

**Mobile Bay National Estuary Program
Management Conference**

CCMP Update, Year Five



**Work Plan
October 1, 2022 - September 30, 2025**

Prepared by
Mobile Bay National Estuary Program
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Preface

In 1972, the Clean Water Act was created to restore and maintain the chemical and biological integrity of the nation's waters so they can ***support the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water***. In 1987, the National Estuary Program (NEP) was created by the U.S. Congress via amendments to this Act to identify, restore, and protect nationally significant estuaries. Authorized under Title 3, Section 320, Public Law 94-117, 33 U.S.C. 466, and reauthorized in 2020 under bipartisan support, the goal of this program is to protect and restore the water quality and living resources of estuaries and associated watersheds designated by the U.S. Environmental Protection Agency (EPA) Administrator as estuaries of national significance.

NEP's work to implement estuarine ecosystem-based management by characterizing the priority problems in their estuaries and surrounding watersheds, developing Comprehensive Conservation and Management Plans (CCMPs) that list and describe actions to address those problems, and identifying partners, including lead entities, to implement the actions. Locally, the Mobile Bay National Estuary Program (MBNEP), in existence for the last 24 years, facilitates the creation of the CCMP and its updates through coordinating scientific assessments of where and what stresses are impacting the health of our estuarine ecosystems, capturing the input of citizens throughout Mobile and Baldwin counties, and initiating the development of actions identified by community leaders, resource managers, and scientists to conserve, restore, and protect those things valued most about living in coastal Alabama.

Respect the Connect: A Comprehensive Conservation and Management Plan for Alabama's Estuaries and Coast was first published in 2013. Since its publication, many of the strategies for measuring ecosystem health, restoring watersheds, building community capacity, and expanding citizen education and involvement have been implemented, resulting in some noteworthy successes. However, implementation of this Plan is far from complete.

In 2019, the MBNEP concluded the process of updating the CCMP as a requirement of the **National Estuary Program Comprehensive Conservation and Management Plan Revision and Update Guidelines** (EPA, May 2016). This updated Implementation Plan reaffirms the goals of the 2013 - 2018 Plan; acknowledges the strengths, weaknesses, opportunities, and threats of implementing the strategies in that Plan; identifies barriers to implementation of the current strategies; and refines the objectives and suggested activities identified to accomplish the reaffirmed goals. The outcome of this effort provides the MBNEP Management Conference with a road map for meeting the environmental needs of Mobile Bay, its surrounding watershed, and coastal Alabama for the next five years.

The following Annual Work Plan has been prepared using the updated strategies included in the CCMP Update for October 1, 2018 - September 30, 2025. (*Updated June 2023 for a 2-year extension of the current 5-year grant*)

INTRODUCTION

MBNEP's mission is to promote the wise stewardship of water quality and living resources of Alabama's estuaries. MBNEP's purpose is to catalyze actions of estuary stakeholders, build community organizational capacity for sound resource management, and leverage commitment and investment to ensure the estuary's sustainability. MBNEP's objectives are: 1) engage estuary stakeholders in the development of CCMPs; 2) expand resources and involvement in the implementation of these CCMPs; and 3) promote how to best protect this nationally significant ecological, economic, and cultural resource to ensure its conservation for our lifetime and beyond. To maximize effectiveness in promoting estuary health, the program's guiding principles are:

Those that live it know it - Citizens, anglers, boaters, scientists, hunters, and others have a unique insight into the environmental challenges we face, what works, and what doesn't. **Stakeholder input is vital to developing long-term solutions to local challenges.**

Economic opportunities must be available - Our coast is an economic engine, creating significant wealth for our State each year through activities such as trade through the Port of Mobile, recreational and commercial fishing, tourism, hunting, and coastal construction. **Many jobs depend on coastal water quality, healthy populations of fish and wildlife, and the mosaic of habitats providing essential natural functions.**

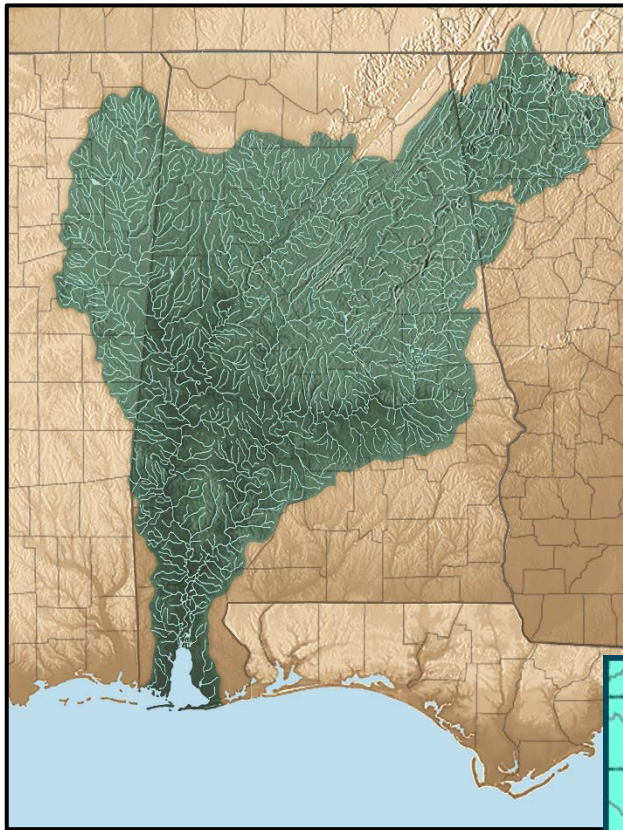
It happens in the river, in the sea, and on the street - Residents, towns, cities, counties, business and industry, academia, community developers, and social services all have a vested interest in preserving the quality of life derived from Mobile Bay and coastal Alabama's estuaries. Involvement of citizens in carrying out activities aimed at improving the Bay and its watersheds is paramount to ensuring the long-term health and vitality of the Mobile estuary. **Citizens must be actively engaged in balancing the many uses of the Bay so that we can preserve its unique natural resources for all of our needs.**

Our vision: Alabama's estuaries (where the rivers meet the sea) are healthy and support ecological functions and human uses. Everyone deserves the opportunity to experience the beauty and bounty of Alabama's estuaries - its rivers, creeks, bays, and bayous; abounding diversity of fish and wildlife; productive wetlands; and forests, dunes, and beaches. Alabama's estuaries are integral to our common good.

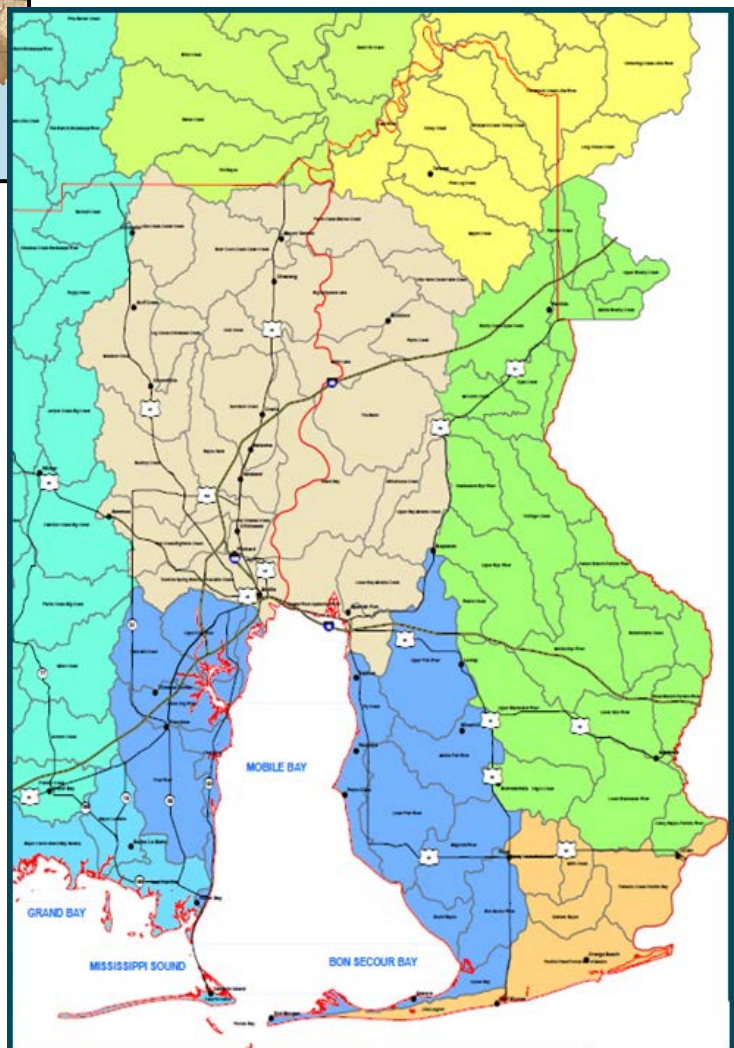
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GEOGRAPHIC DISTRIBUTION



Although the actual watershed for Mobile Bay encompasses more than two thirds of the State of Alabama and portions of Georgia, Mississippi, and Tennessee, MBNEP's primary target area is limited to southern Alabama. This includes all of Mobile and Baldwin counties from the Florida border west across coastal Alabama to its border with Mississippi. In addition, the target area extends seaward to the three-mile State jurisdictional limit. It includes Mississippi Sound, west to the Mississippi/Alabama border and Perdido Bay, east to the Florida state line. Major waterways include the Tombigbee, Tensaw, Apalachee, Blakeley, Escatawpa, Mobile, Alabama, Dog, Fowl, Fish, Magnolia, Bon Secour and Perdido rivers; Chickasaw, Norton, Three Mile, and Eight Mile creeks; Wolf and Perdido Bays, Little Lagoon; and the Intercoastal Waterway.



PART ONE: 2022 - 2023 WORK PLAN

The following workplan summarizes how Section 320 U.S. EPA funds will support implementation of the CCMP in 2022-2023. For each action area below, the CCMP goals are bolded, and the objectives are indicated below Goals as numbers (e.g., 1.1). Please note: the objectives listed are for the five-year period. Activities planned for the coming year are then listed by their associated objective number.

Overall, key areas of focus for the coming year will center around the various activities necessary to be undertaken for the creation of a new Comprehensive Conservation Management Plan for 2023-2028. These activities will include but not be limited to community input, scientific assessment, restoration evaluation, and strategy development.

BUDGET OVERVIEW: 2019 - 2023

Each year the MBNEP receives an allocation from EPA to support activities geared toward achieving the objectives of the CCMP. The EPA requires that the funding provided as part of a “cooperative agreement” be matched with non-federal dollars in a 1:1 ratio, either in cash or in-kind valuation. The following table reflects the cumulative amount of funding received to date and what is anticipated to implement the fifth year of this plan.

	2019	2020	2021	2022	2023	
Revenues	Yr 1 Actual	Yr 2 Actual	Yr 3 Actual	Yr 4 Actual	Year 5 Budget	Combined Total
<i>EPA</i>	625,000.00	600,000.00	662,500.00	700,000.00	750,000.00	\$ 3,337,500.00
<i>Total Non-Federal Match</i>	372,076.00	353,488.00	423,688.00	474,600.00	490,100.00	\$ 2,113,952.00
Total Revenues	997,076.00	953,488.00	1,086,188.00	1,174,600.00	1,240,100.00	5,451,452.00

The following pages provide details of the MBNEP Annual Workplan for the 2022-2023 program year based on anticipated funding as follows:

Mobile Bay National Estuary Program Section 320 Budget: 2022-2023 REVISED

	Year U1: 2018-2019	Year U2: 2019-2020	Year U3: 2020-2021	Year U4: 2021-2022	Reprogrammed Dollars (All Years)	Year U5: 2022-2023 BUDGET	Total All Years
Revenues							
Total Available Budget	997,076	953,488	1,086,188	1,174,600	-	1,248,212	5,451,452
EPA Annual Appropriation	625,000	600,000	662,500	700,000		750,000	3,337,500
Match (Actuals)	372,076	353,488	423,688	474,600		490,100	2,113,952
Net Surplus/(Deficit) from previous year						8,112	17,500
Expenses							
Estuary Status and Trends	45,000	-	25,000	85,000	(14,873)	27,000	139,127
EST 1: Coastal Monitoring Program	45,000		25,000	65,000	(140,539)	27,000	21,461
EST 2: Environmental Monitoring/Communication				20,000	97,666	-	117,666
Ecosystem Restoration and Protection	20,000	23,000	31,000	9,000	99,708	(25,566)	157,142
ERP 1: Watershed Planning	20,000	18,000			91,667	(30,000)	99,667
ERP 2: Watershed Implementation			11,000		9,041	4,434	24,475
ERP 4: Invasive species Management- Three Mile Creek			15,000		2,230	-	17,230
ERP 5: Access Enhancements- ADA Accessibility		5,000	5,000	9,000	(3,230)		15,770
Technical Assistance and Capacity Building	5,000	-	50,000	5,000	7,284	10,041	77,325
TAC 1: Fisheries Capacity Building			50,000		(45,000)	-	5,000
TAC 3: Government Capacity Building-Training				5,000	5,000	-	10,000
TAC 4: Grassroots Capacity Building- Citizen Monitoring	5,000				47,284	10,041	62,325
Education and Public Involvement	74,541	94,452	43,031	49,528	171,581	185,448	618,581
EPI 1: Private Sector Education Program				7,000	3,720	-	10,720
EPI 3: Community Education Program- Newsletter	8,000	8,000	8,000	7,000	(6,890)	8,000	32,110
EPI 3: Community Education Program- Signage	5,000		4,000	2,000	-	-	11,000
EPI 3: Community Education Program- Video Production	30,000	19,952	8,783	18,912	180	5,000	82,827
EPI 4: Create a Clean Water Future Campaign	15,041	-	5,000	3,616	59,290	5,000	87,947
EPI 5: Community Event Program- Special Event sponsorships	7,500	7,500	3,500	8,000	-	10,000	36,500
EPI 5: Community Event Program- Special Event outreach materials	5,000	5,000	3,748	3,000	500	2,500	19,748
EPI 5: Management Conference Support	4,000	54,000	10,000		(55,808)	4,948	17,140
EPI 5: CCMP Rewrite					170,589	150,000	320,589
Management and Program Administration	832,047	889,724	931,111	987,072	(233,201)	1,027,524	4,434,277
Program Delivery/Operation	707,601	758,353	789,644	838,950	(233,201)	864,714	3,726,061
Indirect Charges	124,446	131,371	141,467	148,122	-	162,810	708,216
Total EPA Budget	976,588	1,007,176	1,080,142	1,135,600	30,499	1,224,447	5,426,452

EXTENSION ACTIVITIES: 2023 - 2025

To wrap up completion of all activities for the 5-year grant, MBNEP has requested a two-year extension. Our plan for the expenditure of these remaining funds over the next two-year period will largely be directed toward assessing and communicating the extent to which the current CCMP has been implemented over the past ten years and producing the next 10-year CCMP. The following table provides the details of these remaining activities:

Activity	Timeline	Milestones	Outputs	Outcomes	Justification
Science In Residence	07/01/2023 - 12/31/2024	State of Bay-Spring 2024; EST Strategy-December, 2024	State of Bay Report; EST Strategy for CCMP	Improved understanding of condition, trends, and data needs for next 10 years	This activity will support the next iteration of the CCMP 2025-2030.
Watershed Planning Initiative	07/15/2023 - 06/30/2024	Hire contractor to begin sediment baseline study for Eight Mile Creek Watershed July 2023; Gather water quality data July-May 2024; complete study by June 30, 2024	Sediment Baseline study consistent with all other watersheds in coastal area	Increase knowledge about watershed conditions; establish baseline information to measure ecosystem response to watershed plan implementation efforts	This activity is consistent with the Watershed Restoration Initiative undertaken in all tidally influenced watersheds along the Alabama Coast. Eight Mile Creek watershed planning will begin this summer and this study will support the development of management measures for this plan.
Video Production	07/01/2023 - 06/30/2024	Hire production company by July 1, 2023; Stormwater video by October 2023; Annual meeting video by December 2023; CCMP video by June 2024	Two five-minute videos; one 10-15 minute video	Improve public's understanding about best management practices for stormwater management; Improve public understanding about implementation of CCMP	This activity will support continuous improvement of stormwater management focused on local governments; Annual meeting video will showcase the significant work accomplished over the past ten years.
Clean Water Future Campaign	08/01/2023 - 07/30/2024	Hire contractor August 2023 to update and focus campaign including creation of metrics for success	Updated Clean Water Future website and resource library; Update program policies and standard operating procedures	Increase community of interested focused on continuously improving the management of stormwater	The Clean Water Future campaign currently has 40 partners; as more communities request participation (including several outside of the local area) the need to formalize the CWF and breathe new life into it will leverage current assets and build a more robust resource for open source use.
CCMP Re-Write	Current - 09/30/2024	Watershed plan assessment- July 2023; Stressor Evaluation- August 2023; Community Input- October-June 2024; Strategy Development and Document Finalization and presentation October 2024-September 2025	Technical Report Watershed Plan Compilation; Stressor Evaluation Technical Report; Community Input Inventory; CCMP 2025-2030	Improved management of the coastal environment and increased investment in management activities	As per the current authorization of Section 320, and with prior approval from headquarters, MBNEP is expected to produce a 5-year CCMP. This effort will consolidate 10 years of effort into a new ten-year strategy for protecting what people value most about living in coastal Alabama.

EST - ESTUARY STATUS AND TRENDS: GOALS/OBJECTIVES

EST-1: Increase availability and use of data related to how coastal ecosystems and their services respond to man-made stresses.

- 1.1 Establish a data management and usage strategy.
- 1.2 Maintain or improve existing level of watershed scale monitoring and data analysis to assess trends in coastal ecosystem health by watershed.
- 1.3 Promote consistent system-wide monitoring to assess trends in coastal ecosystem health.

EST-2: Establish a process for measuring, analyzing, and communicating change in marine, estuarine, and freshwater ecosystem conditions.

- 2.1 Synthesize monitoring data to develop a watershed condition index to track and communicate trends in watershed restoration and management.

EST-3: Model/predict connection between ecosystem condition and the ecosystem services people value.

- 3.1 Manage system for multiple services.

EST- Estuary Status and Trends 2022-2023 Workplan			Years 1-5 Funding	Years 1-5 Reprogram Total	REVISED BUDGET	Description
EST-1: Coastal Monitoring Program			162,000	(140,539)	21,461	
	1.2	Continue baseline sediment and water quality analyses- Eight Mile Creek, Bay Minette Creek, or Lillian.	162,000	(140,539)	21,461	Funding will be used to augment watershed planning snapshot baseline data development to inform management measures.
EST-2: Environmental Monitoring and Ecosystem Response Communication			20,000	97,666	117,666	
	2.1	Use appropriate indicators to evaluate trends in habitat condition towards development of State of the Bay Report.	20,000	97,666	117,666	Funding will be used to develop a communications piece related to State of the Bay activities.
EST-3: Ecosystem Modeling, Research, Evaluation Program					-	

ERP - ECOSYSTEM RESTORATION AND PROTECTION: GOALS/OBJECTIVES

ERP-1: Develop comprehensive management plans for all coastal watersheds (at the 12-digit-hydrologic-unit-code scale).

- 1.1 Develop 12 new coastal watershed management plans for those basins discharging into priority fishery nursery areas.
- 1.2 Prioritize watersheds/seek funding for watershed management plans in non-tidally influenced coastal watersheds.
- 1.3 Update existing watershed plans to include new watershed planning criteria.

ERP-2: Implement comprehensive watershed management plans with a focus on priority habitats.

- 2.1 Develop a Coastal Alabama Habitat Restoration Plan to guide watershed management plan implementation.

ERP-3: Improve ecosystem function and resilience through protections, restoration, and conservation along shorelines of coastal Alabama beaches, bays, and backwaters.

- 3.1 Develop a Comprehensive Regional Shorelines Plan for stabilization and protection.

ERP-4: Improve management of invasive species through coastal Alabama watersheds.

- 4.1 Develop invasive species management plans (ISMPs) for coastal watersheds.

ERP-5: Restore and expand human connections to nature as a mechanism for improving environmental protection.

- 5.1 Protect/conservate priority habitats for public benefit/access through acquisition or conservation easement.
- 5.2 Create seven new access points, with at least five in Mobile County, incorporating environmental and cultural themes into each site's interpretive signage.

