

# COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN

*Mobile Bay National Estuary Program*



## THE PATH TO SUCCESS

*Preliminary action plans for restoring  
and maintaining the Mobile Bay estuary*



# THE PATH TO SUCCESS



April 2002

## Comprehensive Conservation and Management Plan (CCMP) of the Mobile Bay National Estuary Program

Within this and two companion volumes, you will find the culmination of several years of work by a vast array of area stakeholders to systematically characterize the health of the Mobile Bay Estuary, and develop a long-term strategy for conserving and improving the estuary.

The CCMP is divided into three distinct volumes, as follows:

**Volume 1 – A Call to Action** contains a brief overview of the U.S. Environmental Protection Agency's National Estuary Program (NEP) process, as well as discussion of the priority environmental issues affecting the Mobile Bay Estuary. This volume summarizes scientific characterization studies about the health of the estuary (published separately and inventoried in Volume 3) that have been completed by the Mobile Bay NEP and its contractors. In addition, this volume of the CCMP introduces actions designed by the Mobile Bay NEP Management Conference to address those priority issues deemed to negatively impact the estuary. Finally, the document highlights future opportunities for citizen feedback on this draft, as well as opportunities to help implement the actions within it.

**Volume 2 – The Path to Success** is a technical reference that contains the complete preliminary Action Plans for restoring and maintaining the Mobile Bay Estuary as developed by the Mobile Bay NEP. Specifically, this document identifies each action, the recommended steps for their implementation, the needed investment, and recommendations on parties responsible for the implementation of each action.

**Volume 3 – Working Together** contains information about the management structure of the Mobile Bay NEP, members of its program staff and Committees, supporting organizations that have contributed to the process, as well as documentation required by the Environmental Protection Agency. An appendix to the CCMP, this volume contains an inventory of the partners involved in the Mobile Bay NEP process, as well as information about funding mechanisms, monitoring strategies, and a summary of public involvement to date.

We are grateful for the tremendous efforts of the past and encourage a renewed interest and enthusiasm for the full support of a final CCMP for the Mobile Bay Estuary. It is only by working together that this outstanding resource will be maintained for future generations.

– The Mobile Bay National Estuary Program Management Conference

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# THE PATH TO SUCCESS



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# Introduction



***The Path to Success*** is arguably the most important section of the Mobile Bay National Estuary Program's Comprehensive Conservation and Management Plan. It contains explicit, step-by-step actions designed to restore and maintain the Mobile Bay Estuary for future generations. The overall goal of the Mobile Bay NEP is ***"To promote wise stewardship of the water quality characteristics and living resource base of the Mobile Bay estuarine system."*** The 29 Action Plans contained herein are the product of an innovative effort to establish consensus among all stakeholders of the estuary, and effectively meet this goal, while fulfilling the estuary's most critical management needs.

The action plans within this document reflect the broad base of citizen and stakeholder involvement that defines the Mobile Bay NEP. Each action plan was developed by Workgroups within the Mobile Bay NEP Management Conference. The Management Conference is a collection of individuals appointed by the Governor of Alabama to represent local, state and federal government agencies, as well as environmental organizations, business and industry, landowners, academic experts, and the general public. The Management Conference, which first formed in 1995, has been working to identify priority issues in the Mobile Bay Estuary and to develop the courses of action defined within this document. Public input has been incorporated throughout the development of this plan through various public meetings. In short, the actions contained herein represent a consensus adopted by all stakeholders in the Mobile Bay Estuary.

In almost every issue area, characterization studies commissioned by the Mobile Bay NEP have indicated existing data is incomplete or inadequate for fully assessing the nature and scope of environmental problems in the Mobile Bay Estuary. As a result, the first steps in many of the Action Plans that follow will be to gather

more data about the perceived problems in order to fully understand and successfully address them. Once new information is gathered, it will be used to review, re-evaluate, and re-direct the efforts initially described in this document. As such, the CCMP represents a snapshot in time and should be viewed as a living, working document that is a comprehensive starting point for development of a sustainable, healthy Mobile Bay Estuary. In addition, as new issues arise that are not contained within this document, the Management Conference of the Mobile Bay NEP will continue working to establish stakeholder consensus for addressing those issues.

As described in ***A Call to Action***, the first volume of the CCMP, the Mobile Bay NEP Management Conference has developed objectives in each of the five priority issue areas of ***Water Quality, Living Resources, Habitat Management, Human Uses*** and ***Education & Public Involvement***. Each objective may have multiple sub-objectives, depending upon complexity, and each sub-objective contains Action Plans designed to achieve the sub-objective. This document contains schematics of the structure for each issue and focuses on the detailed Action Plans designed to fulfill those objectives.

It is important to note that the CCMP is an advisory document that is designed to serve as a guide for implementing preservation and restoration efforts throughout the Mobile Bay Estuary. The Mobile Bay NEP does ***not*** have regulatory authority. However, Action Plans described herein may suggest that regulatory agencies evaluate and address existing programs.

With the completion of the CCMP, the true work of the Mobile Bay NEP begins as each of the cooperating stakeholders within the Management Conference work to implement the actions described herein.



# Action Plans

## **FORMATTING**

Each Action Plan within this document has been uniformly structured in order to provide continuity and readability while also fulfilling EPA program documentation requirements. Each Action Plan will contain the following components:

<b>ACTION PLAN ID</b>	Provides a unique reference number and title for each Action Plan, for ease of reference.
<b>WHAT</b>	Provides a concise statement of the action.
<b>WHO AND HOW</b>	Contains a step-by-step description of the Action Plan and identifies the agencies, organizations, or individuals primarily responsible for implementing the action.
<b>WHEN</b>	Graphically depicts a timeline for completing each step of the action.
<b>WHERE</b>	Describes the physical portion(s) of the estuary or watersheds targeted by the actions.
<b>COOPERATORS</b>	Lists other stakeholder agencies, organizations, and individuals who may have secondary roles during implementation.
<b>FUNDING</b>	Funds currently being expended to complete some portion of or the entire action plan. Does not include estimates for items not yet initiated.
<b>REGULATORY CONSIDERATIONS</b>	Where applicable, this item describes both existing regulatory issues and shortcomings that may directly affect implementation of the described actions.
<b>RELATED ACTIONS</b>	Identifies other similar, coordinated Action Plans proposed in this CCMP, where applicable. Also notes related MBNEP Workplan items, demonstration projects, and committee efforts. Where possible, this item highlights similar consensus items from the Alabama Commission on Environmental Initiatives (ACEI) 2001 report to Alabama Governor Don Siegelman. <b>Note: All Action Plans have a related education component addressed under Action Plans EPI-A1 or EPI-B1.</b>
<b>ENVIRONMENTAL INDICATORS</b>	Largely based on a monitoring plan commissioned by the Mobile Bay NEP (and included in Volume 3 of this CCMP), this item lists environmental parameters identified for measurement in order to gauge success.
<b>MONITORING STRATEGY</b>	Where applicable, this item provides a direct reference to the MBNEP monitoring plan.

**NOTE: For coordination with the MBNEP monitoring strategy, each Action Plan description contains references to Action Plan identification numbers as first established in a June, 1999 draft CCMP.**

## ACRONYMS

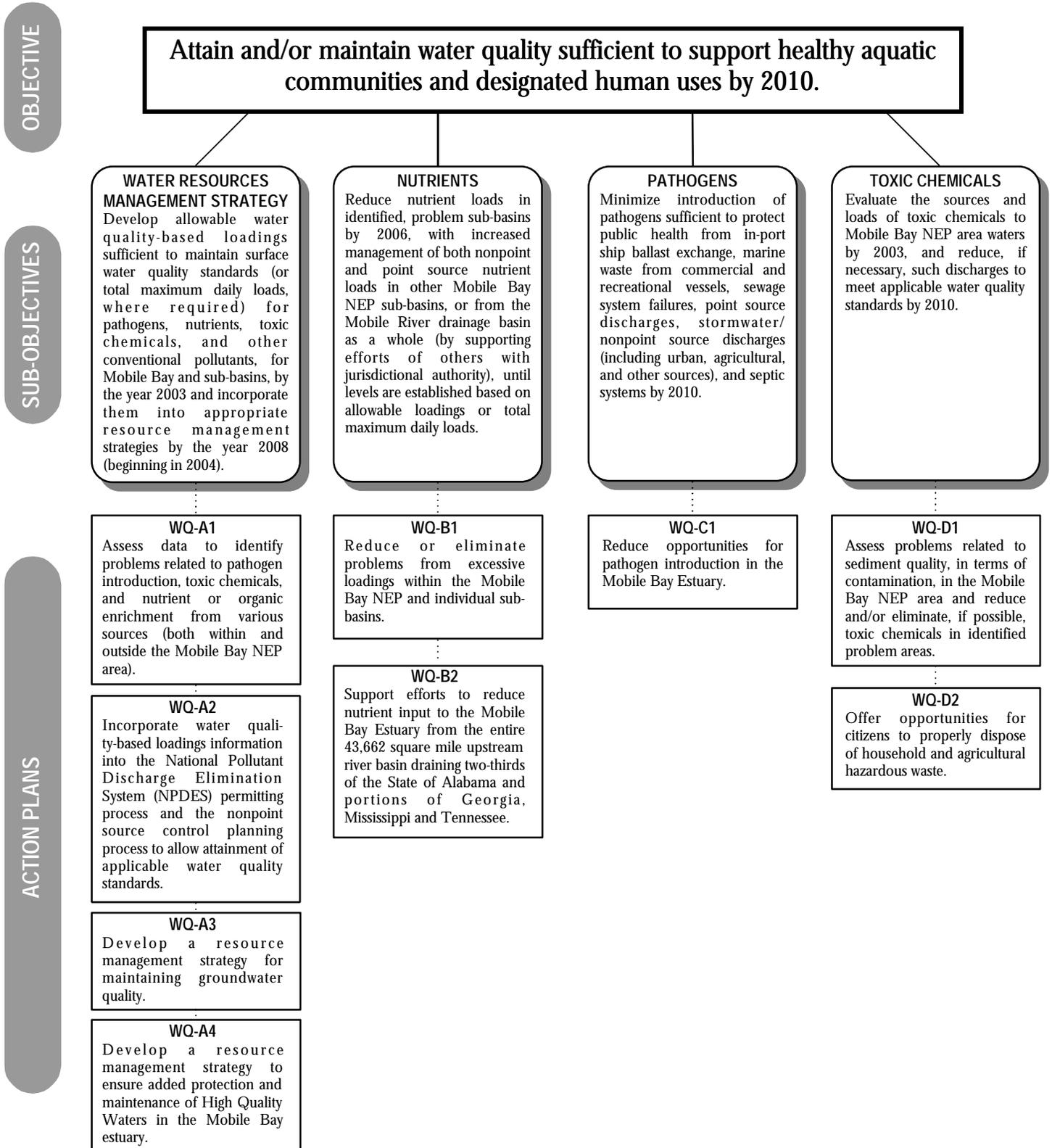
The following acronyms are used throughout the Action Plan descriptions:

ACEI.....	Alabama Commission on Environmental Initiatives	BCEDA .....	Baldwin County Economic Development Alliance
ACES.....	Alabama Cooperative Extension Service	BMP .....	Best Management Practices
ACES.....	Alabama Center for Estuarine Studies	BOD.....	Biological Oxygen Demand
ACWP .....	Alabama Clean Water Partnership	BSA .....	Boy Scouts of America
ADCNR.....	Alabama Department of Conservation and Natural Resources	CACWP .....	Coastal Alabama Clean Water Partnership
–CP.....	Coastal Programs	CAFO.....	Concentrated Animal Feeding Operation
–MRD .....	Marine Resources Division	CCA.....	Coastal Conservation Association
–SLD .....	State Lands Division	CCWWG .....	Coastal Counties Wetland Working Group
–WFFD .....	Wildlife and Freshwater Fisheries Division	CHCT.....	Coastal Habitats Coordinating Team
ADECA .....	Alabama Department of Economic and Community Affairs	CIAP.....	Coastal Impact Assistance Program
–OWR.....	Office of Water Resources	CMP .....	Corridor Management Plan
ADEM .....	Alabama Department of Environmental Management	CPI .....	Coastal Policy Initiative
–CP.....	Coastal Programs	CPUE .....	Catch Per Unit Effort
ADIR.....	Alabama Department of Industrial Relations	CRP .....	Conservation Reserve Program
ADPH.....	Alabama Department of Public Health	CVB.....	Convention & Visitors Bureau
AEC .....	Alabama Environmental Council	DIMS.....	Data Information Management Systems
AFC .....	Alabama Forestry Commission	DISL.....	Dauphin Island Sea Lab
AFO.....	Animal Feeding Operation	DO.....	Dissolved Oxygen
ALDOT.....	Alabama Department of Transportation	CWA .....	Clean Water Act
AMSA.....	Association of Metropolitan Sewer Agencies	EPA .....	Environmental Protection Agency
AOS.....	Alabama Ornithological Society	ESCOC.....	Eastern Shore Chamber of Commerce
ASPA.....	Alabama State Port Authority	FDA.....	Food and Drug Administration
AUMERC.....	Auburn University Marine Extension Research Center	FODIAS .....	Friends of Dauphin Island Audubon Sanctuary
AWW .....	Alabama Water Watch	GAP .....	Gap Analysis Program
BASS .....	Bass Anglers Sportsman Society	GIS .....	Geographic Information System
BCC .....	Baldwin County Commission	GMP .....	Gulf of Mexico Program
BCEAB.....	Baldwin County Environmental Advisory Board	GSA .....	Geological Survey of Alabama
		GSMFC .....	Gulf States Marine Fisheries Commission
		HAB .....	Harmful Algal Bloom
		HBA .....	Home Builders Association

LCI .....	Local Community Initiatives	NRCS.....	Natural Resource Conservation Service
MACOC .....	Mobile Area Chamber of Commerce	OAW.....	Outstanding Alabama Waterway
MASGC .....	Mississippi-Alabama SeaGrant Consortium	ONRW.....	Outstanding Natural Resource Water
MAWSS .....	Mobile Area Water and Sewer System	POTF .....	Public Outreach Task Force
MBAS.....	Mobile Bay Audubon Society	PSA.....	Public Service Announcement
MBNEP .....	Mobile Bay National Estuary Program	SABA.....	South Alabama Birding Association
MBW/MBK ....	Mobile Bay Watch, Inc./Mobile BayKeeper	SARPC .....	South Alabama Regional Planning Commission
MCAQS.....	Mobile County Air Quality Study	SCC .....	Scenic Causeway Coalition
MCC .....	Mobile County Commission	TKN .....	Total Kjeldahl Nitrogen
MCWCA .....	Mobile County Wildlife and Conservation Association	TMDL.....	Total Maximum Daily Load
MOA .....	Memorandum of Agreement	TNC .....	The Nature Conservancy
MS4 .....	Municipal Separate Storm Sewer System	TTW .....	Tennessee-Tombigbee Waterway
NADP.....	National Atmospheric Deposition Program	USA .....	University of South Alabama
NAWQA .....	National Water Quality Assessment Program	USACE.....	United States Army Corps of Engineers
NOAA .....	National Oceanic and Atmospheric Administration	–ERDC .....	Engineering Research Development Center
NEP .....	National Estuary Program	USCG .....	United States Coast Guard
NERRS .....	National Estuarine Research Reserve System	USDA.....	United States Department of Agriculture
NMFS .....	National Marine Fisheries Service	–APHIS.....	Animal and Plant Health Inspection Service
NPDES .....	National Pollutant Discharge Elimination System	USFWS .....	United States Fish and Wildlife Service
NPS.....	Nonpoint Source (pollution)	USGS.....	United States Geological Survey
		WRATT .....	Waste Reduction and Technology Transfer Program

# WATER QUALITY

The Water Quality Workgroup of the Mobile Bay NEP developed four sub-objectives and nine Action Plans to reach the Management Conference objective. Sub-objectives focused on areas of **Water Resources Management Strategies**, **Nutrients**, **Pathogens**, and **Toxic Chemicals**. The following schematic shows how the items are related:



## ACTION WQ-A1: Assess Data to Identify Water Quality Problems

**ACTION PLAN ID**

**WHAT**

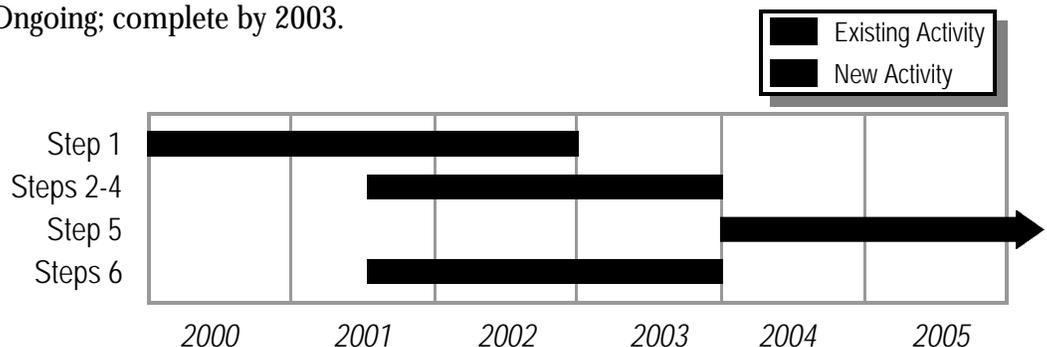
Assess data to identify problems related to pathogen introduction, toxic chemicals and nutrient and/or organic enrichment from various sources (e.g., point and nonpoint sources within the Mobile Bay NEP area, atmospheric deposition, upstream riverine input, etc.) and promote water quality improvements within the NEP area, as necessary.

**WHO AND HOW**

- Step 1: TETRA TECH (under contract to MBNEP) will develop a loadings budget analysis using existing data.
- Step 2: MBNEP, EPA and ADEM will compile additional new data, as needed, to expand upon the Tetra Tech loadings budget, with particular emphasis concerning the impacts of air emissions on water quality.
- Step 3: ADEM, USACE and EPA will develop comprehensive, water quality predictive models to allow a more complete understanding of loadings processes.
- Step 4: ADEM and EPA will develop simple management tools based on the predictive models for planners, managers, etc., in order to reduce future point and NPS loadings.
- Step 5: MBNEP will continue to assess and incorporate newly identified or potential loadings sources within and outside the MBNEP area and, once identified, will develop appropriate new actions, where possible.
- Step 6: MBNEP will support and actively participate in efforts to examine cumulative or synergistic effects of loadings from various point and nonpoint sources, including air emissions.

**WHEN**

Ongoing; complete by 2003.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADPH; BCEDA; CACWP; ESCOC; The Forum; GMP; MACOC; MBW/MBK; MCAQS; Mobile County Health Department; MS4 parties; NADP.

FUNDING

>\$2.5 million

• ADEM	\$475,000*	• MBNEP	\$157,000
• USACE	\$30,000	• EPA	\$1,292,415**
• CIAP	\$600,000		
* \$375,000 ongoing and \$100,000 new			
** \$90,000 from EPA's Gulf of Mexico Program			
TOTAL.....		>\$2,554,415	

Congress authorized the Coastal Impact Assistance Program (CIAP) October 2000 to assist coastal states with mitigating environmental impacts related directly or indirectly to Outer Continental Shelf oil and gas production.

ADEM refers to "Ongoing" as the costs for existing programs or activities related to, but not undertaken specifically to meet, CCMP objectives. "New" refers to the costs for program or activities undertaken specifically to meet objectives of the CCMP.

EPA transfers funds to the State of Alabama through the 106 Grant for statewide TMDL development and water quality planning. Of the funds listed for EPA above, \$1,037,415 are for the statewide 106 Grant for 2002, some of which are used for the Mobile Bay area of concern. Funding for future years is expected to be similar.

REGULATORY  
CONSIDERATIONS

- Possible additions to NPDES permits and nonpoint source control measures.
- 303(d)\* lawsuits.
- CWA Section 305(b)\*

**\*Note: Refer to ADEM's latest 305(b) report and 303(d) listing for information on impaired watersheds and waterbodies.**

RELATED  
ACTIONS

ACEI Consensus Items: All WI & AI items  
Other CCMP Action Plans: HU-A1, HU-B1, HU-B2, HU-B3

ENVIRONMENTAL  
INDICATORS

- Ammonia
- Effluent discharge
- Mercury
- Nitrate+nitrite
- Total phosphate

MONITORING  
STRATEGY

P. 48

## ACTION WQ-A2:

# Incorporate Loadings Information Into NPDES

### ACTION PLAN ID

### WHAT

Incorporate water quality-based loadings information into the National Pollutant Discharge Elimination System (NPDES) permitting process and nonpoint source (NPS) control planning process to allow attainment of applicable water quality standards.

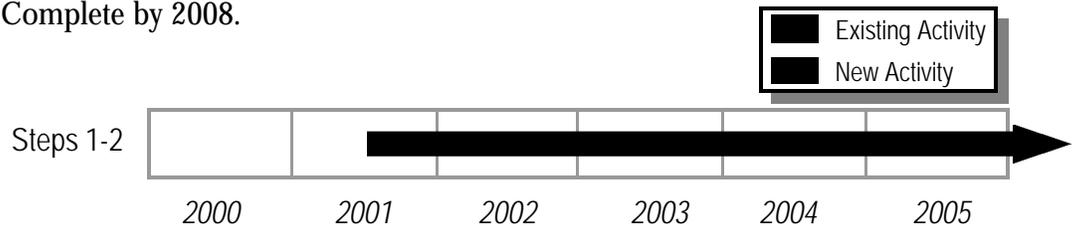
### WHO AND HOW

Step 1: ADEM will develop and issue NPDES permits based on TMDLs.

Step 2: ADEM, in conjunction with EPA and NRCS, will develop and implement NPS control plans based on TMDLs.

### WHEN

Complete by 2008.



### WHERE

Mobile Bay NEP Area.

### COOPERATORS

ADCNR Coastal Programs; County and Municipal governments; NOAA; State and Federal land and resource management agencies; 319\* partners; 6217\* partners.

*\*State NPS pollution prevention programs. See Base Programs Analysis in Volume 3 of the CCMP for more details.*

FUNDING

>\$1.5 million.

• ADEM	\$1,100,000*	• NRCS	\$40,000
• EPA	\$412,559		
*ongoing			
TOTAL.....		>\$1,552,559	

EPA transfers funds to the State of Alabama through the 106 Grant for statewide permitting efforts. Some portion of these funds are used for Mobile Bay area of concern. Funding for future years is expected to be similar.

REGULATORY  
CONSIDERATIONS

- NPDES permits are issued for a 5-year term.
- 303(d) lawsuits.

RELATED  
ACTIONS

ACEI Consensus Items: WI-5  
Other CCMP Action Plans: HU-A1

ENVIRONMENTAL  
INDICATORS

Primary and Supplemental Indicators (p. 127 of Monitoring Plan)

MONITORING  
STRATEGY

Pp. 95, 127

NOTE: Incorporates Action Items WQ-B1 and WQ-B2 as initially described in June, 1999.

ACTION PLAN ID

## ACTION WQ-A3: Maintain Groundwater Quality

WHAT

Develop a resource management strategy for maintaining groundwater quality.

