O&M plans and discuss next steps.
- As PI, developed and submitted a pre-proposal to NFWF for a $150,000 project to advance work on the top five priority tide gates. The proposed 2-year project would allow assessment and preliminary design of five tide gates restorations that will eventually result in the restoration of salt marsh.

Program support

- Supervised intern to help coordinate finalization of the MassSMAP charter and convening the MassSMAP. Met with OMSAP to discuss transitions and invited current OMSAP members to join MassSMAP (all accepted except 4 members who were retiring). Posted a call for experts to fill in seats for MassSMAP – received 14 applications which were reviewed by a Selection Committee. Acceptance letters sent out as well as invitations to agencies to nominate representatives. Next step: kick-off meeting in July.
- Assisting Director with the IIJA and 320 work plan development.

- Continued to manage Healthy Estuaries grant subawards, RC subawards, and fiscal status.

Convene and partner with others to support and improve monitoring outputs.

- Next STAC meeting July 22 from 1-3pm in person at EPA. We will likely have a shellfish program focusing in response to communities expressing the need to collect data on shellfish bed health.
- Finalized new Joint Funding Agreement with USGS for the continuous monitoring program. This year sensors will be deployed in Danvers/Salem, Duxbury, and the Lower Merrimack River.
- Worked with a community to submit a proposal to a CZM Coastal Habitat and Water Quality Grant.
- Attended NERACOOS Board meeting on June 12. Most of the conversation was on funding and sustainability of programs, and the strategic plan which will be finalized and released.

Communications

- Working with Dorria Marsh on the MassBays website to bring in all the work that MassBays does in the coming months. Also developing a followup webpage for the GOM sSymposium.
- Supervised the development and publication of the Spring newsletter.
- **ASKING MC members** - please "like us"/"follow us" and share the MassBays website and social media with your constituents as we are trying to get more "Likes" and "Followers" as part of our communications strategy. Facebook: Massachusetts Bays National Estuary Partnership | Boston MA | Facebook. Instagram: MassBays National Estuary Partnership (massbaysnep) • Instagram photos and videos.
- **ASKING MC members -** Please share and encourage colleagues and contacts to sign up at this link: MassBays Newsletter.

Presentations and publications

- Co-lead on planning and implementation of the GOM research and monitoring symposium (April 8-9) including overseeing development of website, soliciting speakers, registration and agenda. We updated the website to reflect follow up, and prepared presentation slides to share on the MassBays website.
- Presented at the Merrimack River Roundtable, represented MassBays at the BHEN/SMWG Salt Marsh Symposium, and UMB School for the Environment Strategic Planning Meeting.
- Represent MassBays on NROC's Ocean and Coastal Ecosystem Health Committee which is currently working on how to implement the NECAN monitoring plan for ocean acidification as well as working to reinvigorate its SAV working group.

Coastal Data Scientist

Jill Carr (Jillian.Carr@umb.edu)

Support valid (QA/QC) data collection and use

- Continue progress on EPA Exchange Network project to expand MassWateR tool with new functions to increase use in other states and develop a Shiny App to increase access for users not interested in using R code. Project will also build a Shiny App for QC/analysis of continuous data. This is a partnership of four New England NEPs with Casco Bay NEP as the lead, and subawards to MassBays, PREP, and NBEP. Note, funding is not yet in hand due to backlogs at EPA.
- Plan for updates to AquaQAPP tool to integrate the new EPA QAPP Standards. Proposal to MassDEP 319 program was not successful; instead budgeted for this work in the new IIJA workplan.

- Provided one-on-one support to groups on QAPP development, data upload to WQX, and use of MassWateR. Oversaw and responded to questions in the MassWateR Community of Practice.
- Circulate and provide training on MassBays-EPA protocol for eelgrass phenology monitoring.
- Assist in data visualization plans for diadromous fisheries data in the Ecohealth Tracking Tool.

