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Sample Materials

## *Preface*

The National Estuary Program resulted from amendments to the Clean Water Act (CWA) of 1987. Mobile Bay was designated an estuary of national significance and included in the program at the Governor's request in 1995. For the next several years, led by a United States Environmental Protection Agency (EPA) funded Mobile Bay National Estuary Program (MBNEP), literally hundreds of participants and thousands of hours of volunteer time resulted in the development of a CCMP which received final approval on April 22, 2002. Since that time, MBNEP has worked diligently to implement this plan and respond to emerging environmental challenges.

The EPA bases its continuing funding support for MBNEP upon a thorough evaluation of its progress in implementing its CCMP. As stated in the EPA guidance document for the development of and Implementation Review Package, "This review of the implementation process also provides an opportunity for an NEP to 1) highlight successes and strengths, 2) identify and address areas for improvement, and 3) demonstrate that stakeholder commitments, as well as community support and momentum are being maintained and increased."

MBNEP was one of the last National Estuary Programs established. EPA considers MBNEP to be a Tier V NEP and as such MBNEP's successful completion of this year's Implementation Review, which covers the period of October 1, 2002 through September 30, 2005, will provide the basis for funding support for the next three years.

The first step of the Implementation Review is the submission of an Implementation Review Package that includes work plans submitted to EPA for fiscal years 2003, 2004 and 2005 (Years 7, 8, and 9) as well as an executive summary addressing significant achievements, barriers to progress, stakeholders, financial management, and public participation. In addition it contains a section that demonstrates how MBNEP's program supports the core areas of the CWA. This package is due on February 28, 2006. Once this package is submitted, an EPA Team consisting of EPA representatives as well as one other NEP director will review the submission and conduct on-site reviews during the summer months. It is assumed that the entire process will be completed by August, 2006.

MBNEP has made much progress since its last implementation review. Numerous environmental projects have been accomplished despite the setbacks provided by the impacts (in two successive years) in our study area of two of the most damaging hurricanes to ever strike the U.S. However, our progress is less about projects accomplished than about the renewed enthusiasm about the program and the expanded and recognized roles of MBNEP in our coastal community: valued partner, capacity builder, honest broker and community resource.

## *Introduction*

MBNEP was created in 1996 at the request of the Governor of Alabama under provisions of the CWA. Our mission is to promote and maintain the stewardship of the water quality and living resources of coastal Alabama. We are a voluntary, non-regulatory program bringing together citizens, local, state and federal government agencies, business and industry, conservation and environmental organizations, and academic institutions to meet the environmental challenges that face the unique and the imperiled resources that characterize our coastal estuaries.

MBNEP's purpose is to encourage a community-based approach to watershed management by empowering citizens, grassroots organizations, government agencies, and educational establishments to work together to address local environmental challenges. MBNEP's objectives are to engage these groups in determining how to best treat the Mobile Bay, our associated coastal waters and their surrounding watersheds to ensure their protection and conservation for our lifetime and beyond. MBNEP works within a set of guiding principles to maximize its effectiveness in promoting estuary health. These are:

***Those that live it know it-*** Those citizens, fishermen, boaters, scientists, hunters and others have a unique insight into the environmental challenges we face, what works, and what doesn't.

***Economic opportunities must be available-*** Our coast is an economic engine, creating well over three billion dollars in wealth for our state each year through such activities as trade through the Port of Mobile, commercial fishing, tourism, hunting and coastal homebuilding.

***Environmental Stewardship efforts depend on each other-*** The Mobile estuary benefits from the efforts of many diverse partnerships, collaborations, consortiums and associations. These groups of disparate interests come together, in part facilitated by MBNEP, to develop comprehensive solutions to challenges that threaten the estuary's sustainability.

***It happens in the river, in the sea, and on the street-*** Involvement of citizens in carrying out environmental activities aimed at improving the Bay and its watersheds is paramount to ensuring the long-term health and vitality of the Mobile estuary. MBNEP encourages citizen input, involvement, and education, recognizing that ultimately, 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.

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 eastern edge of coastal Alabama to its western coastal border. In addition it extends seaward to the three-mile state jurisdictional limit. MBNEP's target area also includes Mississippi Sound, up to the Mississippi/Alabama boarder. Major waterways include the Tombigbee, Tensaw, Mobile, Alabama, Escatawpa, Dog, Fowl, Fish, Magnolia, Bon Secour, and Perdido rivers; Chickasaw, Norton, Threemile, and Eightmile creeks and the U.S. Intracoastal Waterway.

The Management Conference of MBNEP is composed of leading representatives of local, state and federal governmental agencies, representatives of all resource management organizations, and a wide variety of citizens and community stakeholders interested in protecting and conserving the waters, living resources, continued recreational and commercial uses, and habitat base of Alabama's coastal waters and estuaries. These community leaders set direction for MBNEP as well as advising on the routine operation of the Program office. 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 much more far-reaching benefit than that of simply CCMP project management. This cooperation and coordination is key to successful CCMP implementation.

## **Significant Achievements/Environmental Results: Addressing Clean Water Act: FY 2003-2005**

During the period 2002-2005, MBNEP and its Management Conference matured in concept and effectiveness in the region. As a respected voice, a builder of coalitions, a facilitator of dialogue, a funding source and as leverage for funds from other sources, MBNEP made significant progress in addressing the priorities of both the CWA and the CCMP. The following recap of selected actions and results is divided into those that directly address core programs of the CWA and others of significance. Of particular note is the large number of “partners” involved in the success of the Program. These include participants in contracted projects, co-funders (providing cash support, match and in-kind services), members of the Management Conference and other local, state and regional entities. An entire listing of projects and Management Conference actions can be found in MBNEP Tracking Database/Spreadsheet and in the “Accomplishments” sections of our Annual Work Plans.

### ***Water Quality Standards***

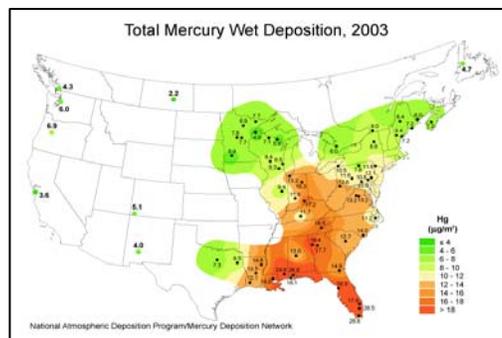
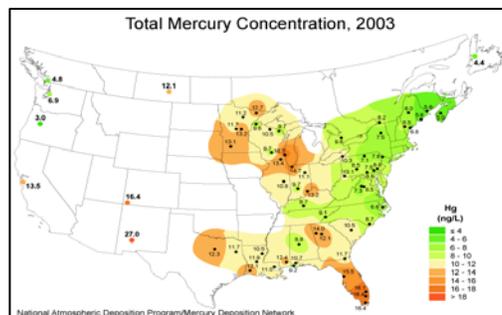
Following a 2004 review of toxic pollutant standards, ADEM adopted and published new water quality standards (ADEM Regulations 335-6-10). Further, based upon fish tissue sampling, ADEM in coordination with the Alabama Department of Public Health (ADPH) is evaluating adoption of more stringent mercury standards relative to fish consumption. Some of the impetus for this reconsideration of mercury and fish tissue standards can be traced to the attention focused on the issue of methylmercury in our waters by the highly successful Mercury Forum held in Mobile in May 2002. This two day conference was put on by MBNEP, Mississippi-Alabama Sea Grant Consortium (MASGC), The Forum (an industry group) and Mobile Bay Watch (a local environmental advocacy organization). It attracted over three hundred participants and experts who hailed from 17 states and three foreign countries. The leaders of two seminal studies on methylmercury exposure and effects were among the participating speakers. In fact, the lead up to this conference saw Alabama Senator Jeff Sessions successfully call on the President to form the federal Mercury Task Force. The recommendations from this conference were provided to numerous agencies and organizations in early 2003. They have been used by the GOMP, the National Marine Fisheries Service, and now ADEM and ADPH is reviewing or formulating actions and programs to deal with the issue.

### ***Water Quality Monitoring***

#### ***Atmospheric Deposition***

MBNEP continued, through fiscal year 2005, an established partnership with the University of Illinois/National Atmospheric Deposition Program (NADP), ADEM, Mobile County and Baldwin County to establish National Trends Network (NTN) monitoring sites to measure nutrient and mercury atmospheric deposition.

The data is gathered to support efforts surrounding Total Maximum Daily Load (TMDL) assessments and subsequent permitting processes and non-point source control plans in addition to providing data that will help area scientists and the public understand sources and impacts of nutrient and mercury loadings in our area waters. MBNEP provides funding for the equipment and the initial sample analyses. Baldwin and Mobile Counties provide the sites and have donated site preparation work. ADEM provides staff time to set up and operate the



monitors. The Air Division of ADEM has committed time and effort in sampling, analysis and maintenance of the atmospheric deposition sites.

To date, four years of atmospheric data have been collected through this monitoring effort. The next phase is to look carefully at this data and examine trends, anomalies and potential impacts of atmospheric deposition of mercury and nutrients in the Bay “air shed”. MBNEP is committed to continuing to fund these sites for sample collection and analysis according to standard protocols and reports analyzed results to EPA, ADEM, the general public and through the NADP website <http://nadp.sws.uiuc.edu/>.

#### Coastal Beach Monitoring (Pathogens)

Lead by ADEM and ADPH, this EPA program monitored for Enterococcus bacteria. MBNEP supported this effort by providing additional funding to the ACF, a local non profit environmental organization, to extend sampling for these bacteria in fresh water streams within the coastal watershed, therefore strengthening ADEM’s coastal monitoring efforts. In addition, MBNEP providing funding support for the establishment of one common sampling station for sampling control and public education purposes.

Alabama has approximately 50 miles of Gulf Beach and an estimated 65 to 70 miles of bay beaches where the adjacent waters are classified for swimming under the State’s Water Use Classification System. Bacterial contamination in Alabama’s coastal recreational waters can originate from sources including shoreline development, wastewater collection and treatment facilities, septic tanks, urban runoff, disposal of human waste from boats, bathers themselves, commercial and domestic animals and natural animal sources such as wildlife. People who swim and recreate in waters contaminated with such bacterial pollution are at an increased risk of becoming ill. Pathogens associated with this type of pollution can cause ear, eye, skin and respiratory infections, gastrointestinal illness, and more serious diseases such as meningitis and hepatitis.

To increase public awareness and provide valuable water quality information to help the public make more informed decisions concerning their recreational use of Alabama’s natural coastal waters, ADEM and ADPH implemented a program of routine collection of water samples from 25 high use and/or potentially high risk public recreational sites from Perdido Bay to Dauphin Island. The selection of sites and the frequency of sampling are determined using a risk-based evaluation and ranking process. Depending on the site, samples are collected twice per week, once per week or once every other week during the swimming season (June through September) and once per month during the cooler months. These samples are analyzed for enterococci. Enterococci bacteria are endemic to the guts of warm blooded creatures. These bacteria, by themselves, are not considered harmful to humans but often occur in the presence of potential human pathogens. The threshold concentration which triggers an advisory, are based on recommendations provided by the EPA in the documents Ambient Water Quality Criteria for Bacteria (1986) and Water Quality Standards Handbook, second addition (1983).

Results for each site are posted on ADEM Beach Monitoring web site (<http://www.adem.state.al.us/FieldOps/Monitoring/images/beachmap05.html>) where users can view data and swim advisories. Local media make use of this site to publicize swim advisories during news broadcasts and in print media.

In February of 2005, MBNEP held a workshop of scientists, resource managers and interested citizens to develop a list of environmental indicators that responded to a list of different focus questions. Enterococcus has been identified as an important indicator of “safety of water for bodily contact” and as such, MBNEP will continue to advocate monitoring of these bacteria.

### Mobile Bay Real-time Water Monitoring

The first long-term water quality/meteorological network has been established in Mobile Bay. In a nearly unprecedented collaboration of effort, a variety of agencies have pooled their resources to establish the long needed continuous (24/7) monitoring capability available through this Northern Gulf of Mexico Coastal Observing System. This monitoring effort, led by MBNEP in partnership with the Dauphin Island Sea Lab, USA Center for Estuarine Studies, and Weeks Bay National Estuarine Research Reserve includes the establishment of instrumentation at four different sites throughout Mobile Bay (Meaher Park, Middle Bay Light, Weeks Bay and DISL) to take continuous measurements of air and water temperature, relative humidity, wind speed and direction, barometric pressure, precipitation, quantum radiation, water depth, salinity, turbidity, dissolved oxygen and total DO. These four stations continue to be financially supported by MBNEP as part of its commitment to water quality monitoring throughout the estuary. Results are available real-time at <http://www.mymobilebay.org> and are archived by the DISL.



Data is available for research use, modeling input, public advice and, most recently, to understand the dynamics and effects of the passage of Hurricane Katrina. These stations are modeled in part on the Chesapeake Bay Program's EMPACT (Environmental Monitoring for Public Access and Community Tracking) project and represent the first, continuous and long term hydrologic and meteorological monitoring effort in the Bay. These monitoring sites provide valuable data for validation of TMDL development, creation of several in-progress hydrodynamic models (under ACES research aegis) as well as provide the public information on water quality for educational or recreational uses. Numerous "snapshots" of Mobile Bay conditions have been obtained through past studies but no long term characterizations are available.