ERP- Ecosystem Restoration and Protection Workplan 2022-2023		External Funds	Years 1-5 Funding	Years 1-5 Reprogram Total	REVISED BUDGET	Description
ERP-1: Watershed Planning			8,000	91,667	99,667	
1.1	Mobile Tensaw Apalachee- 6/30/22	X				
1.1	Gulf Frontal- 7/31/22	X				
1.1	Eastern Shore- 7/31/22	X				
1.1	Dauphin Island- 8/30/22	X				
1.1	Western Perdido Bay- 8/30/22	X				
1.1	Western Delta- 7/31/2023	X				
1.1	Eastern Delta- 8/15/2023	X				
1.1	EPA Reserve to support watershed planning		8,000	91,667	99,667	Funding will be used to augment outreach for watershed planning- specifically focused on targeted stakeholder involvement.
ERP-2: Watershed Plan Implementation			15,434	9,041	24,475	
2.1	D'Olive- Stream/Wetland Restorations	X				
2.1	Weeks Bay- Stream/Wetland Restorations	X				
2.1	Three Mile Creek- Stream/Wetland Restoration	X				
2.1	Three Mile Creek- Rain Barrel Program	X				
2.1	Dog River- Comprehensive Trash Abatement Strategy	X				
2.1	EPA Reserve to support watershed implementation		15,434	9,041	24,475	Funding will be used to support project development and grant writing related to watershed plan implementation.
ERP-3: Shoreline Stabilization, Enhancements, Protection					-	
3.1	Develop Comprehensive Shorelines Management Plan	BIL				
3.1	Fowl River- Marine Spits Restoration	X				
3.1	MS Sound- Dauphin Island Causeway E&D	X				
3.1	Western Shore- Deer River Shoreline Restoration	X				
ERP-4: Invasive Species Management			15,000	2,230	17,230	
4.1	Invasive Species Management- Apple Snails/Flora	X	15,000	2,230	17,230	Funding will be used to purchase supplies related to management and control of invasive species at project sites.
ERP-5: Access Enhancements			19,000	(3,230)	15,770	
5.1	ADA Mats- Foley/Fairhope					Funding will be used to purchase one ADA mat at a location to be determined.

TAC - TECHNICAL ASSISTANCE AND CAPACITY BUILDING: GOALS/OBJECTIVES

TAC-1: Build capacity of water dependent industries to improve working waterfronts and preserve fishing communities.

- 1.1 Conduct a comprehensive assessment of the current status of all safe harbors, including, but not limited to, USACE-designated locations.
- 1.2 Pilot a peer lending program to support fishing business investment in best management practices.
- 1.3 Promote the assessment, improvement, and designation of estuary ports as “Green Ports.”
- 1.4 Develop planning tools to balance multiple uses of marine, estuarine, and freshwater resources.

TAC-2: Build capacity of the business community to support ecosystem protection and restoration.

- 2.1 Engage the business community in support of implementation of the CCMP.
- 2.2 Engage businesses in influencing local resource management decision-making.

TAC-3: Build capacity of local governments to manage and enhance coastal environmental resources.

- 3.1 Support implementation of eight coastal watershed management plans.
- 3.2 Support establishment and operation of watershed plan partnerships and task forces to ensure local ownership of implementation activities.
- 3.3 Improve elected officials’, planning commissions’, and other land-use decision makers’ understandings of the relationship between land use, water resource management decisions, and environmental impacts.
- 3.4 Improve regulatory framework to better protect coastal resources.
- 3.5 Support actions to protect and restore coastal habitats, including community and economic resilience.
- 3.6 Inform elected officials and the public about changing climatic conditions and sea level rise.

TAC-4: Advocate integration of environmental protection into community and economic development.

- 4.1 Advocate inclusion of watershed management plan recommendations into local policies, ordinances, and plans.
- 4.2 Advocate inclusion of better building practices in long-range planning to improve environmental and community resilience.

TAC-5: Build capacity of grassroots groups and citizens to create more resilient and environmentally responsible communities.

- 5.1 Support and promote opportunities to expand grassroots capacity development.
- 5.2 Develop comprehensive strategy for volunteer water quality monitoring to expand citizen science and community engagement programs to inform status and trends.

TAC- Technical Assistance and Capacity Building Workplan 2022-2023			External Funds	Years 1-5 Funding	Years 1-5 Reprogram Total	REVISED BUDGET	Description
TAC-1: Fisheries Capacity Building				50,000	(45,000)	5,000	
	1.2	Coastal Alabama Fisheries Fund	X	50,000	(45,000)	5,000	
	1.2	Oysters Alabama Website					
TAC-2: Business Community Capacity Building						-	
TAC-3: Government Capacity Building				5,000	5,000	10,000	
	3.3	Hydrologic Modeling Workshop- Municipal/County staff		5,000	5,000	10,000	
TAC-4: Integration of Environmental Protection into Community and Economic Development						-	
	4.2	Green Infrastructure Retrofit Plan	BIL				
TAC-5: Grassroots Capacity Building				17,541	44,784	62,325	
	5.2	Sustain Volunteer Water Quality Monitoring Program		17,541	44,784	62,325	Funding will be used to restock volunteer monitoring kits and purchase additional kits for new volunteers.

EPI - EDUCATION AND PUBLIC INVOLVEMENT: GOALS/OBJECTIVES

EPI-1: Improve the private sector's understanding of how coastal natural resources and estuaries contribute to economic, cultural, and community well-being.

- 1.1 Conduct 15 tours to introduce the private sector to watersheds.
- 1.2 Develop outreach to improve private sector understanding of opportunities for environmental protection.

EPI-2: Increase the private sector's involvement in and support for protecting the estuary and coast.

- 2.1 Create a minimum of five service opportunities to engage private sector "teams" in participating in restoration or cleanup efforts.
- 2.2 Identify and connect private sector partners to a minimum of three existing projects celebrating the cultural heritage of Alabama's estuaries and coast.

EPI-3: Improve community understanding of how estuaries and coasts support what people value about living in coastal Alabama.

- 3.1 Create and support recreational and educational programs and events that connect more people to local waterways, fish, and wildlife.
- 3.2 Educate youth about watersheds, water quality, and environmental issues relevant to the CCMP's six values.

EPI-4: Use the *Create a Clean Water Future* campaign as a framework for encouraging actions to improve water quality.

- 4.1 Support Partners for Environmental Progress in launching the CCWF campaign through its business members.
- 4.2 Engage local government in adopting the CCWF campaign to promote improved stormwater management and quality of water flowing through the Mobile Bay Watershed and into coastal waters.
- 4.3 Create a strategy for implementing the CCWF campaign at the community level.

EPI-5: Increase community involvement in and support for stewardship, volunteer, and educational opportunities.

- 5.1 Promote environmentally friendly public events (e.g., parades, sporting events, fishing tournaments, etc.).

EPI- Education and Public Involvement Workplan 2022-2023			Years 1-5 Funding	Years 1-5 Reprogram Total	REVISED BUDGET	Description
EPI-1: Private Sector Education			7,000	3,720	10,720	
1.2	Lead Boat Tours to raise awareness about environmental assets/concerns		7,000	3,720	10,720	
EPI-2: Private Sector Involvement					-	
EPI-3: Community Education			132,647	(6,710)	125,937	
3.1	Semi-Annual Alabama Current Connection Newsletter		39,000	(6,890)	32,110	Funding will be used to produce two newsletters in partnership with the ADCNR.
3.1	Interpretive and Locational Signage to educate about Watersheds		11,000	-	11,000	Funding will be used to develop and install locational watershed signage in Eastern Shore and Western Perdido Bay.
3.1	Digital Media and Video Production to communicate needs, concerns, values		82,647	180	82,827	Funding will be used to produce a cultural heritage video-location TBD.
EPI-4: Raise Awareness through Clean Water Future Campaign			28,657	59,290	87,947	
4.2	CWF Website upgrades and expansion of campaign		28,657	59,290	87,947	
EPI-5: Community Involvement and Stewardship Support			278,696	115,281	393,977	
5.1	Provide support for community events		36,500	-	36,500	Funding will be used to support community events including but not limited to Soil & Water Conservation Meeting, Green Coast Council Sustainability Summit, Alabama Coastal Cleanup, Conservation Achievement Awards, Creek Fest, DISL Grad Student Symposium, DI Heritage and Arts Council, MLK Day of Service, Coastal Kids Quiz, Alabama Coastal Birdfest, Stan Mahoney Fishing Tournament.
5.1	Develop and distribute materials to promote wise stewardship		19,248	500	19,748	Funding will be used to purchase outreach items to educate the public about environmental concepts and issues, drawing attention to needed behavior change.
5.1	Management Conference Support		72,948	(55,808)	17,140	Funding will be used to support Management Conference Committee meetings (including but not limited to space rentals, refreshments, speaker fees).
5.1	Re-write of CCMP		150,000	170,589	320,589	Funding will be used to conduct CCMP Assessment, Environmental Stressor Assessment, Comprehensive Community Input, Strategy Development, publication.

ESTUARY STATUS AND TRENDS: NARRATIVE

Throughout the implementation of the updated Comprehensive Conservation and Management Plan for 2019 - 2023, the MBNEP Science Advisory Committee (SAC) will build a Watershed Condition Framework for coastal Alabama. Scientists, State, and local resource managers will continue to collect data to improve environmental monitoring and the SAC will pursue opportunities to establish baselines and other scientific data necessary to better understand the relationships between anthropogenic activities and ecological functions throughout our coastal landscape.

EST-1: COASTAL MONITORING PROGRAM



Project	Coastal Monitoring Program
CCMP Action	EST-1
Purpose/Goal	Increase availability and use of data related to how coastal ecosystems and their services respond to man-made stress
Benefits/Outcomes	Improve understanding of pollutant loads, Increase community participation in monitoring, Increased knowledge of environmental status & trends
Outputs/Deliverables	Science Advisory Committee coordination, baseline monitoring data, restoration monitoring data, Watershed condition framework support
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation
Activity for 10/01/2022 through 03/31/2023	Little Lagoon Watershed Nutrient Assessment and Source Tracking contract completed by Dr. Alex Beebe; Watershed Pre-Restoration Assessment completed for the Gulf Frontal Watershed
Project Partners	University of South Alabama, DISL
Year 1 Budget	45,000.00
Year 2 Budget	-
Year 3 Budget	25,000.00
Year 4 Budget	65,000.00
Year 5 Budget	27,000.00
Years 1-5 Reprogrammed Dollars	(140,539)
Total Budget	21,460
Available Balance	-

Year 5 Deliverables	Little Lagoon Nutrient Assessment, Little Lagoon Pre-Restoration Assessment
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Overview

The Coastal Monitoring Program supports monitoring of environmental conditions at both the watershed and larger ecosystem scale. Within this program, baseline conditions are established within watersheds and for restoration projects for the purpose of measuring and assessing ecosystem responses. In addition, on a periodic basis, system-wide monitoring of habitats and submerged aquatic vegetation is undertaken to track changes across the Alabama coastal landscape. Most monitoring related activities are funded through receipt of external

grants, most often, from either National Fish and Wildlife Foundation Gulf Environmental Benefit Funds or RESTORE. Highlights of these activities include:

Coastal Watershed Sediment Baseline Studies: Historically, the MBNEP has led, with the assistance of the Geological Survey of Alabama, the characterization of land use, erosion, and sedimentation in coastal watersheds to identify sources of sediment and establish baseline data and sedimentation rating curves useful in watershed planning. Investigators utilized modeling techniques to determine bed and suspended sediment loads and identify sources of sediment, including man-made and natural drainage ways. Monitoring is based on precipitation and resulting stream discharge and includes basic field-acquired physical and water-quality parameters. Data have been used to determine impacts of land-use change and to focus resources in areas of greatest need for remedial action. MBNEP develops this data for all coastal intertidal watersheds as a precursor to comprehensive watershed planning. Sediment studies have been completed for the D'Olive Creek, Fowl River, Bayou La Batre, West Fowl River, and Deer River watersheds and the Dog River, Bon Secour River, Weeks Bay, Wolf Bay, Eastern Shore, and Mobile-Tensaw-Apalachee watershed complexes.

Restoration Baseline Monitoring: To assess the outcomes and success of restoration efforts, determination of pre-project conditions is as critical as post-restoration monitoring. As MBNEP prepares to undertake shovel-in-the-ground restoration efforts on the Deer River shoreline and marsh system, the Fowl River marsh spits, and an incised tributary to Lower Fish River, efforts are already underway to perform baseline monitoring at each of these projects. With Stantec implementing restoration plans for 12 Mile Creek, University of South Alabama Professor Dr. Alex Beebe has supplemented their efforts using his Environmental Sciences students to collect data related to stream geomorphology as part of course laboratory fieldwork. Baseline monitoring is part of the work scope of contractors developing engineering and designs for restoration and stabilization of the Deer River shoreline and tidal creeks, the Fowl River Marsh Spits, and a tributary to Lower Fish River.

Restoration Success Monitoring- D'Olive Watershed: One of the ultimate goals of the extensive restoration work occurring throughout the D'Olive Creek Watershed is to remove its streams from listing on the State's 303(d) List of impaired waterbodies. To accomplish this goal, the Alabama Department of Environmental Management requires sufficient core indicator (based on impairments) sampling frequencies to meet data quantity and quality requirements as outlined in Alabama's Listing and Assessment Methodology to facilitate waterbody listing/delisting decisions. Such a decision was made for Joes Branch siltation impairment in April 2020 after ADEM post-restoration monitoring in 2019. With a goal of additional delisting of streams in this watershed, post construction restoration monitoring continues in the D'Olive Watershed to measure ecosystem response to the restoration/stabilization of over two miles of impacted streams (12,333 linear feet) across 15 stream segments and 75 acres of wetlands and riparian habitat which have been protected/enhanced.

Restoration Success Monitoring- Fowl River/Mon Louis Island Tip: As part of the Fowl River Watershed restoration effort, the tip of Mon Louis Island was restored in 2016. Monitoring of vegetation, shoreline, and bathymetry (up to 1,800 feet offshore) is ongoing and will potentially continue for the next two years to measure this project's success. Based on monitoring results, funding has been kept in reserve for additional project monitoring to meet permit requirements. Monitoring of the condition of created wetlands, shoreline revetment, and bathymetry along the northern tip of Mon Louis Island in the Fowl River Watershed continue.

The 2021 Shoreline Monitoring Report revealed no discernable evidence of shoreline change for this segment as a result of the restoration at the tip of MLI. Consistent with summer 2019 marsh success monitoring, 24 plant species were identified in 2020. Vegetated cover decreased to 49.3% in 2020 from 54.2% in 2019. Tidal creek surveys collected abundant grass shrimp (*Palaemonetes* spp.), blue crabs (*Callinectes sapidus*), Gulf killifish (*Fundulus grandis*), and silversides (*Menidia berylina*). Contractors continue to monitor the shoreline, bathymetry and vegetative cover of the completed project, but based upon a December 8, 2020 letter from the U.S. Army Corps of Engineers Regulatory division, faunal community monitoring will no longer be required for this project.

Hydrologic Modeling: Hydrologic models are used by urban planners to measure predicted responses of water in a system modified by development or by engineers to predict responses to restoration project management. Hydrologic models for the Bon Secour, Wolf Bay, Dog River, Bayou La Batre, Fowl River, and West Fowl River watersheds, the 12 Mile Creek Subwatershed, and the Mobile-Tensaw-Apalachee Watershed Complex have been completed, and a model for Lower Fish River is under development. Each model is still being calibrated. Although some watershed models are in a usable state, more calibration events will improve overall product performance and capability.

Status of EPA Section 320 Investments:

Section 320 funds have been used to support Coastal Monitoring in two ways: to support coordination of the Science Advisory Committee and their quarterly meetings and to supplement monitoring needs identified as part of watershed planning. During the past year the following activities have been undertaken:

Gulf Frontal/Little Lagoon Watershed Nutrient Assessment: To monitor and determine groundwater and surface nutrient sources to Little Lagoon, Dr. Alex Beebe is completing groundwater sampling and analysis of nutrient distribution in Little Lagoon. To date, he has collected samples from 20 unique locations with an ultimate objective of assessing the relative influence of residential development and wastewater injection to the undeveloped reference conditions in the adjacent Bon Secour National Wildlife Refuge.

Gulf Frontal/Little Lagoon Sediment Study/Groundwater Assessment: To augment the baseline sediment study being conducted for Gulf Frontal/Little Lagoon, MBNEP funded lab analysis associated with the collection of field data for 6 surface-water and 2 groundwater monitoring sites in the Little Lagoon project area and submission of water samples to the laboratory. To date, 82 water samples and 74 field parameters have been collected. Water levels were measured in 11 wells and a pumping test was performed on one well. The purpose of this work is to investigate the temporal relationships between groundwater discharge and surface water quality in the Watershed, especially as it relates to nutrient loading and potential to catalyze harmful algal blooms.

2019-Present Completed Deliverables

[Pre-Restoration Analysis of Discharge, Sediment Transport Rates, and Water Quality in the Deer River Watershed](#)

[Pre-Restoration Analysis of Discharge, Sediment Transport Rates, Water Quality, and Land Use Impacts in Watersheds Along the Eastern Shore of Mobile Bay](#)

[Analysis of Discharge, Sediment Transport Rates, Water Quality, and Land-Use Impacts in Tributaries of the Mobile-Tensaw-Apalachee Delta Watershed](#)

[Mon Louis Island Restoration Second Annual Post-Construction Monitoring Report \(2019\)](#)

[Pre-Restoration Baseline for Deer River Watershed](#)

[Twelve Mile Creek Stream Restoration Monitoring: Sediment Transport and Loading](#)

[Bayou La Batre Watershed Study and Hydrologic Model](#)

[Bon Secour Watershed Study and Hydrologic Model](#)

[Dog River Watershed Study and Hydrologic Model](#)

[East MTA Delta Watershed Study and Hydrologic Model](#)

[West MTA Delta Watershed Study and Hydrologic Model](#)

[West Fowl River Watershed Study and Hydrologic Model](#)

[Wolf Bay Watershed Study and Hydrologic Model](#)

[Twelve Mile Creek Hydrologic Analysis](#)

[ADEM: Final Delisting of Joes Branch](#)

[Mon Louis Island Marsh Success Report- Vittor \(2020\)](#)

[Mon Louis Island Restoration Third Annual Post-Construction Monitoring Report \(2021\)](#)

[Mon Louis Island Marsh Success Report- Vittor \(2021\)](#)

[Mon Louis Island USACE Faunal Monitoring Response Letter](#)

[Mon Louis Island Restoration Fourth Annual Post-Construction Monitoring Report \(2022\)](#)

Little Lagoon Watershed Nutrient Assessment and Source Tracking Technical Report
Pre-Restoration Analysis of Groundwater/Surface-Water Interaction, Water Quality, and Land-Use Impacts in
the Little Lagoon Watershed

EST-2: ENVIRONMENTAL MONITORING & ECOSYSTEM RESPONSE COMMUNICATION



Project	Environmental Monitoring & Ecosystem Response Communication
CCMP Action	EST-2
Purpose/Goal	Improve community understanding of estuarine health and coastal resilience
Benefits/Outcomes	Increase knowledge about environmental status and trends
Outputs/Deliverables	Communications tools and reports, <i>State of Alabama's Estuaries and Coast</i>
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation
Activity for 10/01/2022 through 03/31/2023	<i>State of Alabama's Estuaries and Coast</i> delayed
Project Partners	ADCNR, EPA, MBNEP
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	20,000
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	97,666
Total Budget	117,666
Available Balance	117,666

Year 5 Deliverables	
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Overview

During the five years of RESPECT THE CONNECT implementation, the SAC created a monitoring framework to evaluate individual subwatersheds of the Mobile Bay Watershed in standardizing restoration monitoring to answer these questions: what, if any, changes occurred in the water quality, sedimentation, flow, biology, and habitat quantity and quality as a result of restoration efforts and management plan implementation? How are potential ecosystem health indicators related to stressors and ecosystem functions/services? What is the long-term status of the biological condition in the Mobile Bay watershed?

The recommended protocols in this framework will result in standardized data collection for restoration efforts throughout Mobile and Baldwin counties, allowing comparisons both temporally and spatially and improved decision making and data preservation for future use. The monitoring program outlined within this framework is incorporated into all watershed management plans (WMPs) and restoration proposals and contracts. Ensuring utilization of this framework uniformly across all restorations and watersheds in Mobile and Baldwin counties will allow an interconnected network of data that can improve understanding of the processes of Mobile Bay as a whole. The Mobile Bay Subwatershed Monitoring Framework is a living document and is continually reviewed and refined to ensure consistency with larger regional networks, including those developed by the Gulf of Mexico Alliance, the National Oceanic and Atmospheric Administration, and the Gulf of Mexico Coastal Ocean Observing System. The monitoring framework is implemented as follows:

- 1) Baseline data is collected as part of comprehensive watershed planning.
- 2) The framework is referenced and implemented as applicable to the objectives of all restoration projects.

- 3) Long-term monitoring recommendations in each WMP conform with the framework.
- 4) MBNEP coordinates the periodic reporting of monitoring data in outreach products to communicate status and trends both at the watershed scale as well as estuary-wide.
- 5) MBNEP coordinates data synthesis to develop tools and products for assessment of restoration success, adaptive resource management, and baseline establishment.

