Mobile Bay National Estuary Program Management Conference
CCMP Update, Year Three

Work Plan
October 1, 2020 - September 30, 2021

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, the goal of this program is to protect and restore the water quality and living resources of estuaries and associated watersheds designated by the EPA Administrator as estuaries of national significance.

NEPs 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 final 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, 2019 - September 30, 2023.

INTRODUCTION

MBNEP's mission is to promote the wise stewardship of water quality and living resources of the 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: 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 a 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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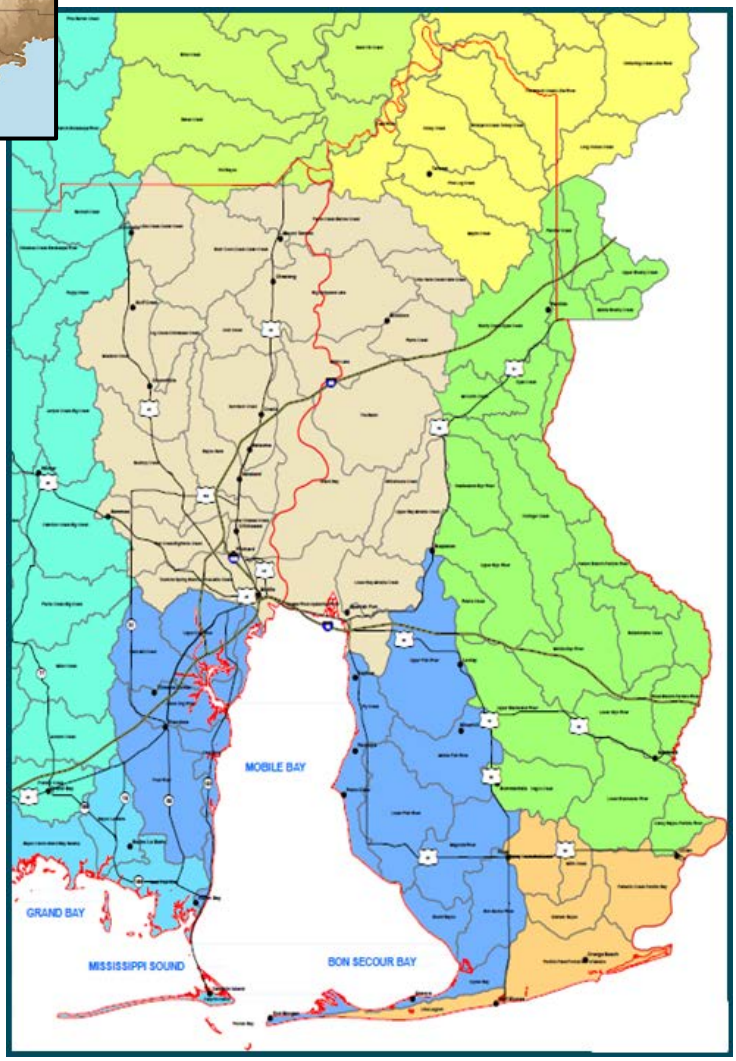
GEOGRAPHIC DISTRIBUTION

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, including all of Mobile and Baldwin counties from the Florida border west across coastal Alabama to its border with Mississippi. In addition, it extends seaward to the three-mile State jurisdictional limit. MBNEP's target area also includes Mississippi Sound, west to the Mississippi/Alabama border. 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; and the Intercoastal Waterway, Wolf and Perdido bays, and Little Lagoon.



PART ONE: 2020-2021 WORK PLAN EXECUTIVE SUMMARY

The following outline summarizes how the updated CCMP will be implemented in 2020-2021. The Action Areas of the CCMP are highlighted in light blue, the Goals are italicized, 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 strengthening how data is gathered and used at the watershed scale and how this data is aggregated to better understand the system as a whole; continued focus on comprehensive watershed planning and implementation- including habitat conservation and restoration activities; expanding public access to the water and open spaces; building capacity of businesses, government, and citizens to be better stewards of our coastal environment; and providing opportunities for all stakeholders to participate in reducing non-point source pollution throughout our two coastal counties.

EST ESTUARY STATUS AND TRENDS: GOALS/OBJECTIVES/SUGGESTED ACTIVITIES

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 monitoring and data analysis to assess trends in coastal ecosystem health at a watershed scale.
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-1: Coastal Monitoring Program		
EST	1.2	Complete baseline sediment and water quality data Western, Central, Eastern Delta; Eastern Shore/Fly Creek; Initiate studies for Grand Bay and Little Lagoon-Gulf Frontal.
EST	1.2	Collect baseline monitoring for 12 Mile Creek; Deer River; Fowl River Spits; Lower Fish River.
EST	1.2	Conduct post-construction monitoring for Mon Louis Island; D'Olive watershed.
EST-2: Environmental Monitoring and Ecosystem Response Communication		
EST	2.1	Using D'Olive Watershed Index, determine the most cost-effective metrics for evaluating trends in habitat condition.
EST	2.1	Develop mechanism for communicating volunteer and other environmental monitoring to general public.
EST-3: Ecosystem Modeling, Research, Evaluation Program		
EST	3.1	Quantify stressors such as sea surface temperatures, ocean acidification, hypoxia, and sea level rise and their impact on oyster, blue crab, and spotted sea trout.

ERP ECOSYSTEM RESTORATION, PROTECTION: GOALS/OBJECTIVES/SUGGESTED ACTIVITIES

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 p lans 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.

3.1 Protect/conserve priority habitats for public benefit/access through acquisition or conservation easement.

3.2 Create seven new access points, with at least five in Mobile County, incorporating environmental and cultural themes into each site's interpretive signage.

ERP-1: Watershed Planning		
ERP	1.1	Watershed Plan Completion- Wolf Bay, Western Shore
ERP	1.1	Watershed Plans in Progress- Little Lagoon, Fly Creek, Mobile Tensaw Delta
ERP	1.1	Watershed Plan Initiation- Dauphin Island/Grand Bay, Bay Minette/Whitehouse Creek, Lower Chasaw/Bayou Sara
ERP	1.3	Watershed Plan Update- D'Olive, Joes Branch, Tiawasee Watersheds
ERP-2: Watershed Plan Implementation		
ERP	2.1	Incorporate Habitat Restoration Priorities into ACCP Visualization Tool.
ERP	2.3	D'Olive Creek, Joes Branch, Tiawasee Watersheds- Construction of Stormwater Facilities
ERP	2.3	Three Mile Creek Watershed- 12 Mile Creek construction
ERP	2.3	Weeks Bay Watershed- Lower Fish River Planning and Marlow tributary restoration
ERP-3: Shoreline Stabilization, Enhancements		
ERP	2.4	Deer River Watershed- Shoreline stabilization and marsh creation
ERP	2.4	Fowl River Watershed- Marine Zone Spits stabilization
ERP-4: Invasive Species Management		
ERP	2.7	D'Olive Watershed- Invasive species management
ERP	2.7	Three Mile Creek Watershed- Invasive species Management
ERP	2.7	Garrows Bend Watershed- Invasive species management- Helen Wood Park
ERP-5: Access Enhancements		
ERP	5.2	Access Enhancements: ADA Accessibility Mats

TAC TECHNICAL ASSISTANCE AND CAPACITY BUILDING: GOALS/OBJECTIVES/SUGGESTED ACTIVITIES

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-1: Fisheries Capacity Building		
TAC	1.2	Set up Peer Lending and Marketing Program to support Oyster Farmers.
TAC	1.3	Continue to support progress towards Green Marine certification and Green Port status.
TAC	1.4	Streamline data delivery for coastal marine planning (Shellfish Aquaculture Siting Tool and AL Coastal and Marine Planning Tool).
TAC-2: Business Community Capacity Building		
TAC	2.1	Develop a long-term plan for business support of the Program.
TAC	2.1	Engage Business in support of CCMP implementation.
TAC-3: Government Capacity Building		
TAC	3.1	Facilitate adoption of resolutions to recognize watershed management plans at the local government level.
TAC	3.2	Support D'Olive Intergovernmental Task Force, 3MC Partnership, Fowl River Implementation Task Force, Dog River Task Force, and Weeks Bay PLAN.
TAC	3.3	Build library of best practices for resource management short videos to inform elected officials and municipal staff.
TAC	3.3	Conduct local government training on the use of tools, funding, and datasets to support improved environmental management.
TAC	3.5	Support efforts to protect dunes on Dauphin Island.
TAC-4: Regulatory Capacity Building (Integration of Environmental Protection into other Planning)		
TAC	4.2	Promote inclusion of watershed plan recommendations into City of Mobile Unified Development Code.
TAC-5: Grassroots Capacity Building		
TAC	5.1	Increase the number of volunteer water quality monitors.
TAC	5.2	Develop Volunteer Water Quality Monitoring Strategy for the Coast.

EPI EDUCATION AND PUBLIC INVOLVEMENT: GOALS/OBJECTIVES/SUGGESTED ACTIVITIES

EP1-1: Improve the business community'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 business community understanding of opportunities for environmental protection.

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

2.1 Create a minimum of five service opportunities to engage business "teams" in participating in restoration or cleanup efforts.

2.2 Identify and connect business 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.

2.2 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-1: Improve Business Community Connection to and Understanding of Coastal Resources.		
EPI	1.1	Lead two boat tours in watersheds under watershed management plan development or implementation.
EPI-2: Increase Business Community Involvement and Support for protecting Coastal Resources.		
EPI	2.1	Expand the partnership with Alabama Power and Greif Soterra to include the FUSE Project in installing rain barrels in low and moderate income areas of Three Mile Creek watershed.
EPI	2.1	Engage AMNS Calvert in assisting with invasive species management in Three Mile Creek Watershed.
EPI-3: Improve Community Connection to and Understanding of Coastal Resources.		
EPI	3.1	Publish semi-annual newsletter in partnership with ADCNR.
EPI	3.1	Develop interpretive and street signage to raise awareness about watersheds and community values.
EPI	3.1	Develop educational videos and digital media content to raise awareness about what people value about living on Alabama coast.
EPI-4: Promote the Clean Water Future Campaign to Encourage Actions for Improving Water Quality.		
EPI	4.1	Support PEP in creating outreach materials for CCWF business partners to educate their members and employees.
EPI	4.2	Assess usage and utility of Clean Water Future Program at the municipal and state level. Make improvements as needed.
EPI-5: Increase community involvement in and support for stewardship, volunteer, and educational opportunities.		
EPI	5.1	Execute the TRASH MOB.
EPI	5.1	Support community events which promote the six values of the CCMP.
EPI	5.2	Develop and promote Guidance for coordinating and promoting more environmentally friendly events.

BUDGET OVERVIEW: 2020-2021

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 how much cash the program anticipates receiving during the next year. Level funding of local and State dollars has been projected.