The value of coastal observing systems is recognized by the U.S. Congress, the National Ocean Partnership Program (NOPP), the Environmental Protection Agency (EPA), and the National Ocean and Atmospheric Administration (NOAA). Recent reports by the Pew Oceans Commission and U.S. Commission on Ocean Policy decry the lack of information from near coastal waters on which to base management decisions and recommend monitoring programs linked to strong research. An additional benefit of real time observation is the potential for the public to track and learn about water quality conditions. Increased environmental knowledge can translate into alteration of behavior patterns.

### Delta Hydrologic Monitoring

MBNEP funded a multi-year study designed to collect preliminary data assessing causeway impacts and the potential impact of altered fresh water inflow (as influenced by upstream release from hydroelectric plants, locks and dams) on the ecology of the lower Mobile-Tensaw Delta in partnership with DISL, The Nature Conservancy, Alabama Power Company, Mobile Bay Watch, in response to concerns of altered hydrography of the estuary due to the construction of a long causeway that connects the west and east sides of Mobile Bay.

The Mobile-Tensaw Delta (Delta) is a freshwater dominated estuarine system at the base of the Mobile River drainage basin. Since 1930, approximately 20 large dams and other major water control structures have been built on the Delta's two primary feeder streams – the Alabama/Coosa/ Tallapoosa and the Tombigbee/Black Warrior river systems. Within the Delta proper, a large dike-like causeway

has sealed off a number of once open bays from immediate contact with the Gulf. These hydrological modifications have potentially altered the hydrography of one of North America's largest, most productive and diverse estuaries on a local and system-wide basis. It is hypothesized that these modifications have dramatically altered the productivity of ecological communities within the lower Delta via reduced water exchange and altered circulation patterns, changes in nutrient cycling and increased incidences of exotic and invasive plant species.

Based on the 2003-2004 continuous hydrographic monitoring and sampling events, short and long-term variations in the data were evident for the Mobile-Tensaw Delta sites. Although the study funded by MBNEP was limited to a single year, the documented biological and physical variability in the lower Mobile-Tensaw Delta suggests that effects of the dike-like causeway are widespread and ecologically important. Thus future studies should be multifaceted and include both additional monitoring and ecological experimentation to tease apart the impacts of local regional land use practices from causeway impacts on the ecology of the Mobile-Tensaw Delta and will require additional evaluation in order to provide a basis for future management and potential remediation.

#### *Effects of Mobile Bay Causeway Construction on Water Conditions and Sedimentation Rates*

Another monitoring study necessary to assess the impacts of hydrologic change on water quality was undertaken by the ACES. Sediment cores from above and below the Hwy. 90 causeway were used to define water conditions, energy levels, sediment deposition and vegetation competition pre- and post-construction. Cesium-137 horizons indicate that sedimentation rates north of the causeway are low due to isolation from Mobile Bay. Pollen records also indicate that the exotic Eurasian water milfoil is more recent in occurrence than the time of construction. Diatom analysis profiles a lower energy and a more freshwater environment above the causeway beginning after the time of construction. No recent dramatic changes were evident in the sedimentary record.



#### *Sub-Estuary Watershed Monitoring*

In 2004, MBNEP entered into a contract with ADEM to provide increased funding for water monitoring in tributary streams for Mobile Bay as outlined and identified in MBNEP. This provides a basis for qualitative and quantitative assessment of water quality in these critical, local tributaries. Sub-estuaries include Bon Secour, Bayou La Batre, and Dog River. One sub-estuary a year is sampled on a quarterly basis starting with the Bon Secour watershed. Long term plans include adding Fowl River and Fish River to the program. Monitoring will include a thorough investigation of water and sediment parameters. These include measurements on water chemistry, pathogens, and metals. Samples will be taken from the rivers leading into the sub-estuary as well. Once analysis is complete, information will be made available through MBNEP's website, [www.mobilebaynep.com](http://www.mobilebaynep.com). Data will be incorporated into MBNEP DIMS. This program represents a significant expansion of the ALAMAP monitoring project in coastal Alabama, that would not have been carried out without the additional emphasis and funding provided by MBNEP.

### Eight Mile Creek Pathogen Source Identification

In 2004, MBNEP, ADEM, Mobile Engineering Company and the South Alabama Regional Planning Commission (SARPC) partnered to in an effort to remove Eight Mile Creek and Gum Tree Branch from the Alabama 303(d) list through identification of pathogen inputs into this stream. The goal of this initiative is to provide data on these waters that could be used verify the success of Prichard's corrective actions to address Sanitary Sewage Overflows (SSO) and associated TMDLS for these segments. In the event that the data does not support this verification, the initiative could identify additional sources that may not have been considered in the draft TMDL and possibly revise the TMDL if the original assumption is determined to be incorrect.

The first phase of this project consisted of ADEM (under contract to MBNEP) collecting samples and compiling monitoring information from the Eight Mile Creek and Gum Tree Branch watersheds. Ten monitoring stations were established: one near the mouth of Eight Mile Creek, two in Gum Tree Branch, one in an unnamed tributary to Gum Tree Branch, and the six remaining monitoring locations were located in Eight Mile, Clear, and Red Creeks. For one year, sampling has been conducted once a month at each location. Three weekly surveys have been conducted at each station for fecal coli form and stream flow has been measured at four monitoring stations to determine pollutant loadings. Data from the monitoring effort is currently being analyzed and compared to Alabama's numeric water quality criteria. A final written report summarizing the results of the monitoring effort will be prepared and provided to the NEP some time next year.



The second phase of this project consists of SARPC working with ADEM to collect, assimilate and compile information about various existing conditions of the water bodies into an ARCVIEW Geographic Information Systems (GIS) project. This GIS system includes the following features to establish a baseline for analysis: Digital-ortho photography of the two watersheds, 2 Foot contours of the area, The creation of a mosaic of the watersheds, Creation of a 3-dimensional model for delineation and analysis, Establish stream and rain gages at critical location of each water body, and Digitize land uses and soil groups for each watershed.

The final phase this effort will include the collection, assimilation and compilation of information about various potential sources of pollutants discharging into the Eight Mile Creek and Gum Tree Branch watersheds. Current information on sources is largely anecdotal with the exception of observed SSO's by ADEM. The degree of contribution from each of these sources is unknown. In order to address the impaired status of the aforementioned streams, it is essential to identify the potential sources discharging and/or affecting their watersheds. The completion of this phase will result in the identification of potential sources and thus the identification of remediation actions. This will be led by MBNEP, working in coordination with ADEM and Mobile Engineering, Inc.

## ***TMDLs***

### ***Loading Budget Analysis and Hydrodynamic Model Development for Mobile Bay***

MBNEP, in partnership with the U.S. Army Corps of Engineer and EPA, funded a study with Tetra Tech to continue hydrodynamic model development for Mobile Bay and develop a loading budget to help analyze pollutant contributions to Mobile Bay and to model point and non-point sources of pollution in the Mobile River basin contributing to Mobile Bay. The main objectives of this study were to develop pollutant mass balance for the Mobile River Basin, assess the total load of pollutants and to characterize the distribution of sources within the basin. The study was delivered in 2002 and has been used in TMDL development throughout the basin.

The study developed and applied comprehensive modeling platforms (BASINS, Version 2.0 and Nonpoint Source Model) to analyze nutrient loadings (total nitrogen and phosphorus), BOD5, sediment and metals issues to the bay and distribution of loadings throughout the Mobile River Basin watershed. The analysis looked into urban runoff potential, fertilizer and pesticide (toxic organic contamination) application, silviculture practices, livestock distributions and mercury. A preliminary bay model (Environmental Fluid Dynamics Code –EFDC), configured to represent hydrodynamics, with capabilities for representation of water quality parameters, was used to simulate Mobile Bay’s response to contributions from the watershed model. Models were run for both existing and future conditions. Results were used by ADEM as major components in developing 128 surface water TMDLs .

### ***Monitoring Projects supporting TMDL Development***

MBNEP CCMP contains specific action plans associated with TMDL development and implementation. To date, ADEM (in association with EPA and support contractors) has developed approximately 128 TMDLS for streams segments in Alabama that do not meet their designated uses. TMDL development is based on models using input from a variety of monitoring programs. Several of the on-going monitoring projects of MBNEP support development and implementation of TMDLs in coastal Alabama. ADEM and other MBNEP partners are continually assessing data so collected for consideration of removal or continued listing of impaired streams. The following already described programs represent examples where this monitoring data heavily supported by MBNEP has multiple uses, including TMDL development and implementation: Atmospheric Deposition, Mobile Bay Real-Time Water monitoring, Sub Estuary Watershed monitoring, and Eight Mile Creek Monitoring as described above, all support the development of TMDLs.

### ***Support for Extramural Hydrodynamic Modeling Studies***

As an Ex-Officio member of the Scientific Advisory Committee for the ACES, MBNEP recognizes and actively promotes research applications for funding to this program which deals with developing hydrodynamic models of Mobile Bay, Weeks, Bay and other portions of the Alabama’s estuarine system. Two such models are currently funded through ACES and are being carried out by Drs. Kyeong Park and Will Schroeder of the Univ. of South Alabama and DISL respectively. Certain data from MBNEP sources and partners facilitate development of these models.

## ***Non-Point Source/319***

### ***Coastal Alabama Clean Water Partnership***

MBNEP, in partnership with Mobile and Baldwin County Soil and Water Conservation Districts, ADEM, has supported the Coastal Alabama Clean Water Partnership (CACWP) since its inception with MBNEP director as its first chair (and later co-chair). Recent developments have made this program an integral component of MBNEP activities providing MBNEP a lead role in coordinating Section 319 programs in coastal Alabama. This role includes providing the CACWP Basin Facilitator from MBNEP staff through a contract with the Baldwin and Mobile County Soil Conservation

Districts. This is supported by our continuing efforts to include all the waters in coastal Alabama to our study area and the fact that the Mobile Basin Plan (developed by SARPC under contract to the CACWP) is largely based on MBNEP CCMP.

CACWP is a public-private group as defined by EPA and ADEM in the Clean Water Action Plan working to protect, improve, and maintain water quality in Alabama's Coastal River Basins by meeting the goals of the CWA through basin-wide public/private partnerships. The CACWP focuses its efforts on the Escatawpa River, the Mobile River, and the Perdido River and twelve sub watersheds by supporting water quality improvement projects developed by local communities and other groups. The CACWP provides support to these watershed communities through technical assistance, assistance in seeking funding to implement projects, and recommendation of funding to funding sources. The CACWP Steering Committee is composed of a wide range of interests, representing diverse stakeholders in coastal Alabama.

The CACWP (CACWP) was originally established by ADEM's Office of Outreach and Education using and targeting 319 funds. It was formed largely to help in addressing the effects of non-point source pollution, promoting development of basin management plans for coastal sub-watersheds, identify projects to remove 303d listed streams from the list, assist in identifying data needs for TMDL development and provide an outreach component in the three coastal basins (Mobile, Escatawpa and Perdido). As such it included a broader geographic range than that originally considered by MBNEP. However, since its inception, MBNEP has continued to be the major partner in this project in coastal Alabama.

CACWP project successes to date include: the installation of permeable concrete as a demonstration project for the sidewalk of its Justice Center, Foley, Alabama (Mobile sub-watershed); Mobile County Soil and Water Conservation District, in partnership with the Natural Resources Conservation Service and Alabama Cooperative Extension System working to protect water resources in the Escatawpa sub-watershed through the provision of technical assistance to a local family dairy farm resulting in establishment of an innovative and alternative method for dealing with manure disposal on a local dairy farm and cattle being fenced out of Juniper Creek. This is a success story for reduction of pathogens entering this stream. Finally, members of the Partnership and MBNEP conducted 5 Stream Restoration Workshops in 2002 and 2003 which were enrolled to capacity.

### 3-Mile Creek

At the request of the City of Mobile and MBNEP, USACE agreed to undertake a feasibility study for restoration along a portion 3 Mile Creek and divert some of the water from an unnamed flood control canal back into it helping to provide both a wetland restoration, add to the City's potential Greenway Plan and provide additional treatment of stormwater run off through the 3-milecreek wetland. A Preliminary Restoration Plan was completed by USACE and the City agreed to serve as the non-federal sponsor for the USACE cost share. The plan is feasible and is within the budgetary authority of the USACE District's Continuing Authority. Due to numerous and competing needs for local, discretionary USACE funding, MBNEP will continue work with our congressional delegation to earmark specific USACE restoration funding for this project.

### Lake Forest/D'Olive Bay Watershed Studies

Accelerated erosion within the watersheds of D'Olive and Tiwassee creeks in Daphne and Spanish Fort, Alabama and the eventual increased sediment inputs into Mobile Bay, have long been identified as major local environmental concerns. This situation has served as a "poster child" for the impacts of increased storm water run-off and sediment loading in coastal Alabama since the mid-1970's when the area became the site of one of Alabama's largest subdivisions.

In July 2003, MBNEP began a process to provide a community forum to review erosion, sedimentation and flooding in these watersheds; establish a baseline understanding of the human and natural processes at work here; and identify perceived problems, causes, and contributors. This process included representatives of 14 federal, state and local groups but lacked necessary political and property owner support to take necessary actions. In 2005, after recognition that solution to the problem involved the need for a regional approach, local political and property owner representatives again approached MBNEP regarding leadership of a renewed effort to take action. MBNEP has since that date been actively leading efforts to begin the systematic and scientific approach to addressing these non point source issues and has achieved a major immediate success having this area moved up in priority for a complete watershed assessment by ADEM to begin in 2006.