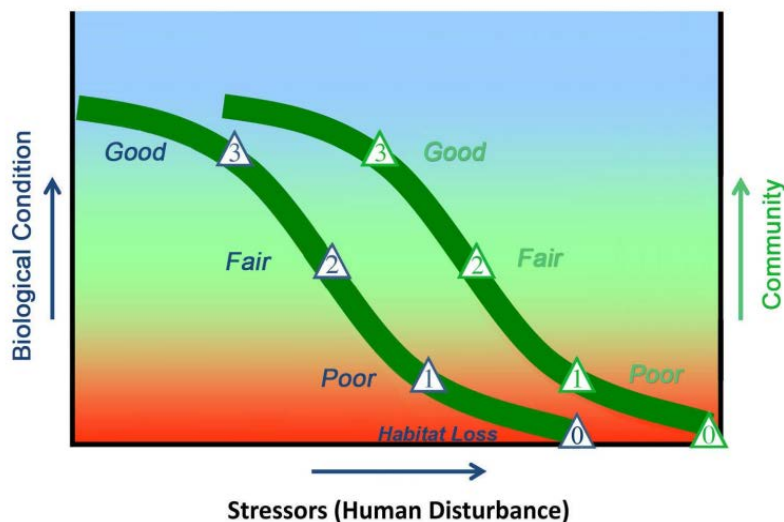
D'Olive Watershed Condition Framework: Using over four years of data collected coincidental to implementation of stream restorations in the D'Olive Creek Watershed, a Watershed Condition Framework (WCF), incorporating a Biological Condition Gradient (BCG), Wetland Rapid Assessment Procedure (WRAP), and stream bioassessments with anthropogenic actions, has been developed to measure overall effectiveness of the restoration effort and applied to various restored streams across the its three subwatersheds – Joes Branch, D'Olive Creek, and Tiawasee Creek.

Site-specific data used in this analysis include information from the baseline and restoration monitoring studies as well as field assessments including:

- Geological Survey of Alabama (GSA) sediment load monitoring;
- Cities of Daphne and Spanish Fort water quality data via Sondes strategically placed throughout watershed (conductivity, temperature, pressure/depth, and dissolved oxygen);
- ADEM/USGS water quality data via two stream gauges (flow, conductivity, temperature, pressure/depth, and dissolved oxygen);
- DISL monitoring in D'Olive Bay (TSS, chlorophyll a, CDOM, DO, temperature, and salinity);
- Riparian Buffers - Habitat Health Level Evaluation (RipHLE);
- Wetlands – Wetland Rapid Assessment Procedure (WRAP); and
- Streams – Rapid Stream Assessment (including ADEM Habitat Assessment [HA] and Riparian Habitat Health Level Evaluation [RipHLE])

Application of the WCF indicated restored stream reaches in the D'Olive Watershed had relatively poor scores for riparian buffer zone width and canopy cover. Rapid stream assessment results for downstream reaches were generally similar to or better than those of restoration areas, suggesting that active pre-restoration sedimentation was decreased. In restored areas, the presence and distribution of macroinvertebrates reflected generally good water quality and habitat availability. The WCF assessment also indicated removal of vegetation and resulting bare ground at restoration sites had promoted rapid colonization by invasive exotic plant species with spreading into adjacent natural areas both upstream and downstream of projects. It revealed the need for measures to accelerated canopy development and maturation of riparian plantings along with more aggressive and earlier management of invasive plants.

Watershed Condition Framework



Status of EPA Section 320 Investments

Section 320 funds have been used to support Environmental Monitoring and Communication as follows:

Science Advisory Committee Coordination: In anticipation of re-writing the Comprehensive Conservation and Management Plan for Alabama’s Estuaries and Coast, the MBNEP’s Science Advisory Committee has begun development of an enhanced stressor matrix as a rapid decision support tool for emerging environmental issues to quantify stressors, inform water quality and habitat protection and restoration strategies, and elucidate appropriate estuarine indicators to determine relationships between hydrologic, hydrodynamic, sedimentological, and biological processes. This matrix has been sent to a curated list of scientists to determine, through a “Wisdom of the Crowds” process, if there have been any changes in trends related to which ecosystem services are most at risk due to the stresses on coastal habitats from a suite of stressors.

Watershed Condition Framework Development: Begun in 2018, MBNEP contracted with Barry Vittor and Associates to provide a comprehensive overview of all data gathered and analyses performed to date for the D'Olive restoration efforts; identification of any inconsistencies during data collection with recommendations for monitoring methodologies that are most efficient and cost effective; a GIS database; and a framework for a Watershed Condition Index that incorporates into the BCG measures of the effectiveness of administrative programs for watershed management. This project was completed in 2020.

2019-Present Completed Deliverables

[D'Olive Watershed Condition Framework 2020](#)

EST-3: ECOSYSTEM MODELING, RESEARCH, AND EVALUATION



Project	Ecosystem Modeling, Research, and Evaluation
CCMP Action	EST-3
Purpose/Goal	Identify biological indicators, Increase understanding of estuary health
Benefits/Outcomes	Increased knowledge about environmental response to restoration activities, Increased knowledge about environmental status and trends
Outputs/Deliverables	Research metadata & datasets, State of the Bay data support, Watershed condition framework support
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation
Activity for 10/01/2022 through 03/31/2023	N/A
Project Partners	DISL
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	-
Total Budget	-
Available Balance	-
Year 5 Deliverables	N/A

Overview

While science is driven by data acquisition, spatial and temporal gaps in data limit our understanding of observed and predicted ecosystem responses, changes, or trends. Models are developed and widely used to predict ecosystem responses to changing levels of stress when gaps in available data limit our understanding of expected impacts of stressors. Models allow investigators to test responses to as-yet-unrealized or potential levels of stress to guide resource management decisions.

Building Resilience for Oysters, Blue Crabs, and Spotted Seatrout to Environmental Trends and

Variability in the Gulf of Mexico (Decadal Study): The abundance of oyster, blue crab, and spotted seatrout (OyBcSt) is rapidly declining in the Gulf of Mexico. Since human settlement in the Gulf, the OyBcSt species have provided humans valuable food, raw material, recreation, and cultural resources. Today, the provisioning of ecosystem services by the OyBcSt community is threatened, or near collapse in Gulf estuaries. This is due in part to anthropogenic activities and environmental trends such as fisheries harvest and changes in water or habitat quality.

While it is known that some of the environmental trends are correlated with OyBcSt populations, many of the underlying mechanisms that relate long-term trends and short-term variability in the environment to changing OyBcSt populations are unquantified or unknown. Concerted resource management actions at the ecosystem

level, such as managing water quality in combination with habitat restoration and fishery stock management requires identification and quantification of these mechanisms and are necessary to build resilience to change.

The OyBcSt communities present a practical model of the fauna in the bay and were selected because all three species have significant resource management issues and interests and their collective ranges and trophic interactions span the estuarine ecosystem from coastal ocean to tidal river. Thus, improving resilience for the cumulative OyBcSt community is expected to improve resilience for many other estuarine species.

In partnership with the Alabama Department of Conservation and Natural Resources and the Mobile Bay National Estuary Program, plus other stakeholder entities, the research products will feed into the next CCMP, as well as existing and new resource management and restoration planning decisions, and support efforts towards holistic ecosystem management of Mobile Bay. More broadly, the project's research and outreach components will support widespread management efforts to increase coastal resource resilience to environmental trends and variability.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Ecosystem Modeling, Research and Evaluation through staff support of the **Building Resilience for Oysters, Blue Crabs, and Spotted Seatrout to Environmental Trends and Variability in the Gulf of Mexico** study or Decadal study.

2019-Present Completed Deliverables

[Decadal Study Narrative](#)

[Decadal Study Project Summary](#)

[Decadal Study Work Plan](#)

[Fowl River Marsh Study](#)

ECOSYSTEM RESTORATION AND PROTECTION: NARRATIVE

Ecosystem restoration refers to returning a damaged ecological system to a stable, healthy, and sustainable state. Although it is impossible to return an ecosystem to the exact same condition as prior to disturbance, restoration to improve ecosystem function and service delivery will contribute to community health and well-being, protection against sea level rise, economic sustainability, recreation, and community quality of life.

The conservation, restoration, and/or protection of coastal watersheds with a focus on freshwater wetlands; streams, rivers and associated riparian buffers; and intertidal marshes and flats continues to be the focus of the Updated CCMP for October 1, 2018 – September 30, 2023. To ensure all restoration efforts are based in sound science and are part of an overall management program, a precursor to restoration efforts will be the creation of comprehensive watershed management plans (WMPs) at the 12-digit Hydrologic Unit Code scale. All WMPs will be based on U.S. EPA guidance, addressing the following key elements:

- Identification of causes of impairment.
- Estimation of pollutant load reductions expected from restoration/management measures.
- Description of non-point source reduction measures/critical areas where those measures will take place.
- Estimation of the amount of financial support needed to implement plan recommendations, including monitoring.
- Creation of an outreach and education plan to increase residents' understanding of restoration measures and to engage them in long-term implementation of the plan.
- Schedule for implementation, key implementation milestones, and implementation evaluation criteria.

The State of Alabama has prioritized funding from the NFWF Gulf Environmental Benefit Fund and federal RESTORE dollars to develop WMPs for all the State's tidally influenced watersheds. MBNEP has recruited assistance from its Project Implementation Committee (PIC) partner agencies and municipalities funded by the MBNEP to manage WMP development and assist in the development and evaluation of Requests for Qualifications to select engineering/planning contractors.

In addition to watershed planning and restoration, the PIC has identified priorities for increasing the installation of living shorelines throughout our two coastal counties and the number of public access points to facilitate connections to our coastal waters and open spaces.

ERP-1: WATERSHED PLANNING



Project	Watershed Planning
CCMP	ERP-1
Purpose	Support watershed management planning and implementation activities for all tidally influenced drainage basins
Outputs/Deliverables	Watershed plans, technical assistance, project development
Benefit/Outcome	Improved watershed management at local scale
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation
Activity for 10/01/2022 through 03/31/2023	All activity this period externally funded; Section 320 funding held in reserve to support externally funded watershed plans
Project Partners	MBNEP, NFWF, Municipalities, ADCNR RESTORE
Year 1 Budget	20,000
Year 2 Budget	18,000
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	(30,000)
Years 1-5 Reprogrammed Dollars	91,667
Total Budget	99,667
Available Balance	31,292

Year 5 Deliverables	Dauphin Island Fiscal Analysis, MTA Watershed Forum, Gulf Frontal WMP, Dauphin Island WMP
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Overview

MBNEP continues to facilitate watershed management planning for all of Alabama's tidally influenced watersheds. To date, with funding largely from National Fish and Wildlife Foundation Gulf Environmental Benefit Fund and RESTORE, WMPs have been completed for the following watersheds and complexes of watersheds:

- Bayou La Batre
- West Fowl River
- Fowl River
- Western Shore
- Dog River
- Three Mile Creek
- Eight Mile Creek
- D'Olive, Joes Branch, Tiawasee
- Weeks Bay
- Bon Secour
- Wolf Bay
- Gulf Frontal
- Dauphin Island

Watershed management plans in progress for the coming year include Western Perdido Bay, Eastern Shore, Mobile Tensaw Delta, Western Delta and Eastern Delta. A joint effort with the State of Mississippi to conduct watershed planning in Grand Bay is on deck.

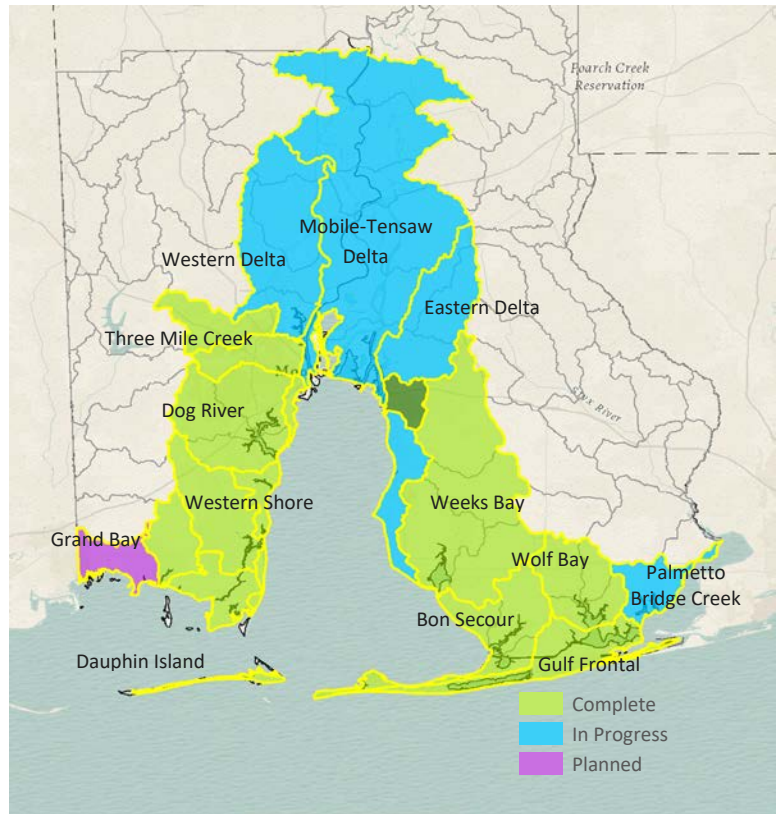
Status of EPA Section 320 Investments

Section 320 funds have been used to support Watershed Management Plans in two areas: first, to support enhanced outreach and engagement and second, to augment planning efforts with complimentary studies.

Mobile Tensaw Apalachee Watershed

Forum: The Mobile Tensaw Apalachee Watershed is one of the most important areas of the Alabama coast due to its species diversity and sensitive habitats coexisting with a robust industrial corridor. This watershed is the terminus of the greater Mobile Bay Watershed, which underscores its significance to the bay and to coastal Alabama as a whole. To engage area stakeholders more deeply and broadly in the wise stewardship of the Mobile Bay and Delta watersheds through the MBNEP WMP process, MBNEP supported a strategically designed virtual forum of technical presentations by the WMP team with breakout feedback sessions designed to run through a Strengths, Weaknesses, and Opportunities exercise and development of an Action Plan to design potential solutions to a critical issue identified by the WMP team.

This forum represented a unique opportunity to engage a curated list of key stakeholders and potential future investors in the long-term conservation of the MTA Delta.



Dauphin Island Fiscal Analysis: In many ways, Dauphin Island is a harbinger of the challenges facing coastal communities nationwide, and in fact worldwide. Dauphin Island faces significant challenges to its long-term sustainability and possesses limited resources with which to meet these challenges. Understanding how best to maximize and allocate those resources is vital to the Island's survival. This Fiscal Analysis set out to determine if the West End was a net benefit to Dauphin Island. Careful assessment of the available data indicates that the West End is in fact a net negative, and a potential drain on the Town's resources. That isn't to say that this portion of the Island doesn't generate significant revenues—including most of the lodging tax revenues—but these revenues do not offset the cost of maintaining the West End area and providing public services to the properties. Furthermore, these revenues certainly do not offset the cost of storm damages. These findings are crucial for future planning, policymaking, and adaptation efforts on the Island and will be incorporated into recommended management measures in the Dauphin Island Watershed Management Plan.

2019-Present Completed Deliverables

[Delta Watershed Plan Story Map/Community Engagement](#)

[Dauphin Island Fiscal Analysis, 2022](#)

[Gulf-Frontal Watershed Management Plan](#)

[Dauphin Island Watershed Management Plan](#)

ERP-2: WATERSHED IMPLEMENTATION



Project	Watershed Implementation
CCMP	ERP-2
Purpose/Goal	Implementation of watershed management plans to improve water quality, habitats, fish and wildlife, and community resilience
Benefit/Outcome	Improve ecosystem function and protection, Improved community management of ecosystem restoration and protection activities
Outputs/Deliverables	Expanded access, Improved stormwater management facilities, Stabilized/restored degraded stream segments, riparian zones, and wetlands
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation
Activity for 10/01/2022 through 03/31/2023	1 Rain barrel install event on 10/20/22. Funds held in reserve to support project development.
Project Partners	ADNCR, ADEM, Baldwin County, Mobile County, Municipalities, NFWF, Property Owners, RESTORE
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	15,434
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	9,041
Total Budget	24,475
Available Balance	-

Year 5 Deliverables	
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Overview

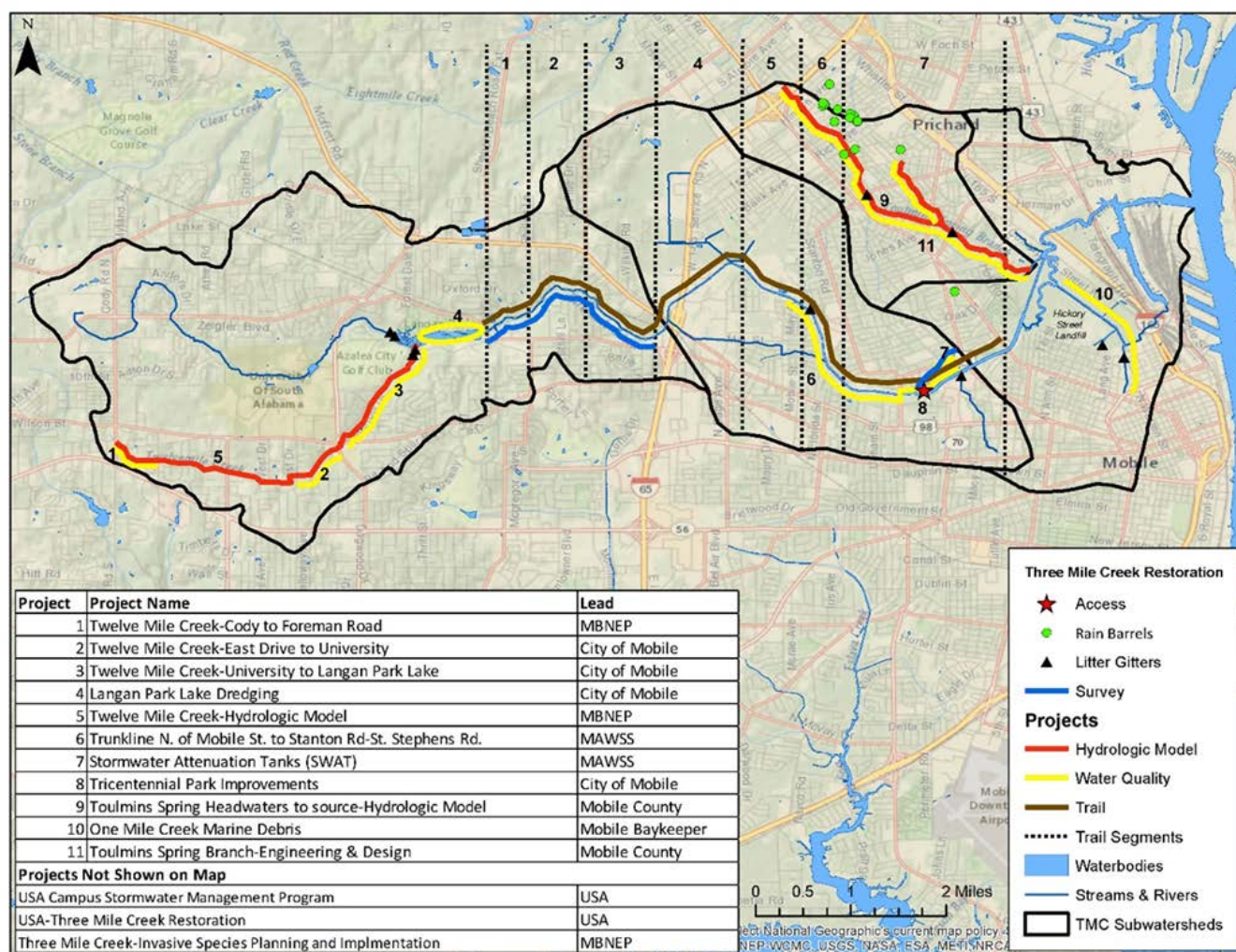
Watershed management plans are developed to provide watershed-specific blueprints for resource management, with characterizations and analyses driving project recommendations intended to address identified problems and potential funding sources. Each watershed has its own issues, but nonpoint source pollution conveyed over impervious surfaces to receiving waters is common to all. A WMP is a living document designed for implementation. Most implementation efforts are funded through grants competitively awarded or sponsored through the State of Alabama Department of Conservation and Natural Resources as part of its funding priorities through the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund. Another significant source of funding is the Alabama Department of Environmental Management Section 319 program. The following is a summary of implementation efforts by watershed.