	Year U1: 2018-2019	***Year U2: 2019-2020***	**Year U3: 2020-2021 Budget**
EPA Annual Appropriation	*625,000*	*600,000*	662,000
Match (Budgeted)	*354,088*	*384,188*	422,076
Surplus/(Deficit) from previous year		*22,988*	
Total Available Budget	***979,088***	***1,007,176***	**1,084,076**

The workplan for the 2020-2021 program year includes the following activities:

	Year U1: 2018-2019	*Year U2: 2019-2020*	**Year U3: 2020-2021 Budget**
EPA Annual Appropriation	*625,000*	*600,000*	662,000
Match (Budgeted)	*354,088*	*384,188*	422,076
Surplus/(Deficit) from previous year		*22,988*	
Total Available Budget	***979,088***	***1,007,176***	**1,084,076**
Estuary Status and Trends	***45,000***	*-*	**25,000**
EST 1: Coastal Monitoring Program	*45,000*		25,000
EST 2: Environmental Monitoring/ Communication			
EST 3: Ecosystem Modeling, Research, Evaluation Program			
Ecosystem Restoration and Protection	***20,000***	***23,000***	**30,000**
ERP1: Watershed Planning	*20,000*	*18,000*	
ERP 2: Watershed Implementation Reserve			
ERP 2: Watershed Implementation-D'Olive Restoration			
ERP 2: Watershed Implementation- Three Mile Creek Restoration		*-*	10,000
ERP 2: Watershed Implementation- Lower Fish River Restoration			
ERP 3: Shoreline Stabilization, Enhancement- DI Causeway			
ERP 3: Shoreline Stabilization, Enhancement- Deer River			
ERP 3: Shoreline Stabilization, Enhancement- Fowl River Spits			
ERP 4: Invasive species Management- Three Mile Creek			
ERP 4: Invasive species Management- Garrows Bend			15,000
ERP 5: Access Enhancements: ADA Accessibility		*5,000*	5,000
Technical Assistance and Capacity Building	***5,000***	*-*	**50,000**
TAC 1: Fisheries Capacity Building			50,000
TAC 2: Business Capacity Building			
TAC 3: Government Capacity Building: Municipal Staff Training			
TAC 4: Green Infrastructure Capacity Building			
TAC 5: Grassroots Capacity Building: Citizen Monitoring	*5,000*		
Education and Public Invovlement	***74,541***	***94,452***	**48,031**
EPI 1: Management Conference Support	*4,000*	*54,000*	10,000
EPI 2: Business Involvement Program			
EPI 3: Community Education Program- Newsletter	*8,000*	*8,000*	10,000
EPI 3: Community Education Program- Signage	*5,000*		5,000
EPI 3: Community Education Program- Video Production/Digital Media	*30,000*	*19,952*	10,783
EPI 4: Create a Clean Water Future Campaign- Trash Mob	*15,041*		5,000
EPI 5: Community Event Program- Special Event sponsorships	*7,500*	*7,500*	3,500
EPI 5: Community Event Program- Special Event outreach materials	*5,000*	*5,000*	3,748
Management and Program Administration	***832,047***	***889,724***	**931,045**
Program Delivery/Operation	*707,601*	*758,353*	789,644
Indirect Charges	*124,446*	*131,371*	141,401
Total EPA Budget	***976,588***	***1,007,176***	***1,084,076***

PROJECT DETAILS: ECOSYSTEM STATUS AND TRENDS

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 Index for coastal Alabama using products of efforts related to development of a biological condition gradient framework during the last five years of the 2013-2018 CCMP implementation. State and local resource managers will refine development of a long-term monitoring program. In addition, the SAC will pursue opportunities to establish baselines and other scientific data necessary to support comprehensive watershed planning and restoration.

EST-1: COASTAL MONITORING PROGRAM

Title	Coastal Monitoring Program
Values Supported	
Purpose	Increase understanding of estuary health; identify biological indicators; and incorporate into a coastal biological monitoring program.
Outputs/Deliverables	Baseline monitoring data; restoration monitoring data; watershed condition index support
Outcomes	Increased knowledge about environmental status and trends and environmental response to restoration activities; and increased community participation in environmental monitoring activities
Clean Water Act Relevance	Improve water quality monitoring, support TMDL implementation, and improve monitoring of wetland function and coverage.
Year 1	30,716 (45,000-14,284 reprogrammed; See TAC-5)
Year 2	0
Year 3	25,000
EPA Total	55,716
External Funding	428,325
Lead/Partners	ADEM, MBNEP SAC, EPA, NFWF, RESTORE

The Coastal Monitoring Program supports monitoring of environmental conditions at both the watershed and larger ecosystem scale. Within this program, baselines are established within watersheds and for restoration projects for the purpose of measuring future 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.

2019-2020 Program Status

Coastal Watershed Sediment 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. These 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.

Baseline sediment studies have been completed for the D'Olive Creek, Fowl River, Dog River, Bayou La Batre, West Fowl River, Bon Secour River, Weeks Bay, Wolf Bay watersheds, and the Mobile-Tensaw-Apalachee Watershed Complex. Analysis of the Deer River Watershed is in review in draft form and close to complete. A sediment loading and water quality analysis of the Eastern Shore/Fly Creek Watershed is currently underway. Of particular note, an evaluation of Pre and Post-Restoration Sediment Loads in the Joes Branch Subwatershed has been completed, leading to action by ADEM.

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.

In April 2020, concurrent with its release of the State's 2020 303(d) List of Impaired Water Bodies, ADEM released its Final Delisting Decision for Joes Branch Siltation. Originally listed in 2008, based on comprehensive sediment loading analyses by the Geological Survey of Alabama indicating elevated suspended sediment loads in Joes Branch. Following "significant stream restoration efforts," ADEM conducted monitoring in 2019 to determine if the waterbody is currently supporting its use classification with respect to siltation. Field parameters, conventional lab parameters, a habitat assessment, and continuous in-situ turbidity results were used to determine that a siltation impairment does not currently exist, so Joes Branch was removed from the List without development of a Total Maximum Daily Load.

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 in 12 Mile Creek, 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 developing restoration plans for 12 Mile Creek, University of South Alabama Professor Dr. Alex Beebe has supplemented their efforts using his Environmental Sciences 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 the Marlow tributary to Lower Fish River.

D'Olive Watershed Restoration Monitoring

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 (10,883 linear feet) across 14 stream segments and 92 acres of wetlands and riparian habitat which have been protected/enhanced.

Mon Louis Island Post Restoration Monitoring

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 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.

Summer 2019 monitoring identified 24 plant species, including six not found in 2018. Vegetated cover increased from 39% in 2018 to 57% in 2019. The 2020 Shoreline Monitoring Report revealed no discernable evidence of shoreline change for this segment as a result of the restoration at the tip of MLI.
Tidal creek surveys collected abundant grass shrimp (*Palaemonetes* spp.), blue crabs (*Callinectes sapidus*), Gulf killifish (*Fundulus grandis*), and white shrimp (*Litopenaeus setiferus*). Contractors continue to monitor completed project.

Watershed Hydrologic Modeling

Hydrologic models for the Bon Secour, Wolf Bay, Dog River, Bayou La Batre, Fowl River, and West Fowl River watersheds and the 12 Mile Creek Subwatershed have been completed, and a model for the Mobile-Tensaw-Apalachee Watershed Complex 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.

Associated Deliverables:

2020 Mon Louis Island Shoreline Monitoring Report
2019 Vittor Marsh Success Mon Louis Island Report
Mon Louis Island Restoration 2018 Marsh Monitoring
http://www.mobilebaynep.com/images/uploads/library/Joes_Branch_Post_Restoration_Assessment_2019_Poly_Inc.pdf
http://adem.alabama.gov/programs/water/delistings/FinalJoesBranchSiltationDelistingApril2020.pdf

2020-2021 Action Plan

EST-1: Coastal Monitoring Program		
EST	1.2	Complete baseline sediment and water quality data Western, Central, and Eastern Delta and Eastern Shore/Fly Creek watersheds; Initiate studies for Grand Bay and Little Lagoon-Gulf Frontal watersheds.
EST	1.2	Collect baseline monitoring data for 12 Mile Creek; Deer River; Fowl River Spits; Lower Fish River.
EST	1.2	Conduct post-construction monitoring for Mon Louis Island; and D'Olive Watershed restoration sites.

EST-2: ENVIRONMENTAL MONITORING AND ECOSYSTEM RESPONSE COMMUNICATION

Title	Watershed Condition Index
Values Supported	
Purpose	Increase understanding of estuary health; identify biological indicators; and incorporate into a coastal biological monitoring program.
Outputs/Deliverables	Baseline monitoring data; restoration monitoring data; watershed condition index support
Outcomes	Increased knowledge about environmental status and trends and environmental response to restoration activities; and increased community participation in environmental monitoring activities
Clean Water Act Relevance	Improve water quality monitoring, support TMDL implementation, and improve monitoring of wetland function and coverage.
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	29,590
Lead/Partners	MBNEP, EPA (Past year grant), ADCNR

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; and
5) MBNEP coordinates data synthesis to develop tools and products for assessment of restoration success, adaptive resource management, and baseline establishment.

2019-2020 Program Status

D'Olive Watershed Condition Index

Using over four years of data collected coincidental to implementation of stream restorations in the D'Olive Creek Watershed, a Watershed Condition Index 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]

The BCG and WCF were used to measure restoration success of efforts undertaken within the D'Olive Creek Watershed in an effort to classify watersheds through indicator assessment; prioritize watersheds for restoration and project implementation, track restoration accomplishments, and verify and monitor watershed condition class. Both BCGs and WCFs across the restored streams in the three subwatersheds showed general improvement post-restoration over baseline for both streams and wetlands, with scores expected to increase over time with growth and development of planted riparian areas.

Associated Deliverables:
http://www.mobilebaynep.com/images/uploads/library/DOlive_WCF_1-24-20FINAL.pdf

2020-2021 Action Plan

EST-2: Environmental Monitoring and Ecosystem Response Communication		
EST	2.1	Using D'Olive Watershed Index, determine the most cost-effective metrics for evaluating trends in habitat condition.
EST	2.1	Develop mechanism for communicating volunteer and other environmental monitoring to general public (Cross Reference TAC 5.2)

EST-3: ECOSYSTEM MODELING, RESEARCH, AND EVALUATION

Title	Ecosystem Modeling, Research and Evaluation
Values Supported	
Purpose	Increase understanding of estuary health; identify biological indicators.
Outputs/Deliverables	Research metadata and datasets; watershed condition index support; State of the Bay data support
Outcomes	Increased knowledge about environmental status and trends and environmental response to restoration activities
Clean Water Act Relevance	Improve water quality monitoring, support TMDL implementation, and improve monitoring of wetland function and coverage.
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	377,267
Lead/Partners	MBNEP, NFWF

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. 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.

2019-2020 Program Status

Fowl River Marsh Health Study

Marsh Health Study Engineering for Shoreline Stabilization of Four Spits. With restoration of four erosion-impacted, salt marsh-covered spits a priority recommendation of the Fowl River Watershed Management Plan, MBNEP secured a NFWF Gulf Environmental Benefit Fund grant to conduct a marsh health study undertaken by principal investigators from its Science Advisory Committee to investigate why salt marshes in the transitional zone between brackish and fresh water-dominated areas appear to be degrading from interior to exterior portions of the marsh. This recently completed marsh study investigated ecologic, hydrologic, and sedimentologic factors to inform the NFWF GEBF-funded engineering and design for restoration and stabilization efforts to protect and restore Fowl River transition-zone marsh spits and problems related to similar stressors elsewhere.