A necessary first step to addressing this concern is the initiation of a watershed assessment in these watersheds. In fact, one of the action plans in MBNEP Comprehensive Conservation and Management Plan (CCMP) calls for: “USACE, ADCNR, and ADEM to conduct a comprehensive biological, hydrologic, and engineering study of D’Olive Bay to determine existing conditions and make recommendations for improvements.....and development of a stepwise strategy to return the area to a more natural hydrologic condition, to the extent possible.” As a result of our actions, ADEM moved this assessment to a priority to begin in 2006. Other actions that local governments have agreed on include increased emphasis on sediment containment from construction sites, mitigating storm water volume and velocity through new engineering practices, adopting stronger state standards regarding land disturbance. This is an excellent example where MBNEP has played the pivotal role in promoting the increased local interest and momentum and “acting as a force multiplier”/capacity builder among residents, municipal and county governments so necessary for making environmental results a reality.

#### *Tiwassee Creek Stream Channel Stability Analysis*

A channel stability analysis on a segment of Tiwassee Creek was performed as part of our on-going Stream Restoration Workshops. Several candidate streams for evaluation using Rosgen criteria and methodologies were considered for analysis in our area as a project led by MBNEP. Due to the recent emphasis in the Daphne/Lake Forest area, a portion of Tiwassee Creek flowing through this subdivision and contributing to the sediment loads in the D’Olive Bay was selected as a demonstration.

During the two-day workshop and tour of the watershed, a number of issues were noted: encroachment of residential development on the stream; sanitary sewer lines located within flood prone areas; active erosion on dirt roads and other exposed soils; mechanical disturbance of soils near the stream bank; active bank erosion and deposition of sediment within the stream channel; as well as the application of unusual engineering practices within the stream channel.

A survey of the stream was undertaken by workshop participants and data was developed to classify the stream type, assess problems and make recommendations for correction. These recommendations have been provided to the Property Owners Association for their action. At present it is being considered for a demonstration project in connection with current activities related to the D’Olive watershed. This is another example of science guiding local restoration actions and the value of having an NEP in place to provide tools for communities to take local actions to restore our streams and protect our estuaries.

#### *Dog River Clear Water Revival Trash Curtain*

In 2004, the Dog River Clear Water Revival (DRCR) investigated installation of trash curtain on Dog River as a demonstration project to reduce the amount of floating refuse in this waterway. These curtains have been demonstrated effective and are in use in the Los Angeles, California area. The City of Mobile (Mayor Dow) requested MBNEP’s evaluation of the project and support before it would commit to funding installation and long-term maintenance of this project. Members of the DRCR

made an excellent presentation to MBNEP's Management Committee on a proposed demonstration project in Mobile. Accordingly, the City is actively supporting this project. The fact that MBNEP was considered to be, and served as a reliable community resource (both by government and a local grassroots organization) for evaluating such environmental proposals is evidence of its growing positive reputation in our coastal area.

#### Montlimar Canal Greenway

MBNEP successfully brokered an agreement between a local chemical company (AtoFina Petroleum Products), the City of Mobile, Alabama Power Company and DRCWR to create a greenway park along a portion of a flood control channelized stream, and line its banks with native vegetation to reduce the impacts of non-point source pollution and provide citizen connection to our water resources.

Montlimar Canal (a channelized flood control structure) delivers urban run off directly into the Bay containing a cumulative load of non-point source pollution including pesticides, fertilizers, tire dust, sediments, and bacteria. A major obstacle to mitigating these sources and their impacts is public apathy. The attitude is partially due to ignorance of the connection between watershed activities and water quality but is also due to the public's lack of ownership of the river and bay as an amenity. They rarely make the connection between the ditch and Mobile Bay. One way to combat this apathy is to increase public access. The creation of greenway parks paralleling stream channels such as the Montlimar Drainage Canal will give any walking/biking/jogging Mobilian access and thus ownership in the waterways. Environmental improvements were numerous. Permeable surfacing was used for the trail. Extensive native shrubbery and tree plantings, including along the canal bank itself, will help shade the water and improve fish and other wildlife habitat. Increased streamside plantings will also contribute to water quality improvements. Signage highlighting the environmental benefits of environmental stewardship and maintaining water quality were also be placed along the trail. It also restored a riparian buffer zone along the canal to further reduce the effect of polluted run-off. This park serves as the initial link in Mobile's plans to develop an extensive network of greenway trails.



This project was identified to MBNEP by the DRCR. MBNEP played the key role in requesting AtoFina to undertake the project as a SEP settlement and brought the City, Industry, and the grassroots organization together to get it accomplished. This is a project where over \$300,000 was leveraged by MBNEP to enhance water quality, mitigate impacts of non-point source pollution, and provide an opportunity to educate citizens about the impacts of upstream actions on water quality of Mobile Bay. This project would not have been possible except for the acceptance of MBNEP as an "honest broker" in negotiations by all parties (the City, Industry and a local environmental group).

#### Other

MBNEP has played a significant role in facilitating training, workshops and assessments to reduce Non Point Source Pollution (NPS) and to educate citizens, developers and local governments on NPS issues. The Daphne community has established a sediment containment officer to deal with construction run-off and MBNEP is working with Spanish Fort to do similarly. MBNEP is currently in discussions with eastern shore municipalities to develop plans for a stormwater authority and to

draft model legislation for the state. Fairhope has adopted BMPs including protections from NPS and along with Foley and Daphne is developing a tri-cities watershed management plan. Both Mobile and Baldwin Counties have adopted and implemented new subdivision regulations limiting and controlling NPS.

### ***Wetlands***

#### ***Emergy Analysis***

In 2004, MBNEP contracted with TAI/Strand Associates to conduct a study that would provide an analysis of economic values across a wide variety of resources, both man-made and natural such as wetlands, using the formal process of Emergy Analysis. Emergy is a measure of the available energy required, directly and indirectly to make a product or service. It is a way of calculating the value of both natural and man-made items on an equal basis and indicates their true contribution to the human economy. Emergy analysis can be used in the design of sustainable development at all scales of the environment. The Emergy analysis of wetlands, coastal zones and their restoration, and of entire watersheds may lead to the development of sustainable designs in harmony with both man and nature. The cost benefit analysis of large-scale environmental restoration projects can be accomplished using the tools provided by Emergy analysis. This was a pilot project which focused on wetlands particularly in the area of Fish River in Baldwin County. This pilot project serves as a valuable reference for local valuation and characterization of wetland resources in our coastal area.

#### ***Habitat Mapping***

Beginning in 2002, MBNEP contracted with the United States Geological Survey to gather digital color-infrared geo-referenced photography of Mobile and Baldwin Counties to determine a baseline for habitat and wetlands loss. Photography has been collected and digital ortho-quads have been completed for Mobile County. Color infrared photography was also acquired for Baldwin County. The products are color infrared digital orthophotos of Baldwin County in GeoTIFF format. The photography meets national map accuracy and GIS standards. The resulting photography for both counties is being mapped to provide classification of wetland and upland habitats using Cowardin, et.al wetland classification system, and uplands using Anderson/Handley level II upland classification scheme. This will provide the first comprehensive National Wetland Inventory update for coastal Alabama using contemporary data and provide the first comprehensive mapping of upland habitats. It will provide a basis for status and trends evaluation. This data will be compared to previously collected data to determine status and trends for Mobile and Baldwin Counties.

The Mobile County project was completed in 2005 and Baldwin County will be complete in 2006. This is a project costing in excess of \$1 million that MBNEP put together with several partners including counties, GOMP, and the State of Alabama and the U.S. Geological Survey. Absent the leadership of MBNEP, this project would not have been accomplished.

#### ***Coastal Habitats Coordinating Team***

The Coastal Habitats Coordinating Team (CHCT) is part of MBNEP's on-going effort to create public/private partnerships to conserve critical habitats throughout MBNEP area. This group is comprised of the WBNEER, ACF, U.S. Army Corp of Engineers, Faulkner State, ADCNR State Lands Division Coastal Section, DISL, Alabama Forest Resource Center, The Nature Conservancy, Weeks Bay Foundation, Alabama Power Company, ADCNR State Lands Division Coastal Section, U.S. Army Corp of Engineers, Mobile Baywatch, Baldwin County Commission, Trust for Public Land, Dauphin Island Bird Sanctuaries, NRCS, US Fish and Wildlife Service, Grand Bay National Estuarine Research Reserve, Auburn Marine Extension, Auburn University, MASGC, City of Orange Beach, ADEM/Coastal Facilities Section, ADEM, AL Port Mitigation Bank, Ducks Unlimited, Alabama Power Company, Mobile Bay Sierra Club, South Alabama Regional Planning Commission, EPA GOMP, Alabama Gulf Coast Convention and Visitors Bureau, Bon Secour National Wildlife

Refuge, Southeastern Natural Resources Incorporated, Mobile County Parks, The Forum, Partners for Environmental Progress and Coastal Conservation Association.

In 2004, this diverse group of conservation organizations and government partners developed a list of 17 priority acquisition sites and 31 priority restoration sites for coastal Alabama. In addition, this group began to identify partnerships for achieving protection of these sites. Several of these sites are being actively acquired and preserved by partners in this effort. The overall goal of the CHCT is to improve coordination and cooperation of organizations with habitat protection goals and better focus individual efforts. Based upon priorities established by the CHCT, Forever Wild/ADCNR and Mobile and Baldwin Counties have made major wetland purchases that have resulted in setting aside over 100,000 acres, largely in the Mobile-Tensaw Delta. Previous trends in coastal Alabama wetlands loss, reported at 4 times the national rate, have been slowed. This project also has been cited by the Alabama Department of Conservation in development of its plans and priorities under the Coastal and Estuarine Land Conservation Program (CELCP). The CHCT sites are included in this document.

In related developments, MBNEP has partnered with MASGC to develop an online, interactive data base for cataloguing habitat conservation and restoration efforts of all partners of coastal Alabama and Mississippi. This will result in better coordination of resources and efforts. Most recently, a workgroup from the CHCT has begun working with the Town of Dauphin Island to protect 20 acres of wetlands located in the central/eastern part of the Island to provide a natural mechanism for storm water retention as a means to reduce flooding, assisting with storm water drainage and maintaining the drinking water supply for the town.

#### *Isle of Herbes (Coffee Island) and Dauphin Island Causeway Restorations*

In the 2005 National Coastal Condition Report (EPA, 2005), the Gulf of Mexico was ranked in the poor category relative to the status of estuarine habitats. Between 1990 and 2000 approximately 7,750 acres of estuarine wetland was lost in the Gulf region (excluding coastal Louisiana). Loss was associated with coastal development, sea-level rise, subsidence, and the interference with normal erosion/depositional processes.

In 1985, U.S. Army Corps of Engineers (USACE) started using dredged material locally to restore and establish wetlands when they undertook a project on Isle of Herbes (aka Coffee Island) to create a marsh area on the northeast side of the island. Where proper sites can be located and government and private agency cooperation can be coordinated, USACE commonly uses dredged material to restore wetlands. Recently, MBNEP,



MASGC, Alabama Department of Conservation and Natural Resources Coastal Section and Marine Resources (ADCNR and MRD), US Fish and Wildlife Service (UFWS), National Marine Fisheries Service (NMFS), and USACE came together to request and plan for two additional “beneficial use” projects to help restore critical wetlands within the Mobile Estuary- Dauphin Island Causeway and again on Isle of Herbes.

The Dauphin Island Causeway project will consist of the construction of approximately 3,960 feet of protective artificial reef wave break offshore to create a semi enclosed are for wetland re-establishment. *Spartina alterniflora* and *Spartina patens* will be the primary species of cordgrass planted to colonize the area for wetland habitat along the 3,960 feet of shoreline (approx. 4 acres.) In addition, 2,250 cubic yards of dead oyster shells (hard bottom substrate) will be emplaced to promote

oyster habitat. The objectives of this project are to stabilize sediments in the shallow near shore waters and reduce turbidity and erosion, improving water quality. This project is in the combined planning and development phase and is estimated to cost approximately \$439,000. It is estimated that construction will begin by summer, 2006.

The Isle of Herbes project will utilize dredge material from the maintenance of the Bayou La Batre Federal Navigation channel to restore approximately 10 acres of tidal wetlands. Material removed from the channel will be deposited inside a minimal containment levee constructed of natural material with a wave break that will be constructed offshore to reduce wave energy, providing protection to the newly created wetland. Deposited fill material will be used to achieve an appropriate elevation between the containment levee and shore at which point wetland species such as *Spartina alterniflora*, *Juncus roemerianus*, and *Spartina patens* will be planted. Once the plants are established, the containment dike will be breached at various locations to permit tidal flow. The objectives of this project are to restore wetland and associated vegetation to improve habitat for piping plovers, brown pelicans, seaside sparrows and diamond back terrapins, to increase nesting habitat for colonial birds, and expand suitable substrate for oyster reproduction. USACE has recently completed its preliminary restoration plan and anticipates entering the combined planning and design phase within the next two to three months. The project is estimated to enter the construction phase some time during 2006 and is expected to cost up to \$850,000.

#### *SAV Historical Coverage and Changes (since 1940)*

In 2002, MBNEP commissioned the first aerial photographic baseline study for current SAV coverage in Coastal Alabama (Photos can be accessed at <http://gulfsci.usgs.gov/>). Barry Vittor and Associates was contracted to produce aerial true color digital orthophotoquads along the coast. Certain photographic signatures indicate various plant species. Once identified in aerials, interpretation was “ground-truthed” by physically checking the plants in the field. Maps of SAV coverage were then created. In a follow-up study, Barry Vittor and Associates then obtained historical aerial photosets of Mobile County from 1940 and Baldwin County from 1955 and 1966 to compare to the 2002 photosets.