D'Olive Watershed: The purpose of undertaking restoration in the D'Olive Watershed was to reduce the sedimentation and improve water quality in D'Olive and Mobile Bays. Goals of this effort included reducing downstream sediment impacts to Lake Forest Lake, D'Olive Bay, and Mobile Bay; improving the quality and clarity of water to re-establish submerged aquatic vegetation beds for shellfish and finfish; and increasing capacity of local resource managers and engineers to design and build successful coastal stream restoration

projects. Project objectives included stabilizing/restoring impacted stream banks and installing instream stormwater measures to reintroduce ecological function in 15 stream segments representing 12,333 linear feet, reconnecting streams to flood plains and enhancing 75 acres of floodplain/wetlands and installing five stormwater retention ponds to reduce discharge volumes and velocities during rain events. MBNEP has acted as lead on these restoration efforts. Restoration of the D'Olive Watershed began in 2012 and continues today. The status of MBNEP contracted work follows:

Year Begun	Project	Engineer	Construction Contractor	Substantial Completion Date	Stream Length (LF)	Retention Capacity (Cu Ft)	# of Impacted Land-owners	Flood-plain Area (acres)	Erosion Reduction (tons/yr)	Nitrogen Reduction (tons/yr)	Phosphorus Reduction (tons/yr)	Total Project Cost
2012	JB	Thompson	Southern Excavating	April 2013	1,000		1	2.2	22,150	27.2	14.2	\$1,184,000
2015	JB-2	Thompson	North State	August 2015	1,600		3	7.8	304	2.4	0.5	\$1,307,679
2016	JB SWMF	Thompson	Southern Excavating	November 2016		53,400	5	1	NA	NA	NA	\$332,397
	J SWMF	Thompson	Southern Excavating	November 2016		35,000		1	NA	NA	NA	\$91,611
	J4-1	Thompson	Southern Excavating	November 2016	700			2	143	1.2	0.3	\$126,198
	J4-2	Thompson	Southern Excavating	November 2016	400			1	100	0.9	0.2	\$773,780
	JA	Thompson	Southern Excavating	November 2016	600			5	200	1.8	0.4	\$445,237
2016	TC1	GMC	North State	April 2016	573		2	7	206	10.7	1.4	\$250,000
	TC2	GMC			573			7	207	12.3	1.6	\$615,349
	Tiawasee Tributary	GMC		April 2018; Adaptive Management April 2020	578			2	72	3.2	0.4	
2016	D4-D6	GMC	North State	September 2017; Adaptive Man. April 2019	2,714		1	15	1,880	19	4	\$3,313,724.00
2016	DA3	Volkert	North State	February 2017	1,100		1	7	547	0.6	0.2	\$1,092,432
2017	SWMF Lake Forest	Integrated Science	NA	NA			NA					\$72,300
2017	DAE	Integrated Science	Southern Excavating	September 2017	420		2	4	300	0.5	0.2	\$433,706
2018	DAF-1A Melanie	GMC	North State	May 2018	490		9	4	254	1.3	0.3	\$493,706
2019	DAF	Mott MacDonald	North State	June 2019	292		3	1	351	2	0.6	\$792,595
	DAF-1 Golf Trib	Mott MacDonald	North State	June 2019	243			1	106	1.3	0.3	
2019	D'Olive WMP Update	Baya Consulting	Geosyntec									\$145,000
2019	Tiawasee Montclair	Volkert	Streamline	February 2020	1,050		17	3	602	1.6	0.4	\$825,589
2020	Stormwater Retention	Jade	Clark Co Oil Field Services	November 2021		206,000		4				\$564,038
2021	D9 Pine Run Emergency Repair	Volkert	Streamline	March 2022	300		3		N/A	N/A	N/A	\$49,958
2021	DACA1 Canterbury	Mott MacDonald	Streamline	May 2022	272		1	0.5	31	2.4	0.1	\$272,795
	MBNEP Project Delivery											\$1,239,572
	Monitoring Activities											\$219,662
					12,905	294,400	44	75	27,453	86	25	\$14,647,358

Three Mile Creek Watershed: Implementation of the Three Mile Creek WMP can be divided into three different overarching programs: environmental restoration; expanding access to the water and open spaces along the creek through the creation of 10 miles of trail; and comprehensive community engagement to ensure each program listens to and learns from affected residents, businesses, churches, schools, and other entities to the greatest extent feasible to ensure projects undertaken meet the needs of the communities who live closest to the creek and its tributaries. Key implementers of this plan include the Mobile Area Water and Sewer Service, Mobile County, the City of Mobile, MBNEP, Mobile Baykeeper and the University of South Alabama. In June 2021, MBNEP staff partnered with Osprey Initiative, LLC and the Prichard City Council to conduct a **litter cleanup** along TSB in the Bessemer neighborhood. Seventeen tires and 634 pounds of trash were removed from the roadsides along a quarter mile-stretch of Hinson Avenue and along the banks and waters of 272 linear feet of stream. Osprey used the EPA's Escaped Trash Assessment Protocol (ETAP) to assess collected materials. Plastics, glass, and aluminum were recycled, non-recyclable materials were sent to a landfill, and tires were recycled through the City of Prichard's Scrap Tire Program for reuse as tire-derived fuel.



Trash-Free Waters in the Three Mile Creek Watershed The City of Mobile continues to fund Osprey Initiative to maintain the six Litter Gitters installed in the Three Mile Creek waters with funding from its EPA Trash Free Waters grant. From the City's budget, Osprey spends one day per week maintaining the traps and manually removing trash from Three Mile Creek waters from the Litter Boat. Osprey uses ETAP to assess collected material. From 2020 until the May 2021, Osprey removed a total of 13,294 lbs. (7,621 cu ft) of material from TMC Watershed waters, including 10,925 lbs. (5,109 cu ft) of litter into a landfill, 2,369 lbs. (2,512 cu ft) of litter sent to recycling facilities, and 1,973 lbs. of non-floating debris.

The MBNEP and the Tampa Bay National Estuary have secured NFWF GEBF funding to expand Osprey's litter abatement activities east to Tampa Bay, to continue the work in coastal Alabama, and to use ETAP data to identify upstream litter sources and provide education and outreach to reduce single use packaging/bottling.

Twelve Mile Creek

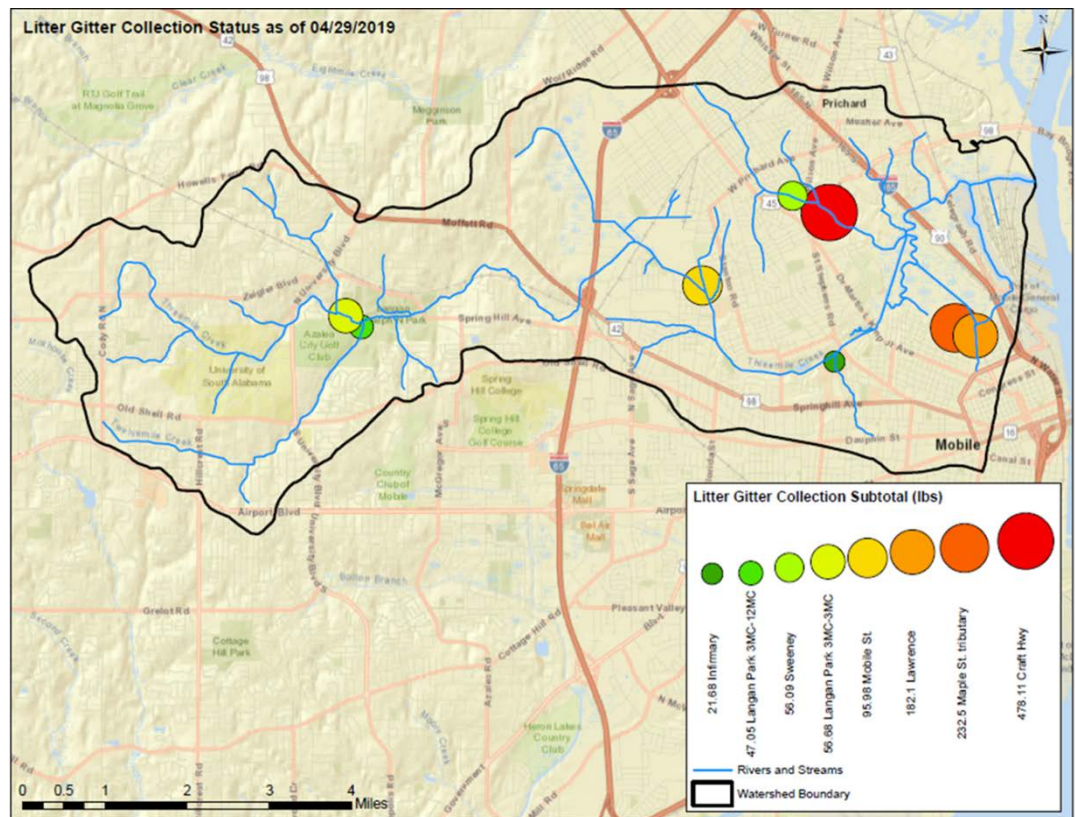
With a grant secured from the EPA through the Gulf Coast Ecosystem Restoration Council

and the RESTORE Act, MBNEP hired contractors to develop engineering and design and permitting documents to restore/stabilize an impacted 1,800-linear-foot reach of the Twelve Mile Creek tributary to Three Mile Creek. Twelve Mile Creek, one of six main tributaries within the Three Mile Creek Watershed, originates in the extreme southwestern portion of the watershed and flows through concrete armored channels and culverts and natural streamways over three miles north and east from its headwaters to its confluence with Three Mile Creek at Municipal/Langan Park. The armored channels prevent natural infiltration of stormwater to groundwater, resulting in increased water volume, flow velocity, and flooding in the stream channel.

A major issue in unarmored reaches within the upper portions of Twelve Mile Creek is stream-bank erosion. Sediment from channel and bank erosion has accumulated downstream, reducing creek water depth and the cross-sectional flow area, resulting in higher water flow velocities during storm events. This has led to further channel erosion and sediment transport to downstream lakes at Municipal/Langan Park, reducing retention volume and carrying pollutants, including oxygen-demanding substances and nutrients. Engineering and design have been completed, a USACE Nationwide Permit and implementation funding has been secured, and construction reached substantial completion with installation of native plants in the winter of 2021. Future efforts will focus on monitoring and assessment activities and control of invasive plant species within the footprint of the restoration.

Dog River Watershed: Implementing a top priority in the Dog River WMP, Mobile County, with support from the MBNEP, has secured funding to acquire and preserve over 300 acres of bottomland hardwoods in lower Halls Mill Creek subwatershed. This wetland tract protects the immediate downstream, tidally influenced marshes of the Dog River estuary. The property, located in a highly urbanized area, is made up of undisturbed, high quality, palustrine, riverine wetlands. A perpetual conservation easement will be placed on the acquired tract to ensure a double layer of permanent protection to the conserved property.

Preservation of this property protects critical habitat for threatened and endangered species, including the West Indian manatee (*Trichechus manatus*) and the American bald eagle (*Haliaeetus leucocephalus*), while ensuring the long-term health of the Dog River estuary by preserving the ecological function of this system. Restoration



and preservation of wetlands are top priorities listed in both the Mobile Bay National Estuary Program's Comprehensive Conservation Management Plan and the Dog River WMP. Conservation of this little-known area of extreme biodiversity is critical to the future health of Dog River.

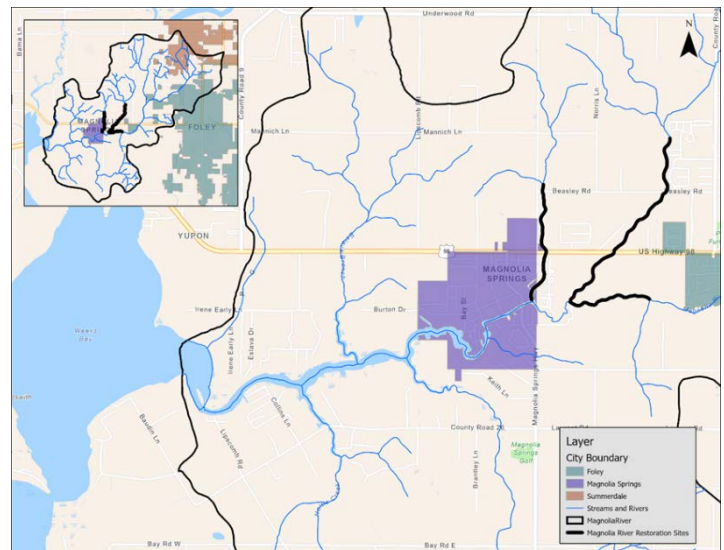
MBNEP initiated the pre-proposal for this project to the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund then passed it to Mobile County to secure the \$2,687,000 for acquisition. The Mobile County Commission purchased this property in 2022.

Trash Abatement Strategy for the Dog River Watershed The Dog River Clearwater Revival (DRCR), a watershed-based nonprofit organization, with assistance and support from the MBNEP, received EPA funding to create a Comprehensive Trash Abatement Program in Mobile, Alabama. The DRCR used ETAP data secured by Osprey Initiative, LLC, who are maintaining six Litter Gitter trash capture devices in the Dog River Watershed to determine litter types and sources. The MBNEP combined hydrologic model outputs with geospatial analyses of the watershed to identify correlations among high-velocity areas during peak flows, various upstream land uses, and significant litter accumulation. The analysis is designed to identify areas with the highest potential for trash to enter waterways and point to the potential locations of sources for effective targeted investments in enhanced litter abatement activities. Partners for Environmental Progress engaged in an awareness campaign to encourage businesses to join the *Create a Clean Water Future* campaign and create “Green Teams” to increase awareness, reduce use, establish recycling programs, and implement a “Truck Bed Trash Program” to reduce trash from being blown out of the back of trucks.

Weeks Bay Watershed: Approximately 1,000 linear feet of streambed and stream banks will be stabilized with green infrastructure to re-establish ecological function in the Lower Fish River Watershed (HUC 031602050204). The project goals are to protect water quality and improve community and ecosystem resilience in Weeks Bay. Project objectives include reducing the amount of sediment carried into Lower Fish River and Weeks Bay, improving stormwater management while reintroducing ecological function, and mitigating future impacts of development.

The Marlow project site currently presents as a deeply incised, ephemeral, tidally influenced tributary with unstable stream banks. The head cut is approximately 30 feet deep with side cuts ranging from 20 to 30 feet depth in places. Active and on-going erosion have resulted in unstable stream banks, as evidenced by downstream deposits of sediment and large, fallen trees that have toppled due to active erosion, undermined root structures, and mass wasting in the riparian area. Stabilization of this stream segment will reduce sediment loading in Weeks Bay, improving the quality and clarity of the water necessary for re-establishing submerged aquatic vegetation (SAV) beds in Weeks Bay.

In addition to the Marlow project, relevant information related to sediment and nutrient delivery and loading and habitat assessment from the WBWMP (2017) and other available sources (aerial photography, soils maps, Weeks Bay hydrologic model, etc.) was reviewed to narrow the geographic focus and identify and rank the small subwatersheds or catchments of concern within lower Fish River watersheds. Targeted field assessments in lower Fish River subwatersheds revealed some issues but not of the severity and scale to consider for engineering and design at this time. MBNEP met with partners to share results and gather consensus before proceeding. All parties agreed additional investigations should be conducted, and the geographic area expanded to include the Magnolia River Watershed (MRW), an Outstanding Alabama Waterway. Based on this additional



review, high priority segments of stream channel and riparian area within the MRW revealed multiple candidates for restoration.

With the geographic area expanded, additional field assessments, available water quality data, and the Soil and Water Assessment Tool (SWAT) model results, revealed three stream segments in the MRW where water quality impacts are most severe. Stream segments proposed for engineering and design are the unnamed tributary draining to the Cold Hole, a cultural and recreational important site on the Magnolia River, multiple shoreline bluffs directly on the Magnolia River, upstream of the confluence with Schoolhouse Branch, and Schoolhouse Branch, a major tributary to the Magnolia River.

Status of EPA Section 320 Investments

Section 320 funds have been used to support watershed plan implementation in two ways: citizen engagement, the development of outreach materials, and extended service of Litter Gitters in Three Mile Creek watershed.

Toulmins Spring Rain Barrel Program Outreach: To engage this underserved community, a contractor was hired to conduct outreach through community meetings and one-on-one relationship building to educate about the watershed and recruit participants into the Rain Barrel program.

Three Mile Creek Brochure: In support of Three Mile Creek Partnership efforts to educate the community about the restoration initiative, MBNEP provided partial support for the design of a brochure highlighting recommendations in the watershed plan and promoting a high priority trail development project.

Three Mile Creek Litter Gitters: To continue operation of two Litter Gitters in the Three Mile Creek Watershed while transitioning costs over to the City of Mobile, MBNEP provided funding until the City was able to assume responsibility.

2019-Present Completed Deliverables

[Toulmins Spring Rain Barrel Program Outreach Final Report](#)

[3MC Partnership Website](#)

[Three Mile Creek Brochure](#)

[Comprehensive Litter Abatement Plan for the Dog River Watershed](#)

[Three Mile Creek Litter Gitters Final Report- Osprey Initiative](#)

[12 Mile Creek 100% Engineering & Design Plan](#)

[D'Olive Restoration Program Summary](#)

ERP-3: SHORELINE STABILIZATION AND ENHANCEMENTS



Project	Shoreline Stabilization and Enhancements
CCMP	ERP-3
Purpose/Goal	Restore intertidal marshes and flats, Stabilize shorelines
Benefit/Outcome	Enhanced fishery and saltwater habitats, Improve water quality, Improved access
Outputs/Deliverables	Acres of marsh protected, Acres of marsh restored, Linear feet of shoreline stabilized
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality
Activity for 10/01/2022 through 03/31/2023	No activity this period
Project Partners	MBNEP, Mobile County, NFWF, Property Owners
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	-
Total Budget	-
Available Balance	-

Year 5 Deliverables	N/A
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Overview

A key component of healthy estuaries is the stabilization of the shorelines using environmentally friendly techniques to protect property from shoreline erosion while sustaining the flora and fauna of these important habitats. The main objective of soft shoreline stabilization is to achieve a balance between the need for protection against erosion while maintaining and enhancing shoreline functions. Several MBNEP Management Conference members are engaged in promoting shoreline stabilization across the Alabama coast. Below are projects led by the MBNEP to achieve this objective.

Mon Louis Island Tip: With a purpose to protect water quality and community and ecosystem resilience in Fowl River, the 1,600-foot, erosion-impacted and storm-vulnerable, wetlands-covered tip of Mon Louis Island was restored to its 1995 footprint. Project goals included stabilizing the shoreline along the bay side of the northern tip of Mon Louis Island, protecting and re-establishing critical nursery habitat for commercially and economically important fish and shellfish, improving access in the shallow Fowl River Navigation Channel, and mitigating storm hazard vulnerability upstream in East Fowl River. Project objectives included stabilizing 1,600 feet of shoreline, creating more than four acres of salt marsh fisheries nursery habitat, protecting eight acres of existing salt marsh fisheries nursery habitat, and dredging the shallow and neglected Fowl River navigation channel and beneficially reusing the material to replace borrowed sediment and avoid negative water quality impacts. Restoration is complete and all objectives were met. Post-construction monitoring has been terminated due to the project meeting its thresholds under USACE Permit requirements.

Fowl River Spits Stabilization: With a WMP, sediment study, and hydrologic model completed for the Fowl River Watershed, a priority concern of stakeholders – engineering and design plans for restoration of disappearing and degrading marsh spits located in the River’s transitional zone between fresh and brackish water continue. The project purpose is to restore important coastal spits and wetlands within the transitional reaches of Fowl River. Project goals include improving habitat and water quality and preserving coastal hydrology. Objectives include protecting 12,600 feet of shoreline and restoring and enhancing 52 acres of coastal marsh. With funding secured through the NFWF GEBF, the project has advanced to 60% design plans.

In addition, MBNEP NFWF funding will be used to leverage funding from NRCS to execute a wetland easement on the Canon property, identified in the WMP for conservation and restoration.

Dauphin Island Causeway Stabilization/Wetland Creation: This project involves stabilization of the shoreline and creation of marsh and shellfish habitat along the erosion-impacted, approximately two-mile-long Dauphin Island Causeway. State Route 193, known as Dauphin Island Parkway (DIP), provides the primary vehicular access to south Mobile County and Dauphin Island, Alabama’s only barrier island, and the single emergency/hurricane evacuation route between the island and mainland. The 10,090 ft (1.91 mi) Dauphin Island (DI) Causeway, between the Heron Bay Cutoff Bridge and the Gordon Persons/Dauphin Island Bridge and is only four feet above sea level.