As contractors develop plans to stabilize and protect the marsh spits in the transitional zone between fresh and brackish water in Fowl River, the study revealed “smoking guns” underlaying marsh spit degradation include:

- Sea level rise – Fowl River was characterized as a “drowning river valley” with insufficient sediment loads or accretion rates to keep up with the rate of sea level rise. Habitats are being flooded in place and plant community succession trends are consistent with this theory

- Recreational boat wakes – Almost 100% of the wave energy impacting the marsh spits is attributed to boat wakes, with 100% of boat wake events occurring between the hours of 7 AM to 7PM. Although significant wave heights are small, ranging from eight to 18 cm with wave periods ranging from 1.4 to 2.5 seconds, significant wave heights routinely exceed the threshold of vegetation tolerance.
- Observed increases in salinity require further investigation to understand their contribution to marsh spit degradation.

Deliverable:
Draft Fowl River Marsh Health and Recovery Study

2020-2021 Plan

EST-3: Ecosystem Modeling, Research, Evaluation Program		
EST	3.1	MBNEP will support research study to quantify stressors such as sea surface temperatures, ocean acidification, hypoxia, and sea level rise and their impact on oyster, blue crab, and spotted sea trout.

PROJECT DETAILS: ECOSYSTEM RESTORATION AND PROTECTION

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 2019-2023. 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.

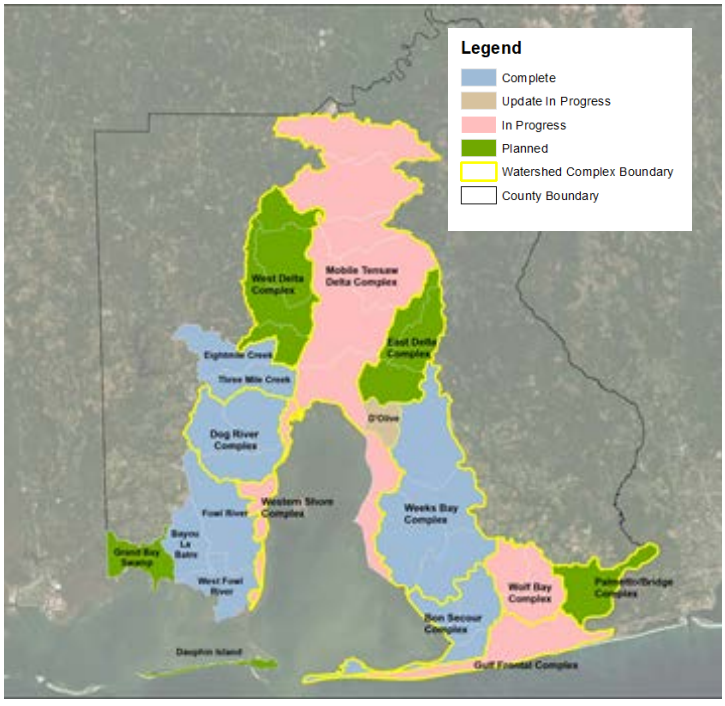
The State of Alabama has prioritized funding from the NFWF Gulf Environmental Benefits Fund and federal RESTORE dollars to develop of WMPs for all the State's tidally influenced watersheds. MBNEP has recruited assistance from its Project Implementation Committee (PIC) partner agencies and municipalities 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

Title	Watershed Planning
Values Supported	
Purpose	Support watershed management planning (WMP) and implementation activities for all tidally influenced drainage basins.
Outputs/Deliverables	Plans, technical assistance, project development
Outcomes	Improved watershed management at local scale
Clean Water Act Relevance	Improve water quality monitoring, support TMDL implementation, and improve wetland function
Year 1	20,000
Year 2	18,000 (3,000+ 15,000 reprogrammed)
Year 3	
EPA Total	38,000
External Funding	5,575,243
Lead/Partners	MBNEP, RESTORE, Municipalities

2019-2020 Program Status



With intensive watershed management planning ongoing for all of the State of Alabama's tidally influenced watersheds, MBNEP is committed to continued WMP development and implementation. Typically, once the WMP is published, technical assistance for initiating implementation and program development require start-up costs as plans transition from the development to implementation. This fund supports both watershed planning activities and initial plan implementation costs.

To date, the WMPs have been completed and are under implementation for the following watersheds and complexes of watersheds: Eight Mile Creed, D'Olive, Three Mile Creek, Fowl River, Dog River Complex, Bon Secour Complex, Weeks Bay Complex, Bayou La Batre, and West Fowl River.

WMPs for both the Wolf Bay and Western Shore Complex of watersheds are nearing completion and planning for Perdido Pass/Frontal Gulf of Mexico, the Mississippi-Tensaw-Apalachee, and Eastern Shore/Fly Creek watersheds and complexes is underway, as is an update of the D'Olive WMP.

2020-2021 Action Plan

ERP-1: Watershed Planning		
ERP	1.1	Watershed Plan Completion- Wolf Bay, Western Shore
ERP	1.1	Watershed Plans in Progress- Little Lagoon, Fly Creek, Mobile Tensaw Delta
ERP	1.1	Watershed Plan Initiation- Dauphin Island/Grand Bay, Bay Minette/Whitehouse Creek, Lower Chasaw/Bayou Sara
ERP	1.3	Watershed Plan Update- D'Olive Creek, Tiawasee Creek, and Joes Branch Watershed

ERP-2: WATERSHED IMPLEMENTATION

Title	Watershed Plan Implementation
Values Supported	
Purpose	Implementation of watershed management plans to improve water quality, habitats, fish and wildlife and community resilience
Outputs/Deliverables	Stabilization/restoration of degraded stream segments, riparian zones, and wetlands; expand access; improve stormwater management facilities
Outcomes	Improved ecosystem function and protection; and improved community management of ecosystem restoration and protection activities
Clean Water Act Relevance	Improve water quality monitoring, support TMDL implementation, and improve monitoring of wetland function and coverage.
Year 1	0
Year 2	5,102
Year 3	30,000
EPA Total	35,102
External Funding	8,183,333 * (amount reflects what is available for 2020-2021)
Lead/Partners	NFWF, MBNEP, GOMP, ADEM, Cities, Mobile and Baldwin County, property owners

Watershed management plans are developed to provide watershed-specific blueprints for resource management, with characterizations and analyses driving prioritized project recommendations intended to address identified problems, with potential funding sources identified to pay for them. Each watershed has its own issues, but problems related to nonpoint source pollution conveyed over impervious surfaces to receiving waters is common to most all. A WMP is not meant to sit on a shelf. It is a living document intended to be implemented aggressively.

2019-2020 Program Status

D'Olive Watershed Restoration

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 beds and installing instream stormwater measures to reintroduce ecological function in 15 stream segments representing 11,500 linear feet,

reconnecting streams to flood plains and enhancing 201 acres of floodplain/wetlands and installing five stormwater retention ponds to reduce discharge volumes and velocities during rain events.

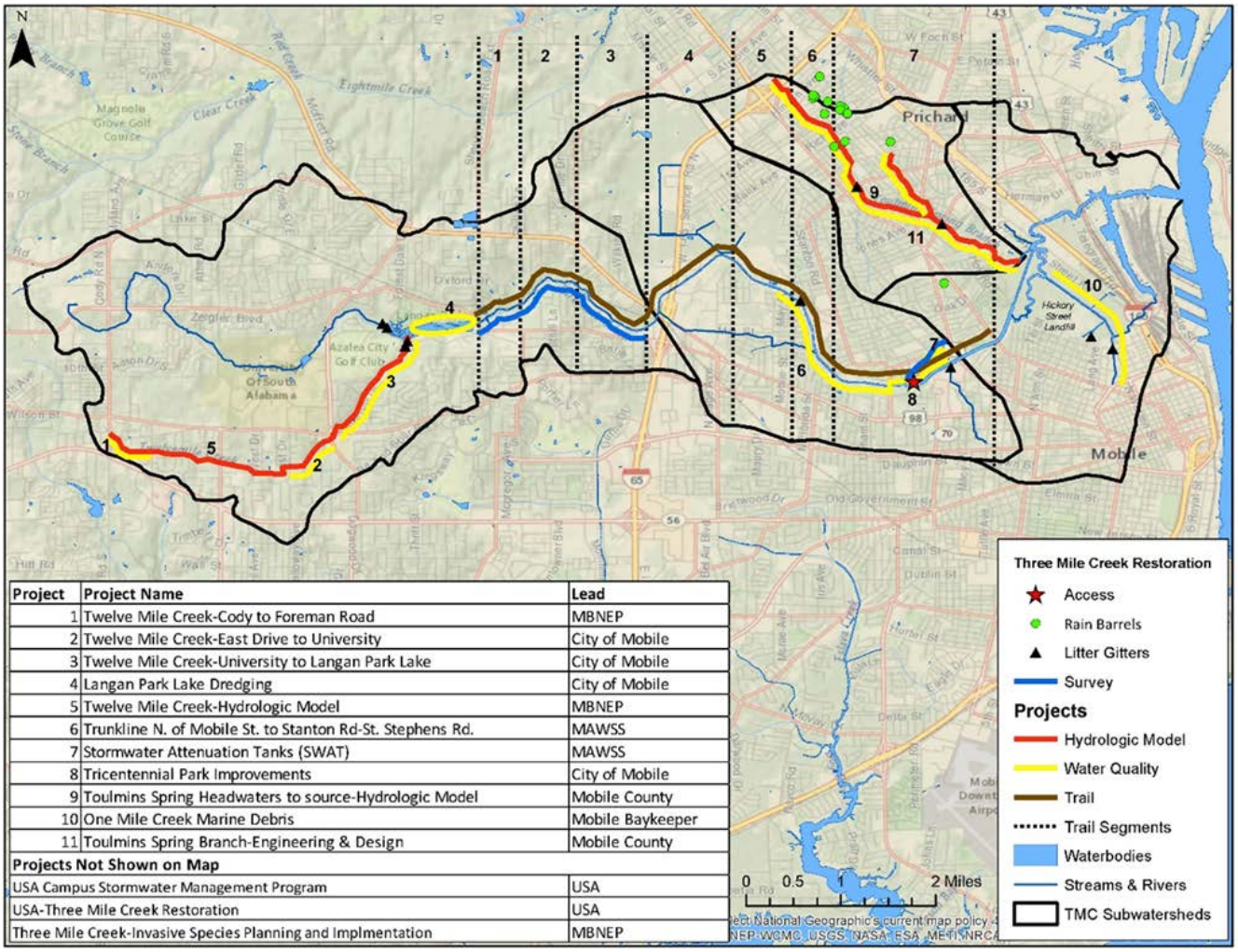
Restoration of the D'Olive Watershed began in 2012 and continues today. The status of MBNEP contracted work follows:

Task	Project	Engineer	Contractor	Substantial Completion	Stream Length (ft)	Floodplain Area (acres)	Drainage Area (acres)	Erosion Reduction (tns/yr)	Total Project Cost
1.1	JB SWMF	Thompson	Southern Excavating			1			$ 332,396.09
1.2	J SWMF	Thompson	Southern Excavating			1			$ 91,611.02
1.3	J4-1 Restoration	Thompson	Southern Excavating		700	2	150	143	$ 126,199.00
1.4	J4-2 Restoration	Thompson	Southern Excavating		400	1	150	100	$ 733,780.00
1.5	JA Restoration	Thompson	Southern Excavating		600	5	5	200	$ 445,237.00
1.6	JB Restoration	Thompson	North State		1,400	10	160	304	$ 1,286,420.50
2.1	SWMF - Lake Forest	Integrated Science							$ 315,826.00
2.2	D10-1	TERMINATED			N/A	N/A	N/A	N/A	-
2.3	D4-D6	GMC	North State	Adaptive Manag. April 2019	2,714	15	1,600	1,880	$ 3,400,425.77
2.4	DA3	Volkert	North State		910	7	493	547	$ 1,142,431.50
2.5	DAE	Integrated Science	Southern Excavating		420	4	22	300	$ 453,434.00
2.6	DAF	Mott MacDonald	North State		292	1	730	351	$ (0.00)
2.7	DAF-1 Golf Trib	Mott MacDonald	North State		243	1	110	106	$ 772,468.29
2.7	DAF-1A Melanie	GMC	North State		600	4	85	254	$ 530,256.24
2.8	D'Olive WMP Update	Baya Consulting	Geosyntec		N/A	N/A	N/A	N/A	$ 145,000.00
3.1	TC1	GMC	Daphne		650	7	1,280	206	$ 250,000.00
3.2	TC2	GMC	Streamline Environmental		655	7	1,480	207	$ 300,000.00
3.2	Tiawassee Tributary		Daphne	April 2020	366				$ 315,349.45
3.3	Stormwater Retention		Daphne		578	2	150	72	$ 395,000.00
3.4	Tiawassee Montclair	Volkert	Streamline Environmental	February 2020	1,000	3	1,037	602	$ 738,454.17
Total					**11,528**	**71**	**7,452**	**5,272**	**$ 11,774,289.03**

In partnership with the City of Daphne and Daphne Utilities funded through ADEM 319 and NRCS grants, MBNEP used NFWF GEBF dollars to restore and stabilize an incised, stormwater-impacted, 1,037-foot stream in the Montclair neighborhood substantially completed in May 2020. Two retention basins are also being enhanced in the headwaters of Tiawasee Creek to manage stormwater and reduce downstream impacts.

Three Mile Creek Watershed Restoration

The implementation of the Three Mile Creek watershed management plan 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 a comprehensive program of community engagement to ensure each program learns from and listens to effected 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.



Project	Project Name	Lead
1	Twelve Mile Creek-Cody to Foreman Road	MBNEP
2	Twelve Mile Creek-East Drive to University	City of Mobile
3	Twelve Mile Creek-University to Langan Park Lake	City of Mobile
4	Langan Park Lake Dredging	City of Mobile
5	Twelve Mile Creek-Hydrologic Model	MBNEP
6	Trunkline N. of Mobile St. to Stanton Rd-St. Stephens Rd.	MAWSS
7	Stormwater Attenuation Tanks (SWAT)	MAWSS
8	Tricentennial Park Improvements	City of Mobile
9	Toulmins Spring Headwaters to source-Hydrologic Model	Mobile County
10	One Mile Creek Marine Debris	Mobile Baykeeper
11	Toulmins Spring Branch-Engineering & Design	Mobile County
Projects Not Shown on Map		
USA Campus Stormwater Management Program		USA
USA-Three Mile Creek Restoration		USA
Three Mile Creek-Invasive Species Planning and Implmentation		MBNEP

Toulmins Spring Branch Drainage Improvements

The Prichard Rain Barrel Program, intended to reduce stormwater runoff in the Toulmins Spring Branch (TSB) Subwatershed, was begun with the Coastal Alabama Conservation Corps in 2017, and continues today with volunteer contributions from Greif/Soterra and assistance from the Alabama Power Service Organization and the Plant Barry Environmental Stewardship Team. The 2016 *Prichard Drainage Study* and Enis Baltaci's 2016 Master's Thesis, *Flood Control in Toulmins Spring Branch through LID Practices*, both recommended increased use of low impact development measures to reduce flooding and nonpoint source pollution in this flood-prone, low-moderate-income, minority community. Thus far, 46 110-gallon, dual-rain barrel systems have been installed at the homes of TSB residents to reduce stormwater runoff, flooding, and sanitary sewer overflows; encourage wise stewardship behaviors and providing a free alternate source of water to a community that pays higher rates for water than surrounding communities.

Twelve Mile Creek

With a grant secured from the U. S. Environmental Protection Agency through the Gulf Coast Ecosystem Restoration Council and the RESTORE Act, MBNEP contracted to develop engineering and design and permitting documents to restore/stabilize an impacted 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, concrete culverts, and natural channels over three miles north and east from its headwaters to its confluence with Three Mile Creek at Municipal/Langan Park. The concrete 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 tributary 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 its retention volume and carrying pollutants including oxygen-demanding substances and nutrients. Engineering and design have been advanced to 60% and a USACE Nationwide Permit has been secured for construction/restoration. Implementation funding is anticipated soon, at which time

Three Mile Creek Invasive Species Control Plan

Also funded by the EPA through the Gulf Coast Ecosystem Restoration Council and the RESTORE Act, an Invasive Species Control Plan for the Three Mile Creek Watershed was delivered in April 2019. This plan 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 a chelated copper drip system to eliminate snails from TMC downstream 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, with funding for implementation, including chemical treatment, expected soon.

Trash-Free Waters in the Three Mile Creek Watershed

In November 2016, the first Litter Gitter, an inexpensive, highly portable trash capture device constructed of pool noodle-lined cables and a wire basket, was installed downstream of stormwater outfalls at the Maple Street dead end as a pilot project and test in the Maple Street Tributary to One Mile Creek, one of the most trash-impacted and infested urban waters in the TMC Watershed. This prototype was installed after a MBNEP Business Resources Committee (BRC) waterfront cleanup of the Maple Street Tributary netting over 200 30-gallon bags of legacy trash. From installation through June 30, 2017, more than 220 lbs/90 ft^3, of litter was removed from this single litter device and a maintenance protocol was established. Vegetative debris was discarded and not included in monitored quantities, and a secondary boom was installed immediately downstream of the collector to gauge effectiveness.

In 2017, funding was secured from the EPA Gulf of Mexico Program to hire professional contractors to remove existing legacy trash, install 10 Litter Gitters at strategically-located

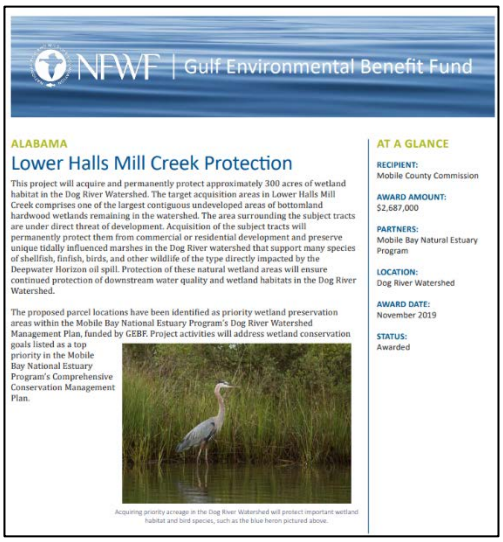
stormwater outfalls in the TMC Watershed, and implement a trash and volunteer monitoring program at each Litter Gitter site to assess the condition of water quality and habitat and analyze constituent materials in collected trash and litter to determine weight, volume, and probable sources. Upon request by the EPA's Trash-Free Waters Program, Osprey Initiative (the contractor) incorporated the EPA's Escaped Trash Assessment Protocol (ETAP) into the constituent material analysis. Osprey is also involved in Litter Gitter installation and maintenance in both the Dog River and Bon Secour River watersheds.

Progress and next Steps: Osprey Initiative has removed 9,732 (6,279 cu ft and close to five tons) of litter from Alabama coastal waters, of which 2,015 lbs (1,735 cu ft or one ton) was recycled. Osprey employed ETAP to quantify and characterize the material to better understand supply chain sources of discarded material.

The MBNEP and the Tampa Bay National Estuary have secured NFWF GEBF funding to expand Osprey's litter abatement protocols east to Tampa Bay, to continue the protocols in coastal Alabama, and to use ETAP data to engage upstream supply chain entities to consider alternatives to or reductions in single use packaging/bottling.

Dog River Watershed Restoration

The Lower Halls Mill Creek Bottomland Hardwoods Protection Project aims to permanently preserve nearly 300 acres of undisturbed, high quality, palustrine, riverine wetlands in the Dog River Watershed. The fee-simple interest of the property would be acquired from a willing seller. A perpetual conservation easement would be placed on the acquired tract to ensure a double layer of permanent protection to the conserved property. This parcel, identified as a priority wetland preservation area in the Dog River Watershed Management Plan (WMP), comprises one of the largest and most pristine, contiguous, undeveloped acreages of bottomland hardwood wetlands remaining in the greater Dog River Watershed.


NFWF | Gulf Environmental Benefit Fund

ALABAMA

Lower Halls Mill Creek Protection

This project will acquire and permanently protect approximately 300 acres of wetland habitat in the Dog River Watershed. The target acquisition areas in Lower Halls Mill Creek comprises one of the largest contiguous undeveloped areas of bottomland hardwood wetlands remaining in the watershed. The area surrounding the subject tracts are under direct threat of development. Acquisition of the subject tracts will permanently protect them from commercial or residential development and preserve unique tidally influenced marshes in the Dog River watershed that support many species of shellfish, finfish, birds, and other wildlife of the type directly impacted by the Deepwater Horizon oil spill. Protection of these natural wetland areas will ensure continued protection of downstream water quality and wetland habitats in the Dog River Watershed.

The proposed parcel locations have been identified as priority wetland preservation areas within the Mobile Bay National Estuary Program's Dog River Watershed Management Plan, funded by GEBF. Project activities will address wetland conservation goals listed as a top priority in the Mobile Bay National Estuary Program's Comprehensive Conservation Management Plan.

Acquiring priority acreage in the Dog River Watershed will protect important wetland habitat and bird species, such as the blue heron pictured above.

AT A GLANCE

RECIPIENT: Mobile County Commission

AWARD AMOUNT: $2,687,000

PARTNERS: Mobile Bay Natural Estuary Program

LOCATION: Dog River Watershed

AWARD DATE: November 2019

STATUS: Awarded

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.

This wetland tract protects the immediate downstream, tidally influenced marshes of the Dog River estuary of the type which were directly impacted by the oil spill. They support many species of shellfish, finfish, birds, and other wildlife also impacted by the spill. This project will help protect, restore, and enhance the function of critical wetland habitat to improve water quality in the estuarine areas of the Dog River Watershed.

MBNEP submitted a pre-proposal for this project to the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund. This project was selected to submit a full proposal and Mobile County has agreed to be the lead.

Mobile County received the award for acquisition of the site and began due diligence including, but not limited to, consultation with property owners, appraisals, survey. The County will oversee efforts to acquire/protect this important wetland acreage.

Lower Fish River Restoration

Approximately 1000 Linear feet of streambed and stream banks will be stabilized with green infrastructure to re-establish ecological function in the Lower Fish River. The project purpose is to protect water quality and community and ecosystem resilience in lower Fish River and Weeks Bay. Project goals include restoring the streambanks of this tidally influenced tributary stream to improve the health of lower Fish River and the Mobile Bay estuary and their provision of ecosystem services. Project objectives reducing the amount of sediment carried into Lower Fish River and Weeks Bay, restoring past impacts of excessive sediment loads by stabilizing this severely degraded tributary, and mitigating future impacts of development.