Between 1940 and 2002, SAV acres in Mobile County decreased from 1924 acres to just 855 acres of SAV. Most of the loss was south of Dog River, and 691 fewer acres along the western shore. Baldwin County analysis revealed a disturbing 88.3% loss between 1955 and 2002. The 1955 photoset revealed SAV from just north of Point Clear south to Bon Secour Bay. In 2002, no SAV were identified from that area. Between 1966 and 2002, the northeastern shore of Mobile Bay lost 328 acres or a 71% decrease.

#### *Hurricane Impacts on SAVs (2004)*

In November 2004, the vegetated coastal locations visited by Vittor and Associates in 2002 were resampled by Dr. K.L. Heck and D. Byron (DISL) to assess changes in seagrass distribution that may have occurred as a result of the effects of Hurricane Ivan. The Alabama Coast was divided into three zones—Grand Bay, Mobile Bay (including Mississippi Sound east of Grand Bay), and Perdido Bay. In addition, two areas that were found to contain newly discovered occurrences or species of SAV were selected for more intensive study. These sites included several locations on the west end of Dauphin Island found to support seagrass for the first time, and a location in Little Lagoon, where turtlegrass was reported for the first time in Alabama by Vittor and Associates (2003).

After Hurricane Ivan passed over the area (2004) 36 of the original 44 Vittor stations were still populated with seagrass. Vittor and Associates reported that *Halodule wrightii* (shoal grass) was the species most often found at these stations. 2004 results agreed that *H. wrightii* was the dominant species, found that at 47% of the stations (17 stations), but another species of seagrass, *Ruppia*

maritima (widgeon grass), was also present. The west end of Dauphin Island, Little Lagoon and Perdido Bay were heavily impacted by Hurricane Ivan and were considered likely to have experienced seagrass damage or loss, but a large loss of seagrass at Little Lagoon or Perdido Bay was not observed. However, due to the shifting sediment conditions at the west end of Dauphin Island, a significant loss of seagrass in this area was observed. The absence of shoal grass at five sites in the Perdido Bay area was of slight concern. Note: Impacts from Hurricane Katrina in August, 2005 have not been assessed, but are anticipated to be significant.

#### Baldwin County Wetland Conservation Plan

This project is an adaptation of the model used previously by Baldwin County in preparing an ADID for a portion of the county's wetlands. Including the entire county, results provide a Wetland Protection Overlay District (WPOD) incorporated into County Zoning Regulations; a GIS wetland data layer containing information on wetland location, type, and functional capacity; a wetlands education and outreach program for area stakeholders; and the data to design and implement wetland restoration/construction projects at selected sites in the county. The report document and GIS maps/data can be used by local residents and developers in site selection and planning as well as by permitting agencies in site evaluation. Partners with Baldwin County include: EPA Region IV, USA-COE/Mobile District, USFWS, ADCNR/State Lands, and University of South Alabama.

#### Land Use / Land Cover Baldwin County

In 2004, MBNEP partnered with the Baldwin County Commission to inventory land use/land cover for Baldwin County, Alabama using the Florida Land Use/Land Cover Classification System (FLUCC) has been completed. The product integrates previous land use coverages already developed at the state and local levels and land cover types resulting from the wetland habitat mapping projects. The resolution of the maps is one meter. The resulting database will be updated every 5 years. MBNEP will work with Mobile County to develop a similar project. Products are available from Baldwin County Planning and Zoning Department. This activity is critical to understanding the impact of land use decisions on natural resources like water quality and habitat. It provides another tool for our local governments to use in planning and assessing growth impacts.

## **Other Significant Achievements and Environmental Results Complementary to CWA Core Programs**

### ***Living Resources***

#### ***Alabama-Mississippi Rapid Assessment Team (AMRAT)***

Begun in 2003 and lead by MBNEP in partnership with the University of Southern Mississippi/College of Marine Sciences/Gulf Coast Research Laboratory, the ADCNR/Marine Resources Division, the WBNEER, the DISL, the Mississippi-Alabama Sea Grant Consortium, the Mississippi Department of Marine Resources, the Gulf States Marine Fisheries Commission (GSMFC), and many volunteers, AMRAT consisted of the collection and identification of native and non-native (exotic) animals and plants in Mississippi and Alabama coastal waters in snapshot surveys over a two year period (2003-2004). Over 120 participants from 22 organizations worked together to complete the two surveys with participants sharing significant man-power, equipment, services, and supplies. Funding was provided by MBNEP, the Gulf Coast Research Laboratory, DISL, NOAA and MASGC Consortium.



Archival specimens were accessioned into the GCRL museum and data is available on the GSMFC website. Results continue to allow researchers and managers to evaluate changes in species distribution and community composition and to assess incidence and abundance of significant exotic species. Reports are provided to the National Aquatic Nuisance Species Task Force (ANSTF) and the Gulf Regional Panel on Aquatic Invasive Species MBNEP was key to making this major project possible through building and multiplying regional capacity. No one agency or organization possessed the resources necessary to do this project alone. AMRAT received the 2005 EPA GOMP Gulf Guardian First Place Award in the Partnerships Category.

#### ***Alabama Aquatic Nuisance Species Task Force***

In 1995, the national Research Council identified aquatic invasive species as one of the five greatest threats to the marine environment. Alabama is the last gulf state to initiate any action on the development of a management plan for aquatic nuisance species. In August, 2005, MBNEP committed funding for the development of this plan for the State of Alabama. In partnership with the Alabama Department of Conservation and Natural Resources Freshwater Fisheries, which is the lead agency for aquatic nuisance species planning, ADCNR-Marine Resources Divisions, and Southeast Aquatic Resources Partnership at Louisiana State University, a group of over 50 representatives from state agencies and other stakeholders was assembled to identify issues and begin development of an ANS Management Plan. This effort is ongoing with an anticipated plan completion date planned for October 2006. MBNEP's interest and commitment helped gain the commitment of the State of Alabama to undertake this necessary project. The Governor's Executive Order establishing the Alabama Aquatic Nuisance Species Task Force and MBNEP's role on the Executive Committee is a result of increased attention focused on this problem in part by MBNEP.

#### ***Analysis and Interpretation of Historical Fisheries Data***

In 2005, the analysis of 20 plus years of previously unanalyzed fisheries population data collected by the Marine Resources Division of ADCNR was completed under a contract between MBNEP and Dr. John Valentine (DISL.) The overall community of fishes recorded within the FAMP data set was

numerically dominated by unexploited species which were found to be widespread throughout the 23 year study period. These fishes played a key role in determining the outcome of the temporal comparisons of community structure as a whole within MBNEP study area. Results from these analyses show that the composition and relative abundances of the community of fishes and epifaunal invertebrates collected by the FAMP base changed for only a short period of time in the 1980's. This change was not permanent as community structure returned to its originally documented state in the 1990's. The analysis also showed areas where additional sampling and information collection would be beneficial and areas for further study and analysis.

It is the first such analysis in many years and was made possible by MBNEP funding leveraged from other sources (CIAP, NOAA).

### ***Human Uses***

#### ***Helen W. Wood Park***

In 2004, MBNEP in partnership with ADCNR-State Lands Division and the City of Mobile undertook a project to improve a seven and a half acre site on the east side of the Dauphin Island Parkway and adjoining the north side of the Mobile Yacht Club to increase public access to Mobile Bay. Improvements included the control of nonnative vegetation, planting of native species, removal of asphalt paving and replacement with permeable material, and the addition of safety lighting and benches. A section of boardwalk was installed on a perimeter of the parking area. Other enhancements that will be installed in the future include a boardwalk skirting the marsh area and an observation kiosk and interpretive signage for wildlife watching.

In addition to this access improvement, the USACE has developed a Preliminary Restoration Plan for an offshore breakwater along the property to reduce wave energy. This project proposes to restore several hundred yards of shoreline and will promote habitat restoration. MBNEP leveraged considerable funding in the creation of this project. It currently amounts to almost Three-quarters of a million dollars when the value of the land (\$500,000) is added and more will accrue as the entire project is completed.

### ***Habitat Management***

#### ***Colonial Bird Nesting Survey***

In 2004, MBNEP contracted with Dr. John Dindo (DISL) to establish a baseline of nesting area information for colonial nesting birds (including shorebirds, seabirds, and wading birds) sites in MBNEP area so that status and trends could be established for management decisions and public information. The quality and quantity of bird nesting sites may be an important indicator of ecosystem health and extent of human impacts. A complete inventory of all colonial nesting bird sites in MBNEP area had not been completed in recent history. Partial surveys for bird-nesting sites were conducted as part



of the Mobile Bay symposiums. Documentation of existing colonial nesting bird sites is essential to developing a conservation plan that may include protection of existing sites and management or enhancement of others.

#### ***Alabama Coastal and Estuarine Land Conservation Program (CELCP)***

Lead by ADCNR/State Lands Division, the Alabama CELCP encompasses the federally defined Alabama Coastal Area, MBNEP boundaries and the Mobile-Tensaw River Delta. Ten "conservation target" habitat types and over 25 sites were selected from a combination of information from MBNEP

Coastal Habitats Coordinating Team, Alabama Forest Legacy Assessment of Needs, Alabama Coastal Area Management Plan, Forever Wild and others inventories and assessments. In addition, this plan draws on the information contained CCMP. As previously noted, the Alabama coastal CELCP plan incorporates the sites identified by the Coastal Habitats Coordinating Team as priority conservation targets, thus validating the efforts of the CHCT and better coordinating local conservation efforts. MBNEP is proud to have played a major part in this coordination.

### **Building Relationships: Program Successes FY 2003-2005**

In addition to the many quantitative achievements and results of MBNEP (MBNEP) in addressing the CWA core programs; there are a number of qualitative achievements that have significantly contributed to the efficacy of MBNEP.

#### ***Strong Alliance with Other Locally Managed Coastal Federal Funding Sources***

Since the establishment on March 30, 2002 of a formalized Memorandum of Agreement between MBNEP, the Alabama Department of Conservation and Natural Resources (ADCNR), Coastal Programs Office and the DISL (DISL), there has been a continuing commitment of funding, time and resources among the organizations to work cooperatively toward the implementation of the CCMP, leveraging the scarce resources available in an efficient and effective manner that better addresses priority coastal issues. The state's decision to move the Coastal Programs office from the Alabama Department of Economic and Community Affairs (ADECA) into the more



conservation-focused ADCNR was significant to this progress. In addition, a somewhat less formal alliance of MBNEP and ADCNR with the Mississippi-Alabama Sea Grant Consortium (MASGC) has resulted in a significant cooperative relationship that now comprises the three primary sources of federal funding to address and improve coastal environmental conditions for the state of Alabama. Each of these programs provide leadership in either research and extension, monitoring and capacity building, or land management while also playing supportive roles to in other areas of resource planning and management: 1) The MASGC is dedicated to the funding and support of scientific research and extension to address priority coastal issues; 2) the ADCNR, Coastal Programs office is committed to the protection of coastal lands, the creation of public access and to the implementation of the Alabama Coastal Area Management Plan (ACAMP) in coordination with ADEM, and; 3) MBNEP is the unique facilitating organization that brings stakeholders to the table to focus on issues that are in common with the mission and strategic plans of all, and focused on the monitoring of coastal conditions. In fact the relationships have become so well established and coordination so effective that the three programs, Coastal Zone Management (ADCNR Coastal), Mississippi Sea Grant Consortium (MASGC) and the Mobile Bay National Estuary Program (MBNEP) are often colloquially referred to as a “coastal trinity”.



#### ***Strengthened Relationships with Other Federal Environmental Agencies***

In part, because of the strengthened relationships among the Management Conference Members, MBNEP has enjoyed better relationships with the Federal agencies that are represented on the Management Conference. The USACE understands the value of MBNEP as an umbrella organization that can reach many diverse stakeholders and has sought more cooperative involvement with MBNEP, particularly with regard to public outreach, on such issues as the protection of wetlands and habitat enhancement. Similarly, the U.S. Fish & Wildlife Service (USFWS) has come to the table more often for collaboration on projects and has brought additional funding. Significantly, both Federal agencies are known to uniquely refer to MBNEP as the collaborative “we,” instead of as a third party. As a

result, the work of these agencies, through representation on the Management Conference, has become closely integrated with that of MBNEP.

### ***Strengthened Relationships with State Environmental Agencies***

By supporting sampling and other ongoing programs of coastal emphasis with ADEM when funding has been short, MBNEP has bettered its relationship with ADEM. There is more consistent and direct contact with the agency's field office in Mobile, and ADEM has, in turn, benefited from more access to other Management Conference Members. MBNEP continues to build upon its relationship with ADEM and other partners through involvement in the Alabama Clean Water Partnership, organized by ADEM's office of outreach.

### ***Strengthened Relationships with Local Government Officials***

While the relationship of the Program with the City of Mobile and Mobile County has been generally strong from program inception, in the past several years, significant strides have been made in reaching other local governments. During this review period, relations with Baldwin County have been strengthened significantly. This is reflected in increased commitments to match funding that occurred in 2005. Further, the County has passed resolutions supporting MBNEP, has consistently funded the Program, and has partnered on such projects as GIS data acquisition for land use. In addition, outlying minority areas, such as the City of Prichard in Mobile County, that had not traditionally made environmental protection partnerships a strong part of its planning efforts, is now including and partnering with the Program in its plans to better manage stormwater and wastewater. In fact, at a recent meeting of the South Alabama Regional Planning Commission, the mayor of the City of Prichard introduced a resolution commending and supporting the work of MBNEP.

### ***Strengthened Relationships Among Management Conference Members***

For many of the same reasons mentioned above, MBNEP has seen additional significant strengthening of relationships among the Management Conference Members. In addition, the staff's continuous emphasis on the collaborative, consensus building nature of the program has resulted in a full circle move of the political leadership from control to commitment.