Approximately 280 acres of healthy, productive salt marsh habitat, comprising both black needle rush (*Juncus roemerianus*) and smooth cord grass (*Spartina alterniflora*), lie on the western, or leeward, side of the Causeway, but the eastern, or windward, side is devoid of vegetative habitat. Only sparse patches of persistent common reed (*Phragmites australis*) remain along the roadway. Many of the State’s commercially and recreationally significant fish and shellfish populations rely upon salt marshes for critical nursery habitat. Additionally, the Causeway lies landward of the State’s most active wild oyster harvest area. The proposed project will employ scientific inquiry to develop an effective design to enhance resilience related to fisheries by employing best management practices providing optimum habitat opportunities for fish, shellfish, and oysters, while buffering the energy of wind and waves affecting habitats.

MBNEP received funding for engineering and design for this project from both the NFWF GEBF and Community Resilience Fund. MBNEP partnered with the Mobile County Commission, who agreed to act as a project lead for engineering and construction.

Deer River Shoreline Stabilization: The Deer River marsh system was prioritized in the draft Western Shore Watershed Management Plan (WSWMP). Sufficient migration space is not available in the Deer River Watershed (352 acres or 4% of Watershed area) to sustain resilient marshes into a future beset by sea level rise (SLR). To ensure the Deer River marsh system continues to provide ecosystem services, it is critical to protect it and enhance its resilience. The total remaining resilient marsh acreage within the Deer River watershed is 524 acres. This project will protect and restore 58% (275 of existing marsh acres, 30 acres created, and 305 acres total) of the remaining resilient marsh habitat within the Watershed. The following priority WSWMP management measures were recommended to address critical issues and areas that will be met by this project:

- Identify shoreline management and habitat creation opportunities.
- Restore and stabilize shorelines in the coastal zone of the WSW Complex.
- Improve watershed resilience by preserving lands for marsh and habitat migration.
- Advocate for beneficial use of dredged sediments and thin layer sediment placement.

The proposed project is intended to address shoreline recession, marsh deterioration, and loss of natural function from erosion, apparently caused by heavy storms, tidal impacts, and wakes from cargo ships entering or exiting the Theodore Ship Channel. Long-time Hollinger’s Island residents have expressed concern over degraded water quality, sedimentation and shoaling, and solid waste pollution entering the marsh system through the gaping breach formed along the Bay shoreline. Residents recall times when Deer River had navigable depths of 10 feet and recreational fishing was a primary source of food and bait for fishing Mobile Bay.

The goal of this project is to protect one of the largest intact marsh complexes on the western shore of Mobile Bay to enhance the resilience of environmental resources, and the first line of defense protecting infrastructure critical to significant maritime operations and an adjacent residential community. Objectives of the project include:

- Provide wave attenuation from the erosive forces of winds, wave actions, and boat wakes necessary to protect the remaining 275 acres of existing critical marsh habitat.
- Reestablishing connectivity in the Middle Fork of Deer River by restoring the hydrology of the tidal creek system to sustain the currently healthy marsh but sediment-impaired channel.
- Creating at least 30 acres of additional marsh habitat.

MBNEP has a draft Memorandum of Agreement in place with the USACE to deliver 200k cu/yd of beneficially sourced, suitable marsh fill material, from the Mobile River Turning Basin to the project site.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Shoreline Stabilization projects funded with external grants.

Deer River Stabilization Appraisals: Although acquisition of the property is not part of the Deer River Coastal Marsh Stabilization and Restoration Project, during project planning a major property owner explored the possibility of leveraging the restoration project to explore acquisition of the property for conservation. The State of Alabama Department of Conservation and Natural Resources indicated a willingness to consider the possibility. Because the State of Alabama would have to conduct an independent appraisal conforming to the Uniform Standards of Professional Appraisal Practice (USPAP) or the Uniform Appraisal Standards for Federal Land Acquisitions, which is sometimes referred to as UASFLA or the Yellow Book, MBNEP, a State sponsored program, offered to contract with State-approved appraiser, Valbridge Property Advisors, to prepare an appraisal of the property for use in making an offer to Theodore Bayshore Lands, Inc. The appraisal was submitted to the State and MBNEP on November 3, 2021, to wit, “The appraiser’s opinion of market value of the property as of September 23, 2021, the date of the last inspection, and subject to extraordinary assumptions located on Page 9 of this report, is \$345,600.” Due to the extreme divergence in value indicated by the property owner’s appraisal and the one commissioned by MBNEP, a third independent appraiser, Commercial Valuation Services, Inc., conducted a review of both and provided an objective opinion. This review confirmed the value determined by the Valbridge report, indicating the highest and best use of the property is for recreational use. Due to an inability to reach consensus on a sale price, MBNEP is in the process of redesigning the restoration project.

2019-Present Completed Deliverables

[Fowl River Spits Marsh and Shoreline Restoration Phase I - Design Alternatives](#)

[Fowl River Spits Engineering & Design 60%](#)

[Dauphin Island Causeway Design Alternatives Report](#)

[Deer River Engineering & Design 30%](#)

[Deer River Appraisal- Courtney & Morris](#)

[Deer River Appraisal- Valbridge](#)

[George McKean Letter](#)

ERP-4: INVASIVE SPECIES MANAGEMENT



Project	Invasive Species Management
CCMP	ERP-4
Purpose/Goal	Reduce and eradicate invasive aquatic and terrestrial flora and fauna
Benefit/Outcome	Enhanced fishery and saltwater habitats, Improve water quality, Improved access
Outputs/Deliverables	Acres of wetland protected, Acres of wetland restored, Invasive species management, Linear feet of riparian buffers restored
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality
Activity for 10/01/2022 through 03/31/2023	No activity this period
Project Partners	MBNEP, Mobile County, City of Mobile, NOAA Gulf Corps, EPA RESTORE
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	15,000
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	2,230
Total Budget	17,230
Available Balance	6,588

Year 5 Deliverables	2022 Apple Snail Control Report
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Overview

Across coastal Alabama, the introduction of exotic plant and animal species has impacted native communities and ecosystems. Introduced invasive nuisance species, without natural predators, displace native communities of plants and animals and eliminate the habitats and food they need and ecosystem services they provide, while spreading unchecked. MBNEP supports invasive species management through on-the-ground activities as well as publication of comprehensive invasive species management plans.

Evidence of our work is demonstrated by our history. In 2017, the Coastal Alabama Conservation Corps worked in the wooded wetlands of the lower Three Mile Creek Watershed using herbicide treatments to kill over 8,000 popcorn trees (*Triadica sebifera*) and 14,000 Chinese privet plants (*Ligustrum sinense*). They also worked at stream and floodplain restoration sites in the D'Olive Watershed to eradicate those same species, along with camphor (*Cinnamomum camphora*) and others, which are commonly among the first to “volunteer” at recently restored project sites.

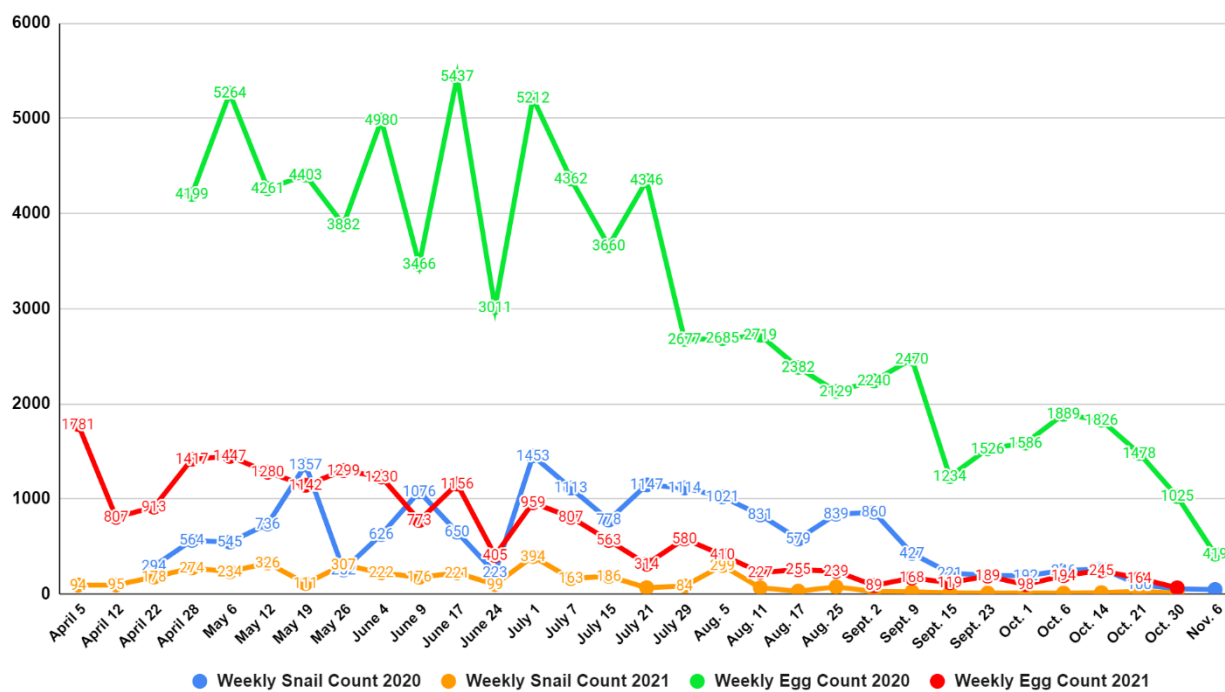
Three Mile Creek Watershed Invasive Species Control Plan: Implementing a recommendation of the Three Mile Creek Watershed Plan, in 2019 a team of environmental professionals was hired to develop a comprehensive invasive species control plan for the watershed. This plan provides a template for a prescriptive, watershed-specific road map for the management of invasive plant species and the island apple snail, an invader of Three Mile Creek threatening downstream Mobile-Tensaw Delta seagrass beds.

With funding from the EPA (through the Gulf Coast Ecosystem Restoration Council and the RESTORE Act), the same source used to fund development of the 2019 *Three Mile Creek Watershed Invasive Species Control Plan*, the Plan is being implemented in partnership with the City of Mobile and the University of South Alabama and has provided a roadmap for controlling invasive, exotic nuisance species of plants and animals to conserve or restore the Watershed and improve water and habitat quality.

Of particular importance, the Plan provides a prescription for the elimination of the Watershed's iconic invasive animal, the island apple snail, with both mechanical removal of eggs around the lakes and subsurface applications of a copper-based molluscicide in advance of the City of Mobile's plans to restore the Langan Park Lakes through a dredging effort. Manual efforts to eliminate the garish pink egg masses from vegetation and infrastructure around the Park's lower lake were undertaken throughout the snail's reproductive season in 2020. With implementation funding, twice-weekly manual removal of eggs and adults and subsurface application of the copper-based molluscicide began in April 2021 and will continue through the end of the reproductive season in November of that year. Currently, efforts are underway to continue both manual and chemical control efforts in Langan Park during the 2022 reproductive season in hopes of eradicating the snails from the lakes in advance of restoration work anticipated to begin near the end of 2022. These ongoing efforts have shown to be effective with total numbers of snails and egg masses collected dropping dramatically throughout the course of 2021. Additional efforts will be made on an as needed basis to opportunistically target snails and aquatic invasive plants in the lower reaches of the Watershed throughout 2022.

Control of invasive plant targets is likewise guided by the Plan, which described distribution and potential invasiveness of the watershed's invasive species, prescribed primary and secondary control and management options (including mechanical, chemical, and biological) and an implementation calendar, identified personnel and equipment needed, and provided a cost calculator. Ongoing control efforts have been focused on the priority areas identified in the Plan and targeted the primary species of concern in the Plan: Chinese privet, Chinese tallow, camphor tree, and Japanese climbing Fern. To date, over 15,000 individual plants of these species have been removed from priority areas with additional efforts on tap for 2022.

2020 Data vs 2021 Data: Weekly Snail & Egg Mass Collection Counts



D'Olive Watershed: The comprehensive restoration of over two miles of stormwater-impacted streams in the D'Olive Watershed included disturbance of approximately 75 acres of floodplain, routinely stabilized by planting native vegetation. As the native plants mature and spread, they compete with invasive species adapted to opportunistically exploit such conditions, with numerous, easily dispersed seeds and rapid growth rates. The MBNEP has enjoyed a partnership with NOAA's Gulf Corps, whose personnel have used manual and herbicide measures to control invasive species across the various restoration sites within this watershed.

Western Shore Watershed: The MBNEP partners with NOAA GulfCorps to undertake measures to control or eradicate stands of the common reed, *Phragmites australis*, from the margins and from higher elevation spots of the Helen Woods Park salt marsh restored in 2009, with minimum disruption/by-kill of the diverse assemblage of appropriate native species successfully planted there.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Invasive Species Management projects funded with external grants.

2019-Present Completed Deliverables

[2021 Apple Snail Control Report](#)

[Invasive Species Control Plan](#)

[2022 Apple Snail Control Report](#)

ERP-5: ACCESS ENHANCEMENTS



Project	ADA Improvements
CCMP	ERP-5
Purpose/Goal	Habitat conservation and access enhancements to reconnect residents and visitors to nature of the Alabama coast
Benefit/Outcome	Expanded community engagement & ownership, Improve ecosystem function and protection, Improved community management of ecosystem restoration and protection activities
Outputs/Deliverables	ADA mats installed, Acres acquired, Miles of trail, Ramps improved
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	Installation of an ADA beach access mat at Dauphin Island's West End Beach; Installation of an ADA beach access mat at Gulf State Park's Cotton Bayou Beach Access on the east ramp
Project Partners	Town of Dauphin Island, Krewe of Kindness, City of Orange Beach, Gulf State Park, USFWS, MBNEP
Year 1 Budget	-
Year 2 Budget	5,000
Year 3 Budget	5,000
Year 4 Budget	9,000
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	(3,230)
Total Budget	15,770
Available Balance	10

Year 5 Deliverables	ADA Beach Mats- Dauphin Island & Orange Beach
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Overview

Access is an important component of coastal protection because the more connected people are to the environment, the more they will value and protect it. Enhancing access includes a combination of protecting intact habitats to ensure abundant species diversity and environmental integrity; and developing appropriate access to Alabama's coastal natural resources for all people, including those with mobility impairments. MBNEP has promoted access through support for priority habitat acquisitions and access site expansion and accessibility. In addition, MBNEP is assisting the State of Alabama with the update of an inventory and assessment of all access points along the Alabama coast.

Mobile-Tombigbee and Alabama River Watersheds Atlas: In 2018, the MBNEP secured funding from the Healthy Watersheds Consortium to expand a Habitat Prioritization tool upstream in the Mobile-Tombigbee and Alabama River Watersheds. The Atlas, completed in 2020, identified forested headwater parcels whose protection offered the greatest benefits to the ecological health of Alabama's estuarine waters. The tool was vetted by forestry resource managers to determine which parcels had the greatest potential for sale or

conservation easement. The Alabama Forest Resources Center is now pursuing protection of the prioritized parcels with an initial target of protecting 10,000 acres.

Update of the State of Alabama Coastal Access Inventory: Under a memorandum of understanding with the ADCNR, the MBNEP is updating the 2014 Alabama coastal access inventory. The MBNEP is identifying existing public access points in the two coastal counties; is characterizing them by condition, features, recreation opportunities, amenities, handicap-accessibility, fees, signage, etc.; and identifying opportunities to increase accessibility and recreational opportunities. Deliverables will include an inventory of existing coastal public access points by characterization, including indication of changes or improvements; identification of access points for future improvement; a list identified recreational needs by watershed; and a separate inventory of potential new public access points.

Expanding Access for the Mobility Impaired:

The MBNEP Management Conference partners, concerned over beach access for physically challenged individuals confined to wheelchairs, have created a non-profit organization, the Krewe of Kindness, in part to ensure that individuals reliant upon the Americans for Disabilities Act have access to Alabama beaches. The MBNEP provided the Krewe of Kindness sufficient funds to purchase the first ADA-compliant beach mat, extending 270 feet onto the beach and installed at Dauphin Island's West End Beach with a ribbon-cutting ceremony in May 2021.



In April 2023, the City of Orange Beach Coastal Resources Department used MBNEP funds to purchase and install an ADA access mat at Gulf State Park's Cotton Bayou Beach Access on the east ramp.

Status of EPA investments

Section 320 funds have been used to support Access Enhancements as follows:

ADA Access Mats: MBNEP has established an annual program for ensuring ADA accessibility at public access locations.

2019-Present Completed Deliverables

[WKRG News: Wheelchair Accessible Beach Mats Coming to Dauphin Island](#)

[State of Alabama 2014 Public Access Inventory Update, Interim Report May 2022](#)

[OBA News: Orange Beach Enhances Cotton Bayou Beach Access with wheelchair mats](#)

TECHNICAL ASSISTANCE AND CAPACITY BUILDING: NARRATIVE

As a backbone organization serving the MBNEP Management Conference in achieving collective impact along the Alabama coast, nowhere is impact more important than in the continuous improvement of how our coastal assets are used and managed. The mission of MBNEP is to provide the necessary tools to integrate environmental protection into community development. This is accomplished through a combination of the creation of incentives and decision support tools to expand coastal economies, improving the regulatory environment to ensure restoration investment success, providing the tools necessary to continuously improve environmental management best practices, and building a network of volunteer scientists willing to supplement resource manager efforts to monitor environmental conditions.

TAC-1: FISHERIES CAPACITY BUILDING



Project	Fisheries Industry Support and Enhancement
CCMP	TAC-1
Purpose	Support alternative industries which couple fishing livelihoods and ecosystem service delivery
Benefit/Outcome	Preservation of fishing heritage and increased adoption of business practices improving water and habitat quality
Outputs/Deliverables	Development of a public-private partnership framework for sustainable operation of a peer-lending program
Clean Water Act Relevance	Improve water quality
Activity for 10/01/2022 through 03/31/2023	Funding supports Coastal Alabama Fisheries fund, capitalized by private foundation. Continuation of loan servicing for 5 loans- 1 loan paid back in full, 1 loan in default
Project Partners	Alabama Power, Auburn University, MASGC, 22nd Street Bank
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	50,000
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	(45,000)
Total Budget	5,000
Available Balance	4,454

Year 5 Deliverables	
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Overview

In coastal Alabama, the commercial marine seafood industry provides more than 12,000 jobs, \$555M in sales, \$219M in income, and \$287M in general profits annually. Oyster landings account for roughly 2% of this revenue. Alabama's seafood economy is less reliant on imports than other states, with imports accounting for slightly more than 3.6% of the total economic impact.

Oyster market prices in 2019 ranged from \$0.50 to \$0.70 with a weighted average price of \$0.59. Alabama oysters are considered high-quality and fetch higher prices, selling for \$0.85 per oyster in 2019, which nearly doubles historic highs. Between 2007 and 2016, Alabama oysters sold for \$1.50 more per pound than the national average. In 2019, the market value for Alabama oyster commercial operations was at least \$1,452,000 and the total number of single market oysters sold was at least 2.425 million.

The market demand for Alabama oysters has consistently outpaced supply, and therefore any aquaculture development or expansion in Alabama can reasonably expect a positive return on investment. There are two methods of oyster harvest employed in Alabama: wild caught oysters harvested from reefs and oysters produced via aquaculture, a method of controlled farming. In 2019, there were 21 commercial oyster aquaculture operations in Alabama. In 2009, there were as yet no oyster farms in Alabama, demonstrating how young this industry is in this State. Nine Oyster farmers reported 34 full-time employees and 30 part-time employees in 2019. At least 74 acres were permitted for oyster aquaculture, with at least 40 acres used in production.

Coastal Alabama Fisheries Fund: The mission of the Coastal Alabama Fisheries Fund (CAFF) is to pilot a peer lending program to support fishing business investment in best management practices through the creation of an inventory of successful fishing community peer-lending programs, development of public-private partnership frameworks for sustainable operation of peer-lending programs, and establishment of peer councils to develop policies for use and loan terms. Objectives are to:



- Secure capital for the purpose of loaning to commercial fishermen, initially oyster aquaculturalists, through grants, donations, etc.
- Establish a council or body to review and approve loan applications, ideally comprising partially of peer members from the relevant fishing industry.
- Partner with a financial institution to set the terms of and issue loans to borrowers approved by the council or body and to then recover payments and interest from borrowers.
- Grow CAFF through further fundraising as well as interest collected to better serve commercial fishing industries.
- Establish, assist or otherwise develop a third-party entity to manage and grow this fund in a dedicated and sustainable capacity.

This revolving loan fund, modeled as a peer lending program, was launched in 2022 with the first loan closing in February. A community meeting held March 22 with 60 oyster farmers and catchers in attendance and resulted in an additional 3 oystercatchers preparing loan applications which will be reviewed in June, 2022.