Located in the southeast corner of the Lower Fish River Watershed (HUC 031602050204), an unnamed tributary to Fish River is experiencing significant bank and channel erosion and contributing substantial quantities of sediment to downstream wetlands and, ultimately, the main channel of Lower Fish River. The proposed 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.

This project consists of clearing the riparian zone of vegetation, excavating riparian area to reconnect the incised stream to its floodplain, and construction of step pools or other similar drop structures to dissipate stormwater energy as it flows downstream to Fish River. Construction would also include installation of erosion control structures and planting of native vegetation to stabilize stream banks. The project would conclude with implementation of a long-term maintenance and monitoring plan that includes invasive species control.

While the Lower Fish River Watershed, located in the greater Weeks Bay Watershed in the southwestern portion of Baldwin County, did not suffer direct impacts of the Deepwater Horizon event (DWH). 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 the Bay. Although this area did not fall within the geological nexus of DWH impacts, there is an ecological nexus between harmed natural resources and these degraded SAV beds, which support benthic and pelagic communities, including but not limited to, red fish, speckled trout, shrimp, blue crabs, and manatees.

2020-2021 Action Plan

ERP-2: Watershed Plan Implementation		
ERP	2.1	Incorporate Habitat Restoration Priorities into ACCP Visualization Tool.
ERP	2.3	D'Olive Creek, Joes Branch, Tiawasee Watersheds- Construction of Stormwater Facilities
ERP	2.3	Three Mile Creek Watershed- 12 Mile Creek construction
ERP	2.3	Weeks Bay Watershed- Lower Fish River Planning and Marlow tributary restoration

ERP-3: SHORELINE STABILIZATION, ENHANCEMENTS

Title	Shoreline Stabilization, Enhancements
Values Supported	
Purpose	Stabilize shorelines and restore intertidal marshes and flats.
Outputs/Deliverables	Linear feet of shorelines stabilized; acres of marsh protected or restored
Outcomes	Improved water quality; and enhanced fishery and saltwater habitats, improve access.
Clean Water Act Relevance	Improve water quality; and improve monitoring of wetland function and coverage.
Year 1	0
Year 2	0
EPA Total	0
External Funding	813,203 (Funding available for 2020-2021)
Lead/Partners	MBNEP, NFWF, Mobile County, Property Owners

2019-2020 Program Status

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. Project goals include stabilizing the shoreline along the Bay side of the northern tip of Mon Louis Island, protect and re-establish critical nursery habitat for commercially and economically important fish and shellfish, improve access in the shallow Fowl River Navigation Channel, and mitigate 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 continues under USACE Permit requirements.

Fowl River Spits

With a WMP, sediment study, and hydrologic model completed for the Fowl River Watershed, a priority concern of stakeholders – restoration of disappearing and degrading marsh spits located in the River's transition zone between fresh and brackish water is moving towards implementation. As discussed in the EST portion of this work plan, a team of principal investigators from the MBNEP's Science Advisory Committee undertook a comprehensive study to determine the causes of stress underlying the degradation of the marsh spits. With funding secured though the NFWF GEBF, the projected has been advanced into the engineering and design phase of restoration. The project purpose is to restore important coastal spits and wetlands within the transitional reaches of Fowl River. Project goals include: Improve habitat and water quality; Preserve

coastal hydrology. Project objectives include: Protect 12,600 feet of shoreline and restore and enhance 52 acres of coastal marsh.

With the marsh spit study completed by SAC PIs and funding for restoration engineering and design secured, a feasibility study and design are currently underway to stabilize the spit shorelines and restore and protect emergent marsh habitat and the various ecosystem services it provides. Public meetings have provided stakeholders improved understanding of the stressors thought to underlie the degradation of the spits and potential range of activities necessary to ensure their restoration and protection. Both the Marsh Spit study and engineering and design of a restoration plan for the spits will have value in informing future restoration in locations with similar conditions and stresses.

With the comprehensive marsh study to determine the causes of marsh degradation to guide future restoration activities completed and engineering and design funding secured, field surveys and data review were undertaken, property access was secured, and project design alternatives and cost estimates are expected by July 2020. Project design will be selected and permit application to the USACE will be submitted upon completion of 60% engineering and design for marsh spits restoration by October 2020. With grant funding from NFWF GEBF for implementation in application, initiation of bidding and construction is expected March 2022.

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.

Deer River Shoreline Restoration

An otherwise healthy tract of wetlands surrounding Deer River and bordered by Mobile Bay to the east and the Theodore Industrial Canal to the north is experiencing significant recession along its Mobile Bay shoreline and siltation impacting Deer River tidal creeks. Thought to result from wave activity, tidal action, and wakes from cargo ships passing through the Industrial Canal, nine acres of productive marsh habitat and shoreline have been lost since 1997 with a gaping breach penetrating the Middle Deer River's eastern-most oxbow coincidental with impacts from Hurricane Katrina in 2005. The breach allows sediments and gross pollutants from the eroding shoreline and Mobile Bay to enter the wetlands tract, degrading water and habitat quality and threating the long-term sustainability of ecological services provided by the fisheries nursery habitats of this system.

The MBNEP secured a NFWF GEBF grant to undertake preparation of engineering and design documents to restore/stabilize the wetlands' mile-long shoreline, potentially create new wetlands as a component of restoration, and address sedimentation impairing water circulation through the wetlands.

Dauphin Island Causeway

This projected 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, or 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 lying only four feet above sea level, forms the border between the Bon Secour Bay Watershed (HUC 031602050104) to the east and the Grand Bay/Mississippi Sound Watershed (HUC 031700090201) to the west.

The project area includes northern parcels owned by Mobile County with the southern balance owned by the Cedar Point Fishing Pier, Inc. 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 oyster harvest area, where production has been compromised in part by salinity fluctuations and oyster drills, whose populations explode when salinities rise during periods of drought. 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 this project from the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund and its Community Resilience Fund. MBNEP will partner with the Mobile County Commission, who has agreed to act as a subrecipient for this project. Mobile County will lead coordination of a project team to undertake a feasibility assessment and engineering and design of this project before undertaking a contractor selection process for construction.

2020-2021 Action Plan

ERP- 3: Shoreline Stabilization, Enhancements		
ERP	2.4	Deer River Watershed- Shoreline stabilization and marsh creation
ERP	2.4	Fowl River Watershed- Marine Zone Spits stabilization

ERP-4: INVASIVE SPECIES MANAGEMENT

Title	Invasive Species Management
Values Supported	
Purpose	Reduce and eradicate where practicable, invasive aquatic and terrestrial flora and fauna.
Outputs/Deliverables	Linear feet of riparian buffers restored; acres of wetland protected or restored
Outcomes	Improved water quality; and enhanced fishery and saltwater habitats, improve access.
Clean Water Act Relevance	Improve water quality; and improve monitoring of wetland function and coverage.
Year 1	0
Year 2	0
Year 3	15,000
EPA Total	15,000
External Funding	335,400
Lead/Partners	MBNEP, RESTORE, Cities, Counties, NOAA Gulf Corps

2019-2020 Program Status

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, eliminating the habitats, food, and other ecosystem services they provide, while spreading unchecked. 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.

D'Olive Watershed

The comprehensive restoration of two miles of stormwater-impacted streams in the D'Olive Watershed included disturbance of approximately 71 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 easily dispersed seeds and rapid growth rates. The MBNEP has enjoyed a partnership with NOAA's Gulf Corps, whose personnel have provided manual and herbicide control measures to invasive species across the various restoration sites within this Watershed.

Three Mile Creek Watershed

With expected funding from the same EPA (through the Gulf Coast Ecosystem Restoration Council and the RESTORE Act) source used to fund the Invasive Species Control Plan for the Three Mile Creek Watershed delivered in April 2019, the Plan will be implemented in partnership with the City of Mobile. It 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 a chelated copper drip system to eliminate snails from TMC downstream 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, are ongoing, with implementation funding for chemical treatment to eradicate the snails, expected soon.

Control of invasive plant targets of will be guided by the Plan, which described distribution and potential invasiveness of the watersheds invasive species, prescribed primary and secondary control and management options (including mechanical, chemical, and biological) and implementation calendar, identified personnel and equipment needed, and provided a cost calculator.

Volunteer support of implementation measures will be recruited from the University of South Alabama, AM/NS Calvert, and other sources to reduce costs associated with INS control and management.

Garrow's Bend Watershed

The MBNEP will engage NOAA GulfCorps partners 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.

2020-2021 Action Plan

ERP-4: Invasive Species Management		
ERP	2.7	D'Olive Watershed- Invasive species management
ERP	2.7	Three Mile Creek Watershed- Invasive species Management
ERP	2.7	Garrows Bend Watershed- Invasive species management- Helen Wood Park

ERP-5: ACCESS ENHANCEMENTS

Title	Access Enhancements
Values Supported	
Purpose	Habitat conservation and access enhancements to reconnect residents and visitors to nature of the Alabama coast
Outputs/Deliverables	Acres acquired; ramps improved; ADA mats installed; miles of trail
Outcomes	Improved ecosystem function and protection; improved community management of ecosystem restoration and protection activities; and expanded community engagement and ownership
Clean Water Act Relevance	Support water quality standards; and improve wetland function and coverage.
Year 1	0
Year 2	5,000
Year 3	5,000
EPA Total	10,000
External Funding	300,000
Lead/Partners	MBNEP/Town of Dauphin Island/Krewe of Kindness, Healthy Watersheds Consortium

2019-2020 Program Status

Mobile Bay Watershed Headwater Conservation

The Alabama & Mobile Bay Basin Integrated Assessment of Watershed Health shows Mobile Bay Basin catchments not located along large river corridors, in urbanized regions, or across the Black Belt display high connectivity to Mobile Bay and/or high Watershed Health Index scores (based on catchment land cover and physical, chemical, and biological attributes of stream ecosystems gathered from geospatial data sets and predictive modeling results). Headwater catchments in the Mobile-Tombigbee and Alabama basins, with total area of 20,022,518 acres, are important to maintaining hydrological integrity and comprise 75% of these basins, whose waters support the highest species diversity of states east of the Mississippi, second largest intact river delta in US, and ecosystem services provided by the Mobile Bay estuary.

MBNEP secured $150,000 annually for two years from the Healthy Watersheds Consortium to advance strategic protection of healthy habitat parcels in Mobile-Tombigbee and Alabama River basins, where 75% of catchments drain first and second order streams, key to the ecological health of the Mobile Bay estuary. A land protection atlas was developed by Moffatt Nichol to identify priority parcels and possible funding sources for acquisition and protection, and then support Alabama Forest Resources Center efforts to secure upstream acreage. The AFRC continues to engage property owners to secure critical healthy headwater parcels for protection through conservation easements or fee-simple donations They successfully surpassed their initial target, securing more than of 10,000 acres in the first year of the grant.

Deliverables:

2020 Mobile Bay Basin Habitat Atlas

Provision of Access for People with Mobility Impairments

Enhance access to the natural resources of the Alabama coast for those with mobility impairments. Acquisition of wheelchair-accessible beach mat to provide access from handicap parking onto the beach

MBNEP Management Conference partners concerned over beach access for physically challenged individuals confined to wheelchairs have created a non-profit organization, in part to ensure that individuals reliant upon the Americans for Disabilities Act have access to Alabama beaches. The Krewe of Kindness has already raised funds to purchase the first ADA-compliant beach mat, extending 100 feet onto the beach and installed at Dauphin Island's West End Beach with a ribbon-cutting ceremony on Friday, May 24, 2019.