Address data gaps

- Co-PI on proposal to Massachusetts Environmental Trust for a project that will revamp the #MassWrack data challenge. MassBays will partner with UMass Boston's Helen Poynton to improve the project's status and design in iNat, collect supplementary field data, conduct a valuation of wrack, and make management recommendations for beach towns. Proposal is due 6/30 and work would take place approximately 9/2025 to 12/2026.
- As PI, develop and submit pre-proposal to NFWF for a $16.5M east-coast-wide eelgrass restoration project. The proposed 5-year restoration program will create and reinforce over 30 acres of eelgrass by planting thermo-tolerant seeds across 12 restoration sites and 12 reinforcement sites located in embayments from Maine to North Carolina. Work would take place with numerous partners across the NEP, NERR, academia and gov programs and includes extensive outreach and capacity-building.
- Planning, coordination and submission of a successful proposal to Restore America's Estuaries for a cross-region eelgrass restoration pilot project that will involve planting 1 acre of eelgrass using seeding techniques in each of Gloucester, Salem, Lynn and Plymouth, in partnership with the Regional Coordinators.
- Planning for a proposal for aquaculture-eelgrass study submitted to MIT Sea Grant by Northeastern / RC Chin.
- Complete data analysis for a study led by National Park Service to investigate eelgrass loss and barriers to recovery along the outer Cape (Wellfleet / Billingsgate area). Collect and analyze numerous datasets of historic stressors (water quality, fishing pressure, disease, predation). Report preparation is underway.
- Continue data QA/QC, analysis, and modeling for WHOI Sea Grant study looking at seed-based approach to large-scale eelgrass restoration. Completed field germination experiment and processing of samples in the lab, in partnership with SSCW. Tested novel method for sampling eelgrass seed bank using a suction sampler, in partnership with DMF.
- Continued oversight of IIJA-funded project titled *Building infrastructure to support seed-based eelgrass restoration* which built dedicated tank infrastructure to support an eelgrass seed bank at DMF's Cat Cove Marine Lab. Interviewed, trained and continue to oversee two lab technicians (SSU Co-Op students) who will work at the lab 2 hours a day throughout the summer to process and manage flowers and seeds.

Convene and partner with others to support and improve monitoring outputs.

- Finalize new Interagency Service Agreement with MassDEP for eelgrass mapping project. For the next 3 years, MassBays will lead field ground-truthing and assist with polygon QA/QC review for the following mapping areas: Buzzards Bay & Marthas Vineyard, Cape Cod Bay, and Boston & North Shore. Each year, 800+ sampling stations are visited in Aug-Sept and sampled via boat-based drop camera protocol for eelgrass presence and condition.
- Hosted the spring 2025 Massachusetts Seagrass Working Group meeting at UMass Boston. Topics and subgroup work included defining a meadow, sharing a database of seagrass regulations, and a discussion about region-wide seed processing facilities and best practices.
- Oversee MassBays' Community of Practice forums for MassWateR and the Massachusetts Seagrass Working Group.

- Represent MassBays on the steering committees for: East Coast Submerged Aquatic Vegetation Collaborative, DKP Cit Sci eelgrass monitoring project, Merrimack River living shoreline project, STAC
- Work with the town of Swampscott to plan for a conservation mooring pilot project, which would convert 1 or more town-owned chain moorings for their harbormaster and/or police boats to low impact systems. The goal is to build local support and buy-in and expand conservation mooring use to other parts of the harbor in the future.

Presentations and publications

- Co-lead the planning and implementation of the GoM research and monitoring symposium which took place in early April 2025.
- Attend and represent MassBays at Merrimack River Roundtable, BHEN/SMWG Salt Marsh Symposium, and UMB School for the Environment Strategic Planning Meeting.
- Co-host public event at Cat Cove Marine Lab to provide hands-on eelgrass outreach and assist with eelgrass seining at BHEN field trip led by RC Chin.

Other

- Manage grant subawards and fiscal status.
- Train and supervise UMB graduate research assistant Aaron Shavitz. Aaron so far has worked primarily on the NPS Wellfleet project but will pivot to support all other eelgrass projects through May 2026.
- Assist with social media planning.
- Manage and track the annual retainer contract for software developer Ethan Mick.
- Participate in UMass cross-campus committee that is establishing a Scientific Boating Policy and safety program.