### ***Enhanced Credibility Through Partnerships, Maturation***

The formal alliance with the DISL has brought new leadership and enthusiasm to the Program and the continued strengthening of the relationships with the agencies described above has given stakeholders confidence that the Program is moving in the right direction, is increasingly committed to cooperation, and to leveraging scarce funding on the priority issues facing the estuary. In addition, the maturation of the Program since the development of the CCMP has shown the true personality of MBNEP as a consensus builder to develop and implement solutions, overcoming the parochialism and mistrust inherent in the initial natural struggles to develop the Plan.

## **Previously Identified Challenges to Implementation of CCMP**

### ***CCMP Action Plan Prioritization***

Through a broad-based Strategic Planning effort conducted over 10 months from May 2005-February 2006 with The Bellwether Group, strategic environmental public affairs consultants, the CCMP Action Plans have been prioritized. During that time (in late August) the Gulf Coast, from Louisiana to Alabama, endured severe coastal impacts from Hurricane Katrina and the Strategic Planning effort was revised to ensure it took into account changing conditions and values related to the storm's impact. The Strategic Planning effort was devised with three primary components, staged over the 10-month period to gather the broadest possible stakeholder involvement with increasingly direct feedback to prioritize the CCMP Action Plans: 1) A Survey of Management Conference Members on the Program's Mission, Governance, Action and Financing, 2) A Coastal Planning Summit involving

an intentionally broad and diverse array of stakeholders from the Mobile and Baldwin County region and 3) A CCMP Prioritization Workshop for Management Conference Members.

During the confidential, third-party Survey of Management Conference Members that was conducted over a long period between June-October 2005 (due to the landfall of Hurricane Katrina), there was general consensus that prioritizing the Action Plans contained in the CCMP and selecting the top priority actions to pursue in the short term were the most positive ways to refocus efforts, make the most efficient use of resources and funding, and recapture the imagination of the public in support of CCMP implementation. There were a number of qualitative suggestions made during those surveys about which Action Plans should receive priority attention, such as actions related to land use, and this feedback was further taken into account for the prioritization exercise.

In October 2005, a “Coastal Planning Summit” was held in Mobile to determine community priorities related to improving coastal conditions within MBNEP area. While clearly the impacts of Hurricane Katrina were influential on the feedback of this broad based group, the workshop was designed to receive feedback on the five key objective areas of the CCMP: 1) Water Quality, 2) Living Resources 3) Habitat Management, 4) Human Uses and 5) Public Outreach and Education. After hearing from speakers, which included district Congressman Jo Bonner and MBNEP Director David Yeager, a group of 109 participants, including many community leaders who had not yet participated in the work of MBNEP, broke out into the five workgroups and developed their top three priorities for addressing the key challenges for each area.

In January 2006, a CCMP Prioritization Workshop was held for Management Conference Members. The original 29 Action Plans were expanded into 101 specific actions based on their sub-objectives and the specific steps required to accomplish them. In addition, Action Plans not included in the original CCMP, but identified as priorities in the Strategic Planning effort thus far were added for consideration. All the Action Plans were quantified and prioritized by participants working in the same five workgroups as noted above, which comprise the five key action areas of the CCMP.

Workshop participants further quantified each Action Plan by assigning a value based on the redundancy or efficacy of the Action Plan and provided additional qualitative values (high, medium or low priority) to each based on a number of additional focus questions. Workshop participants recommended combining, deleting and rewording some Action Plans for efficiency in implementing the CCMP. The result is a broad based community recommendation for prioritizing Action Plans as MBNEP heads into its 10th year.

#### *Coordinating and Improving Mobile Bay Monitoring Programs*

MBNEP has moved forward considerably on its position as a uniquely neutral party to coordinate coastal conditions monitoring efforts. The Program has established an active contract with the DISL for database maintenance through a Data Information Management System (DIMS). MBNEP has also partnered with the MASGC to maintain databases that have been developed on estuarine habitat restorations in Alabama. Through the DIMS, the Program is coordinating regional data being collected by the Program, as well as its partners, if that data is common to the objectives of the CCMP. By establishing the DIMS as a central clearinghouse for collecting and tracking coastal data, the Program is working to eliminate redundancy and increase the efficiency of the data with the ultimate goal of making this information available and meaningful to the public. In addition, the Program has expanded the participation in EPA’s Monitoring and Indicators Conference Calls by engaging members of its Management Conference in the calls.

### CCMP Implementation Tracking System

As a key part of the development of the DIMS, the Program is in the final stages of establishing a baseline for a CCMP Implementation Tracking System. The System will track the activities and status of Action Plans and will ultimately become available to the public. As above, the Tracking System is capturing regional accomplishments, as opposed to just what is occurring through MBNEP program, so it is truly becoming the basis for a community-wide tracking program.

MBNEP's original choice to use the PIVOT tracking system ultimately proved useless since it was not a user-friendly, nor detailed model. But the failure of the original model caused the Program to look at and settle on a new and more comprehensive model. As part of our contract with the DISL to host this database, Management Conference Members will provide feedback for the tracking and assist the Program in keeping the database updated. Along with the baseline, a set of expectations is also being developed to ensure the tracking is a communal and cooperative effort. A sample report of CCMP activities can be found in the appendix.

### Rebuilding the Community Advisory Committee (CAC)

While relatively successful in the initial years of the Program, an active effort to engage a traditionally structured CAC over the course of two years post-CCMP development has to date been unsuccessful. Efforts included monthly meetings at convenient and casual venues in traditional non-working hours with scheduled speakers on various local topics, status reports on Management Conference or CCMP related activities and monitoring efforts. The Program staff developed an efficient and timely manner of notifying CAC members about meetings and other opportunities for engagement through an electronic list serve. However, the "membership" based model ensured that participation was stagnant at best. Despite the successes of developing a bumper sticker and boosting the community oyster gardening project, the CAC was not committed and its activities were poorly attended by the stagnant membership, eventually petering out. The lack of response led the Program to conclude that the traditional model for the CAC is not relevant in this region in a post CCMP environment and MBNEP moved to another model which has created a renaissance of community involvement and has significantly expanded outreach.

The foundation of the more successful community outreach program is based on the creation of public opportunities focused on their priority issues as relevant to the CCMP. The new model invites community involvement that is issue-specific. Individuals participate consistently, but aren't required to commit beyond activities that aren't specific to their interests. The result is dynamic and expanded outreach that is meaningful, not based on stagnant "membership". The response has been resounding. The Program has developed events and opportunities, including educational forums and coalitions around issues such as land use planning, and home rule (in a state where what are typically simple local decisions to protect our watersheds are required to be voted on by the entire state legislature due to an arcane state constitution). By moving to more meaningful focused gatherings, community outreach and participation has been heightened. The new model also offers new opportunities for partnership, such as with the Envision Coastal Alabama program, a regional, volunteer visioning program that covers generally the same region as MBNEP. One of Envision's key areas for visioning and action is on the coastal environment, and MBNEP Director serves as a co-chair of that committee, leveraging resources, avoiding duplication and broadening Program outreach to this additional volunteer base. The new model ensures a higher level of citizen participation and the Program is committed to this ongoing effort, as well as to reaching out to the community in new and different ways based on issues.

## **New and Emerging Challenges to Implementation and Plans to Address Them**

### Coastal Hazards

Within the last two years MBNEP program area suffered the effects of two devastating hurricanes. These coastal hazards, and the prognosis for their continued trend over the next 10 years, have affected the Program and community's ability to carry out some prescribed actions. But the challenges of such storms have also provided fresh opportunities for working with new partners, such as the City of Dauphin Island on conservation planning for barrier islands. They also provide opportunities to partner on coastal hazards mitigation and they have reenergized the community's interest in all coastal impacts. In some instances, having a newly "blank slate" has better allowed previously disengaged members of the community to envision and act upon what they desire our coastal resources to be.

### Lack of Home Rule

Due to the state's arcane Constitution, ordinarily simple local efforts to protect watersheds must go before a vote of the entire state legislature. In response to wide agreement of priorities identified in our strategic planning effort, both through our Coastal Planning Summit and in the CCMP Prioritization Workshop, MBNEP has already held a forum to better educate our Management Conference and the broader community about home rule and how we can more successfully use increased legislative authority in support of environmental protection and improved water quality. These include land disturbance ordinances, the creation of stormwater management authorities and the assessment of impact fees.

### Revised CCMP

The 101 Action Plans in the CCMP have been an overwhelming number for both the Management Conference and the community at large. The challenge has been how to make progress on so many broad but important actions. A newly prioritized CCMP based on data gathering from the Coastal Planning Summit and the Management Conference Prioritization Exercise provides the Program and community with some new direction and will result in an updated CCMP that includes deleted, modified and new actions that better address our priority coastal impacts. The newly prioritized CCMP will become part of the central database and tracking system that will ultimately be available for public use.

### Data Management

#### Indicators Task Force

Within the last year a core group of researchers, experts, and resource managers have re-grouped toward the development of key, traceable, and reportable indicators for MBNEP area. This task force resulted from a one day workshop held February 2005, where scientists, resources managers and citizens came together to develop a list of 51 indicators spanning water quality, living resources, human uses, habitat management and education/public involvement. These indicators were chosen based on criteria that the data points 1) could be supported by existing collection activities and 2) describe ecological conditions, demographic or economic components of community environmental awareness & action.

MBNEP established the task force to include a mix of scientists, resource managers, and interested citizens to assist with the acquisition of data related to the identified indicators. This task force recommended a process for coordinating with other agencies to collect data, will recommend a reporting mechanism for communicating to the public, and will evaluate the effectiveness of indicators identified, making recommendations for any changes. MBNEP looks forward to issuing a State of the Bay report utilizing key indicators and communicating their status to the general public by the end of 2006.

*Data and Information Management System (DIMS)* In an effort to increase the level of monitoring of living resources in MBNEP area, MBNEP continues to develop a Data Information Management System including a GIS component that will provide base, locus, and other graphic maps of the water quality, living resource, human uses, and habitat management activities of the Mobile Bay Estuary. This web-based data management system will be based on the recommendations in the Final Report and Recommendations on Data and Information Management Systems (Southeast Digital Mapping, LLC). The purpose of this system is to provide a gateway for information related to key living resources of the NEP area. The objectives are to provide graphical depictions through mapping of biodiversity activities throughout the NEP area, to provide a central point for data entry of environmental agencies activities in a way that is useful to the entity while making the data available for aggregation, and to provide a mechanism for educating the public about the diverse living resources within our fragile ecosystem.

Currently a searchable water quality characterization document database<sup>1</sup>, real time bay monitoring, coordination with the Gulf Coast Ocean Observing System, Oyster Gardening and Crab Watch data entry, retrievable SAV aerials, and preliminary CCMP interactive tracking is available on line. In addition, a habitat restoration database component is being developed that will provide information about coastal restoration projects that are ongoing.

#### *Expanded Constituency*

With a resurgence of community interest in MBNEP and its implementation of the CCMP, the Program recognizes a small area of would-be constituents just outside Program boundaries that have been glaringly omitted. Currently the Program boundary of the Mobile Bay watershed includes all of Mobile County and MOST of Baldwin County. A group of individuals committed to conservation and the protection of the Wolf Bay and Perdido Bay watersheds in far southeastern Baldwin County are, thus disenfranchised because they are omitted from coastal Alabama efforts through MBNEP and are not eligible for coastal Florida efforts. As recommended by our Management Conference survey, the Program intends to request the expansion of its boundaries to encompass Mobile and Baldwin Counties entirely and the Baldwin County Commission has agreed to write a resolution in support of this request. Initial discussions with County Commissioners and other local political leaders regarding this expansion of boundaries has been exceptionally positive, with some Commissioners offering to introduce resolutions at the County Commission level thus affirming the perception of MBNEP as a true “coastal resource”.

#### *Financing*

Lack of financing and resources to accomplish the broad scope of our mandate has been challenging and this has been reiterated and reconfirmed in the strategic planning survey with our Management Conference. In the past two years we have been laying the groundwork for improved relationships and outreach that are necessary to better attract community match to fulfill our federal grant requirements and are developing a business plan that allows us to communicate more effectively with local industry and governments using the same business-based language and performance metrics.

## **Identification of Ways EPA Can Support Efforts to Address Challenges**

### **Section 320 Funding**

EPA currently only allocates approximately 57% of its NEP/Coastal Watershed dollars (Section 320 funding) to its 28 National Estuary Programs. A mere increase in funding from 57% to 70% would increase each estuary program's budget by over \$100,000. This additional funding could be used specifically to target challenges, consistently fund expanded monitoring, or provide funding for a number of different CCMP actions. By increasing the percentage of Section 320 funds going to the local jurisdictions, EPA can directly point to "local investment", whether it is being used to fund technical assistance, projects, or outreach. In addition to increasing its Section 320 funding percentage to local NEPs, EPA should continue to support increasing the Section 320 appropriation.

### ***Clarification and Coordination of Messages for EPA and NEP***

Although the National Estuary program represents only one aspect of EPA, the activities related to the implementation of 28 different CCMPs cut across every aspect of the agency. To this extent, EPA should work within its own agency to promote the National Estuary Program as an effective mechanism for coordination of and communication of EPA activities and successes at the local level. By utilizing the local National Estuary Program as a clearing house for all EPA activities as well as all other activities directed at the implementation of the CCMP, NEPs can facilitate and coordinate activities, actions, resources, and identify leverage opportunities in ways that other regulatory entities could not. By positioning the NEP as the local clearing house for EPA activities in those jurisdictions with National Estuary Program, EPA can clearly communicate (through its NEP) the positive and necessary impacts that it has at the local level, thus making a stronger argument to congress for increased funding of all of its programs.