Decision Support: The MBNEP will continue to facilitate streamlined data delivery with partners, the Alabama Marine Resources Division and Mississippi-Alabama Sea Grant Consortium to enhance planning tools like the [Shellfish Aquaculture Siting Tool](#) and [Alabama Coastal Marine Planning Tool/Public Viewer](#). These planning tools provide resources to guide siting for potential off-bottom oyster farming operations and aid identification of potential conflicts of users of marine resources, respectively. Data sets include political boundaries, human uses, cultural resources, and offshore structures for Alabama's two coastal counties.

Green Port Status: The Alabama State Port Authority (ASPA) continues to participate in the Green Marine Program, an environmental certification program for the North American maritime industry. This voluntary, transparent, and inclusive initiative addresses key environmental issues through performance indicators. To qualify for certification, participants must benchmark annual environmental performance through the Program's rigorous self-evaluation guidelines, have results validated by an accredited external verifier every other year, and agree to publication of individual results. The MBNEP has supported the ASPA, which has undertaken an emissions inventory of land-based vehicles, implemented Policy ENV-002 to limit idling vehicles on Port premises, and applied for EPA Clean Diesel funding to retrofit, replace, or repower marine diesel engines.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Fisheries Capacity Building as follows:

OystersAlabama Website: To highlight the oyster catching and farming industry in Alabama, www.OystersAlabama.com was launched in October 2021. The website is dedicated to the marketing of oysters grown or harvested in Alabama and the growth and development of this coastal industry.

Coastal Alabama Fisheries Fund: Due to receipt of a grant from the Alabama Power Foundation for fifty thousand dollars, no Section 320 funding has been used to stand up this program.

2019-Present Completed Deliverables

[Coastal Alabama Fisheries Fund Applications](#)

[Coastal Alabama Fisheries Fund Market Analysis and Program Description](#)

[“Oysters Alabama” Marketing Website](#)

[Oyster Industry Meeting Newsletter](#)

TAC-2: PRIVATE SECTOR CAPACITY BUILDING



Project	Private Sector Capacity Building
CCMP	TAC-2
Purpose	Promote creation of new businesses in support of environmental protection along the Alabama coast
Benefit/Outcome	Increased ability of business community to participate in management & protection of coastal natural resources
Outputs/Deliverables	Creation of new economic opportunities/businesses
Clean Water Act Relevance	Improve water quality
Activity for 10/01/2022 through 03/31/2023	No activity this period
Project Partners	
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	-
Total Budget	-
Available Balance	-

Year 5 Deliverables	N/A
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Overview

Continuous improvement of how we manage and interact with our natural resources demands new ways of doing business. Continuous improvement is an ongoing effort to improve products, processes, or services by reducing waste or increasing quality. This continuous effort drives a competitive advantage and MBNEP seeks to support businesses willing to take calculated risks in improving environmental management and conservation practices.

Osprey Initiative: The MBNEP's Amphibious Assault on Maple Street was a cathartic cleanup of a litter-entrained tributary to One Mile Creek conducted by its Business Resources Committee in partnership with Thompson Engineering and partners for Environmental Progress in November 2016. Shortly thereafter, a prototype "Litter Gitter," a portable and inexpensive floating litter capture device constructed from cable, hardware cloth, and pool noodles, was installed and tested there with funding from a 2017 EPA Trash Free Waters grant. The success of this device led to the formation of the Osprey Initiative, LLC, a fledgling company employing veterans and dedicated to innovative trash abatement.

With funding by the MBNEP through a 2018 EPA Gulf of Mexico Division Grant, Osprey was hired to conduct "first pass tactical cleanups" to remove, characterize, and quantify legacy trash from waters and banks downstream of 10 installation sites strategically located within the Three Mile Creek Watershed. Litter Gitters were emptied and maintained, with personnel quantifying and characterizing collected material using the ETAP

and recycling recyclables. The MBNEP's success in catalyzing new technologies for capturing litter using EPA Trash Free Waters funding, has led to Osprey installations and maintenance contracts in the Dog River, D'Olive, and Bon Secour watersheds.

From early experiences in south Alabama, Osprey Initiative has expanded to fourteen watersheds in eight states with potential expansion opportunities in three more states. Through May 2021, Osprey teams have removed a total of 101,341 lbs. or 48,913 cubic feet of floating litter from their service areas. Of this grand total, 62,385 lbs. or 33,404 cubic feet of litter has been removed from coastal Alabama. Osprey Initiative is a remarkable example of building the capacity of the business community to support ecosystem protection and restoration.

Status of EPA Section 320 Investments

Section 320 funds have not been used to support Private Sector Capacity Building in this program year.

2019-Present Completed Deliverables

Litter Gitter Activities:

Device locations (City, watershed, funder)

Mobile, Alabama - Funder: City of Mobile

- 6 Litter Gitters in Three Mile Creek
- 2 Litter Booms in Three Mile Creek
- 30 Litter Interceptors in the Three Mile Creek Watershed
- 6 Litter Gitter in Dog River

Daphne, Alabama - Funder: Daphne Utilities

- One Litter Gitter on D'Olive Creek

Foley, Alabama - Funder: City of Foley

- One Litter Gitter on an unnamed tributary to the Bon Secour

Other collection activities

- Routine maintenance (Tactical Cleanups) of Dog River and Three Mile Creek through Litter Boats - funded by the City of Mobile

Collection totals

- Mobile County
 - Litter Collection Devices - 19,414 lbs./ 9,883 cubic feet
 - Tactical Cleanups - 71,085 lbs./ 34,463 cubic feet
- Baldwin County
 - Litter Collection Devices - 1,168 lbs./ 994 cubic feet
 - Tactical Cleanups - 727 lbs./ 323 cubic feet

TAC-3: GOVERNMENT CAPACITY BUILDING



Project	Government Capacity Building
CCMP	TAC-3
Purpose	Expand capacity of local governments to manage and enhance coastal environmental resources
Benefit/Outcome	Improve water quality, Improved health of fisheries, Improved watershed management at local scale, Reduced trash in waterways, Restoration & conservation of stressed habitats
Outputs/Deliverables	Trained county and municipal employees on the use of hydrologic models and software
Clean Water Act Relevance	Improve water quality
Activity for 10/01/2022 through 03/31/2023	Coastal Alabama Regulatory Review complete
Project Partners	Mobile and Baldwin counties, Cities of Mobile, Daphne, Fairhope, Foley
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	5,000
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	5,000
Total Budget	10,000
Available Balance	5,005

Year 5 Deliverables	
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Overview

CCMP success can be measured by the extent to which improved environmental management is institutionalized at the local and state level. This institutionalization can be in the form of government law, training of government staff, and increased coordination across geopolitical boundaries.

Watershed Plan Resolutions: Successful implementation of watershed management plans hinges on partnership-building leading to watershed communities effectively "owning" their watershed plans. Central to this effort is the adoption of the plans by the governing authorities which fall within those watersheds. To achieve this goal, the MBNEP works with local and county governments to pass resolutions of support for completed plans. These resolutions recognize the importance of the watershed plans in protecting water and habitat quality and serve as a first official effort to codify plan recommendations. As WMPs continue to be developed for Alabama's tidally influenced watersheds, the MBNEP will continue to encourage counties and municipalities to pass resolutions supporting completed plans. To date, eight resolutions have been passed by local governments in support of six individual watershed plans:

- D'Olive WMP/Baldwin County and cities of Daphne and Spanish Fort
- Three Mile Creek WMP/City of Mobile
- Dog River WMP/City of Mobile

- Fowl River WMP/Mobile County
- Weeks Bay WMP/City of Foley
- Bon Secour WMP/City of Foley

Local Government Training: On the final day of the three-day annual Gulf Coast Sustainability and Modeling Systems Workshop, conducted to increase the capacity of local engineering, construction, and government employees involved in stream restoration work, a training session was held by Hydrologist John Curry of Hydro, LLC. This single-day session, held specifically for local municipality and county staffs where hydrologic models have been developed, introduced participants to Gridded Surface Subsurface Hydrologic Analysis (SSSHA) software used to model hydrology and inform decisions.

As watershed planning continues and hydrologic models are developed for all tidally influenced watersheds, it is imperative that these plans are institutionalized within local governments to inform resource management planning decisions. To ensure these tools are used to the greatest extent possible, the MBNEP will facilitate a subsequent, more in-depth training program for local municipal and county staffs. This follow up workshop will be scheduled post-pandemic to build the capacity of stormwater management staff use of the products to make planning decisions in a meaningful, scientifically informed manner.

Video Training: The MBNEP has increasingly used video production as a tool to increase the capacity of businesses, governments, and grassroots organizations and gathered videos from news outlets and other external media sources describing MBNEP activities or initiatives. To facilitate ease of access, the MBNEP is developing a video library in spreadsheet form that will be hosted online for viewers and web browsers listing video titles, publication years, producing entities, categories (general, educational, government/municipal, annual meetings, raw footage/B roll) and detailed descriptions. This video library is available on the MBNEP website under Library.

Watershed Implementation Task Forces: A key component of watershed management planning is ensuring an adequate organizational structure is in place to champion implementation recommendations and efforts. Since most watersheds fall across geopolitical boundaries (e.g., the Weeks Bay Watershed, which includes nine municipalities and Baldwin County), intergovernmental cooperation is vital to watershed management success. As the development of WMPs for tidally influenced Alabama watersheds continues, MBNEP will continue to support consortiums of governmental elected officials and staffs and watershed stakeholders, frequently derived from watershed planning steering committees, to ensure adequate organizational structure is in place to lead, guide, and prioritize WMP implementation. Here are highlights of a few already established:

- The D'Olive Watershed, an Intergovernmental Task Force meets quarterly to review WMP implementation status and coordinate uses of resources focused on stormwater management. Both Daphne and Spanish Fort have updated subdivision regulations to ensure consistency across political boundaries.
- The Three Mile Creek Partnership was established to support the City of Mobile and private sector stakeholders in implementing the WMP with a vision of creating a transformational corridor.
- The Fowl River Area Community Association has adopted Fowl River WMP and established an implementation subcommittee and volunteer water quality monitoring workgroup to develop long-term environmental monitoring data.
- Plan Lower Alabama Now (PLAN), overseen by the City of Foley to share and coordinate use of geospatial datasets to better inform watershed community growth and development, was created through a recommendation in the Weeks Bay WMP.
- Weeks Bay Watershed Implementation Team was established to champion implementation of the recommendations in this watershed plan.

South Alabama Stormwater Regulatory Review Update/Revision: In January 2018, the MBNEP published the *South Alabama Stormwater Regulatory Review*, prepared by John Carlton, to provide local governments with a survey of best practices related to regulatory measures for better managing environmental resources. It

reviewed existing laws, regulations, permits, and ordinances at the federal, State, and local levels for jurisdictions within the immediate Mobile Bay Watershed (i.e., Baldwin and Mobile counties). The 27 jurisdictions reviewed include Mobile County and its 11 incorporated towns and cities, Baldwin County and its 14 incorporated towns and cities, and all lands under State and federal jurisdiction. Approximately 50 county and municipal government regulations were reviewed relative to factors influencing stormwater runoff, water quality, wetland protection, and stream and shoreline protection. The codified regulations of each local entity were reviewed, and a chart listing regulatory requirements was prepared. Responses were compiled into a Regulatory Matrix for ease of comparison.

Municipal Training: MBNEP and the Auburn University Water Resources Center held a two-day Nature-Based Stormwater Solutions Workshop February 2023. Over 40 practitioners and representatives from local and regional government, nonprofits, and state agencies attended. Attendance for municipal employees was free. This will expose partners to strategies for integrating nature-based solutions into stormwater management planning and methods for addressing flooding and stormwater impacts.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Government Capacity Building as follows:

Regulatory Review Update: The *South Alabama Stormwater Regulator Review* was updated in 2021 to include reviews of the same stormwater management, natural resource protection, and coastal/shoreline issues reviewed in the 2018 report and develop a matrix of laws, regulations, permits, and ordinances related to the management of trash/litter/recycling and enforcement mechanisms across the same jurisdictions.

2019-Present Completed Deliverables

[Clean Water Future Videos](#)

[South Alabama Stormwater Regulatory Review \(2018\)](#)

[South Alabama Stormwater Regulatory Review Update \(2021\)](#)

[D'Olive WMP Resolution of Support](#)

[Three Mile Creek WMP Resolution of Support](#)

[Dog River WMP Resolution of Support](#)

[Weeks Bay WMP Resolution of Support](#)

[Bon Secour WMP Resolution of Support](#)

TAC-5: GRASSROOTS CAPACITY BUILDING



Project	Water Quality Monitoring
CCMP	TAC-5
Purpose	Expand citizen stewardship of the estuary through voluntary water quality monitoring activities
Benefit/Outcome	Increased community ownership and involvement in local environmental protection activities, Increased knowledge about science, monitoring, habitat management, and restoration of the Mobile Bay estuarine environment
Outputs/Deliverables	Trained water quality monitoring volunteer monitors
Clean Water Act Relevance	Improve water quality
Activity for 10/01/2022 through 03/31/2023	Two reimbursements for water quality chemicals were completed- Wolf Bay Watershed Watch and Dog River Clearwater Revival. Professional Services Contract in process with Mobile Baykeeper to manage Mobile County volunteer water quality monitoring program
Project Partners	Alabama Water Watch, Mobile Baykeeper, Community Action Committee, Wolf Bay Watershed Watch, Dog River Clearwater Revival, Fowl River Area Community Association, Little Lagoon Preservation Society
Year 1 Budget	7,500
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	10,041
Years 1-5 Reprogrammed Dollars	44,784
Total Budget	62,325
Available Balance	8,298

Year 5 Deliverables	Volunteer Monitoring Workshop Log 2019-2023
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Overview

Watershed-based, grassroots organizations lead community-based efforts to promote the wise stewardship of the water quality and living resources of Mobile Bay's estuarine waters. The mission of MBNEP is to provide the necessary tools to support those efforts, accomplished through the delivery of:

- field trips that highlight coastal issues and possibilities,
- outreach and decision support materials,
- specialized training and education opportunities, and
- volunteer engagement in hands-on learning experiences.

These activities cultivate stewardship while improving the quality of Alabama's coastal resources. During the next fiscal year, MBNEP will support and help build capacity of these critical groups and other partners to

successfully “provide the tools to promote the wise stewardship of the water quality and living resources of coastal Alabama.”

Volunteer Water Quality Monitoring: Alabama Water Watch (AWW) is a citizen volunteer water quality monitoring program covering all of the major river basins of the state. The mission of AWW is to improve both water quality and water policy through citizen monitoring and action. Established in 1992, AWW is a national model for citizen involvement in watershed stewardship, largely because of its three interrelated components: citizen monitoring groups, a university-based program, and a non-profit association.

AWW uses EPA-approved monitoring plans with a community-based approach to train citizens to monitor conditions and trends of their local waterbodies. With a “data-to-action” focus, AWW helps volunteers collect, analyze, and understand their data to make positive impacts. The AWW vision is to have a citizen monitor on every waterbody in Alabama. The goal of AWW is to foster the development of statewide water quality monitoring by:

- Educating citizens about water issues in Alabama and the world.
- Training citizens to use standardized equipment and techniques to gather credible water quality information.
- Empowering citizens to use their data to protect and restore their local waters.



The MBNEP Community Action Committee has identified a need for increased training opportunities to provide citizens with the knowledge and skills necessary to effectively participate in resource management decisions at the local, state, and federal levels. Monitors will learn the principles of Alabama Water Watch and how to monitor and evaluate physical, chemical, and biological features of water. Workshops will be offered free of charge to coastal residents and qualify for continuing education units with Auburn University. Volunteer water monitor training will concentrate in the following areas:

- **Bacteriological monitoring:** Levels of *E. coli* and other bacteria in water provide indicators of contamination to determine if water is safe for drinking, swimming, and aquatic life.
- **Water chemistry monitoring:** Testing of six physical and chemical parameters of water to determine pollution sources and long-term trends in water quality. Six parameters are measured, and results can be compared with standards that define conditions for healthy waterbodies.

Development of Volunteer Water Quality Monitoring Strategy for the Coast: To further expand volunteer water quality monitoring efforts, the CAC has identified a need to develop a coastal volunteer water quality monitoring strategy which would assess volunteer monitor needs, determine agreed upon methodology, strategize to increase the number of volunteer monitors testing for bacteria, and promote better coordination and policy changes related to testing methodologies with ADEM and ADPH. Recognizing a gap in the capacity of volunteer water quality monitoring programs to quickly capture and report water quality issues and data, MBNEP identified Water Rangers, an existing, user-friendly, web-based platform that allows the public to

report data related to water quality, animal and plant observations, and pollution as a mechanism to fill that gap. The MBNEP funded new functionality for Water Rangers to improve usability for coastal Alabama residents.

Grassroots Training Initiative: The CAC has identified a need for training opportunities to provide citizens with the knowledge and skills necessary for effectively participating in resource management decisions at the local, state, and federal levels. The CAC has identified training priorities as follows:

- Watershed Education;
- Stormwater runoff education, including how the MS4 permit works;
- Volunteer water quality monitoring;
- Volunteer biological monitoring;
- Volunteer shoreline monitoring; and
- Implementing the *Create a Clean Water Future* campaign.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Grassroots Capacity Building as follows:

Volunteer Monitoring Training and Support: During the past five years 45 monitoring kits were restocked periodically with up-to-date chemicals and 135 volunteers were trained and provided with monitoring kits.

Mobile County Volunteer Monitoring Program: MBNEP remains committed to providing resources and assisting volunteer monitoring. To ensure there is dedicated coordination to assist existing monitoring networks and grow data collection in other local watersheds, MBNEP contracted Mobile Baykeeper to serve in this role. Their charge is to provide chemicals and supplies, coordinate refreshers or other training needs in coordination with Alabama Water Watch, help synthesize data and communicate results, and recruit new monitors.

2019-Present Completed Deliverables

[Volunteer Monitoring Workshop Log 2019-2023](#)

EDUCATION AND PUBLIC INVOLVEMENT: NARRATIVE

The cornerstone of Section 320 of the Clean Water Act is the convening of a Management Conference, made up of Federal, State, and local government; business and industry; academia; and citizens. The purpose of the Conference is to assess trends in water quality; identify causes of environmental problems; determine the relationships between pollutant loads and water quality, natural resources and uses within the service area; development and implementation of a comprehensive plan for addressing environmental management needs; monitor the effectiveness of plan implementation; and most importantly continuously improve environmental management of these resources through behavior change and adoption of best management practices. The effectiveness of this conference depends on education, outreach, and citizen involvement.

EPI-1: PRIVATE SECTOR EDUCATION PROGRAM



Project	Private Sector Education Program
CCMP	EPI-1
Purpose	Improve understanding about local environmental resources with the private sector
Benefit/Outcome	Improved community understanding about watersheds and environmental stressors
Outputs/Deliverables	Comprehensive trash campaign encompassing monitoring of debris, waterway restoration, incentive programming, community outreach, and canoe trips
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	Three Mile Creek Kayak Tours were held October 14 and November 8 with a variety of stakeholders from the business industry such as Downtown Mobile Alliance and Mobile Area Chamber of Commerce
Project Partners	Partners for Environmental Progress, Mobile Area Chamber of Commerce, Eastern Shore Chamber of Commerce, Coastal Alabama Partnership
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	7,000
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	3,720
Total Budget	10,720
Available Balance	6,280
Year 5 Deliverables	Watershed Tours 2019-2023

Overview

Alabama residents recognize a healthy environment is intrinsically linked to their economic, cultural, and community well-being. Private sector support for better environmental management and adoption of best practices is built by reinforcing their understanding and experiences of how healthy ecosystems protect what they value most about living on the Alabama coast.

Watershed Tours: The MBNEP has conducted boat tours on local receiving waters and walking tours of drainage areas and restoration projects for elected officials, private-sector stakeholders, and members of the public at large as a component of watershed management planning and to familiarize this audience with conservation and restoration projects and initiatives. Tours focused on Three Mile Creek and D'Olive watersheds have been used to engage over 200 individuals on various issues and challenges and solutions to them. As planning continues, MBNEP will continue to engage stakeholders during tours to view problems, observe implementation of restoration projects, and to see projects successfully completed. Four tours were conducted this program year- 2 in the D'Olive Watershed and 2 in Three Mile Creek watershed.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Private Sector Education by providing kayaks and canoes for tour participants.