WHO AND HOW

- Step 1: MBNEP will apply to the Groundwater Guardian program as a Groundwater Guardian Affiliate to encourage communities within Mobile and Baldwin Counties to advocate groundwater protection practices and procedures. MBNEP will try to enroll one new Groundwater Guardian community a year in each county. As part of the Groundwater Guardian activities, MBNEP will encourage public water systems to select yearly objectives that will contribute toward eventual implementation of a Wellhead Protection Program.
- Step 2: ADEM, GSA, and USGS are working together to better define groundwater resources and properly plan for expanded groundwater withdrawals in order to abate well field development practices that may lead to saltwater intrusion. ADECA-OWR regulates all groundwater withdrawals.
- Step 3: ADEM-Water Division will implement: a) the Underground Injection Control Program for Alabama, a federal program under the Safe Drinking Water Act; b) the Underground Storage Tank Program, a federal program enacted under Subtitle I of the Resource Conservation and Recovery Act; c) investigation and cleanup of groundwater at contaminated sites under provisions of the Alabama Water Pollution Control Act; and d) the Wellhead Protection Program.
- Step 4: ADEM-Land Division will implement: a) the Alabama Hazardous Wastes Management and Minimization Act, a state program federally authorized to act in lieu of Subtitle C of the Resource Conservation and Recovery Act; b) the Alabama Hazardous Substances Cleanup Fund Act; c) the Alabama Land Recycling and Economic Redevelopment Act; d) the Alabama Solid Waste Disposal Act; e) the Drycleaner Environmental Response Trust Fund Act; f) a federal facility cleanup program (including cleanup of Formerly Used Defense Sites) pursuant to the Defense State Memorandum of Agreement and various Federal Facility Agreement; and g) the state component (via cooperative agreements with EPA) of the federal Comprehensive Environmental Response, Compensation, and Liability Act.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADECA Office of Water Resources; ADEM; ADPH; EPA; GSA; local governments and utilities; SARPC; USGS; and Weeks Bay Watershed Project.

FUNDING

No new public cost is anticipated for this action.

REGULATORY  
CONSIDERATIONS

Baldwin County is exempt from licensing requirements for well drillers.

RELATED  
ACTIONS

ACEI Consensus Items: WI-1; OI-13, 15, 16, and 22  
Other CCMP Action Plans: HU-A1

ENVIRONMENTAL  
INDICATORS

None.

MONITORING  
STRATEGY

Pp. 96, 99

NOTE: Incorporates Action Items WQ-C10 and HM-A3 as initially described in June, 1999.

**ACTION WQ-A4:**

# Ensure Protection and Maintenance of High Quality Waters

ACTION PLAN ID

WHAT

Develop a resource management strategy to ensure added protection and maintenance of High Quality Waters located in the Mobile Bay NEP area.

WHO AND HOW

Step 1: ADEM, at the request of the Baldwin County Commission, will evaluate portions of the Tensaw River for reclassification as an Outstanding Alabama Water (OAW).

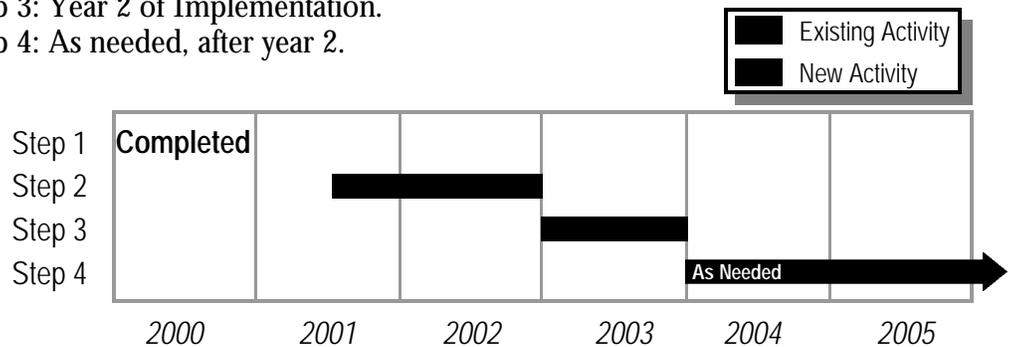
Step 2: USFWS and MBNEP staff will identify other stream segments of exceptional recreational, historical, and ecological significance, which merit consideration for raising the water quality classification to Outstanding Alabama Water, Outstanding National Resource Water (ONRW), or another higher use classification.

Step 3: MBNEP, through the COMMUNITY ADVISORY COMMITTEE, will develop LOCAL PLANNING TEAMS for stream segments identified in Step 2 in order to determine the level of public support for reclassification efforts.

Step 4: LOCAL PLANNING TEAMS will work with appropriate county or municipal governments to prepare requests for water use reclassification of identified, high-quality stream segments.

WHEN

Step 1: Completed.  
Step 2: Immediately.  
Step 3: Year 2 of Implementation.  
Step 4: As needed, after year 2.



WHERE

Step 1: Tensaw River stream segments.  
Steps 2-4 : Mobile Bay NEP Area.

COOPERATORS

Baldwin County Commission; Mobile County Commission; municipalities, and 319 programs.

FUNDING

Step 1: None.  
Steps 2-4: Dependent upon NEP implementation funding or 319 program.

• ADEM	\$75,000*	• MBNEP	\$4,000
• USFWS	\$5,000**		
*ongoing			
**estimated annual expenditure			
<b>TOTAL.....&gt;\$84,000</b>			

REGULATORY  
CONSIDERATIONS

- No new legislation is needed to complete these actions, as Chapter 335-6-10 and Chapter 335-6-11 rules are in place for such a program.
- ADEM OAW Workgroup may recommend amendments to these rules which would have the potential to affect this action.

RELATED  
ACTIONS

ACEI Consensus Items: OI-10, 14  
Other CCMP Action Plans: HM-A1, HU-C2

ENVIRONMENTAL  
INDICATORS

- DO
- pH
- Water temperature
- Fecal coliform bacteria
- Toxics
- Nutrients
- Turbidity

MONITORING  
STRATEGY

P. 42

NOTE: Incorporates Action Item WQ-C13 as initially described in June, 1999.

**ACTION WQ-B1:**

# Reduce Excessive Nutrient Loading Within the Mobile Bay NEP

**ACTION PLAN ID**

**WHAT**

Reduce or eliminate problems from excessive nutrient loadings within the Mobile Bay NEP and individual sub-basins.

**WHO AND HOW**

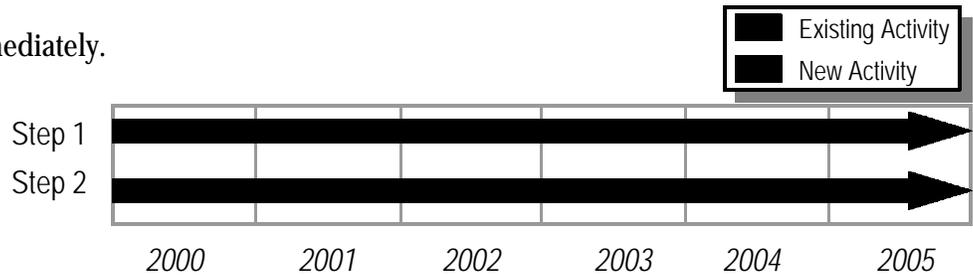
Step 1: LOCAL GOVERNMENTS will attempt within existing legislative authority under the Alabama Constitution to develop and implement ordinances and encourage additional means for stormwater detention and retention, including BMPs, alternative landscaping and other innovative methods,\* in order to reduce nutrient and/or organic loadings. Future legislative or constitutional changes may provide authority for local counties to establish local ordinances (home rule).

Step 2: MBNEP will provide technical assistance and support efforts for development and implementation of NPS control programs (e.g., 319 program, 6217 program, NPDES, proposed CAFO rules, etc.).

*\*Note: Such innovative methods are available in other areas.*

**WHEN**

Immediately.



**WHERE**

Mobile Bay NEP Area

**COOPERATORS**

ADCNR Coastal Programs; ADEM; Alabama Soil and Water Conservation Districts; City of Mobile; DISL; GMP; CACWP; MS-4 cooperating parties; MBW/MBK; NRCS; and USDA.

Step 2 will also involve applicable user groups, such as: ACES; golf courses; lawn care service associations; Master Gardeners program; and Mobile Nurserymen's Association.

FUNDING

>\$9.6 million.

• ADEM	\$5,100,000*	• MBNEP	\$4,000
• EPA	\$4,500,000**	• MBW/MBK	\$15,000***
• DISL	\$75,000		
*ongoing			
**This money is divided between WQ-B1, WQ-B2 & WQ-C1.			
***Clean Water Guardian Program			
TOTAL.....		>\$9,694,000	

EPA funds are provided to the State of Alabama for the Clean Water Act Section 319 program (Nonpoint source) for 2002. These funds support all aspects of state nonpoint source activities including staff and support. Funding for near term future years could be expected to be similar. Some portion of these funds may be used in the Mobile Bay area of concern.

REGULATORY  
CONSIDERATIONS

Absence of home rule may present implementation challenges.

In the 1901 Alabama Constitution the writers limited county governments and required them, as it is today, to have to go through the Alabama Legislature to accomplish basically anything. Home rule means a county or city having the constitutional authority to govern at the local level without having to go through the Alabama Legislature. There is a movement to revise or rewrite the 1901 Alabama Constitution.

RELATED  
ACTIONS

ACEI Consensus Items: WI-3, 5, and 6  
Other CCMP Action Plans: HU-A1, HU-B1, HU-B3

ENVIRONMENTAL  
INDICATORS

- Ammonia
- DO
- TKN
- BOD
- Flow volume
- Total phosphate
- Chlorophyll a
- Nitrate+nitrite

MONITORING  
STRATEGY

P. 36

NOTE: Incorporates Action Item WQ-C11 as initially described in June, 1999.

## ACTION WQ-B2: Address Upstream Nutrient Inputs

**ACTION PLAN ID**

**WHAT**

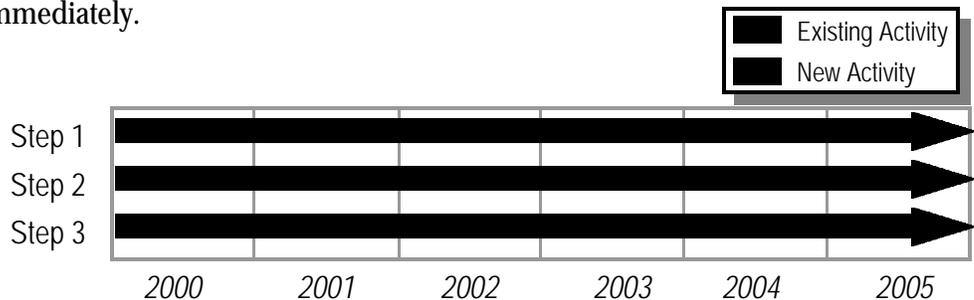
Support efforts to reduce nutrient input to the Mobile Bay estuary from the entire 43,662 square mile upstream river basin, draining two-thirds of the State of Alabama and portions of Georgia, Mississippi and Tennessee.

**WHO AND HOW**

- Step 1: MBNEP will support ADEM's NPS programs statewide (e.g., 6217 and 319 programs, etc.) by providing technical support for watershed basin assessments and public outreach support for NEMO and on-site sewage workshops.
- Step 2: MBNEP will educate the public on the results of the USGS's Mobile River Basin NAWQA study through presentations to organizations, clubs and schools.
- Step 3: MBNEP will provide technical support and coordinate public outreach efforts, as feasible, with local and statewide watershed groups, such as Clean Water Partnership, Alabama Rivers Alliance and Alabama Environmental Council.

**WHEN**

Immediately.



**WHERE**

Throughout the Mobile Bay watershed.