MBNEP will purchase an additional ADA-compliant beach mat and facilitate installation to provide access from parking areas over sand to beaches or shoreline resources.

2020-2021 Action Plan

ERP-5: Access Enhancements		
ERP	5.2	Create inventory of access points and assess feasibility of installation of ADA Accessibility Mats at sites
ERP	5.2	Installation of at least one mat at a priority location

PROJECT DETAILS: TECHNICAL ASSISTANCE/ CAPACITY BUILDING

Watershed-based, grassroots organizations are the cornerstone of 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 technical assistance, the building of capacity through development of outreach and decision support materials for their use, provision of specialized training and education opportunities, and engagement of volunteers in hands-on learning experiences that 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 address our mission.

MBNEP will support a program that provides data while cultivating stewardship in volunteer monitors from grassroots organizations. Facilitation of the Coastal Alabama Clean Water Partnership will provide a neutral forum for bringing all stakeholders to the table to ensure that sources and impacts of non-point source pollution are addressed.

Outcomes from these activities will include increased knowledge about science, monitoring, habitat management, and restoration of the Mobile Bay estuarine environment and increased community ownership and involvement in local environmental protection activities.

TAC-1: FISHERIES CAPACITY BUILDING

Title	Fisheries Capacity Building
Values Supported	
Purpose	Support alternative industries which couple fishing livelihoods and ecosystem service delivery.
Outputs/Deliverables	Development of a public-private partnership framework for sustainable operation of a peer-lending program.
Outcomes	Preservation of fishing heritage and increased adoption of business practices improving water and habitat quality.
Clean Water Act Relevance	
Year 1	0
Year 2	0
Year 3	50,000
EPA Total	0
External Funding	23,000+
Lead/Partners	Alabama Power, MASGC

2019-2020 Program Status

Oyster Farming Support

Since the COVID-19 crisis began in early 2020, the MBNEP Business Resources Committee has pivoted their attention to the Alabama's oyster industry with a particular focus on oyster aquaculture. Mississippi-Alabama

Sea Grant Consortium is moving forward with a project to provide an alternate income source to off-bottom oyster farmers whose market has been disrupted by restaurant closings related to the COVID pandemic. They are seeking funding to buy farmed, oversized oysters for placement on oyster reefs to improve water quality, increase habitat complexity, and stimulate increased wild oyster reproduction. Alabama off-bottom oyster aquaculture is an emerging industry providing not only delicious seafood, but also vital ecosystem services along our coast.

The MBNEP Business Resources Committee will attempt to support oyster farmers by developing a comprehensive strategy for assisting this industry, which has been negatively impacted by the COVID-19-related shutdown of restaurants across the nation. Using a multi-pronged approach, the BRC will support the aforementioned MASGC efforts to purchase oysters for placement on restoration reefs, work with farmers to develop a shared marketing platform for promoting their product, and develop a peer-lending program to provide capital to those interested in either expanding or entering the oyster aquaculture industry.

Green Port Status

In 2016, the Alabama State Port Authority elected to participate in the Green marine Program, an environmental certification program for the North American marine 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 ASPA, who 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.

Coastal Marine Planning Tools

The MBNEP will continue to facilitate streamlined data delivery with partners, the Alabama Marine Resources Division and Mississippi-Alabama Sea Grant Consortium to ensure planning tools like the Shellfish Aquaculture Siting Tool (https://aldcnr.maps.arcgis.com/apps/webappviewer/index.html?id=a32dad8dacd249ea86bcb80dd951a424) and Alabama Coastal Marine Planning Tool/Public Viewer (http://www.arcgis.com/apps/Viewer/index.html?appid=28ee2b81558d4aeab563164137b1cec7). 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.

2020-2021 Action Plan

TAC-1: Fisheries Capacity Building		
TAC	1.2	Set up Peer Lending and Marketing Program to support Oyster Farmers.
TAC	1.3	Continue to support progress towards Green Marine certification and Green Port status.
TAC	1.4	Streamline data delivery for coastal marine planning (Shellfish Aquaculture Siting Tool and AL Coastal and Marine Planning Tool).

TAC-2: BUSINESS CAPACITY BUILDING

Title	Business Capacity Building
Values Supported	
Purpose	Promote creation of new businesses in support of environmental protection along Alabama coast.
Outputs/Deliverables	Creation of one new economic opportunity/business
Outcomes	Increase ability of business community to participate in management and protection of coastal natural resources.
Clean Water Act Relevance	Improve water quality monitoring.
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	
Lead/Partners	

2019-2020 Program Status

Financial Strategy

With prior-year funding for CCMP implementation and Program operation from federal sources (annual EPA funding and competitive grants), the State (State budget line and MOU with ADCNR, and competitive grants), Mobile and Baldwin counties, coastal municipalities (Mobile, Daphne, Spanish Fort, Fairhope, Foley, and Gulf Shores), national groups (NFWF, Healthy Watersheds Consortium, etc), and local organizations (Partners for Environmental Progress, the Alabama State Port Authority, The Nature Conservancy, the engineering community and others in support of local events), the MBNEP is in a position to revisit these funding mechanism and further develop a finance strategy that plans for the long-term sustainability of the Program and implementation of the CCMP. Enhancing our Finance Committee and facilitation of CCMP by establishing policies with the following objectives:

- Target key stakeholders (public and private) with interests in the two coastal counties to educate about the MBNEP, its successes, and its needs.
- Solicit community investment equivalent to a minimum of 10% of project costs in either cash or in-kind resources to support restoration or community projects.
- Secure annual Program investments or the next five-year period from at least five new communities.
- Establish a fund for coastal restoration through the Community Foundation of South Alabama as a mechanism por providing the non-federal matting share of grants supporting CCMP implementation with a target of raising $100,000 within the next three years.
- Solicit contributions to the coastal restoration fund targeting private sector interests.
- Create a revolving fund capitalized with State Revolving Funds to support private sector investment in best management practices aimed at reducing stormwater runoff or supporting local fishing interests.

Osprey

Following the successful Business Resources Committee sponsored Amphibious Assault on Maple Street cleanup in November 2016 in partnership with Partners for Environmental Progress and Thompson Engineering, Thompson Vice President Don Bates developed a prototype "Litter Gitter," a portable and inexpensive floating litter capture device constructed from cable, hardware cloth, and pool noodles, which he installed and tested there. The success of this device led to the entrepreneur and conservation activist forming Osprey Initiative, LLC, a fledgling company employing veterans and dedicated to innovative trash abatement. With funding by the MBNEP through a 2017 EPA Gulf of Mexico Program Grant, Osprey conducted "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. Osprey personnel emptied and maintained the Litter Gitters, quantifying and characterizing collected material using the EPA's Escaped Trash Assessment Protocol (ETAP) and recycling recyclables. The success of Osprey efforts led to funded 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 eleven watersheds in five states with potential expansion opportunities in five more states. Through April 2020, Osprey teams have removed 43, 013 lbs. or 23,000 cubic feet of litter from their service areas and 30,891 lbs or 17,898 cubic feet of litter from coastal Alabama. Osprey Initiative is a remarkable example of building the capacity of the business community to support ecosystem protection and restoration.

2020-2021 Action Plan

TAC-2: Business Community Capacity Building		
TAC	2.1	Develop a long-term plan for business support of the Program.
TAC	2.1	Engage Business in support of CCMP implementation.

TAC-3: GOVERNMENT CAPACITY BUILDING

Title	Building Capacity in Local Governments
Values Supported	
Purpose	Expand capacity of local governments to manage and enhance coastal environmental resources.
Outputs/Deliverables	Train X county and municipal employees on the use of hydrologic models and software.
Outcomes	Improved watershed management, water quality in impaired waterways, restoration and conservation of stressed habitats, improved health of fisheries, and reduced trash in waterways.
Clean Water Act Relevance	Improve water quality monitoring.
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	0
Lead/Partners	Cities, Counties, watershed stakeholders

2019-2020 Program Status

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. 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; and the Bon Secour WMP/City of Foley

As WMPs continue to be developed for Alabama's tidally influence watersheds, the MBNEP will continue to encourage counties and municipalities to pass resolutions supporting completed plans.

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.

In 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. In the Three Mile Creek Watershed, the 3MC 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. In the Weeks Bay Watershed, resource managers on the Weeks Bay Watershed Implementation Team formed 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.

As the development of WMPs for tidally influence 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

Video Library

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, nearing completed development, will be introduced and available in the near future.

Local Government Staff 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 stormwater management staffs to use the products to make planning decisions in a meaningful, scientifically informed manner.

Dauphin Island Dune Protection

The Dunes of Dauphin Island is a video produced by the MBNEP in 2019 to educate Island residents about the importance of an intact dune system to the developed community as an important line of defense from winds, waves, and storm surge. With dunes shifting and sometimes encroaching upon private property parcels, the Town of Dauphin Island sought to pass a dune protection ordinance to ensure dune systems remain intact and able to contribute to community resilience while offering habitat opportunities to birds and wildlife. The MBNEP may partner with the Town to produce *The Dunes of Dauphin Island, Part II*, for use by the planning community to educated residents prior to the passage of a dune protection ordinance.

Deliverable:

The Dunes of Dauphin Island

2020-2021 Action Plan

TAC-3: Government Capacity Building		
TAC	3.1	Facilitate adoption of resolutions to recognize watershed management plans at the local government level.
TAC	3.2	Support D'Olive Intergovernmental Task Force, 3MC Partnership, Fowl River Implementation Task Force, Dog River Task Force, and Weeks Bay PLAN.
TAC	3.3	Build library of best practices for resource management short videos to inform elected officials and municipal staff.
TAC	3.3	Conduct local government training on the use of tools, funding, and datasets to support improved environmental management.
TAC	3.5	Support efforts to protect dunes on Dauphin Island

TAC-4: REGULATORY CAPACITY BUILDING

Title	Living Shorelines Capacity Building
Values Supported	
Purpose	To build the capacity of local governments for improved environmental protection regulations to manage and enhance coastal resources
Outputs/Deliverables	Comment Letters on zoning and ordinance development
Outcomes	Improve capacity of local government to manage environment
Clean Water Act Relevance	
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	
Lead/Partners	City of Mobile, Dog River Clearwater Revival, Peninsula of Mobile

2019-2020 Program Status

Promotion of WMP Recommendations in City of Mobile Unified Development Code

The MBNEP has endorsed inclusion of recommendations of the Three Mile Creek and Dog River watershed management plans to update of local regulations that would increase protections of local water bodies and encourage better stormwater management practices. The City of Mobile is in the process of incorporating several of these recommendations into an update of their Unified Development Code including mandatory riparian buffer setbacks in all new commercial or residential development or redevelopment on parcels of two acres or more. Additionally, the City has also passed a stormwater management fee that is applied to all residential and commercial properties to fund the City's stormwater management program.