2019-Present Completed Deliverables

[Watershed Tours 2019-2023](#)

EPI-2: PRIVATE SECTOR INVOLVEMENT PROGRAM



Project	Private Sector Involvement Program
CCMP	EPI-2
Purpose	Engage business community in assisting with implementation of the CCMP
Benefit/Outcome	Improved community understanding about watersheds and environmental stressors, Increased involvement of business community in activities to protect estuarine resources, Increased public awareness of environmental issues
Outputs/Deliverables	Invasive species management, Rain barrel installations
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	No activity this period
Project Partners	Alabama Power, Greif-Soterra, AM/NS Calvert, Camp Grace
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	-
Years 1-5 Reprogrammed Dollars	-
Total Budget	-
Available Balance	-

Year 5 Deliverables	
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Overview

Alabama Power/Greif-Soterra Toulmins Spring Rain Barrel Partnership: Initially begun as a 2017 activity of the Coastal Alabama Conservation Corps, the Rain Barrel Partnership provides rain barrels, initially donated by the **Coca Cola Bottling Company** and now by Greif, to minority, low-to-moderate income residents living in the flood-prone, low-lying Toulmins Spring Branch Sub-watershed of the Three Mile Creek Watershed. Each harvest system includes two 55-gallon rain barrels, gutters, downspouts, and hardware that provide these Prichard residents (who pay disproportionately high rates for water) with a free source of non-potable water for watering lawns or gardens. Rain barrels are a low impact development measure recommended in the 2016 *Prichard Drainage Study* prepared for the Mobile County Commission by the MBNEP to reduce volumes and velocities of stormwater runoff causing flooding and impacting the receiving waters of Toulmins Spring Branch.

This Program is dependent upon private sector volunteers. Greif, a local land management company, and its subsidiary Soterra have donated three hundred and ninety-eight 55-gallon barrels to provide rainwater harvest systems for 100 residents. Alabama Power Service Organization members from the Plant Barry Environmental Stewardship Team install the rain barrel harvest systems at the homes of resident applicants on scheduled workdays. Considering the nearly two-year suspension due to the pandemic, the program reached a significant milestone of 125 two-barrel systems installed since 2019.

AMNS Calvert Partnership: The MBNEP is cultivating a relationship with employee members of the AM/NS Calvert Associates Program, made up of young engineers and other professionals who have committed to assisting our Program with implementation of the *Three Mile Creek Invasive Species Control Plan*. Members have committed to spending one day per month volunteering to assist in the eradication of Chinese privet, popcorn trees, wild taro, and other riparian invasive nuisance species (INS) whose distribution was mapped in the Plan. With plans to ultimately assist in control of INS along One Mile Creek, volunteers have spent days along Three Mile Creek on the campus of the University of South Alabama. Volunteers manually pulled privet seedlings in areas where recruitment was noted before the issue became a bigger problem and the privet could progress unchecked to form a monoculture, choking out native vegetation. With schedules modified by the COVID-19 pandemic, Associate Program volunteer activities have been temporarily postponed.

Camp Grace Rain Barrel Partnership: In early 2022, friends of Camp Grace, a nonprofit serving other nonprofits, contacted MBNEP about ongoing erosion caused by stormwater runoff. We were able to quickly assemble a volunteer group of 15 engineers, contractors, and resource management professionals, representing seven different firms (Allen Engineering, Goodwyn, Mills, Cawood, Hydro LLC, Mott MacDonald, Streamline Environmental, Thompson Engineering, Volkert Inc.), to hold a stormwater summit to develop practical solutions to alleviate on-site stormwater runoff impacts potentially threatening Camp buildings, infrastructure, and guest safety. Meeting outcomes were used to provide Camp Grace with a list of priority measures to address identified issues.

In August 2022, implementation of Phase I priority measures began with construction to mitigate the most concerning stormwater runoff problems. During this time Alabama Power's Service Organization assisted with a rain barrel installation on four cabins. To date, nearly \$30,000 has been donated in-kind and for supplies to Camp Grace because of these efforts. In the coming year we will continue to work with Camp Grace to monitor site conditions and install more rain barrel systems with Alabama Power.

Status of EPA Section 320 Investments

Section 320 funds have not been used to support Private Sector Involvement.

2019-Present Completed Deliverables

[Rain Barrel Program Status Report](#)

EPI-3: COMMUNITY EDUCATION PROGRAM



Project	Community Education Program		
CCMP	EPI-3		
Purpose	Educate community about watershed, ecosystem characteristics, environmental stressors, and project components		
Benefit/Outcome	Increased public awareness of environmental issues		
Outputs/Deliverables	<i>Alabama Current Connection</i> Newsletter	Educational signage	Educational videos
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards		
Activity for 10/01/2022 through 03/31/2023	Fall issue focused on the relationship between art and the environment was released in November	No activity this period	Facebook promotions, video b-roll services
Project Partners	ADCNR, MBNEP	Mobile and Baldwin counties, Cities of Mobile, Daphne, Fairhope, Foley	
Year 1 Budget	8,000	5,000	30,000
Year 2 Budget	8,000	-	19,952
Year 3 Budget	8,000	4,000	8,783
Year 4 Budget	7,000	2,000	18,912
Year 5 Budget	8,000	-	5,000
Years 1-5 Reprogrammed Dollars	(6,890)	-	180
Total Budget	32,110	11,000	82,827
Available Balance	7,000	5,080	23,510

Year 5 Deliverables	Current Connection: Spring 2022 and Current Connection: Fall 2022		
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Overview

Alabama Current Connections Newsletter: Raising environmental awareness involves translating the technical language of a natural science or related field into terms and ideas a non-scientist can easily understand. It helps if it is presented in a way that is entertaining and interesting to the coastal Alabama public. The Alabama Current Connection is a joint newsletter published by the MBNEP and the ADCNR-State Lands Division, Coastal Section to highlight current projects and initiatives, MBNEP Management Conference activities, and other issues of interest to coastal residents.

Signage: MBNEP develops and installs educational and interpretive signs in public places adjacent to on-the-ground projects to educate the public about 1) where they are in the watershed, 2) the ecosystem in the project

area, and 3) project details. The signs have already been installed at Dog River Park, Helen Wood Park, Brooks Park, Steele Creek Lodge, and Prichard's Jackson Reading Park.

In addition, MBNEP installs roadway signage to create awareness within communities about local watersheds and drainage to local receiving waters in the coastal area. To date, road signage has been installed in the following watersheds:

- | | | |
|-------------------|--------------------|----------------------|
| ○ Bayou La Batre | ○ Three Mile Creek | ○ Magnolia River |
| ○ West Fowl River | ○ Eight Mile Creek | ○ Bon Secour Complex |
| ○ Fowl River | ○ D'Olive Creek | ○ Wolf Bay |

Video Production/Digital Media: The MBNEP has increasingly used video production to annually share Program activities, challenges, and accomplishments and to educate elected officials and municipal and county staffs on stormwater management, MS4, use of best management practices, and low-impact development; communities on watershed dynamics and environmentally favorable initiatives and behaviors.

In June 2020, the MBNEP released a short film, *The Unintended Consequences of Convenience – The Story of Coal Ash in Alabama* to weigh the benefits and disadvantages of two imperfect closure options imposed by the federal government. The MBNEP began development of the film after being approached by stakeholders and elected officials seeking information on Alabama Power's plan to close the coal ash pond at Plant Barry. During the course of research and production, the MBNEP gathered extensive literature related to the CCR Rule and closure options and contracted two firms to conduct independent analysis of hydrologic factors and structural integrity related to Alabama Power's plans to close the pond in place. ***This film was financed through non-federal sources of funding.***

In addition to the production of annual meeting videos, this past year MBNEP produced a short video to chronicle the development of trash abatement activities along the Alabama Coast.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Community Education as follows:

Signage: Install signage in the following locations: Bayou La Batre, West Fowl River, Magnolia River, Wolf Bay.

Video Production: Produce in whole or in part, the videos shown in our Video Library.

Newsletter: Co-produce a semi-annual newsletter, *Alabama Current Connections*, with the State of Alabama Department of Conservation and Natural Resources.

2019-Present Completed Deliverables

[Current Connection Newsletter, Summer 2018](#)

[Current Connection Newsletter, Spring/Summer 2019](#)

[Current Connection Newsletter, Summer 2020](#)

[Current Connection Newsletter, Spring 2020](#)

[Current Connection Newsletter, Spring 2021](#)

[Current Connection Newsletter, Spring 2022](#)

[Current Connection Newsletter, Fall 2022](#)

[Langan Park Apple Snails- Educational Signage](#)

[Bayou La Batre Watershed Signage](#)

[West Fowl River Watershed Signage](#)

[Wolf Bay Watershed Signage](#)

[Magnolia River Watershed Signage](#)

[MBNEP Video Library](#)

EPI-4: CLEAN WATER FUTURE CAMPAIGN



Project	Clean Water Future Campaign
CCMP	EPI-4
Purpose	Educate the residents of Mobile and Baldwin Counties about ways to decrease harmful stormwater runoff
Benefit/Outcome	Improved community understanding about watersheds and environmental stressors, Increased public awareness of environmental issues
Outputs/Deliverables	Marketing campaign involving production of educational materials available on a website or distributed at community meetings and events
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	No activity this period
Project Partners	TC Boiler, Rogers and Willard
Year 1 Budget	15,041
Year 2 Budget	-
Year 3 Budget	5,000
Year 4 Budget	3,616
Year 5 Budget	5,000
Years 1-5 Reprogrammed Dollars	59,290
Total Budget	87,647
Available Balance	45,859

Year 5 Deliverables	WKRK Trash Blows ADSFR Campaign
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Overview

With stormwater runoff providing the primary source of pollution to American waters, MBNEP, through its Business Resources Committee, hosts a stormwater media campaign, *Create a Clean Water Future*, to encourage wise stewardship of our estuarine waters and raise awareness of the importance of clean water to recreational and commercial uses, our economies, and our environment. Through the content of the CCWF framework, businesses, schools, groups, and communities are improving their understanding and actions related to reducing polluted runoff and preserving our unique way of life, dependent on healthy waterways.

The CCWF campaign explains what stormwater is and encourages actions resulting in the reduction of stormwater pollution at both individual and community levels. The campaign features a membership pledge for new affiliates, an attractive brand identifying members to their markets, an informative website with effective message delivery usable for diverse audiences, literature and videos, open-source signs and billboards, and even links to where more environmentally sustainable products can be purchased.

Trash Blows: The MBNEP has successfully transformed one special event, the Alabama Deep Sea Fishing Rodeo, with a concentrated focus on recreational fishing, into one that encourages positive stewardship behaviors through it's "Trash Blows" campaign, to reduce incidences of truck bed and recreational boat-carried

trash blowing onto roadways during transportation. The MBNEP continues to work in partnership with the Town of Dauphin Island to install signage, including strategically placed banners and street signs (which are meticulously recovered, post-event), raising awareness of the problems of inadvertently dispersed trash. MBNEP provides a presence in the Rodeo tent and hosts a social media campaign that awards t-shirts to participants posting pictures of videos of trash cleanup activities on social media.

Status of EPA Section 320 Investments

Section 320 funds have been used to support the *Clean Water Future* campaign as follows:

The Create a Clean Water Future Website: The MBNEP supports operations and improvements to the *Create a Clean Water Future* website. It is actively maintained and updated to provide information about pollutants and resources to avoid or mitigate them, along with tips for children, teens, adults, retail businesses, restaurants, and schools to ensure healthy waters for generations to come. While the primary role of the CCWF campaign involves raising awareness, it also involves building individual and community capacity to make appropriate decisions resulting in cleaner, less-impaired coastal Alabama waters.

2019-Present Completed Deliverables

[Clean Water Future Website](#)

[Environmental Education Program Guide](#)

[WKRG Trash Blows ADSFR Campaign](#)

EPI-5: COMMUNITY EVENTS PROGRAM



Project	Special Events	
CCMP	EPI-5	
Purpose	Educate the public about the things that are valued most about living in coastal Alabama	
Benefit/Outcome	Improved community understanding about watersheds and environmental stressors, Increased public awareness of environmental issues	
Outputs/Deliverables	Sponsorships for community events	Outreach materials for community events
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards	
Activity for 10/01/2022 through 03/31/2023	Events sponsored this period: Sustainability Summit, Coastal Kids Quiz, and Fort Morgan Oyster Fest. 2023 Bays and Bayous Symposium was held January 24-25, 2023 with 465 attendees	Promotional materials with educational messaging to engage stakeholders in wise stewardship of Alabama's estuaries purchased this period include: koozies, stickers, golf towels, and sunflower seed packets
Project Partners	MBNEP, MASGC	
Year 1 Budget	7,500	5,000
Year 2 Budget	7,500	5,000
Year 3 Budget	3,500	3,748
Year 4 Budget	8,000	3,000
Year 5 Budget	10,000	2,500
Years 1-5 Reprogrammed Dollars	-	500
Total Budget	36,500	19,748
Available Balance	10,268	(558)

Year 5 Deliverables	Bays and Bayous Final Report	
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Overview

Special Event Sponsorships: Special events like the Dauphin Island Sea Lab's Discovery Day, Alabama Coastal Birdfest, (Three Mile) Creek Fest, Stan Mahoney Youth Fishing Tournament, and Alabama Coastal Cleanup provide positive and engaging opportunities to educate the public about protecting the things most valued about living in Coastal Alabama. MBNEP will continue to support and provide a presence and a credible source of information at local environmental events in the two coastal counties. The Program will maintain an annual calendar of festivals/events to coordinate support and participation.

Bays and Bayous Symposium: The Bays and Bayous Symposium is organized by the Mobile Bay National Estuary Program, Mississippi-Alabama Sea Grant Consortium, and many partners. This biennial two-day event will include presentations and discussion by resource managers, scientists and active participants in watershed stewardship who will share the latest understanding of the condition of the lands, waters and living resources of the northern Gulf of Mexico. Bays and Bayous showcases the latest information about the changing watersheds,

impacts from major stressors, recovery programs for species and habitats, and emerging challenges. The symposium typically includes 150-200 poster and oral presentations and is a networking opportunity for the 350 to 450 coastal science professionals and students who attend.

Promoting Stewardship at Local Events: MBNEP's purpose is to provide the tools to support community-based efforts to promote wise stewardship of the water quality and living resource base of Mobile Bay, its tributaries, and the Mobile-Tensaw Delta. Public education is essential to raising environmental awareness and promoting behaviors that will lead to sustainability of the resources that draw people to the coast.

Status of EPA Section 320 Investments

Section 320 funds have been used to support Community Events as follows:

Event	2019	2020	2021	2022	2023 BUDGET	TOTAL
Soil & Water Conservation Annual Meeting	500.00					500.00
Green Coast Council Sustainability Summit	500.00	500.00	500.00	500.00	500.00	2,000.00
Alabama Coastal Cleanup	500.00	524.19	500.00	500.00	500.00	2,024.19
Bays & Bayous Symposium				5,000.00		5,000.00
CreekFest			2,500.00	2,500.00	2,500.00	5,000.00
DISL Graduate Student Symposium			500.00			500.00
Fors & Corks	500.00					500.00
Mike deGruy Movie	2,500.00					2,500.00
Cocktails with Critters Silent Auction	39.88		41.26	40.23	50.00	121.37
Dauphin Island Native American Festival	1,000.00	3,000.00				4,000.00
MLK Day of Service	121.75					121.75
Mobile Chamber Business Expo	275.00					275.00
Gulf Coast Land Conservation Conference	500.00					500.00
Coastal Kids Quiz	250.00		250.00	250.00	250.00	750.00
JAGServes! Career Fair	25.00					25.00
Alabama Coastal Birdfest	250.00	250.00	250.00	250.00	250.00	1,000.00
Stan Mahoney Fishing Tourney	300.00		500.00	500.00	500.00	1,300.00
Auburn Univ. Plant Identification Course				500.00		500.00

Bays and Bayous Symposium: Bays and Bayous will be held January 23-25, 2023, at the Arthur R. Outlaw Mobile Convention Center in Mobile, Alabama. Registration, abstract submittal, and sponsorships are done through a Bays and Bayous website, created and maintained by MBNEP.

2019-Present Completed Deliverables

[Bays and Bayous Symposium Website](#)

[2023 Bays & Bayous Final Report](#)

EPI-5: MANAGEMENT CONFERENCE SUPPORT (ALL STAKEHOLDERS)



Project	Management Conference Support
CCMP	EPI-5
Purpose	Sustain and expand stakeholder involvement in the implementation of the CCMP 2018-2023
Benefit/Outcome	Improved community understanding about the issue of trash and how to improve management of this waterway impairment
Outputs/Deliverables	Quarterly meetings of the Management Conference Committees and organizational development
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	The 2022 Annual Breakfast was held on December 15, 2022 with 138 attendees; Government Networks & Executive Committee both met on 3/31/23
Project Partners	
Year 1 Budget	4,000
Year 2 Budget	54,000
Year 3 Budget	10,000
Year 4 Budget	-
Year 5 Budget	4,948
Years 1-5 Reprogrammed Dollars	(55,808)
Total Budget	17,140
Available Balance	357

Year 5 Deliverables	Annual Meeting 2022 presentation
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Overview

Efforts to engage and inform key stakeholders of past efforts and future projects of the MBNEP are accomplished through quarterly meetings of and engagement with Management Conference committees. The Management Conference comprises diverse stakeholder committees who develop and implement the strategies of the CCMP. The MBNEP serves as a catalyst for activities of the Management Conference, helping to build community based organizational capacity for sound resource management and leveraging commitment and investment to ensure the sustainability of Alabama's estuaries and coast.

Management Conference Committee Coordination: The most important role of the MBNEP is its function as a backbone organization or convenor of stakeholder interests. Our job is to keep everyone at the table and focused on implementing a common agenda, the CCMP. We do this through the coordination of seven different management conference committees: Government Networks, Business Resources, Project Implementation, Science Advisory, Community Action, and Executive. These committees meet quarterly with a focus on implementing the strategies associated with their sections of the CCMP.

Status of EPA Section 320 Investments

Section 320 funds have been used to support the MBNEP Management Conference as follows:

Government Networks Committee Meetings: Each quarter, the MBNEP brings together elected officials and State Agencies to discuss local concerns and needs and provide a space for education about State and Federal programs and priorities. Three meetings were supported with Section 320 funding to provide refreshments at these early morning meetings.

Annual Breakfast: Each year MBNEP holds an annual breakfast/meeting to educate the Management Conference about the past year's accomplishments as well as recognize members for their service to the coastal area.

2019-Present Completed Deliverables

[Annual Meeting Video 2018: *The Absence of Doubt*](#)

[*The Unintended Consequences of Coal Ash*](#)

[Annual Meeting Video 2021: *True Grit*](#)

[Annual Meeting Presentation 2022](#)

EPI-5: CCMP UPDATE



Project	CCMP Update
CCMP	EPI-5
Purpose	Sustain and expand stakeholder involvement in the implementation of the CCMP 2018-2023
Benefit/Outcome	Increased community involvement in and support for stewardship, volunteer, and educational opportunities
Outputs/Deliverables	Comprehensive Conservation & Management Plan Update
Clean Water Act Relevance	Improve monitoring of wetland function & coverage, Improve water quality, Support TMDL implementation, Support water quality standards
Activity for 10/01/2022 through 03/31/2023	Contract executed with Shafer Consulting for CCMP Evaluation and ESA for Watershed Plan Assessment
Project Partners	
Year 1 Budget	-
Year 2 Budget	-
Year 3 Budget	-
Year 4 Budget	-
Year 5 Budget	150,000
Years 1-5 Reprogrammed Dollars	170,589
Total Budget	320,589
Available Balance	281,389
Year 5 Deliverables	

Overview

On January 13th 2021, H.R.4044, the [Protect and Restore America's Estuaries Act](#), was signed into law. Introduced to the House in 2019 through the Transportation and Infrastructure Committee and sponsored by Rep. Tom Malinowski (D – NJ), the act reauthorizes appropriations for the National Estuary Program until 2026 and nearly doubles the annual funding authorization. It also expands the range of supporting projects which would qualify for grants and recognizes the increasing threats towards estuaries such as pollution, accelerated land loss, and risks to biodiversity. These actions demonstrate a clear recognition by Congress of the economic and environmental importance of wetlands and coastal environments in the United States.

One of the conditions of reauthorization is the need to either revise or update our Comprehensive Conservation and Management Plan for Alabama's Estuaries and Coast. The current CCMP was first developed for the period 2013-2018. This plan was revised for the period 2019-2023. Given, this workplan represents what we project to be done in the final year of this five-year CCMP implementation program, it is time for us to assess what has been done, identify gaps, gather additional information, and strive to produce a new CCMP which refines and improves the targeting of actions to improve environmental management across the Alabama coast for the next five-year period.