**COOPERATORS**

ACES; ACWP; AFC; Alabama Soil and Water Conservation Districts; GMP, NRCS; USDA.

FUNDING

>\$10 million

• ADEM	\$5,400,000*	• MBNEP	\$4,000
• EPA	\$4,500,000**	• Other(see below)	\$120,021
* ongoing			
**This money is divided between WQ-B1, WQ-B2 & WQ-C1.			
TOTAL..... >\$10,024,021			

Please see WQ-B1 for a description of the EPA funds.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

None identified.

RELATED  
ACTIONS

ACEI Consensus Items: WI 1-9

ENVIRONMENTAL  
INDICATORS

- Ammonia
- TKN
- Nitrate + Nitrite
- Orthophosphate
- Nitrite
- Total phosphate

MONITORING  
STRATEGY

P. 96

NOTE: Incorporates Action Item WQ-C12 as initially described in June, 1999.

ACTION PLAN ID

## ACTION WQ-C1: Reduce Opportunities for Pathogen Introduction

WHAT

Reduce opportunities for pathogen introduction in the Mobile Bay estuary.

WHO AND HOW

Step 1: MBNEP will coordinate efforts with GMP to aid development of an effective Gulf-wide solution for pathogen introduction to area waters (e.g., by supporting GMP's initiative for a Gulf-wide ballast discharge policy, writing letters to other NEPs, etc.). In addition, MBNEP will support existing and/or develop new incentive programs to reduce or eliminate pathogen introduction due to inadequate or improper disposal methods.

Step 2: USCG will:

- a) check ship's bridge logs for ballast exchange;
- c) review logs for location of ballast activity; and
- d) share data with the MBNEP.

Step 3: EPA will work with ADEM (municipalities are required to perform self-audits) to reduce opportunities for potential introduction of pathogens from point source discharges (e.g., sewage treatment systems, etc.) by evaluating the extent of the problem from various sources and encouraging compliance where needed.

Step 4: COUNTY HEALTH DEPARTMENTS will reduce or eliminate the introduction of pathogens due to inadequate on-site sewage disposal systems by reviewing on-site sewage disposal regulations and, if necessary, re-writing them to accommodate coastal site conditions and locations. Recommendations will be forwarded to the State Health Department for possible inclusion in state regulations. MBNEP will work with HBAs and

WHO AND HOW  
(continued)

COUNTY HEALTH DEPARTMENTS to:

- a) develop and implement support for recommended changes (e.g., write letters, petitions, solicit citizen, local legislature and county support, develop a policy statement for distribution to public health departments, support additional funding for enforcement of regulations, etc.);
- b) investigate other successful efforts, such as regional disposal or alternative on-site disposal systems, and develop appropriate education and incentive programs to encourage use of alternative technologies; and
- c) encourage technology upgrades (e.g., GIS databases to include parcel identification numbers on permits, etc.).

Step 5:

MUNICIPAL AND COUNTY WATER AND SEWER AND STORMWATER DRAINAGE AGENCIES/BOARDS will reduce or eliminate the introduction of pathogens from sanitary collection system breaks and hydraulic overloading by:

- a) identifying and upgrading existing sanitary collection systems, where needed, to provide for adequate current and future wastewater flow capacity;
- b) reducing infiltration and inflow into the sanitary system to levels that can be contained and effectively treated in the sewerage system;
- c) reducing peak rainfall runoff rates and preventing erosion failures in stormwater drainage systems; and
- d) coordinating design, location, and operation of sanitary and stormwater drainage systems.

Step 6.

NRCS will reduce introduction of pathogens from domestic pets, wildlife, and farm animals by supporting implementation of AFO/CAFO rules and use of agricultural BMPs.

Step 7.

ADEM will administer the federal Clean Vessel Act program funds for the installation of pump-out stations. Funds are provided for:

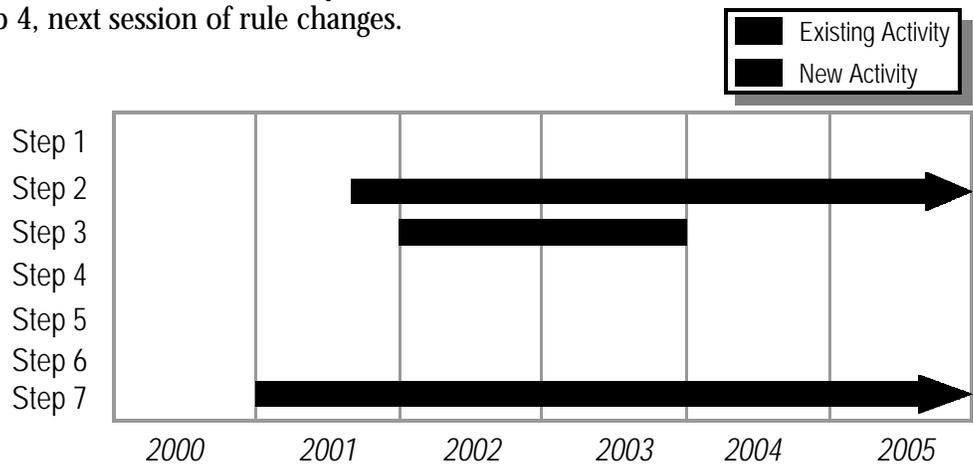
- a) making available and encouraging pump-out stations at marinas (including upgrading existing permittees);

WHO AND HOW  
(continued)

- b) placing appropriate facilities (e.g., holding tanks, permanent facilities, signage, etc.) at public launches in need of facilities and develop maintenance agreements for owners and/or local governments;
- c) ADEM will encourage legislation dealing with illegal discharge of waste from non-commercial vessels (including houseboats) into State waters;
- d) ADCNR will implement and enforce new legislation going into effect on October 1, 2003. This legislation prohibits the discharge of untreated sewage into state waters, allows for the enforcement of the law, provides for inspection of vessels, and provides for a public education program.

WHEN

Steps 1-3, and 5-7 immediately;  
Step 4, next session of rule changes.



WHERE

Mobile Bay NEP Area.  
**Note: Step 5 is possible only in areas served by sanitary systems.**

COOPERATORS

Alabama Soil and Water Conservation Districts; ASPA; CPI; FDA; MS-4 cooperating entities; MBW/MBK; POTF; shipping agents; U.S. Customs; and USA.

FUNDING

- Step 4. Low cost or zero financing available to upgrade systems.
- Step 5. \$50 to \$300 million
- Step 7. \$10,000 per pump out station

• ADEM	\$250,000*	• EPA	\$4,500,000**
• CIAP	\$145,000	• NRCS	\$25,000
*ongoing			
**This money is divided between WQ-B1, WQ-B2 & WQ-C1.			
TOTAL.....>\$4,920,000			

Please see WQ-B1 for a description of the EPA funds.

Please see WQ-A1 for a description of the CIAP funds.

REGULATORY  
CONSIDERATIONS

- Step 1: Possible mandatory exchange regulations.
- Step 2: Criteria and protocol; no jurisdiction currently.
- Step 4. Possible development and implementation of new state and/or health department regulations.
- Step 5. Local health department and public notifications; Federal Clean Water Act (CWA) administered by EPA and ADEM; Proposed amendment to CWA “Urban Wet Weather Watershed Act of 1999” drafted by the Association of Metropolitan Sewer Agencies (AMSA).
- Step 7. Regulatory enforcement issues are expected.

RELATED  
ACTIONS

ACEI Consensus Items: WI-1, 2 and OI-3, 15, 16  
MBNEP Workplan Items: GMP/NEP Shellfish Challenge project

ENVIRONMENTAL  
INDICATORS

- Fecal coliform bacteria for shellfish waters.
- Enterococcus bacteria for bathing waters.
- Number of days of shellfish bed closure.

MONITORING  
STRATEGY

Pp. 29, 31 and 33

ACTION PLAN ID

## ACTION WQ-D1: Assess Problems Related to Sediment Quality

WHAT

Assess problems related to sediment quality, in terms of contamination, in the Mobile Bay NEP area and reduce and/or eliminate, if possible, identified toxic chemicals in identified problem areas.

WHO AND HOW

Step 1: WOOLPERT ENGINEERING (under contract to MBNEP) will compile and analyze existing data to identify problems and data gaps and, if necessary, develop a framework with screening factors, such as below (could use the EPA screening process):

*Areas of: No Concern-----Don't Know-----Some Concern*

Step 2: MBNEP will:

- a) gather additional data, as identified in the characterization report;
- b) develop risk assessments, if necessary (to address contaminants of concern and levels of concern); and
- c) support efforts to better understand sediment toxic processes.

Step 3: ADEM will evaluate the sources and levels of input of identified toxic chemicals in identified problem areas.

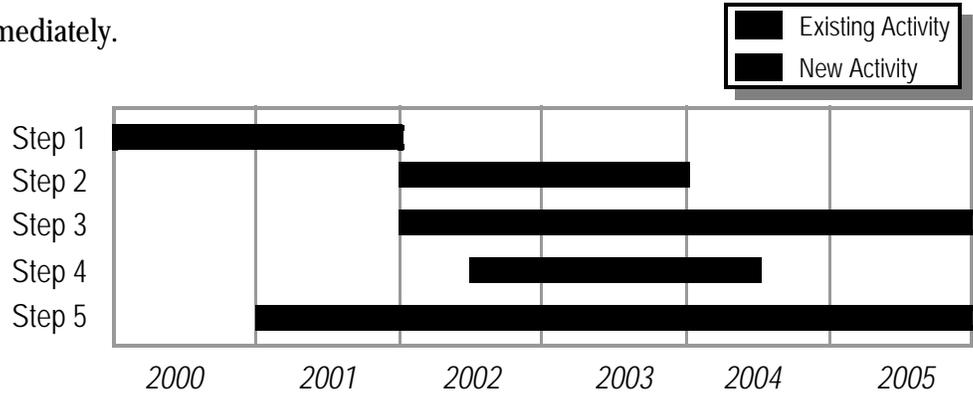
Step 4: MBNEP will encourage the reduction of levels of toxic chemicals in identified problem areas by working with groups such as WRATT to reduce toxic chemical releases at the sources.

Step 5. Impacts of runoff from parking lots, etc., to sediment and/or water quality will be reduced by:

- a) LOCAL GOVERNMENT encouragement of storm-water planning and design to address water quality and quantity management concerns (e.g., design changes from detention to retention basins; use of constructed wetlands in stormwater retention basins, etc.); and
- b) ADEM encouragement of highway and road planning and design to address water quality and quantity management concerns and/or remediation measures.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ALDOT; City of Mobile; DISL; EPA; MS-4 cooperating parties; USA; USACE; USFWS; and WRATT.

FUNDING

>\$400,000

• ADEM	\$140,000*	• MBNEP	\$60,000
• DISL	\$75,000	• Other (below)	\$127,600
*part of the 6217 program associated with WQ-B1, ongoing.			
<b>TOTAL.....</b>		<b>&gt;\$402,600</b>	

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

Step 1. Possible application in Sediment Evaluation Process pursuant to the CWA; possible remedial actions; and possible additions to listed waters for TMDLs.

Step 4. MS-4 permitting.

RELATED  
ACTIONS

ACEI Consensus Items: AI-4 and OI-1  
Other CCMP Action Plans: HU-A1, HU-B1, and HU-B3

ENVIRONMENTAL  
INDICATORS

- Aluminum
- Chromium
- DDT
- Iron
- Nickel
- Silver
- Shellfish Contamination
- Arsenic
- Copper
- Dieldrin
- Fuel spills
- PAH
- Tin
- Bha (a-d, g)
- DDD
- Dioxin levels
- Lead
- Pesticide Use
- Zinc
- Cadmium
- DDE
- Heptachlor
- Mercury\*

*\*(particularly in fish tissue samples)*

MONITORING  
STRATEGY

Pp. 39, 45

**ACTION WQ-D2:**

**Provide for Safe Disposal of Hazardous Waste**

**ACTION PLAN ID**

**WHAT**

Offer opportunities for citizens to properly dispose of household and agricultural hazardous waste.