2020-2021 Action Plan

TAC-4: Regulatory Capacity Building (Integration of Environmental Protection into other Planning)		
TAC	4.2	Promote inclusion of watershed plan recommendations into City of Mobile Unified Development Code

TAC-5: GRASSROOTS CAPACITY BUILDING

Title	Grassroots Capacity Building
Values Supported	
Purpose	Expand citizen stewardship of the estuary through voluntary water quality monitoring activities.
Outputs/Deliverables	Train 20 Water Quality Monitoring volunteer monitors.
Outcomes	Increased knowledge about science, monitoring, habitat management, and restoration of the Mobile Bay estuarine environment; and increased community ownership and involvement in local environmental protection activities
Clean Water Act Relevance	Improve water quality monitoring.
Year 1	19,284 ($5,000 plus reprogram of $14,284)
Year 2	0
Year 3	0
EPA Total	0
External Funding	0
Lead/Partners	AWW/MBNEP, CAC

2019-2020 Program Status

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 information.
- Empowering citizens to use their data to protect and restore their local waters.

In the coming year, MBNEP will continue to improve community ability to participate in ecosystem-based management action by engaging grassroots groups in collecting water quality and biological data in support of watershed planning through expanded training and participation in AWW activities. 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.

In the coming year, MBNEP and the CAC will hold AWW workshops to train or recertify at least **20 volunteer water monitors**. 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, determining agreed upon methodology, strategies to increase the number of volunteer monitors testing for bacteria, and promoting better coordination and policy changes related to testing methodologies with ADEM and ADPH. Having recognized a gap in the capacity of volunteer water quality monitoring programs to quickly capture and report water quality issues and data, MBNEP recognized Water Rangers, an existing, user-friendly, web-based platform that allows the public to report data related to water quality, animal and plan observations and pollution. The MBNEP funded new functionality for Water Rangers to improve usability for coastal Alabama residents.

In addition, 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.

2020-2021 Action Plan

TAC-5: Grassroots Capacity Building		
TAC	5.1	Increase the number of volunteer water quality monitors.
TAC	5.2	Develop Volunteer Water Quality Monitoring Strategy for the Coast.

PROJECT DETAILS: EDUCATION AND PUBLIC INVOLVEMENT

Watershed-based, grassroots organizations are the cornerstone of 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, 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 *"promote the wise stewardship of the water quality and living resources of coastal Alabama."*

EPI: MANAGEMENT CONFERENCE SUPPORT (ALL STAKEHOLDERS)

Title	Management Conference Support
Values Supported	
Purpose	Sustain and expand stakeholder involvement in the implementation of the CCMP 2018-2023.
Outputs/Deliverables	Comprehensive trash campaign encompassing monitoring of debris, waterway restoration, incentive programming, and community outreach
Outcomes	Improved community understanding about the issue of trash and how to improve management of this waterway impairment
Clean Water Act Relevance	Support water quality standards; improve water quality monitoring, Support TMDL implementation, and improve monitoring of wetland function and coverage.
Year 1	4,000
Year 2	54,000
Year 3	10,000
EPA Total	68,000
External Funding	
Lead/Partners	MBNEP/All members of the Management Conference

2019-2020 Program Status

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 in various ways:

- Incorporate the “Create A Clean Water Future” (CCWF) branding broadly in local business practices to have those businesses become identifiable with that brand;
- Host meetings and presentations for civic organizations, business leaders, municipalities, and local media outlets to share scientific data, identify areas of concern, and introduce specific projects and priorities tailored to the individual groups;
- Conduct tours of critical areas of interest or concern to educate the private sector on the value of our coastal resources and the economic impact on our community;
- Motivate constituents to adjust current behaviors and practices to help preserve working waterfronts and fishing communities;
- Promote volunteer monitoring and science to encourage stewardship and ownership of our estuarine waters and habitats;
- Share watershed management plans and strategies to help ensure community commitment to the environment; and
- Encourage and facilitate employee involvement in service opportunities to support the CCWF campaign. Facilitate strong communication among business leaders and environmental partners.

Education, encouragement, and marketing campaigns are all part of the plan to build strong relationships and “buy-in” from local business leaders. These efforts will prove effective in providing the tools to support community-based efforts to promote wise stewardship of the water quality and living resources of the Mobile Bay and Delta.

2020-2021 Action Plan

Continue to support Management Conference Committees as requested.

EPI-1: BUSINESS COMMUNITY UNDERSTANDING

Title	Business Community Tours
Values Supported	
Purpose	Improve understanding about local environmental resources within the private sector.
Outputs/Deliverables	Comprehensive trash campaign encompassing monitoring of debris, waterway restoration, incentive programming, and community outreach
Outcomes	Improved community understanding about watersheds and environmental stressors
Clean Water Act Relevance	
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funding	
Lead/Partners	MBNEP/All members of the Management Conference

2019-2020 Status

Watershed Tours

The MBNEP has employed boat 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 on 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 the issues, challenges, and solutions. As planning continues, MBNEP will continue to engage stakeholders in tours to view problems, observe implementation of restoration projects, and to see projects successfully completed.

2020-2021 Action Plan

EPI-1: Improve Business Community Connection to and Understanding of Coastal Resources		
EPI	1.1	Lead two boat tours in watersheds under watershed management plan development or implementation.

EPI-2: BUSINESS INVOLVEMENT PROGRAM

Title	Business Involvement Program
Values Supported	
Purpose	Engage business community in assisting with implementation of the CCMP.
Outputs/Deliverables	Rain barrel installation; invasive species management
Outcomes	Increased public awareness of environmental issues; increased knowledge of environmental issues and stressors; and increased involvement in activities being undertaken to protect estuarine resources
Clean Water Act Relevance	
Year 1	0
Year 2	0
Year 3	0
EPA Total	0
External Funds	7,500
Lead/Partners	MBNEP, Alabama Power, Greif/Soterra, AMNS Calvert

2019-2020 Status

Alabama Power Rain Barrel Partnership

Initially begun as a 2017 activity of the Coastal Alabama Conservation Corps, the Prichard Rain Barrel Program provided rain barrels, initially donated by the Coca Cola Bottling Company, to minority, low-to-moderate income residents living in the flood-prone, low-lying Toulmin Springs Branch Sub-watershed of the greater Three Mile Creek Watershed. Each harvest system comprises two 55-gallon rain barrels, gutters, downspouts, and hardware that provide these City of Prichard residents, who pay disproportionately expensive 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 Toulmin Springs Branch. This Program is dependent upon private sector volunteers. Grief, a local land management company and its subsidiary Soterra, have donated 200 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. With 60 systems installed to date, the partnerships and installation of rain barrel harvest systems are ongoing.

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.

2020-2021 Action Plan

EPI-2: Increase Business Community Involvement and Support for protecting Coastal Resources		
EPI	2.1	Expand the partnership with Alabama Power and Greif Soterra to include the FUSE Project in installing rain barrels in low- and moderate-income areas of Three Mile Creek watershed.
EPI	2.1	Engage AMNS Calvert in assisting with invasive species management in Three Mile Creek Watershed.

EPI-3: COMMUNITY EDUCATION PROGRAM

Title	Community Education Program
Values Supported	
Purpose	Educate community about watershed, ecosystem characteristics, environmental stressors and project components.
Outputs/Deliverables	Newsletters, Signage, videos, events
Outcomes	Increased public awareness of environmental issues
Clean Water Act Relevance	
Year 1	0
Year 2	0
Year 3	30,783
EPA Total	30,783
External Funding	24,000
Lead/Partners	MBNEP, ADCNR Coastal Section

2019-2020 Program Status

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 a 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.

Deliverables:

2020 Spring: The Oyster: An Icon of Life on the Alabama Gulf Coast
2019 Summer: Stepping Up! Coastal Alabama Cities Demonstrate Stewardship

Signage

MBNEP will develop and install 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 area of the project, and 3) Project details. The signs have already been installed at Dog River Park, Helen Wood Park, Broods Park, Steele Creek Lodge, and Prichard's Jackson Reading Park.

In addition, MBNEP will continue to install 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 Three Mile Creek, Fowl River, Eight Mile Creek, and D'Olive Creek, and Bon Secour Complex of watersheds. Plans currently underway for watershed sign installation in the West Fowl River, Wolf Bay, and Magnolia River watersheds were interrupted by the COVID19 pandemic. Our strategy involves installing these signs in concert with watershed planning.

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. The Program has hired Ben Brenner, who was the principal in production of many of the videos in our library contractually as Cobia Productions, as a full-time member of its staff. Ben was part of the production team that produced *Flight of the Frigate Bird – On Omen of Rising Seas* in 2018 and is currently involved in the production of several short videos addressing local environmental issues to be released to the public.

As discussed under TAC-3.3, the video library is being catalogued in a spread sheet that will be shared online to enhance access for potential users. The library will be updated as content is added.

Deliverables:

http://www.mobilebaynep.com/videos

2020-2021 Action Plan

EPI-3: Improve Community Connection to and Understanding of Coastal Resources		
EPI	3.1	Publish semi-annual newsletter in partnership with ADCNR.
EPI	3.1	Develop interpretive and street signage to raise awareness about watersheds and community values.
EPI	3.1	Develop educational videos and digital media content to raise awareness about what people value about living on Alabama coast.

EPI-4: CLEAN WATER FUTURE CAMPAIGN

Title	Clean Water Future Campaign
Values Supported	
Purpose	Educate the residents of Baldwin and Mobile counties about ways to decrease harmful stormwater runoff.
Outputs/Deliverables	Marketing campaign involving production of educational materials available on a website (www.CreateACleanWaterFuture.com) or distributed at community meetings and events
Outcomes	Increased public awareness of environmental issues; and increased knowledge of environmental issues and stressors
Clean Water Act Relevance	
Year 1	15,041
Year 2	0
Year 3	0
EPA Total	15,041
External Funding	0
Lead/Partners	MBNEP

2019-2020 Program Status

With stormwater runoff providing the number one source of pollution to American waters, MBNEP, through its Business Resources Committee, will continue to develop and host 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

The Create a Clean Water Future web site (https://www.cleanwaterfuture.com/) 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.

2020-2021 Action Plan

EPI-4: Promote the Clean Water Future Campaign to Encourage Actions for Improving Water Quality		
EPI	4.1	Support PEP in creating outreach materials for CCWF business partners to educate their members and employees.
EPI	4.2	Assess usage and utility of Clean Water Future Program at the municipal and state level. Make improvements as needed.

EPI-5: COMMUNITY EVENTS PROGRAM

Title	Special Events
Values Supported	
Purpose	Educate the public about the things that are valued most about living in coastal Alabama.
Outputs/Deliverables	Sponsorships and outreach materials for at least 5 community events.
Outcomes	Increased public awareness of environmental issues; and increased knowledge of environmental issues and stressors
Clean Water Act Relevance	
Year 1	12,500
Year 2	12,500
Year 3	7,248
EPA Total	32,248
External Funding	0
Lead/Partner	Community groups, Management Conference members

2019-2020 Program Status

The Trash Mob

Created by the MBNEP and the Coastal Conservation Corps in 2017, the "Trash Mob" utilizes the pop-culture phenomenon of a "flash mob" to raise awareness and encourage behavioral change toward reducing littering and Creating a Clean Water Future. Participants meet in crowded spaces and perform a "spontaneous" dance to a catchy song, "Pick Up the Trash", with an anti-littering message. The Trash Mob has been performed on a small scale at community meetings, and plans include a roll-out on a regional scale.

Special Event Sponsorships

Special events like the Dauphin Island Sea Lab's Discovery Day, the Alabama Coastal Birdfest, (Three Mile) Creek Fest, the Stan Mahoney Youth Fishing Tournament, and Fairhope's Earth Day 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.