Status of EPA Section 320 Investments

Recognizing the need to move forward with CCMP planning, MBNEP is not only reprogramming funding from Year 4's workplan, but also adding funding from Year 5 to complete an extensive program of evaluation, assessment, input, and strategy development, all of which will inform a new CCMP for 2023-2028. The path for creating a new CCMP will include the following:

CCMP Rewrite Components		Past Year EPA (Reprogrammed)	Year 5 Funding 2022-2023
Community Input	<ul style="list-style-type: none">• Compilation of Input• Demographic Changes/Community Perceptions• Engaging underserved communities• Socioeconomic assessment	60,000	
CCMP Implementation Assessment	<ul style="list-style-type: none">• Evaluation of efforts• Inventory of activities• Outcomes/Gaps• Areas for further study• Value added	60,000	
Environmental Stressor Assessment/Data Development	<ul style="list-style-type: none">• Levels of environmental stress• Data compilation/development needs	50,589	
Management Conference Engagement and Strategy Development	<ul style="list-style-type: none">• Education about findings• Strategy development		100,000
CCMP Document	<ul style="list-style-type: none">• Publication of CCMP for 2023-2028		50,000
		170,589	150,000

2019-Present Completed Deliverables

NA

PROGRAM IMPLEMENTATION: NARRATIVE

MPA: PROGRAM IMPLEMENTATION

The MBNEP Program Office works closely with all MBNEP Management Conference members on initiatives related to the CCMP. The Management Planning and Administration (MPA) budget provides resources for the Program Office to continue program planning, development, implementation, evaluation, and reporting. The staff provides organizational and logistical support for all the Management Conference committee meetings and coordinates/communicates as necessary with appropriate groups, including user groups, State, local, and federal agencies, and professional groups relevant to CCMP development and implementation. Staff provide EPA-required documents; develop and administer grants/contracts; monitor projects including coordination of work plans, progress reports, and draft/final reports with project leads; coordinate project work plans and activities with other local, State and Federal agencies; and provide for overall program coordination.

Travel

The administration amount usually includes \$10,000 for travel related to outreach and technology and information transfer per year. However, due to COVID-related travel limitations, prior year travel funding is still available, and only \$3,000 of additional funds were added to the Travel line. Program staff will participate in regional, state, and national conferences and meetings relevant to estuarine management. Attendance at Association of National Estuary Programs workshops and EPA workshops / meetings will be stressed.

Indirect Cost Rate

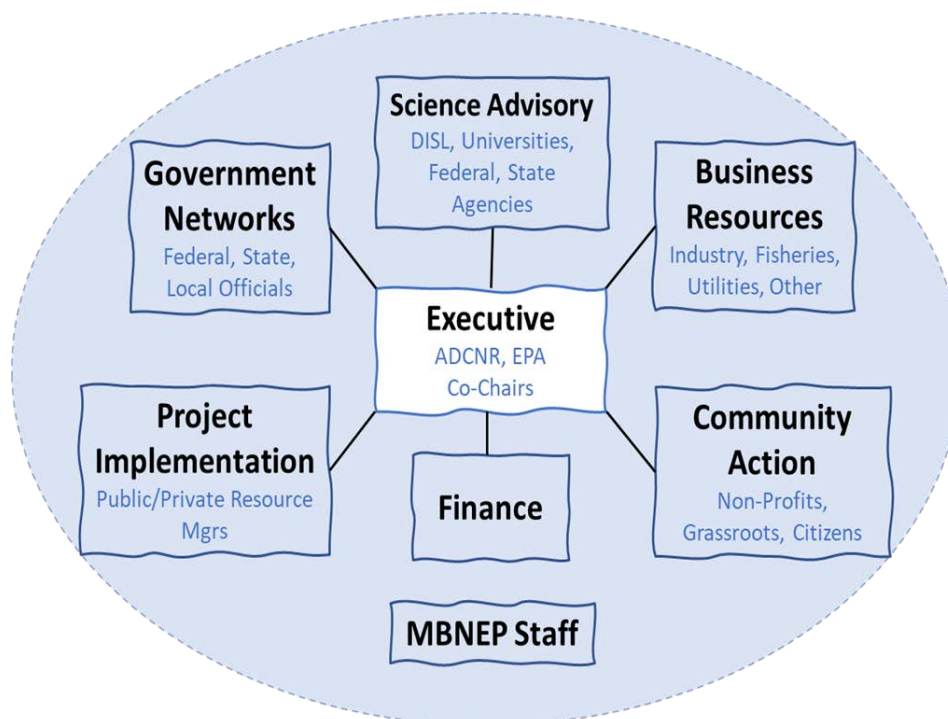
The Dauphin Island Sea Lab is the administrative sponsor of the MBNEP and has a federally approved indirect rate of 43.8%. The cost of DISL administrative support is discounted for the MBNEP to 15% of all expenditures related to the U.S. EPA grant and any other small external grants awarded to the MBNEP. Based on a 15% indirect charge, the MBNEP can capture the 28.8 % unrecovered costs as additional match for the program. For all large external grants, the DISL follows federal regulations of charging 43.8% indirect costs to all direct activities and to the first \$25,000 of each contract executed as part of each external grant.

Staffing Plan

Position	Employee	Responsibilities
Director	Roberta Arena Swann	Generates financial and political support for program; participates in regional and national initiatives associated with program; engages in project identification and design; builds collaborative teams for accomplishing objectives; liaison between Program and local governments and other public agency leaders; spokesperson for estuary related activities and needs; oversees program activities.
Business and Grants Manager	Tiffany England	Maintains budget, project files, financial record keeping, grant reporting; coordinates logistics and promotional materials for educational outreach and special events.
Program Administrator	Bethany Hudson	Planning, development, implementation, and management of database processes; provides services associated with office manager as well as technical editing and graphic design.
Restoration Program Lead	Jason Kudulis	Coordinates activities of Project Implementation Committee in their facilitation of the Program's watershed approach to restoration, protection, and conservation; oversight of all restoration-related projects, including project design, implementation, coordination, and monitoring; develops, initiates, and coordinates baseline data collection.
Public Sector Program Lead	Christian Miller	Coordination of the Government Networks Committee; engages partners for the development of comprehensive watershed management plans for all coastal Alabama intertidal watersheds.
Science & Monitoring Program Lead	Blair Morrison	Coordination of the Science Advisory Committee; conducts stressor assessments; provides coordination support to scientific research interests.
Private Sector Program Lead	Henry Perkins	Coordination of the Business Resources Committee; cultivates relationships with a focus on the business community; enlists local business community participation in watershed management planning and implementation.
Community Engagement Program Lead	Shemika Brown	Coordination of the Community Action Committee; engages diverse communities and educates audiences about issues affecting the Alabama coast and activities being undertaken to mitigate stress on coastal resources.
Communications Manager	Marti Messick	Coordinates distribution of public information, including press, outreach materials; communicates the value of MBNEP through special events and media.

THE MANAGEMENT CONFERENCE

MBNEP initiated a reorganization of the Management Conference in 2006. The structure was revised to better provide a mix of Policy Makers (both public and private), Implementers (both public and private), and Grassroots (community groups and citizens) to ensure expanding support for CCMP implementation and identification and engagement of emerging issues related to CCMP objectives. The ultimate goal is an increased ability to function as a community capacity builder and provide improved public services in the environmental area to our coastal communities. Due to lack of activity, the Community Resources Committee was disbanded in August, 2021. The Mobile Bay NEP Management Conference now consists of five main committees: Community Action, Government Networks, Science Advisory, Business Resources and Project Implementation Committees.



- **The Community Action Committee** is composed of representatives of environmental grassroots organizations who work together to network, share information, develop issues, and provide cooperative training.
- **The Business Resources Committee** brings together a balance of interested community leaders from industry, business, environmental services, fishing, tourism, and other professional fields to identify commonalities among sectors to resolve coastal issues that impact their interests and develop resources and funding.
- **The Government Networks Committee** is made up of State agency heads, regional government administrators, and local officials of the southern Alabama area. The goal of this committee is to educate local officials about State priorities and programs and provide a venue for local officials to communicate local needs more effectively.
- **The Project Implementation Committee** includes representatives of resource management agencies and organizations that undertake projects related to CCMP objectives and goals.

- **The Science Advisory Committee** includes experts from the various scientific disciplines who provide insights, research, and a sound basis to be used by the other committees in their decision-making processes.
- **The Finance Committee** includes community leaders that are committed to assisting in the development of non-Federal matching dollars to implement activities of the CCMP.
- **The Executive Committee** is made up of representatives from each of the four main committees, EPA, the Science Advisory Committee, the Finance Committee and three at-large members – develops policies on issues and funding, reviews/approves work plans and budgets, evaluates the performance of the Director, and sets financial goals.

A key principle of the Management Conference is to coordinate and cooperate with other ongoing resource management activities to avoid unnecessary duplication. In this regard, the program office plays a major role in coordinating estuary projects and outreach activities, thus providing a more far-reaching benefit than that of simply CCMP project management. During the next program year, MBNEP will continue to promote this management structure as a mechanism for garnering stakeholder ownership in implementing the CCMP.

FEDERAL PARTNERS



EPA Allocation and Non-Federal Matching Share

Each year the MBNEP receives an allocation from EPA to support activities geared toward achieving the objectives of the CCMP. These funds require a one-to-one match. Our current program is being supported by 3.3 million in federal dollars with more than 20 million dollars in matching funds and awards.



Gulf of Mexico Program (GMD)

The Gulf of Mexico Program facilitates collaborative actions to protect, maintain, and restore the health and productivity of the Gulf of Mexico in ways consistent with the economic well-being of the Region.



Mississippi-Alabama Sea Grant Consortium (MASGC)

The Mississippi-Alabama Sea Grant Consortium is dedicated to activities that foster the conservation and sustainable development of coastal and marine resources in Mississippi and Alabama. Sea Grant is NOAA's primary university-based program in support of coastal resource use and conservation. The MASGC is an important partner to MBNEP in implementing many CCMP actions. MASGC provides technical expertise, program development assistance, and valuable research and is a leader of many initiatives related to CCMP objectives. At present, MBNEP is a member of the MASGC Advisory Council, and the MASGC Director sits on the MBNEP Executive Committee.



U.S. Army Corps of Engineers Participation (USACE)

The U.S. Army Corps of Engineers (USACE) actively participates in the implementation of many of the actions of the CCMP. At present, the Corps is a member of the City of Mobile Mayor's Task Force to coordinate implementation of the Three Mile Creek Watershed Plan. In addition, MBNEP works closely with USACE to coordinate permitting and environmental project planning.

STATE RESOURCES



AL Department of Conservation and Natural Resources State Lands (ADCNR)

Because ADCNR has a long term interest in Alabama's Coastal Resources and the statutory responsibility for the conservation, management, and protection of these resources through its State Lands Division, Marine Resources Division, Wildlife and Freshwater Fisheries Division, State Parks Division and particularly through the Alabama Coastal Area Management Program, it has entered into a memorandum of agreement to provide annual funding to MBNEP as part of its non-Federal match requirement, as an investment toward implementation of the CCMP. MBNEP has received over \$860,000 over the past nine years and additional NOAA related grants, which are used to produce the *Alabama Current Connection* newsletter. *Alabama Current Connection* is a joint newsletter published by the ADCNR State Lands Division Coastal Section and the MBNEP to highlight current projects, management conference activities, and other issues of interest to coastal residents.



State of Alabama

MBNEP met with the head of ADECA on March 17, 2006 to request additional State funding support for the program. After much discussion and initial support by ADECA, MBNEP decided on pursuing other opportunities within State government for ongoing support. In 2007, MBNEP was added as a line item in the State budget through the auspices of the Dauphin Island Sea Lab for a designated amount of \$250,000 in 2007. This funding has been reduced to \$76,088 for the past several years with an increase to \$100,000 in 2021.

State Match	Year U1	Year U2	Year U3	Year U4	Year U5
State Appropriation	76,088.00	76,088.00	76,088.00	100,000.00	100,000.00
ADCNR	98,000.00	98,000.00	98,000.00	90,000.00	90,000.00

LOCAL RESOURCES

The following local governmental entities provide continuing financial assistance to the MBNEP on an annual basis to support the implementation of the CCMP. Although these communities only allocate funding annually, MBNEP anticipates expanded support from these and other coastal communities in the future. MBNEP will reach out to the City of Mobile, Daphne, Spanish Fort, Fairhope, Saraland, Satsuma, Chickasaw, Saraland, Spanish Fort, Dauphin Island, Gulf Shores, and Foley for additional investment. Past annual investment from municipalities includes:

Non-Federal Match	Year 1 / FY 2019	Year 2 / FY 2020	Year 3 / FY 2021	Year 4 / FY 2022	Year 5 / FY 2023 ACTUAL
State Appropriation	76,088	restricted	76,088	100,000	100,000
ADCNR	98,000	98,000	90,000	90,000	90,000
Baldwin County	50,000	75,000	75,000	75,000	75,000
Mobile County	17,888	17,888	25,000	50,000	75,000
City of Mobile	50,100	50,100	50,100	50,100	50,100
City of Daphne	50,000	50,000	50,000	50,000	50,000
City of Spanish Fort	5,000	5,000	5,000	5,000	5,000
City of Fairhope	5,000	15,000	15,000	15,000	15,000
Dauphin Island				5,000	5,000
Satsuma					-
Saraland				5,000	-
Chickasaw					-
City of Foley	20,000	20,000	20,000	27,000	40,000
City of Gulf Shores		2,500	2,500	2,500	-
Carry Over from 467		20,000			-
Alabama Power/Other private			15,000		7,500
Transfer match for ADCNR					(30,000)
Total Non-Federal Match	372,076	353,488	423,688	474,600	482,600

IN-KIND CONTRIBUTIONS

MBNEP depends on volunteer support and local contributions or other in-kind services to achieve program success. This in-kind support is generated from volunteer labor hours related to activities including but not limited to oyster gardening, crab monitoring, trap removals, and participation in area events. Based on a 15% indirect charge from DISL, the MBNEP can capture the 28.8 % unrecovered costs as additional in-kind match for the program. Other in-kind services include use of city-owned machinery, the value of land donated for conservation purposes, and private donations to cover expenses incurred for events and activities carried out by local grassroots organizations and sponsored by MBNEP.

PART TWO: PAST YEAR ACCOMPLISHMENTS

Mobile Bay National Estuary Program Semi Annual Report as of March 31, 2022

The mission of the Mobile Bay National Estuary Program (MBNEP) is to promote wise stewardship of the water quality and living resources of Alabama's estuarine systems. Funded in part by the U.S. EPA and administratively sponsored by the DISL, MBNEP is a non-regulatory program, bringing together citizens; local, state, and federal government agencies; businesses and industries; conservation and environmental organizations; and academic institutions to meet the environmental challenges that face the unique and imperiled resources that characterize our coastal estuaries. The MBNEP is part of the Sea Lab's Coastal Policy Program.

Project	Activities	Activity Status for 10-1-2021 through 03-31-2022	Product	Benefit/Outcome
Coastal Monitoring Program				The provision of technical assistance to the Science Advisory Committee ensures robust scientific vetting of issues, guidance in the development of frameworks used to track environmental progress, and engagement of scientists from a variety of disciplines in developing common goals for tracking environmental health.
	Little Lagoon	Dr. Beebe completed groundwater sampling and preliminary analysis of nutrient distribution in Little Lagoon. Collected samples from 29 unique locations.		
	Gulf Frontal	Marlon accomplished the collection of field data for 6 surface-water and 2 groundwater monitoring sites in the Little Lagoon project area and submission of water samples to the laboratory. To date, 82 water samples and 74 field parameters have been collected. Water levels were measured in 11 wells and a pumping test was performed on one well.		
Environmental Monitoring				Increased knowledge about environmental status and trends and environmental response to restoration activities.
		No activity this period		

Project	Activities	Activity Status for 10-1-2021 through 03-31-2022	Product	Benefit/Outcome
Watershed Planning		<i>\$17,208 reprogrammed from Management Conference Support; \$7,500 reprogrammed to Volunteer Monitoring</i>		More effective watershed management plan implementation.
	Mobile Tensaw Apalachee Plan-Watershed Forum	Activity complete		
Watershed Implementation				More engaged and educated stakeholders.
	Three Mile Creek Case Statement	Activity complete		
	Three Mile Creek Tour	Tours were held October 22, November 4, and March 31 with a variety of stakeholders from the business industry such as Alabama State Port Authority, 22nd State Bank, Groundworks Mobile, 3MC Partnership Board members, etc.		
	Three Mile Creek Rain Barrel Program Outreach	Activity complete		Prichard Drainage Study recommendations to reduce volumes and velocities of stormwater runoff in this low-income, flood prone sub-watershed of Three Mile Creek have been implemented, and residents have been engaged and educated about stormwater management while receiving a free source of non-potable water.
Invasive Species Management				Reduced populations of invasive species
	Three Mile Creek Invasive Species Management	Facilitated regular meetings of Three Mile Creek invasive species management team. Continued manual and chemical control of apple snails in TMC Watershed. Continued chemical and manual removal of terrestrial invasives in TMC Watershed.	Apple Snails 2021 Report	
ADA Improvements				Provision of access for handicapped stakeholders to Gulf and Mississippi Sound beaches.
	Dauphin Island ADA Mats Installation	Complete		
		Began planning for another installation in City of Foley		

Project	Activities	Activity Status for 10-1-2021 through 03-31-2022	Product	Benefit/Outcome
Fisheries Industry Support and Enhancement				Preservation of fishing heritage and increased adoption of business practices improving water and habitat quality.
	Alabama Oysters Website	Website launched October, 2021; Expanded to include oystermen and seafood distributors.	OystersAlabama.com	
	Oyster Revolving Loan Fund	The fund entered the implementation stage and the process was formalized. The first loan was issued February 17. A community meeting held March 22 with 60 oyster farmers and catchers in attendance.		
Government Capacity Building				Increased capacity of local governments to manage and enhance coastal environmental resources.
	Municipal Training	Planning initiated for late Summer 2022		
	Coastal Alabama Regulatory Review	Finalized and released South Alabama Stormwater Regulatory Update	South Alabama Stormwater Regulatory Review Update	
Water Quality Monitoring		<i>\$5,000 reprogrammed to Fisheries Capacity Building; \$7,500 reprogrammed from Watershed Planning</i>		Increased knowledge about science; monitoring, habitat management, and restoration of the Mobile Bay estuarine environment; Increase community ownership and involvement in local environmental protection activities.
	Grassroots Monitoring Supplies	4 kits purchased/restocked		
General Outreach & Education				Improved engagement of coastal stakeholders on topics chosen by ADCNR and MBNEP leadership.
	Current Connection Newsletter	Biannual newsletter of the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section and the MBNEP. The Spring issue, we took a deep dive into the tragedy that was the Deepwater Horizon oil spill, and how our ecosystem has evolved since then.	Alabama Current Connection Newsletter: Spring 2022 - Vol. XVI, Issue 1	

Project	Activities	Activity Status for 10-1-2021 through 03-31-2022	Product	Benefit/Outcome
General Outreach & Education	Promotional Materials			More engaged and educated stakeholders.
		Promotional materials with educational messaging to engage stakeholders in wise stewardship of Alabama's estuaries purchased this period include: multipurpose cleaning cloths, stress balls, pocket hand sanitizers, post-its, and koozies.		
General Outreach & Education	Signage			Education of visitors to watersheds, access points, or restoration sites.
		No activity this period		
General Outreach & Education	Special Event Sponsorships			More engaged and educated stakeholders.
		MBNEP continues to participate in local events to encourage the wise stewardship of the water quality and living resources of Alabama's estuaries. Events sponsored this period: Stan Mahoney Fishing Tournament, Sustainability Summit, Plant Identification Course, Coastal Kids Quiz, and Creek Fest		
General Outreach & Education	Video Production			Improved understanding of stormwater management and impacts, habitat restoration, climate change, low impact development, and other local issues and concerns.
		An 8-minute video on history of litter abatement and next steps titled "Altering the Course" written, produced, and released. A 30 second video on restoration of Mon Louis Island was developed for WKRG. The "Growing the Gulf Coast" partnership with WKRG continued to develop soft news pieces that highlight positive environmental work ongoing in the community.	Altering the Course	

Project	Activities	Activity Status for 10-1-2021 through 03-31-2022	Product	Benefit/Outcome
Clean Water Future Campaign	Clean Water Future Campaign			Better management of stormwater runoff and nonpoint source pollution.
		With the City of Mobile and other partners, an Educational Resources booklet was developed for K12 teachers in the area focused on clean water and litter reduction. A "Trash Blows, Stow It" New Year's resolution campaign was undertaken, targeting dozens of service stations and thousands of motorists through posters, social media, and highway billboards.	Environmental Education Program Guide	
Management Conference Support	Management Conference Support	<i>\$17,208 reprogrammed to Watershed Planning</i>		Maintain Management Conference committee operations and the continuing dialogue it promotes between partners representing diverse interests and often holding different views.
		No activity this period		
Private Sector Education Program	Watershed Tours; Green Infrastructure Education			
		See Watershed Implementation		