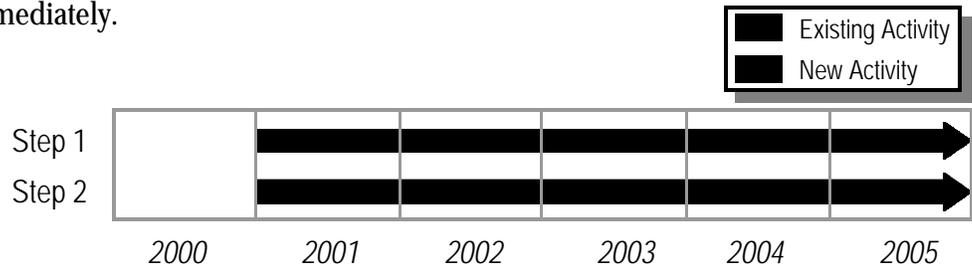
**WHO AND HOW**

Step 1: MBNEP will support and promote existing and future state and local efforts to establish hazardous waste amnesty days for potentially toxic materials (e.g., motor oil - “Project ROSE”; household chemicals; oil-based paints; agricultural chemicals, etc.).

Step 2: MBNEP will track dates, amounts collected and parties responsible for organizing and sponsoring Hazardous Waste Days.

**WHEN**

Immediately.



**WHERE**

Throughout the Mobile Bay watershed.

**COOPERATORS**

ACF; Local governments.

**FUNDING**

>\$600K over five years.

• CIAP	\$673,994	• MBNEP	\$15,000
<b>TOTAL</b>		<b>&gt;\$688,994</b>	

Please see WQ-A1 for a description of the CIAP funds.

**REGULATORY CONSIDERATIONS**

Hazardous waste generator and transportation liabilities for sponsor.

**RELATED  
ACTIONS**

None identified.

**ENVIRONMENTAL  
INDICATORS**

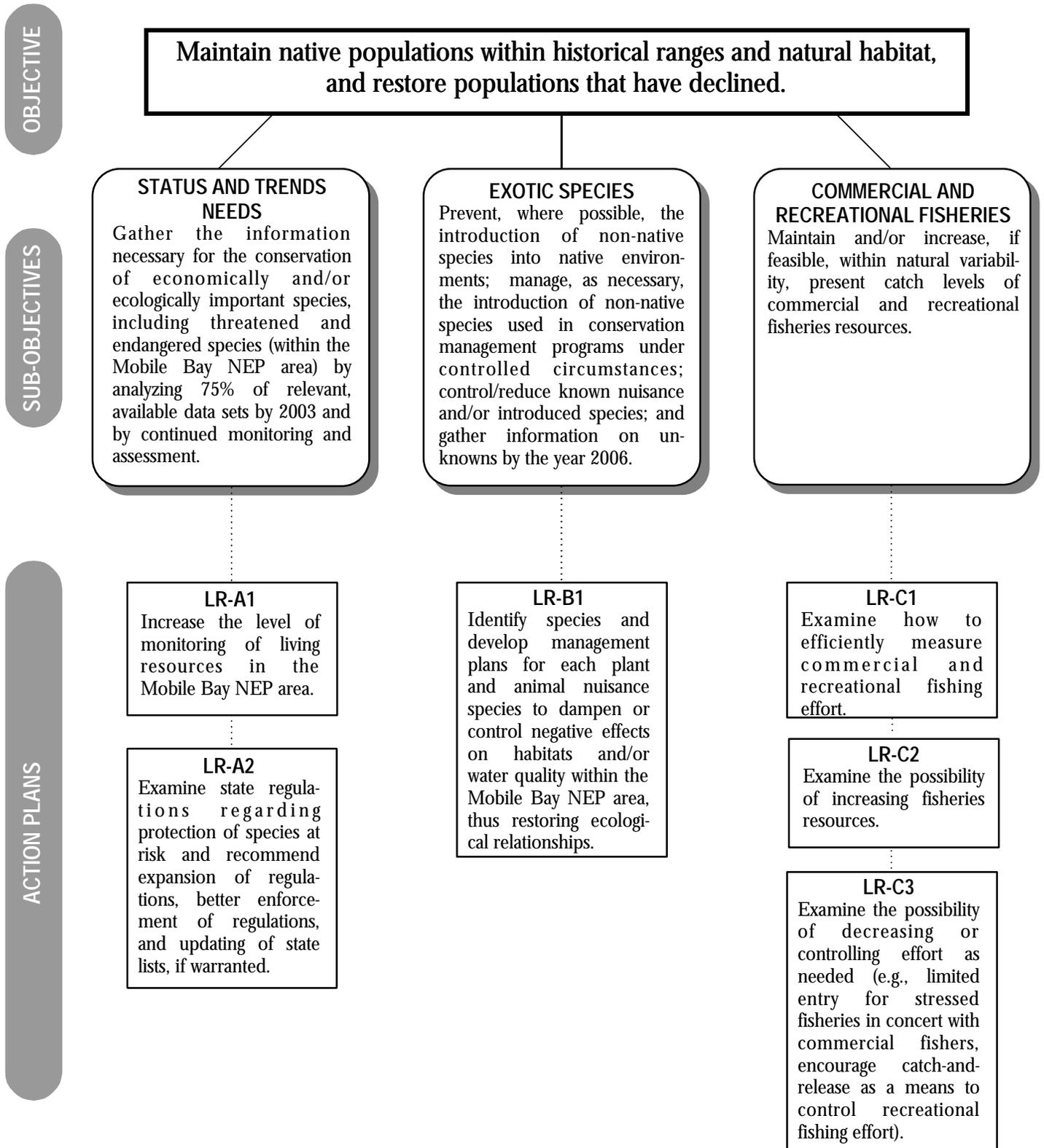
None identified.

**MONITORING  
STRATEGY**

P. 97

# LIVING RESOURCES

The Living Resources Workgroup of the Mobile Bay NEP developed three sub-objectives and six Action Plans to reach the Management Conference objective. Sub-objectives focused on areas of **Status and Trends Needs**, **Exotic Species**, and **Commercial and Recreational Fisheries**. The following schematic shows how the items are related:



ACTION PLAN ID

## ACTION LR-A1: Improve Monitoring of Key Living Resources

WHAT

Increase the level of monitoring of living resources in the Mobile Bay NEP area.

WHO AND HOW

Step 1: MBNEP will request bids to:

- a) identify status and trends of living resources in the estuary indicated as a gap in existing studies; and
- b) recommend key species that offer insight into ecosystem health that are not currently being evaluated in existing monitoring programs (especially in areas above the Causeway).

Step 2: MBNEP will support development of city, county, and state programs for the maintenance of biodiversity and better protection of threatened and endangered species on private and public lands. MBNEP will encourage the expansion of eagle hatching activities to Mobile Delta TTW mitigation land, currently managed by ADCNR-WFFD. MBNEP will coordinate with city, county and state agencies on all species at risk and request that they monitor and/or survey for species at risk during field activities. ADCNR-WFFD administers federal funds from USFWS to support Endangered Species Act implementation in Alabama.

Alabama Natural Heritage Program, an affiliate of The Nature Conservancy, as contracted, will review existing information and make recommendations for measuring and monitoring biodiversity, develop programs for better protection of endangered/threatened species on private and public coastal lands, and develop guidance and recommendations to public and private land owners for site conservation planning efforts, including protection of endangered/threatened species.

Step 3: EXPERT WILDLIFE SOLUTIONS will:

- a) evaluate the ADCNR-WFFD current monitoring plan for the American alligator (*Alligator mississippiensis*);

WHO AND HOW  
(continued)

- b) make recommendations to ADCNR-WFFD for a population characterization study that investigates the general physical health and behavioral characteristics of this species; and
- c) implement a pathological study on visual impairment of these animals.

This will include a Bay-wide effort to gather data from individuals, organizations, agencies, municipalities, etc., with knowledge and experience about the general physical health and behavioral characteristics of *A. mississippiensis* and will also utilize alligator nuisance control agents to gather data, eyes, and tissue samples from nuisance alligators that have already been harvested. Through individual efforts of Expert Wildlife Solutions and others, tissues are currently being examined by Emory University, the University of South Carolina and the Alabama School of Math and Science.

Step 4: AUMERC will encourage ADCNR to develop monitoring programs of known potential vectors of nuisance species introduction, based on agency input and examinations of other effective programs such as Aquatic Nuisance Species state plans.

ADPH will develop a water quality protection and monitoring plan specifically dealing with nuisance HABs by:

- a) examining Alabama's current water quality protection and monitoring plans specifically dealing with HABs;
- b) examining other states' initiatives (e.g., Virginia, North Carolina, etc.); and
- c) developing recommendations to enhance or improve current plans, if necessary.

Step 5: MBNEP will actively gather information from relevant institutions to provide data to the Data and Information Management System (DIMS) by:

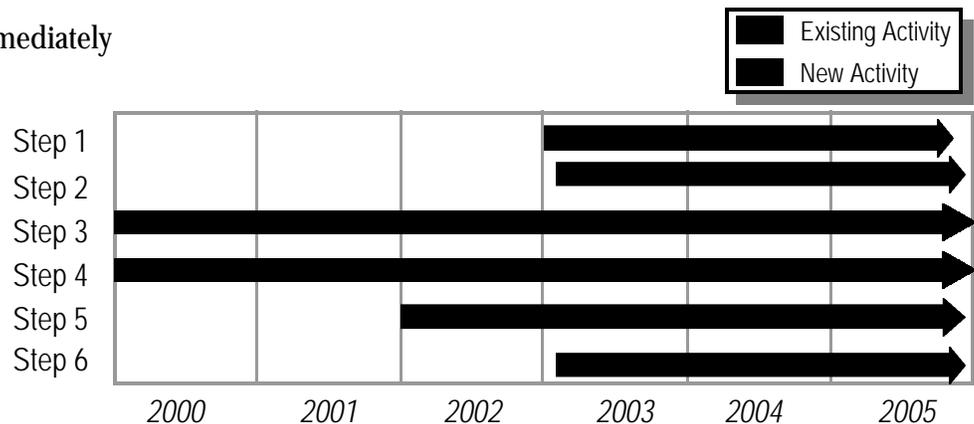
- a) continuing efforts of the monitoring strategy group to coordinate monitoring between appropriate agencies, organizations, and groups;
- b) incorporating recommendations from Steps 1 -3 and the monitoring strategy group into the Mobile Bay NEP monitoring plan;
- c) requiring contractors to provide data in formats compatible with DIMS; and
- d) delivering monitoring results to the public and agencies.

WHO AND HOW  
(continued)

Step 6: **MBNEP'S COMMUNITY ADVISORY COMMITTEE** will establish a species advisory subcommittee to serve as a forum for species management issues affecting the Mobile Bay estuary. The committee will be comprised of individuals, agencies, and organizations with interest and knowledge in the Mobile Bay NEP area.

WHEN

Immediately



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADCNR; ADPH; FWS; MASGC; NOAA; USCG; USDA-APHIS; USGS.

FUNDING

>\$2.4 million

• AUMERC	\$76,356	• MBNEP	\$46,000
• ADPH	\$61,863*	• ADCNR-MRD	\$645,119*
• TNC	\$350,000	• Expert Wildlife Solutions	\$10,000
• CIAP	\$690,000	• DISL	\$125,000
• Other (below)	\$494,180		
*approximate annual expenditure			
<b>TOTAL.....</b>		<b>&gt;\$2,498,518</b>	

Please see WQ-A1 for a description of the CIAP funds.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

Implementation will require MOAs between agencies.  
Step 2 must be accomplished within the confines of trespass laws.