Promoting Stewardship at Local Events

MBNEP's purpose is to provide tools and 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. In the next fiscal year, MBNEP will continue development of materials for use in a multi-pronged community outreach program that includes an updated

communication plan establishing goals, identifying target audiences, determining what information should be disseminated and how, implementing actions, and evaluating results.

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 has worked 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.

2020-2021 Action Plan

EPI-5: Increase community involvement in and support for stewardship, volunteer, and educational opportunities.		
EPI	5.1	Execute the TRASH MOB.
EPI	5.1	Support community events which promote the six values of the CCMP.
EPI	5.2	Develop and promote Guidance for coordinating and promoting more environmentally friendly events.

MPA: PROGRAM IMPLEMENTATION

The MBNEP Program Office works closely with all of the 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 of 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 will provide overall coordination for implementation of the CCMP; prepare 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. This amount includes all the necessary items for program administration including salaries, benefits, supplies, equipment, etc.

The Dauphin Island Sea Lab is the administrative sponsor of the MBNEP and has a federally approved indirect rate of 43.2%. 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 is able to capture the 28.2 % unrecovered costs as additional match for the program. For all large external grants, the DISL follows federal regulations of charging 43.2% indirect costs to all direct activities and to the first $25,000 of each contract executed as part of each external grant.

A hallmark of the National Estuary Program is the convening of a "Management Conference" to guide the **assessment of trends** in water quality, natural resources, and uses of estuary**; identification of causes** of environmental problems; **development of relationships** between pollutant loadings to the estuary and potential uses and quality of the estuary; **development of the CCMP** and other action plans for restoring and maintaining the chemical, physical, and biological integrity of the estuary; and **coordination of the collective implementation** of the CCMP. At its annual retreats, MBNEP's Executive Committee (EC) evaluates the functioning of the current Management Conference structure and assesses progress on implementation of the CCMP.

Vision: Alabama's estuaries, where rivers meet the sea, are healthy and support ecological functions and human uses.

Purpose: The MBNEP brings together an engaged and diverse community committed to integrating environmental health with community and economy to develop consensus on what our ecosystem priorities are, how to achieve them, and how to facilitate/promote their implementation.

Mission: To provide the necessary tools and to support community-based efforts to promote the wise stewardship of the water quality and living resources of the Mobile Bay estuary and the Mobile-Tensaw Delta.

Goals:

- Water that is fishable, swimmable, and drinkable ("meeting or exceeding State's designated uses)
- Conservation, restoration, and protection of critical habitats
- Community who understands and supports the value of our coastal resources
- Integration of environmental health with a balanced economy

During the next fiscal year, MBNEP will continue to promote greater coordination and participation of Management Conference members in implementing the Updated CCMP 2018-2023 through improving program transparency, communications, and community awareness. This will be done by the development of a communications plan for promoting the updated CCMP, coordination of special events to expand MBNEP partnerships, and continuously improving and expanding our website to provide more interactivity and highlight management conference efforts.

Expected outcomes related to these activities include an increased understanding of activities undertaken by MBNEP and its partners to protect and conserve the water quality, living resources, habitats and human uses of the Mobile Bay estuary, increased recognition of the activities of the MBNEP, increased knowledge about the issues impacting the health of the Mobile Bay estuary, and improved financial planning and tracking.

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; and oversees program activities.
Deputy Director	Vacant	Assists with overall management of program priorities, project development; cultivation of stakeholders; communications, outreach, and resource development.
Restoration Program Manager	Katie Dylewski	Oversight of all restoration-related projects including project design, implementation, coordination and monitoring; and develops, initiates and coordinates baseline data collection.
Watershed Protection Coordinator	Tom Herder	Conducts technical writing and preparation of grant applications; develops watershed implementation program projects; conducts educational programs in schools and to community groups; and facilitates the transfer of technical information.
Contracts 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.
Restoration, Science & Monitoring Coordinator	Jason Kudulis	Coordinates activities of Science Advisory Committee in their development of a watershed monitoring framework to measure ecosystem health and the citizen science program.
Community Outreach Coordinator	Kelley Barfoot	Manages distribution of public information including press, outreach materials; prepares program activity reports for grantors/public; other
Community Relations Manager	Herndon Graddick (Contractor)	Cultivates relationships with a focus on the business community; builds and supports the Business Resources Committee through recruitment of key individuals; enlists local business community participation in watershed management planning and implementation; communicates the value of MBNEP through special events and media.
Watershed Management Coordinator	Christian Miller	Works with communities to develop watershed management plans and implement initiatives of the Alabama Clean Marina Program and the Alabama Clean Water Partnership.
Program Administrator	Bethany Dickey	Provides services associated with office manager as well as technical editing, social media strategies.
Program Coordinator	Madison Blanchard	Supports projects using GIS, logistical support; coordinator of Rain Barrels Initiative
Video/Digital Media	Ben Brenner	Produces educational videos; manages social media accounts; maintains website

Travel

The administration amount includes $15,000 for travel related to outreach and technology and information transfer. 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.

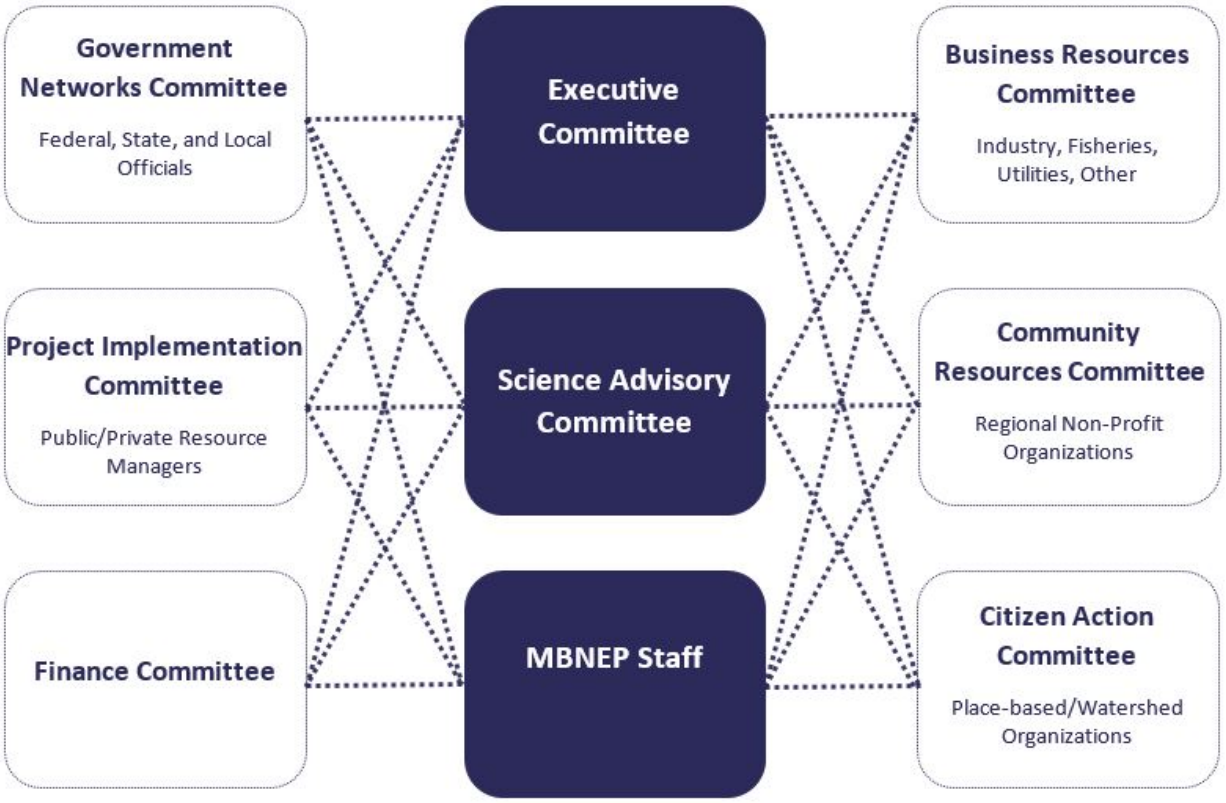
Indirect Cost Rates

Indirect Costs are charged at a rate of 15% on all cash expenditures (grant and matching funds) of the MBNEP by the Dauphin Island Sea Lab. DISL allowable Indirect Cost negotiated rate with Federal Government is 43.2%. The unrecovered indirect of 28.2% is provided to the MBNEP by DISL/MESC as an in-kind matching contribution. Additional in-kind and support services not covered by indirect costs are also provided to the MBNEP by DISL on a case by case basis.

PARTNERS

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. The Mobile Bay NEP Management Conference now consists of six main committees: Community Action, Community Resources, 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 provides 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 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 more effectively communicate local needs.
- **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.
- **Community Resources Committee** is made up of regional and local non-profit organizations who are able to provide training, advocacy and educational opportunities to community members and grassroots groups.
- **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 2.9 million in federal dollars with more than 16 million dollars in match.

Gulf of Mexico Program (GOMP)

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. At present, MBNEP is the recipient of a $488,711 grant to implement a comprehensive trash abatement program in the Three Mile Creek Watershed.

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 Director sits on the MBNEP Executive Committee.

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

The US 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 the corps 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 Fresh Water 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 $750,000 over the past nine per year and additional NOAA related grants, which are used to produce ***Alabama Current Connection. 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.

State Match	Year U1	Year U2	Year U3 Budgeted
State Appropriation	76,088.00	76,088.00	76,088.00
ADCNR	98,000.00	98,000.00	98,000.00

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 Satsuma, Chickasaw, Bayou La Batre, Spanish Fort, Dauphin Island, Gulf Shores and Foley for additional investment. Past annual investment from municipalities includes:

Revenues	Year One Actual	Year Two Actual	Year Three Budget
Non-Federal Match			
Baldwin County	50,000.00	75,000.00	75,000.00
Mobile County	17,888.00	17,888.00	17,888.00
City of Mobile	50,100.00	50,100.00	50,100.00
City of Daphne	50,000.00	50,000.00	50,000.00
City of Spanish Fort	5,000.00	20,000.00	20,000.00
City of Fairhope	5,000.00	15,000.00	15,000.00
City of Foley	20,000.00	20,000.00	20,000.00
City of Gulf Shores	5,000.00	-	-

IN-KIND CONTRIBUTIONS

MBNEP depends on volunteer support and local contributions or other in-kind services to achieve program success. On a yearly basis, in-kind environmental contributions account for over half of the non-federal share of match that MBNEP is required to raise as investment in implementing the CCMP. 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. 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, 2020

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.

THE CCMP

In the first year of the updated ***Comprehensive Conservation and Management Plan for Protecting Alabama's Estuaries and Coast 2019-2023***, the draft CCMP, nearing completion and submission, is already under implementation. This road map to protection of Alabama's coastal resources was produced to support what people along the coast value most: ***Access to the Water and Open Spaces***, ***Beaches and Shorelines***, ***Fish and Wildlife***, ***Heritage and Culture***, ***Environmental Health/Resilience***, and ***Water Quality***. The CCMP is organized into five sections: Ecosystem Status and Trends, Ecosystem Restoration/Protection, Technical Assistance and Capacity Building, Community Stewardship, and Program Implementation. What follows is an overview of accomplishments by a Management Conference that includes community leaders, academia, businesses and industry, government entities, and grassroots and environmental groups in their efforts to implement strategies of the CCMP.