### ***Targeting of Resources Locally***

Consistent with the "clearing house" concept discussed above, EPA could better support the activities of the NEPs by targeting more of the Agency's resources through MBNEP as opposed to applying them to projects in an isolated or piecemeal fashion such as with the 319 program Clean Water Partnership. In this way, EPA could better use MBNEP to more effectively target resources to local priority problems.

### ***Promoting Cooperation with Other Federal Agencies***

MBNEP supports the notion of recruiting local investment to show commitment to the activities of the CCMP. In addition, EPA should work at the federal level to coordinate among other federal programs, specifically NOAA, USFWS, HUD, and others, and to establish an understanding among these agencies of the CCMP and how it relates to these different departments. Cost sharing among other federal partners should be supported and encouraged where applicable and should be considered as valuable as the match that is generated at the local level.

### ***Provision of GIS Support***

GIS is a valuable tool that provides local decision makers with visual information to make more informed decisions. EPA could better support local estuary programs by providing GIS software, data files, and funding for equipment. Several years ago, the Department of Housing and Urban Development provided its entitlement grantees with basic GIS software (Maptitude) so that the communities could better plan and present issues, projects, and areas of need. This same tool could be instrumental to NEPs as they continue to reach out to the community to educate and recruit citizen involvement.

### ***Minimize Reporting Requirements***

MBNEP understands the need for accountability for the EPA funding that it receives each year. However, certain reports that are required at the regional level are redundant and onerous to prepare. Specifically, having to produce quarterly reports that include copies of everything that has transpired is time consuming and duplicative to what is kept on file at the NEP office. Local staff (which is at capacity) would be better served by having programmatic reviews on an as needed basis where EPA staff would conduct on-site visits to review project files, progress, and management activities.

### ***Promote Regional Transfer of Ideas, Methods, Successes***

EPA should encourage the GOMP in its efforts to periodically bring together the NEPs from its Gulf States territory, to share resources and knowledge and to better implement and coordinate actions. Cross fertilization with other NEPs could be promoted by the GOMP since it is working at the regional level.

### **Barriers to CCMP Implementation**

Among the possible barriers to CCMP implementation are issues talked about previously, including the 1) need for expanded public outreach, 2) the enormity of the task of CCMP implementation, 3) the lack of funding, and 4) the federal requirements for funding. MBNEP is actively addressing these barriers by changing its model for public outreach from the traditional to the issues-based, prioritizing the CCMP in order to focus on a few key priority issues in the short term, and attracting more funding through better outreach to the public and public officials by focusing on key issues in common.

### **MBNEP's Organizational Structure: Promoting Community Based Environmental Decision Making**

#### ***Staff Reorganization***

Organizationally, MBNEP has conducted a critical restructuring of its staff from the established model of having its own scientist on board, to creating more resource coordinators. Realizing that the community and, indeed, even the Management Conference, had considerable resident scientific resources available to the program free of charge, the Program removed what was perceived as a conflict of talents and more efficiently allocated its resources to helping coordinate community efforts. The inherent mission of the NEP as a community based program is, after all, not to invent or create new programs, but to bring together talented community scientists, data and efforts in support of estuary conservation. Especially in light of the limited resources available, the understanding that available talent does not have to reside completely within the program staff has made a measurable difference in performance. The result is that the staff is recognized as more professional and is more flexible to meet the needs of the program without loss of science capability.

#### ***Shift from Small to Broad Projects, Issues***

Between implementation reviews, MBNEP used the advice contained in its report from contractor Battelle and engaged in small scale community projects that would capture the imagination of the public by showing creative successes that encouraged participation from individuals. One example of this success was the community oyster gardening project. However, the Program realized that, after some initial small scale successes, in order to make real progress and capitalize on its unique role and the broad scope of the CCMP, it needed to engage in larger and higher profile issues and projects. This was reiterated in its survey of Management Conference Members through the strategic planning process where there was broad consensus for this need.

The first major milestone in this transition was MBNEP’s agreement to facilitate the public discussion of a controversial no trawl proposal by ADCNR’s Marine Resources Division in Mobile Bay between the recreational and commercial fishing industry. The role was successful and sealed MBNEP’s unique position as an honest broker of information on coastal impact issues and facilitator on controversial issues. The result was expanded outreach and relationships with new groups outside the Management Conference and MBNEP continues to be newly invited to the tables of such groups as the Gulf States Marine Fisheries and the Gulf of Mexico Fisheries Management Council as well as local commercial fisheries organizations.

Based on the success of this new role, MBNEP began a series of efforts to engage the community based on their interest in the topics of CCMP implementation. The Program began to reach outside the Management Conference to engage new players in its efforts based on issues and issues workgroups. These events include the community based Indicators Workshop, the Coastal Planning Summit and the Home Rule Workshop for Water Quality, as mentioned above and has proven remarkably successful.

***Key Stakeholders: The Management Conference***

Though the Management Conference structure of MBNEP has been lauded as diverse and broadly representative of the community, a major barrier to achieving accomplishments is the size, structure and roles of the Management Conference Committees. MBNEP and a Task Force of its Management Conference is reviewing the recommendations of its strategic planning effort in considering a revamp of the Management Conference Structure that focuses on smaller committees with specific and complementary roles based on the priority needs of MBNEP and fewer large scale meetings.

The Management Conference’s size, alone, while often cumbersome in meetings, also guarantees that we represent virtually every important stakeholder group with an interest in the Bay and estuary. Every member of our Management Conference has his/her own constituency and the Program has at its fingertips a ready bellwether of community attitude. Based on an assessment of conference members conducted as part of the strategic planning process, the following roles among the group are identified below:

Type of Stakeholder	# on Management Conference
Advocates	20
Funders	12
Governments	6
Project Implementers	13
Technical Assistance	7

**Summary of MBNEP’s Education and Outreach Strategy**

MBNEP’s Public Participation and Education Strategy was prepared in 2002 and is currently being implemented. Many of the objectives of this strategy continue to hold true and, like many of the actions within the CCMP, once undertaken, tend to continue into the long term, never truly being “complete”. The main three goals of this strategy are: 1) to educate targeted audiences and the general public regarding the history, function and activities of the Mobile Bay National Estuary Program; 2) to involve the community in activities that affect the quality of Mobile Bay and to address the priority issues and action plans established by the CCMP; and 3) to develop a sense of stewardship and shared responsibility in the Mobile Bay community.

The strategy is broken into three phases. Phase I focuses on the publication of the CCMP and galvanizing the Management Conference and local environmental community organizations regarding the CCMP's implementation. Phase II builds upon the success of Phase I focusing on targeting activities to specific CCMP actions, expanding media presence and continuing to build name recognition, and investigating opportunities to bring CCMP messages to the K-12 population. Phase III focuses on developing regular programs including volunteer activities for children as well as adults, expanding regionally in the distribution of outreach materials and in the participation of special events, and coordinating regional dialogue between resource managers and users.

Phase I was completed by the end of Fiscal Year 2002. Activities included many local community meetings (initiatives), a CCMP ceremony, and a widely publicized meeting to demonstrate new partnerships, including one with the DISL, MBNEP, and the State of Alabama.

Phase II was launched at the beginning of Fiscal Year 2003. Below is a synopsis by category, of the different activities undertaken to target education activities to specific CCMP Actions, expand media presence, build name recognition for MBNEP, and initiate opportunities to engage the K-12 and other student populations.

### ***Targeting Education Activities to Specific CCMP Actions***

**Conferences** MBNEP provided funding and staff support for four major conferences throughout the report period with total attendance of over 600 participants. The Mercury Forum (although held in April 2002- slightly prior to the report period) as mentioned earlier, attracted experts who hailed from 17 states and three foreign countries and the resultant recommendations generated by this conference spurred actions to create a task force at the national level as well as catalyzing ADEM into incorporating methyl-mercury into its monitoring programs.

Another set of major conferences were undertaken to address the issue of smart growth. Two meetings were held over a six month period to raise awareness about issues of zoning and land development, sprawl, long range planning, storm and waste water management, uncontrolled growth, and economic development. Today, participants from these meetings continue to develop cases for action on mixed use development, transportation, green building, and regional resource management issues.

**Workshops** MBNEP working in partnership with organizations such as Weeks Bay Coastal Training Program, ACF, and Auburn University Marine Extension and Research Center has conducted a number of adult education workshops.

During the reporting period, MBNEP participated in the implementation of 18 issue related workshops that were attended by over 500 individuals. These workshops addressed issues of stormwater and waste water management, nonpoint source pollution, low impact design and water management, streambank restoration, erosion and sedimentation, critical habitat prioritization, and environmental indicator development.

A notable success was the development of a series of stream restoration and related workshops held in 2002. These initial introductory sessions were expanded to the provision of more technical information in response to professional participant desires to educate themselves about actual engineering techniques and specifications. These more rigorous workshops led to the development of a statewide stream team. A complete list of conferences and workshops can be found in the appendix.

### ***Expand Media Presence***

MBNEP has utilized a number of ways to communicate targeted media messages to area stakeholders. Direct ways have included website, newsletter, press releases, press events, and email list servs.

**Website** MBNEP has been hosting a website since 1999. In 2002 the website was redesigned and content was added, more frequently updated, and covered a wider range of current activities, documents, and pertinent program information. In 2003, MBNEP in conjunction with DISL began the bay monitoring program and real time water quality data was displayed directly on a website. This joint environmental monitoring website now has its own domain, “mymobilebay.com” and is growing to include an array of information to include maps, aerial photographs, and datasets as they become available. It is envisioned that this site will be integrated with CCMP tracking and indicators.

Website use as a method of information and communication is on the rise and is expected to increase. A statistical tracker was put in place in November 2005. A variety of information such as pages viewed, traffic, visitor domains and other pertinent data will be available. It is also useful in focusing information exchange by knowing for what people are searching. While information is not available for the implementation time period, the following example of preliminary information is forthcoming.

Top 10 Links from Search Engines		Top 15 Pages		View #
Google	677	Home Page		780
Google (Images)	340	Projects Page		114
Yahoo	126	Bumper Sticker		105
MSN	48	Publications		96
AOL	26	Program Basics		85
Ask Jeeves 15	15	Crab Watch		85
Unknown search engines	7	Crab Trap		84
Netscape 6	6	Contact Info		70
Dogpile 4	4	EcoKids		67
Earth Link 3	3	ANS		67
		News		66
		Links		56
		Calendar		55
		Events		49
		Mini Grants		49
		Earth Day Event		47

**Print Media** MBNEP produced a state of the bay newspaper insert in 2003, Where Rivers Meet the Sea, which was distributed via The Sunday Mobile Register in March of 2003. Distribution of this extensive report approximated 125,000 households. MBNEP has been publishing a newsletter since 1997. Originally a tri-organization release (ACF, Alabama Department of Conservation and Natural Resources, MBNEP) the *Alabama Current Connection* newsletter is now produced jointly between MBNEP and ADCNR Coastal Section. These documents are mailed and made available on the website in PDF format.

All of MBNEP contracts for technical reports are made available on the website as well as in hard copy. In addition to these technical reports, three issue related posters have been produced; including a partnership with MASGC for an Eastern Oyster Poster (2005) and MBNEP funded posters of Alabama Coast Timeline (2002) and the Alabama Watershed (2002). In addition to educational posters, MBNEP has provided funding for many posters advertising community events. A complete list of posters can be found in the appendix.

Brochures produced by MBNEP address issues of Invasive Species, crab monitoring, oyster gardening, storm and waste water. In addition, MBNEP produced a brochure, Generations, which educated about the NEP as well as the CCMP. A complete list of brochures, including those produced for advertising purposes, can be found in the appendix.

### ***Building Name Recognition for MBNEP***

**Press Releases** MBNEP has issued press releases and held several press events regarding CCMP related activities as a mechanism for generating greater name and program recognition. Press hits are tracked in a database. These generally fall into five categories: Newspaper, television, radio, electronic media, and other. A summary of press hits is displayed.

<b>Year</b>	<b>Newspaper</b>	<b>TV</b>	<b>Radio</b>	<b>Electronic</b>	<b>Other</b>
*2003	52	27	9	25	19
*2004	50	4	3	16	16
2005	115	12	5	19	13

Those years that are starred (\*) reflect materials seen by, given or reported to MBNEP. These numbers do not reflect all press releases or notices and as a result, during those years, actual coverage was probably higher. The newspaper numbers track strictly newsprint articles; in late 2004 MBNEP began using Magnolia Clipping within the state of Alabama only which is reflected in the higher number of hits for 2005. Regarding TV and radio spots, these numbers reflect those spots that were arranged or reported to MBNEP, and generally are only for Alabama stations. These numbers do not include PSAs. Electronic hits represent email, electronic newsletters, or websites that have included MBNEP somewhere on the site or in the written content. Other hits include community newsletters, magazines, posters, or annual reports.

**Promotional Products** MBNEP has produced many promotional products to build “program and organizational awareness and recognition”. The basis for distributing these products is to build awareness of MBNEP as an environmental entity with the hope that once citizens are made aware of MBNEP they will then recall it and associate it with environmental action (through other printed media and event information.)

**Special Events** MBNEP sets up activities and displays at many community events as a method of outreach as well as organizational and issue awareness. These events, which are as diverse as birding festivals, Halloween carnivals, canoe races, and beach clean-ups, all provide an opportunity for MBNEP to educate community members about important environmental issues, support community action, and communicate MBNEP’s role in estuary activities. A list of the different events that are supported by MBNEP on an ongoing basis can be found in the appendix.