RELATED  
ACTIONS

ACEI Consensus Items: OI-10  
Other CCMP Action Plans: WQ-A1, HM-A1, HM-B1, HM-C1, HM-D1,  
HM-E1, and HU-B1

ENVIRONMENTAL  
INDICATORS

Step 2:  
• Benthic communities • Birds • Finfish  
• Other selected species • Terrestrial mammals  
• Numbers of threatened or endangered species  
• Common and Supplemental Indicators (P. 129)

MONITORING  
STRATEGY

Step 2: Pp. 77, 129

ACTION PLAN ID

## ACTION LR-A2: Improve Monitoring of At-risk Species

WHAT

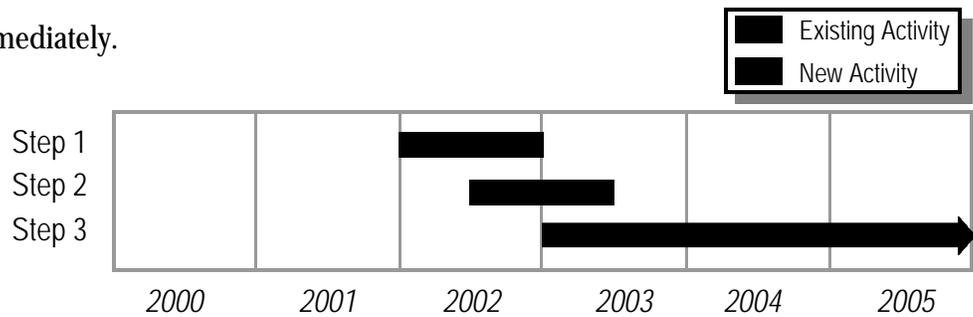
Examine state regulations regarding protection of species at risk and recommend expansion of regulations, better enforcement of regulations, and updating state lists, if warranted.

WHO AND HOW

- Step 1: MBNEP COMMUNITY ADVISORY COMMITTEE will review the habitat loss and living resources characterization reports to develop a list of priority species not previously identified that may warrant immediate attention in the Mobile Bay NEP area. Alabama Natural Heritage Program, an affiliate of The Nature Conservancy, maintains a database of rare and threatened species including plants, animals, and natural communities. The database is used for the generation of GIS products.
- Step 2: MBNEP will host a workshop with appropriate agencies and other participants (e.g., ADCNR, ADEM, GMP, USDA, State Attorney General, etc.) to assess the need for any changes regarding current state regulations and enforcement.
- Step 3: USFWS:
- a) may require a survey to determine the presence or absence of listed species for a project authorized, funded or carried out by a Federal agency. If a listed species is present and may be affected by project activities, the agency is required to consult with the USFWS. Formal consultation results in a Biological Opinion which is the Service's best professional judgment regarding project impacts on listed species and ways to avoid and minimize harm to the species. The Biological Opinion may also allow incidental take of listed species provided all terms and conditions of the Biological Opinion are complied with;
  - b) encourages private landowner to avoid "taking" a listed species and may grant incidental take permits provided project impacts have been minimized and mitigated to the maximum extent practicable;
  - c) will support implementation of recovery plans for all listed species.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADEM; ADCNR, DISL; GMP; NMFS; USACE; USFWS; universities.

FUNDING

>\$60,000.

• DISL	\$56,000	• MBNEP	\$4,000
<b>TOTAL.....&gt;\$60,000</b>			

REGULATORY  
CONSIDERATIONS

Possible ADEM - Division 8 and ADCNR state regulatory amendments.

RELATED  
ACTIONS

Other CCMP Action Plans: HM-A1

ENVIRONMENTAL  
INDICATORS

Presence of endangered/threatened species and their occurrence.

MONITORING  
STRATEGY

P. 80

## ACTION LR-B1: Develop Management Plans for Nuisance Species

**ACTION PLAN ID**

**WHAT**

Identify species and develop management plans for each plant and animal nuisance species to dampen or control negative effects on habitats and/or water quality within the Mobile Bay NEP area, thus restoring ecological relationships.

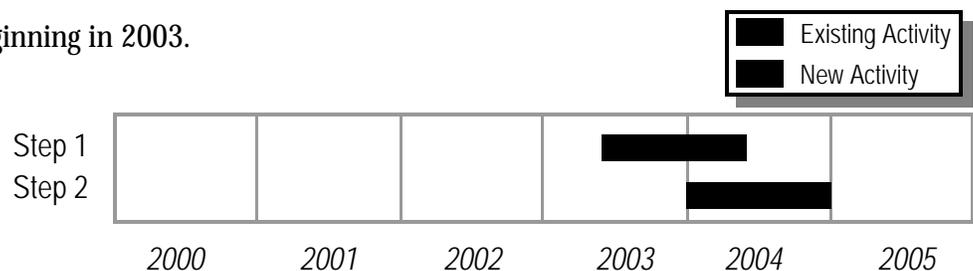
**WHO AND HOW**

- Step 1: MBNEP will:
- a) with the assistance of GMP, gather existing/incoming data that have already identified nuisance species (see LR-A1, Step 4),
  - b) research exotic species regulatory and enforcement programs in other states; and
  - c) examine the extent of existing Alabama legal authority to control the sale and distribution of nuisance exotic species.

Step 2: MBNEP will host a workshop with appropriate agency and other participants (e.g., ADCNR, ADEM, GMP, USDA, State Attorney General, etc.) to identify options for changes regarding current state regulations and enforcement. Attendees will draft appropriate legislation for Alabama from existing examples and promulgate regulations based on the 1995 Non-indigenous Aquatic Plant Control Act. In addition, MBNEP will develop and promote model programs to control or prevent the introduction of nuisance species.

**WHEN**

Beginning in 2003.



WHERE

Mobile Bay NEP Area.

COOPERATORS

MBNEP Living Resources Workgroup (including representatives from the ADCNR – Game and Fish Division; AUMERC; GMP; MBW/MBK; Scenic Causeway Coalition; etc.)

FUNDING

>\$90,000.

• DISL	\$20,000	• MBNEP	\$4,000
• Other (below)	\$67,275		
TOTAL.....		>\$91,275	

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

Possible ADEM - Division 8 and ADCNR state regulatory amendments.

RELATED  
ACTIONS

ACEI Consensus Items: OI-13  
Other CCMP Action Plans: HM-A1

ENVIRONMENTAL  
INDICATORS

- Nutria
- Chinese Tallow Tree
- Hydrilla
- Australian Spotted & “Big Pink” Jellyfish
- Eurasian Water Milfoil
- Water Hyacinth

MONITORING  
STRATEGY

P. 74

## ACTION LR-C1: Efficiently Measure Fishing Effort

**ACTION PLAN ID**

**WHAT**

Examine how to efficiently measure commercial and recreational fishing effort. Catch per unit effort is the quantity of fish or shrimp caught within a certain time period.

**WHO AND HOW**

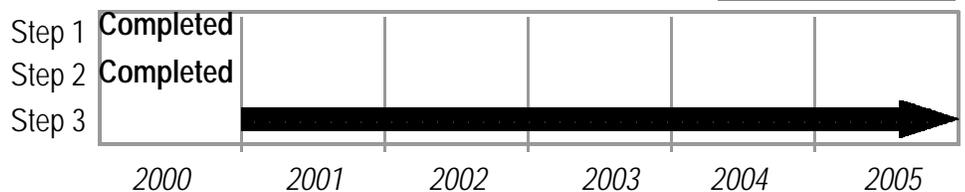
- Step 1: AUMERC will examine how commercial and recreational fishing effort is being measured in Alabama and other Gulf States and make recommendations to ADCNR regarding improving data collection and ensuring compatibility with other programs.
- Step 2: ADCNR will implement a standardized trip ticket system to collect data on catch per unit effort.
- Step 3: ADCNR will develop a computerized data input system so trip ticket information can be entered online via the Internet.

**WHEN**

- Step 1: "Investigation of Record Keeping Procedures Pertaining to Marine Commercial and Recreational Fishing Harvests Among Gulf States" by Richard K. Wallace and Rick E. Pavek, Auburn University Marine Extension & Research Center, AUMERC Report 99-2 was completed as 1998-1999 MBNEP Workplan item. Recommendations included:
  - a) adoption of a trip ticket system for all finfish within the State of Alabama to collect data on catch per unit effort.
  - b) adoption of a trip ticket system standardized for all of the Gulf States to allow for the exchange of meaningful data. This data can be used for better management which translates into healthier and more stable fish stocks. A suggested list of questions for a standardized trip ticket is included in the report.

- Step 2: A standardized trip ticket system has been implemented for all commercial landings in Alabama. This standardized system is being implemented by all of the Gulf States.

- Step 3: 2001-ongoing



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADCNR, GSMFC, NMFS, and appropriate agencies in the various Gulf States will be involved in implementation.

FUNDING

>\$830,000.

• AUMERC	\$8,000	• DISL	\$325,000
• ADCNR	\$500,000*		
*approximate annual expenditure			
TOTAL.....		>\$833,000	

REGULATORY  
CONSIDERATIONS

Legislation/regulation may be needed to require better record keeping.

RELATED  
ACTIONS

None identified.

ENVIRONMENTAL  
INDICATORS

Not addressed.

MONITORING  
STRATEGY

Not addressed.

NOTE: Incorporates Action Item LR-A4 as initially described in June, 1999.

## ACTION LR-C2: Increase Fisheries Resources

**ACTION PLAN ID**

**WHAT**

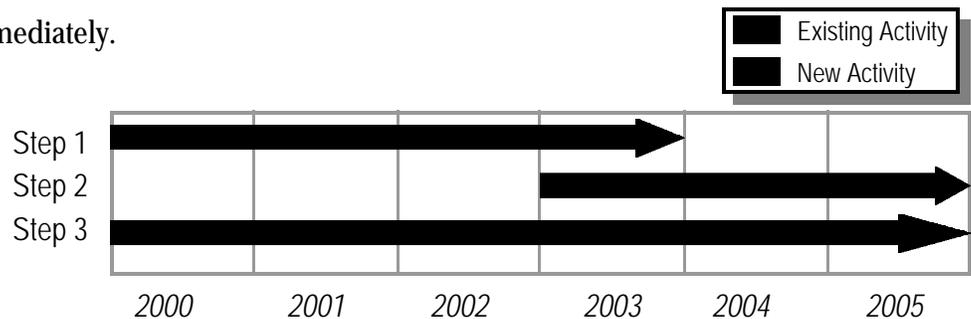
Examine the possibility of increasing fisheries resources.

**WHO AND HOW**

- Step 1: ADCNR will continue to develop and monitor artificial habitat in appropriate areas of the Mobile Bay estuary through programs such as the “Roads to Reefs” effort.
- Step 2: ADCNR will conduct shell planting, as funds become available, to replenish and expand shell areas in Mobile Bay to increase oyster habitat.
- Step 3: ADCNR MRD will continuously examine existing data to determine whether additional limited take and/or no take zones are warranted.

**WHEN**

Immediately.



**WHERE**

Mobile Bay NEP Area.

**COOPERATORS**

GMP; MCWCA; and recreational fishermen’s associations.

FUNDING

>\$700K.

• ADCNR	\$350,000*	• MBNEP	\$4,000
• Other (below)	\$348,755		
*approximate annual expenditure			
TOTAL.....		>\$702,755	

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

None identified.

RELATED  
ACTIONS

Other CCMP Action Plans: All WQ and HM Action Plans  
MBNEP Workplan Items: GMP Shellfish Restoration Grant;  
Oyster gardening

ENVIRONMENTAL  
INDICATORS

Commercial fisheries landings.

MONITORING  
STRATEGY

P. 104

NOTE: Incorporates Action Item LR-A5 as initially described in June, 1999.

## ACTION LR-C3: Manage Recreational and Commercial Fishing Effort

**ACTION PLAN ID**

**WHAT**

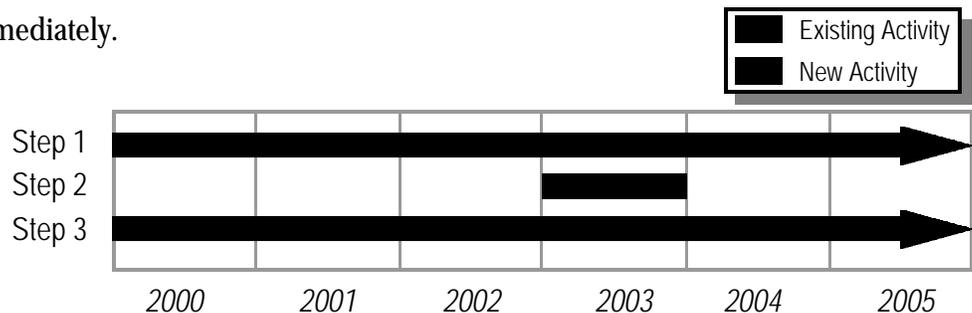
Examine the possibility of decreasing or controlling effort as needed (e.g., limited entry for stressed fisheries in concert with commercial fishers, encourage catch-and-release as a means to control recreational fishing effort).

**WHO AND HOW**

- Step 1: ADCNR MRD and ADCNR WFFD will examine other state plans/programs to manage fishing effort and develop a plan for Alabama based on this examination. Such a plan should also contain a monitoring component to determine effectiveness.
- Step 2: The MBNEP, ADCNR MRD, and AUMERC will hold a workshop each year, or at an appropriate interval, to facilitate communication and cooperation between agency representatives, judges, district attorneys, fishers, and other interested parties. The workshop will cover existing marine resources regulations and their enforcement.
- Step 3: MASGC will fund applied research and extension studies to determine the impact of bycatch on fish populations within the Mobile Bay NEP.

**WHEN**

Immediately.



**WHERE**

Mobile Bay NEP Area.

**COOPERATORS**

Commercial and recreational fishermen’s organizations (e.g., Alabama Seafood Association, CCA, BASS, GSMFC etc.) and GMP.

FUNDING

>\$3,054,000.

• ADCNR	\$3,000,000*	• MBNEP	\$4,000
• MASGC	\$50,000		
*approximate annual expenditure			
TOTAL.....		>\$3,054,000	

MASGC expenditures are based upon receiving acceptable proposals for each funding cycle.

REGULATORY  
CONSIDERATIONS

Legislation/regulation may be needed to require decreased effort.

RELATED  
ACTIONS

None identified.

ENVIRONMENTAL  
INDICATORS

None identified.

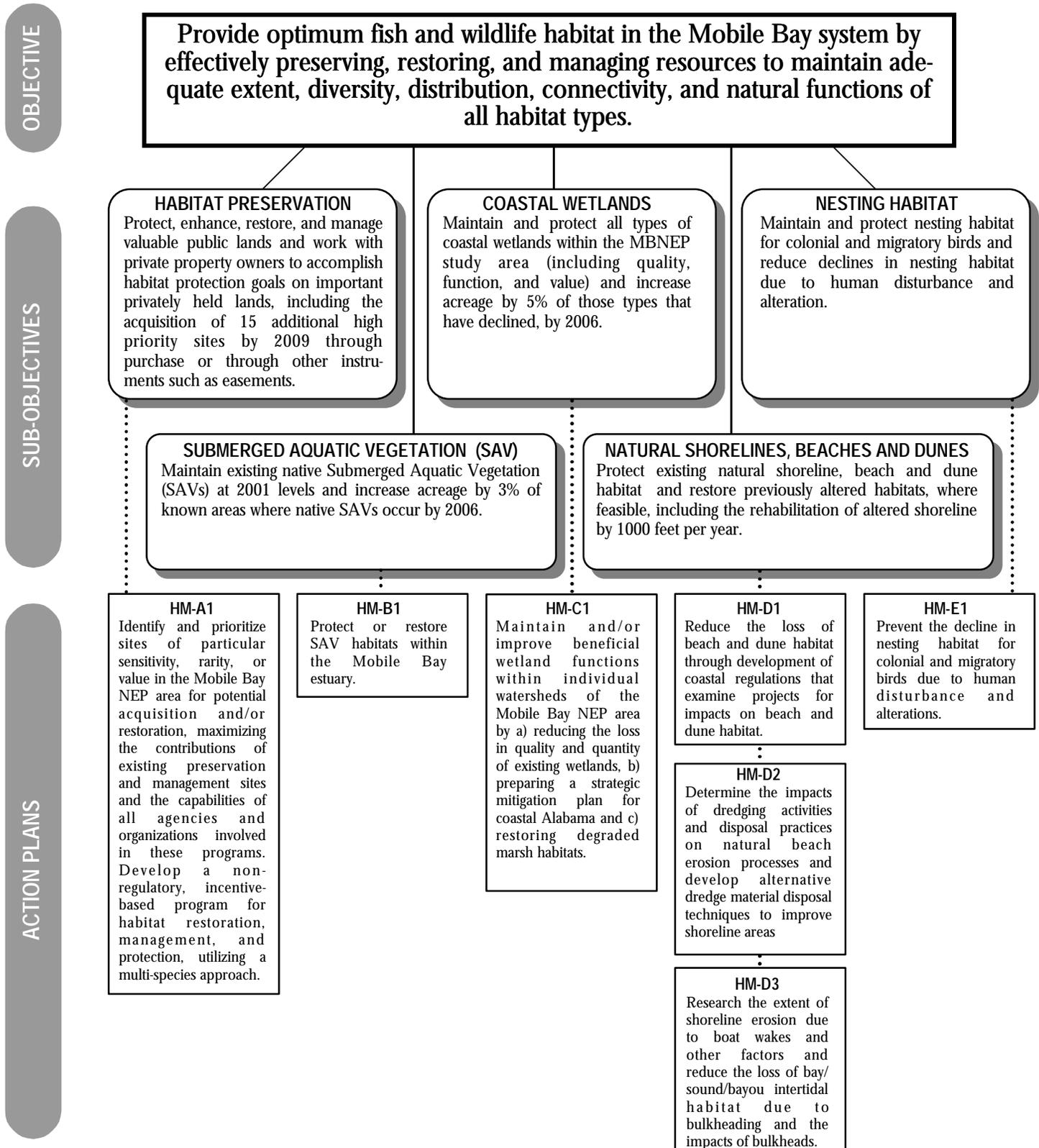
MONITORING  
STRATEGY

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NOTE: Incorporates Action Items LR-A6, LR-A8, and LR-A13 as initially described in June, 1999.

# HABITAT MANAGEMENT

The Habitat Management Workgroup of the Mobile Bay NEP developed five sub-objectives and seven Action Plans to reach the Management Conference objective. Sub-objectives focused on areas of **Habitat Preservation, SAV, Coastal Wetlands, Natural Shorelines, Beaches and Dunes, and Nesting Habitat**. The following schematic shows how the items are related:



## ACTION HM-A1: Develop a Coastal Habitats Coordinating Team

### ACTION PLAN ID

### WHAT

Identify and prioritize sites of particular sensitivity, rarity, or value in the Mobile Bay NEP area for potential acquisition and/or restoration, maximizing the contributions of existing preservation and management sites and the capabilities of all agencies and organizations involved in these programs. Develop a non-regulatory, incentive-based program for habitat restoration, management, and protection utilizing a multi-species approach.

### WHO AND HOW

Step 1: MBNEP, ADCNR COASTAL PROGRAMS and GMP will organize and facilitate a ***Coastal Habitats Coordinating Team*** comprised of entities involved in habitat acquisition, restoration, preservation and management to be charged with developing a strategy of collaborative and prioritized acquisition and/or restoration for high priority sites, utilizing a multi-species approach. High priority sites will be determined by the Coastal Habitats Coordinating Team.

Step 2: The COASTAL HABITATS COORDINATING TEAM will:

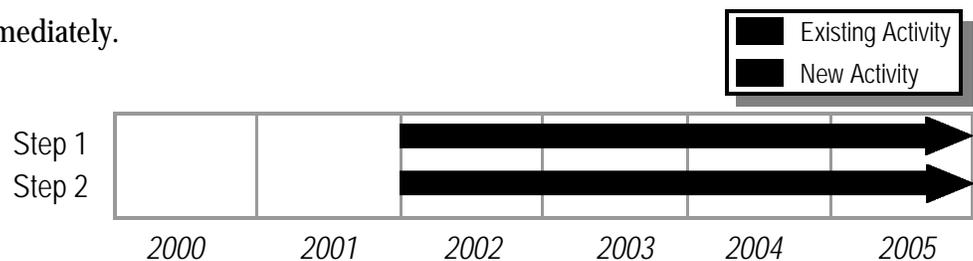
- a) identify and survey existing habitat acquisition, restoration, preservation and management programs and develop an information matrix of capabilities, limitations, and requirements;
- b) identify programs used elsewhere, but that do not exist in Alabama, with potential for habitat protection and restoration in the Mobile Bay NEP area;
- c) determine the legislative or other infra-structural requirements to implement new programs for habitat acquisition and restoration in the Mobile Bay NEP area;
- d) draft, submit and facilitate the adoption of local ordinances, regulations, and other legal instruments to implement these programs;
- e) integrate coastal habitat acquisition, restoration, and preservation strategies with the administration of non-regulatory, incentive-based programs such as conservation easements, Forever Wild and USDA's WRP and CRP;

WHO AND HOW  
(continued)

- f) develop an acquisition plan listing area/habitats in order of priority. This plan will have criteria for evaluation and ranking of areas/habitats.
- g) incorporate acquisition and/or restoration into mitigation planning strategies as an alternative, when appropriate;
- h) develop guidance on long term site management and protection (planning, financing, and implementation) for high priority sites acquired;
- i) encourage maintenance of natural functions on state lands of high or critical habitat value;
- j) prepare a strategy to increase funding for acquisition, preservation, and restoration of sites with high or critical habitat value; and
- k) provide technical assistance to facilitate these actions (see EPI-A1 and B1).

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADCNR Natural Heritage Program; Coastal Land Trust; CCWWG; Forever Wild; GAP Analysis; GMP; Mobile County Parks and Wildlife; MBW/MBK; NERRS; NMFS; TNC; and USFWS-NWRR.

FUNDING

>\$7.5 million.

• ADCNR-CP \$325,000	• MBNEP \$4,000
• MBW/MBK \$2,500	• CIAP \$7,192,222
<b>TOTAL..... &gt;\$7,523,722</b>	

Please see WQ-A1 for a description of the CIAP funds.

**REGULATORY  
CONSIDERATIONS**

None identified.

**RELATED  
ACTIONS**

ACEI Consensus Items: OI-10,14  
Other CCMP Action Plans: LR-A1, LR-B1, HU-B3

**ENVIRONMENTAL  
INDICATORS**

Common and Optional Indicators (P. 128)

**MONITORING  
STRATEGY**

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**NOTE: Incorporates Action Items HL-A2 and HL-A3 as initially described in June, 1999.**

## ACTION HM-B1: Protect or Restore SAV Habitat

**ACTION PLAN ID**

**WHAT**

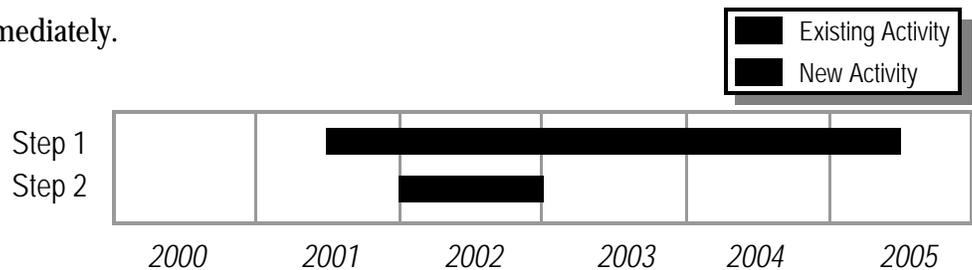
Protect or restore SAV habitats within the Mobile Bay NEP area.