**Presentations** MBNEP speaks at many community organization meetings and events to educate diverse constituencies about the NEP and the issues affecting the estuary. During the reporting period, MBNEP staff presented at over 63 different gatherings: five presentations during 2003, 24 presentations during 2004, and 34 presentations during 2005. A complete list of presentations can be found in the appendix.

### ***Opportunities to Engage K-12 and other Student Populations***

**K-12 Students** MBNEP has participated in a number of traditional K-12 related activities. These include the Coastal Kids Quiz, Make-A-Splash, Regional Science Fair, and Women in Science – Expanding Your Horizons. These examples include 5<sup>th</sup> grade competitions, 4<sup>th</sup> grade education on wetlands, junior and high school level research, and exposing middle school aged girls to science. MBNEP has trained high school students to oyster garden, recruited them for event participation and most recently to develop a bumper sticker campaign. Presentations to these school groups introduce the students to real world environmental issues. A list of educational products can be found in the appendix.

During 2004-2005, MBNEP partnered with DISL, Gulf Shores High School, and the Weeks Bay NERR to train high school students on planting submerged aquatic vegetation. This program involved

students experimenting with growing SAV, harvesting additional plants, and planting in a restoration area on the eastern shore.

**Collegiate** Since 2003 MBNEP has had eight interns from the University of South Alabama. One intern was hired by MBNEP to coordinate oyster gardening and has since been promoted to CACWP Basin Coordinator. Another intern continues to provide more in-depth project assistance under contract.

MBNEP has also helped foster a service learning component within the Communications Department of Spring Hill College. These students have produced successful marketing pieces for the Clean Marina Program, Bay Area Earth Day Event, and the award winning *EcoKids* children's activity book which won a Bay Area Advertising Federation Special Recognition Award. Students gain experience and portfolio pieces while MBNEP gains creative ideas and products.

Other Public Involvement Activities/Awards, Special Recognition

**Public Involvement** MBNEP supports many activities throughout the community that engage residents in actively monitoring conditions of the bay or its improving environmental condition. A list of volunteer activities and participation is included in the appendix and includes:

Alabama Water Watch- Volunteer Water Quality Monitoring

Mobile Bay Oyster Gardening- Growing oysters for reef restoration purposes

Dock Watch- Project to report sightings of exotic jellyfish *Phyllorhiza punctata* and others

Crab Watch- Program to monitor recreational crabbing efforts; track incidental by catch and aquatic nuisance species

**Awards and Special Recognition** MBNEP has received or been a participant in receiving 6 different awards for projects that it has lead or supported. Those awards include a 2003 Cypress Tree Planting Project Coastal America Spirit Award with the ACF; a Derelict Crab Trap Recovery Program 2004 Gulf Guardian Award with the Gulf States Marine Fisheries Service; a

Mobile Bay Oyster Gardening Program 2004 5-Star Restoration Grant Award with AUMERC, MASGC, DISL; an EcoKids Activity Book 2005 Bay Area Advertising Federation with Spring Hill College; and an Alabama Mississippi Rapid Assess Team 2005 Gulf Guardian Award - 1st place partnerships with USM GCRL and numerous others; and finally, a Marine Litter Public Service Announcement 2005 Clear Channel Radio - 1st Place Most Creative Award with MASGC.

### **MBNEP Finances**

MBNEP currently has two open grants with EPA. One grant represents Work Plans from 2003 and all prior years (this grant agreement has been amended several times) and a second grant that encompasses FY 2004, 2005, and 2006. For the purpose of presenting financial information in this document, we have included information from the first grant (2003 and prior years) in its aggregate as all previous year funding was rolled into the FY 2003 plan, as well as financial information from FY 2004 and FY 2005.

During the period from October 1, 2002 through September 30, 2005, EPA and match funding available for program activities totaled \$3,238,370. Of this amount, \$2,399,780 was expended and an additional \$1,822,942 of in-kind match value was generated. Together, the total value of EPA and match (including in-kind) equaled \$4,222,723 of which 47% was EPA funding, 10% represented actual cash match toward the program, and 43% was in the form of in-kind services.

**EPA and Match Dollars Budgeted 2003-2005**

Figure 1 provides a review of the EPA Budgets for years 2003-2005 by objective area of the CCMP. The blue bars represent the EPA dollars budgeted by objective area and the green bars represent match dollars only. From the graph below, it is evident that the program has maintained a certain amount of balance among the five objective areas, although the category of Habitat Management reflects a disproportionate share of attention. This is due to the cost of habitat and SAV mapping which consumed a major part of the budget in the early years. Expenditures for Education and Public Outreach during 2003 and prior years include the publication of the CCMP as well as other outreach materials produced to raise awareness in the initial years of the program. Funding for water quality activities under the 2003 and prior year grant includes a currently active project to conduct expanded sampling in sub-estuaries as described earlier.

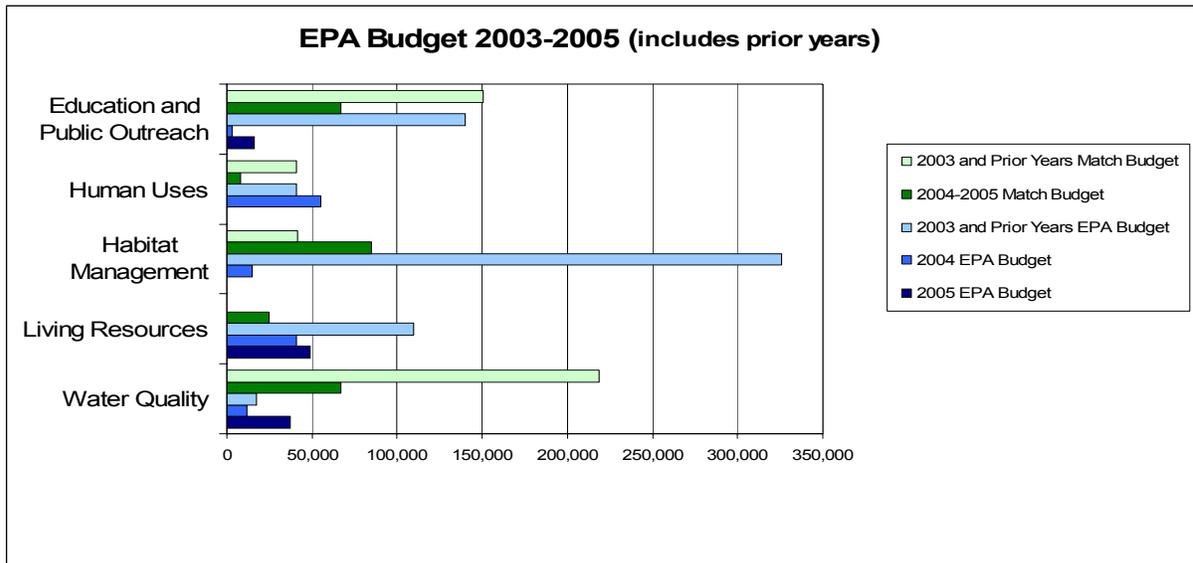


Figure 1: EPA and Match Budget 2003-2005

Description	2005 EPA Budget	2004 EPA Budget	2003 and Prior Years EPA Budget	2004-2005 Match Budget	2003 Prior Yrs/Match Budget	Total Budget All Years
Water Quality	37,000	12,000	17,555	67,000	218,387	351,942
Living Resources	48,839	40,839	109,621	25,000	-	224,299
Habitat Management	-	15,000	326,000	85,000	41,500	467,500
Human Uses	-	55,000	41,056	8,000	41,000	145,056
Education and Public Outreach	16,072	3,237	139,780	67,191	150,561	376,841
Program Admin	405,073	380,609	703,651	47,708	135,691	1,672,732
Totals	506,984	506,685	1,337,663	299,899	587,139	3,238,370

Table 1: EPA and Match Budget 2003-2005

From 2003 through 2005, MBNEP expended a total of \$2,399,780 or 74% of the total funding available. The figure below clearly demonstrates the multi year and long term nature of many of the projects undertaken. For example, the discrepancy in the amount budgeted vs. expended for habitat management projects reflects the ongoing habitat mapping project mentioned above. This project, which is more than halfway complete, has an outstanding balance of over \$100,000. With maps finished for Mobile County, the project is still anticipating the completion of maps for Baldwin County. The same is true for the Sub-Estuary Monitoring project. This project, which has a budget of \$162,500, covers three years and three different sub-estuaries. It is scheduled to be completed by December, 2007.

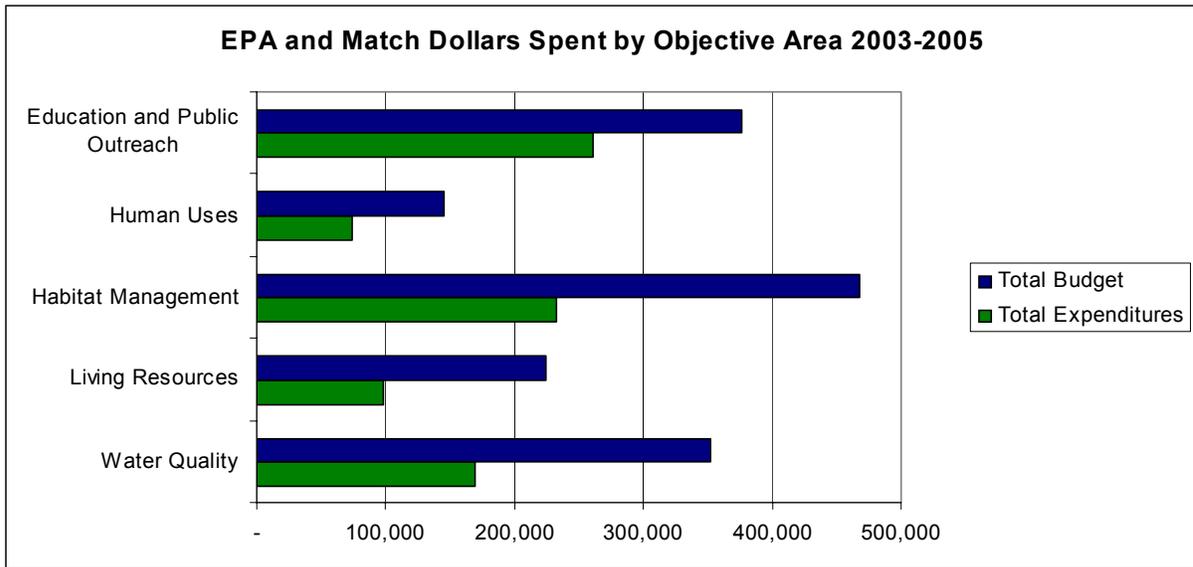


Figure 2: EPA and Match Dollars Budgeted and Expended 2003-2005

Description	2004-2005 Expenditures Thru 9/30/2005	2003/Prior Years Expenditures Thru 9/30/05	Total Expenditures	Total Budget
Water Quality	64,597.00	104,159.00	168,756.00	351,942.00
Living Resources	984.00	97,595.00	98,579.00	224,299.00
Habitat Management	12,000.00	221,002.00	233,002.00	467,500.00
Human Uses	30,539.00	42,833.00	73,372.00	145,056.00
Education and Public Outreach	21,175.71	239,720.00	260,895.71	376,841.00
Management and Administration	761,348.68	803,827.00	1,565,175.68	1,672,732.00
	890,644.39	1,509,136.00	4,630,804.78	3,238,370.00

Table 2: EPA and Match Budget and Expended 2003-2005

***A Comparison of EPA, Cash Match, In-Kind Match, and Leverage by Objective Area 2003-2005***

Although MBNEP has historically and continues to cultivate local governments and private industry for cash match dollars, it is evident from the figure below that, in fact, cash match continues to be somewhat elusive for the program. While this limits program office staffing capability and surge

capability, it has not hampered MBNEP’s efforts to implement projects. On the contrary, the program has worked hard to secure both in-kind sources of match as well as securing significant leveraged dollars from other federal programs to accomplish the actions set out in the CCMP.

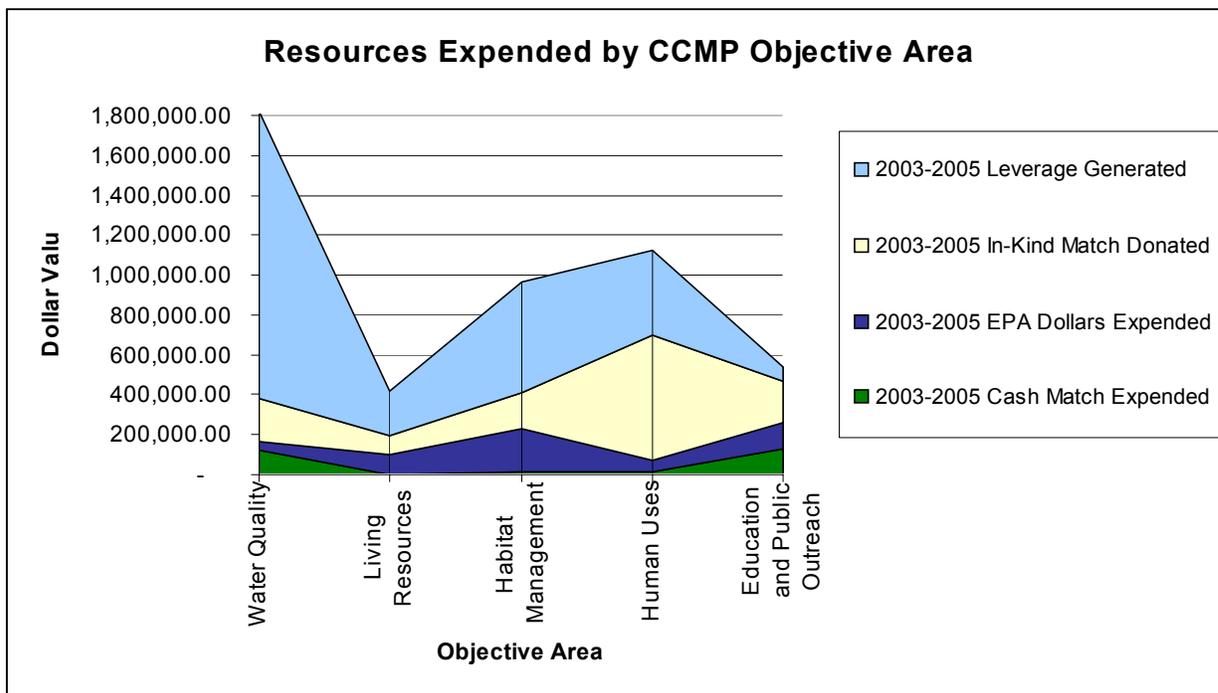


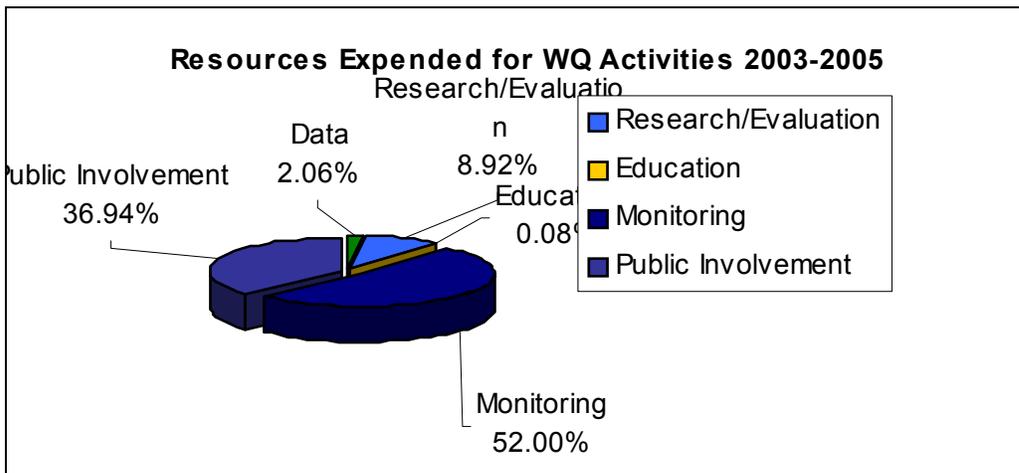
Figure 3: All Resources Expended 2003-2005

Description	2003-2005 Cash Match Expended	2003-2005 EPA Dollars Expended	2003-2005 In-Kind Match Donated	2003-2005 Leverage Generated
Water Quality	118,945	49,811	211,301	1,444,719
Living Resources		98,579	92,518	228,752
Habitat Management	13,866	219,136	178,937	553,454
Human Uses	12,316	61,056	622,275	426,700
Education and Public Outreach	129,442	131,454	208,714	70,000
Program Administration	148,058	1,417,118	509,198	0.00
Totals	422,622	1,977,158	3,645,885	5,447,250

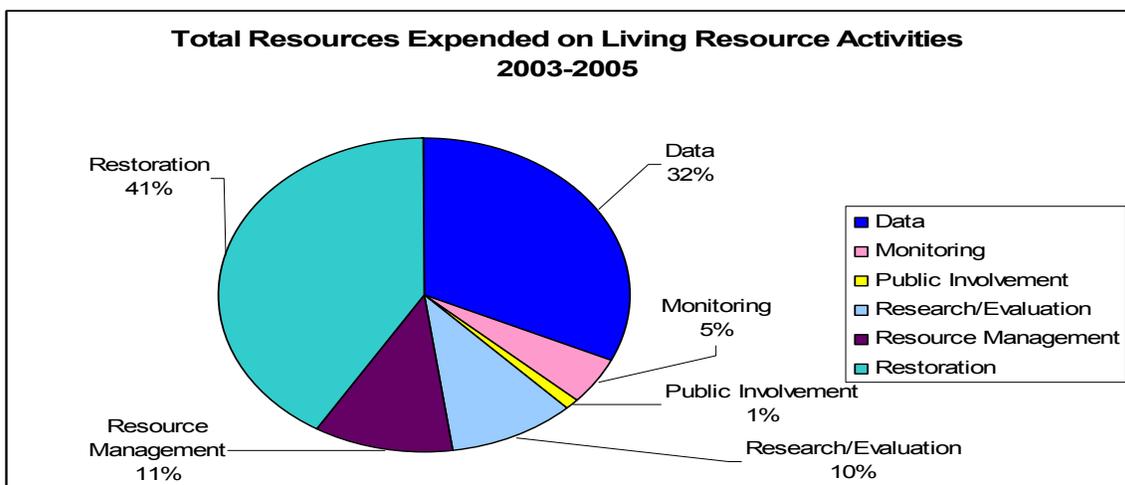
Table 3: All Resources Expended by Objective Area 2003-2005

**Activities Funded by Objective Area**

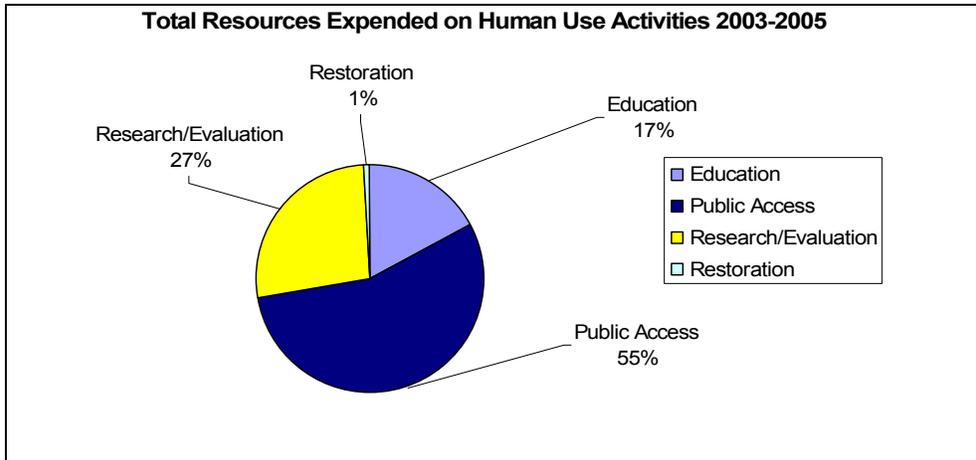
**Water Quality** Within the objective area of Water Quality, over 52% of funds expended were on monitoring activities, including Sub-Estuary and Atmospheric Deposition monitoring. The 37% expended for public involvement activities reflect the large amount of leverage generated by the Household Hazardous Waste Amnesty Days held in 2002.



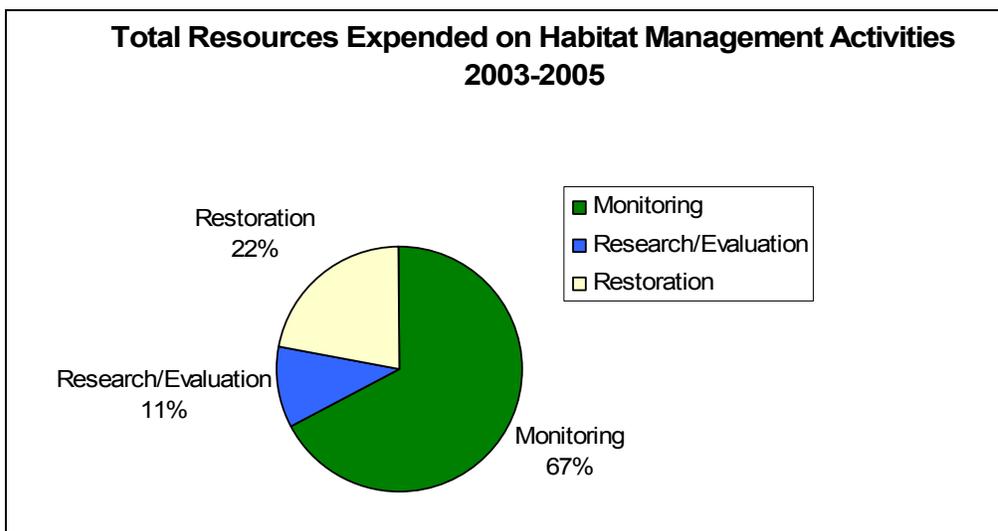
**Living Resources** From 2003-2005, most of MBNEP’s efforts to increase fisheries resources focused on reef restoration through its Oyster Gardening program and support of reef construction. In fact, 41% of MBNEP’s funding went toward these efforts. An additional 32% of funding was committed toward gathering the information necessary for conservation of economically and/or ecologically important species, including those that are threatened and endangered. MBNEP has made a long term commitment toward managing invasive and exotic species by allocating a significant amount of staff time and \$45,000 toward an Aquatic Nuisance Species Management Plan.



**Human Uses** The lion share of funding expended on Human Use activities was allocated to public access improvements. These projects, including the restoration of Helen Wood Park, also involved a large amount of public involvement. The Research and Evaluation amount, which represents 27%, was expended on the development of Land Use/Land Cover maps that will aid municipalities and counties in future planning.

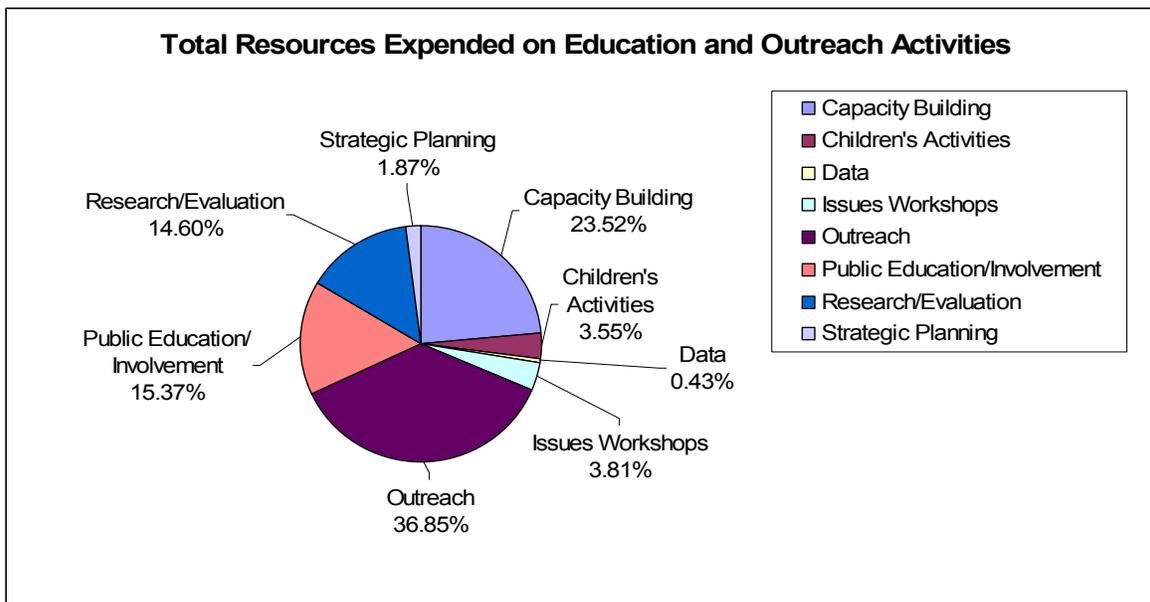


**Habitat Management** MBNEP has put a major emphasis on mapping the wetlands of Mobile and Baldwin Counties to provide a baseline for resource management and monitoring activities. Clearly, this project, which represents 67% of the funding dedicated to habitat management activities, is considered a high priority and will contribute to future restoration efforts. Restoration efforts were accomplished through community partnerships with local non-profits and community volunteers, and included Blakely State Park and delta wetlands projects. Research and evaluation projects focused on wetlands valuation (Emergy Analysis) and SAV management issues.



**Education and Public Involvement** MBNEP has invested significant time and attention to raising community awareness of the many issues that impact our coastal environment. Through workshops, children’s coloring books, community meetings, and other special events, MBNEP has implemented not only “outreach” activities, but has also participated in the offering of many workshops related to CCMP identified issues. Through its Mini Grant program, MBNEP has been able to provide a unique

source of funding for projects that enable grassroots groups as well as teachers the ability to undertake studies and experiments that otherwise would be difficult to fund. Finally, MBNEP has funded conferences and symposia as a means of transferring technical information among scientists, resource managers and vendors.



## **Conclusion**

“We shall never achieve harmony with land, any more than we shall achieve absolute justice or liberty for people. In these higher aspirations, the important thing is to strive.”...Aldo Leopold, Round River (1953)

In light of our continual self examination and flexibility to reorganize and transition to the needs of the community, MBNEP has begun to establish a unique role in the community that is better understood, appreciated, and embraced. MBNEP strives to bring together the many interests focused on sustaining Alabama’s coastal environment and in this document has demonstrated its ability to navigate through the science, politics, community interests, natural forces, and “on the ground” actions that have made significant positive impacts within MBNEP’s target area and beyond. MBNEP will continue to cultivate the full support and commitment of local officials, commercial and industrial interests, and citizens, engaging them in dialogue, advocacy and action toward a resilient coast, a productive estuary, and future that balances economic growth with environmental progress.