**WHO AND HOW**

- Step 1: MBNEP, in coordination with CHCT will:
- a) produce a map of major SAV concentrations of occurrence for public distribution;
  - b) identify high priority sites for SAV restoration from those areas with healthy or recovering SAV;
  - c) implement a coordinated restoration effort to expand the coverage of SAV, utilizing volunteer planting efforts;
  - d) examine the possibility of incorporating priority SAV restoration sites into area mitigation planning strategies;
  - e) monitor and evaluate restoration efforts for success, necessary corrections, and improved techniques; and
  - f) investigate non-destructive (other than transplanting) methods for growing plants for use in SAV restoration.
- Step 2: ADCNR MRD will attempt to expand enforceable “no wake” zones to include areas adjacent to SAV beds and post with signs. In addition, ADCNR MRD will consider developing regulations for “no motor” zones in sensitive SAV areas.

**WHEN**

Immediately.



**WHERE**

Mobile Bay NEP Area.

COOPERATORS

ADCNR-MRD, ADCNR-CP, CCWWG; DISL; and GMP.

FUNDING

>\$580,000.

• ADCNR	\$5,000	• MBNEP	\$145,000
• DISL	\$225,000	• Other (below)	\$210,282
TOTAL.....>\$585,282			

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

Legislation/regulation may be needed to develop “no motor” zones.

RELATED  
ACTIONS

Other CCMP Action Plans: LR-A1, LR-B1, HU-B1, HU-B2, and HU-B3

ENVIRONMENTAL  
INDICATORS

SAV Acreage.

MONITORING  
STRATEGY

P. 64

ACTION PLAN ID

## ACTION HM-C1: Maintain and/or Improve Beneficial Wetland Function

WHAT

Maintain and/or improve beneficial wetland functions within individual watersheds of the Mobile Bay NEP area by:

- a) reducing the loss in quality and quantity of existing wetlands;
- b) preparing a strategic mitigation plan for coastal Alabama; and
- c) restoring degraded marsh habitats.

WHO AND HOW

Step 1: The MBNEP will:

- a) determine and quantify the current extent of wetlands and the extent of wetlands loss or conversion within the Mobile Bay NEP study area by habitat type, watershed, and cause of loss;
- b) produce a GIS map of the information gathered for education and conservation management purposes; and
- c) develop and implement specific recommendations to alleviate the loss of non-regulated wetland habitats within the confines of the Mobile Bay NEP.

Step 2: The CHCT will:

- a) develop baseline information on the level of wetland functions within individual watersheds;
- b) determine the extent and cause of beneficial wetland functions loss;
- c) establish the threshold acreage needed to sustain baseline wetland functions;
- d) examine the effectiveness of existing wetland regulations; and
- e) develop and implement specific watershed management recommendations to alleviate the loss of wetland functions.

Step 3: The CHCT will:

- a) identify wetland types receiving the greatest permit pressure and development impact;
- b) identify priority sites for mitigation, preferably by watershed;

WHO AND HOW  
(continued)

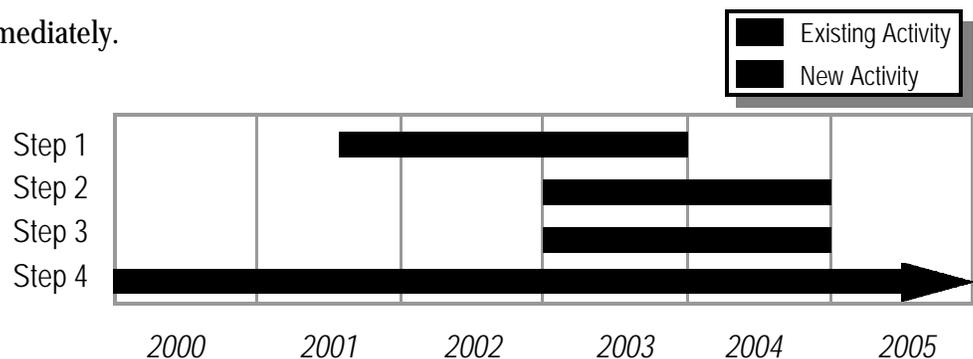
- c) develop guidance on wetland functional assessment and execute MOAs between regulatory agencies for its implementation;
- d) designate appropriate success criteria that are consistent with replacement of lost wetland functions;
- e) implement a program of regular mitigation site inspections to assure mitigation compliance;
- f) identify needed design corrections, and provide input to better mitigation design;
- g) incorporate the above into a strategic mitigation plan for coastal Alabama; and
- h) Implement a coordinated restoration effort with a local non-Federal partner to expand marsh acreage using the USACE 206 program to restore marsh.

Step 4: USFWS will:

- a) identify high priority sites for marsh restoration within the Mobile Bay NEP area by watershed;
- b) make arrangements with local nurseries to grow marsh plants adapted to Mobile Bay, as opposed to transplanting from donor marshes or purchasing plants from distant sources; and
- c) sponsor and coordinate volunteer marsh-planting efforts and monitor and evaluate restoration efforts for success, necessary corrections, and improved techniques.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADCNR-SLD; ADCNR-CP; ADEM-CP; Baldwin County; CCWWG; EPA, GMP; Mobile County; NMFS; NRCS; and USACE.

FUNDING

>\$1.7 million.

• ADCNR	\$10,000	• MBNEP	\$360,000**
• EPA	\$861,400	• USFWS	\$8,000*
• CIAP	\$473,994	• DISL	\$50,000
• Other (below)	\$26,264		
*estimated annual expenditure			
**\$180,000 from GMP and \$18,000 from ADEM-CP			
TOTAL .....		>\$1,789,658	

Please see WQ-A1 for a description of the CIAP funds.

**EPA** funds include grants received by the Baldwin County Commission and ADEM. Projects include Baldwin County Wetlands Advance Identification, Baldwin County Wetland Conservation Plan, and Wetland Protection and Restoration Activities for Coastal Baldwin County. Recipients contributed total match monies of \$264,467.

Section 206 of the Water Resources Development Act of 1996 provides the authority for the **US Army Corps of Engineers** to restore degraded aquatic ecosystems. A restoration project is adopted only after investigation shows the restoration will improve the environment, is in the public interest and is cost-effective. Each project is limited to a Federal cost of \$5 million. This limitation includes ALL project related costs, feasibility studies, planning, engineering, construction, supervision, and administration. A non-Federal entity must provide 35% of the project costs.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

- ACAMP
- ADEM, Division 8
- Legal determination of whether wetlands are considered waters of the state is required.
- Legal determination of jurisdictional wetlands

RELATED  
ACTIONS

None identified.

ENVIRONMENTAL  
INDICATORS

- Acreage of wetland habitat.
- Acreage of wetlands gained, impacted, or lost due to permitted activity.

MONITORING  
STRATEGY

P. 64

## ACTION HM-D1: Assess Beach and Dune Habitat Loss

**ACTION PLAN ID**

**WHAT**

Reduce the loss of beach and dune habitat through development of coastal regulations that examine projects for impacts on beach and dune habitat.

**WHO AND HOW**

- Step 1: LOCAL GOVERNMENTS will work to reduce habitat fragmentation of beach and dunes. This work will address critical habitat issues currently under land development pressure.
- Step 2: LOCAL GOVERNMENTS will develop and enforce zoning ordinances and regulations to address habitat fragmentation of critical habitat.

**WHEN**

2001/2002.



**WHERE**

All areas within the Mobile Bay NEP study area where beaches and dunes are present.

**COOPERATORS**

ADCNR Coastal Programs; ADEM-CP; Coastal Resources Advisory Committee; GMP; HBAs; and real estate associations.

**FUNDING**

>\$79,000.

• DISL	\$25,000	• MBNEP	\$4,000
• ADEM	\$50,000*		
*new			
<b>TOTAL.....</b>		<b>\$79,000</b>	

**REGULATORY  
CONSIDERATIONS**

County ordinance development; better enforcement of existing regulations.

**RELATED  
ACTIONS**

Other CCMP Action Plans: HU-A1; HM-C1

**ENVIRONMENTAL  
INDICATORS**

Acres of secondary and tertiary dunes, acres of maritime forest, acres/shoreline footage of wetlands

**MONITORING  
STRATEGY**

Maintaining map of areas, maintaining zero net loss.

## ACTION HM-D2: Determine Impacts of Dredging on Coastal Habitats

ACTION PLAN ID

WHAT

Determine the impacts of dredging activities and disposal practices on natural beach erosion processes and develop alternative dredge material disposal techniques to improve shoreline areas.

WHO AND HOW

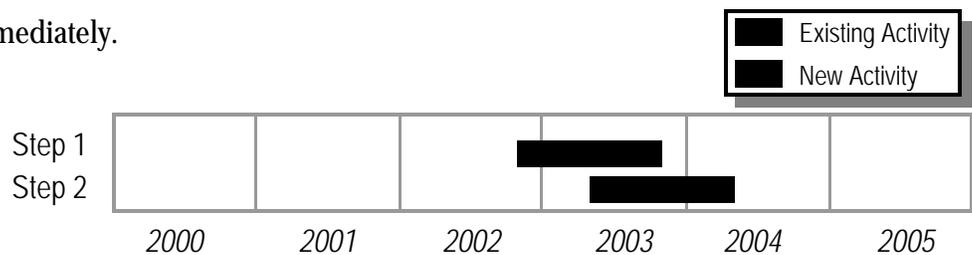
Step 1: MBNEP will develop a **Coastal Dredge Material Task Force**.

Step 2: The COASTAL DREDGE MATERIAL TASK FORCE will develop a **Coastal Dredge Material Management Plan**, based on the format for the Upper Mobile Harbor Dredge Management Plan. The Upper Mobile Harbor Dredge Management Plan was developed by the USACE as a long-term plan for the disposal of dredge materials from the Upper Mobile River. The Coastal Dredge Material Management Plan will determine positive and/or negative impacts, if any, associated with dredged material management practices, including, but not limited to:

- circulation impacts due to dredged material mounding;
- beneficial uses of dredged material; and
- “within-bay” disposal for erosion reduction.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ASPA; USACE; and USFWS.

FUNDING

>\$4,000

• MBNEP	\$4,000
<b>TOTAL..... \$4,000</b>	

Section 204 of the Water Resources Development Act of 1992 provides authority for the U.S. Army Corps of Engineers to restore, protect, and create aquatic and wetland habitats in connection with construction or maintenance dredging of an authorized navigation project. A local non-Federal sponsor must provide a minimum of 25% of the project cost including provision of all lands, easements, rights-of-way, relocations and disposal areas.

REGULATORY  
CONSIDERATIONS

Current ban on in-bay disposal of dredged materials.

RELATED  
ACTIONS

Other CCMP Action Plans: WQ-A1, WQ-D1, HU-B2

ENVIRONMENTAL  
INDICATORS

Acreage of beach and dune habitat.

MONITORING  
STRATEGY

P. 64

ACTION PLAN ID

## ACTION HM-D3: Address Shoreline Erosion

WHAT

Research the extent of shoreline erosion due to boat wakes and other factors. Reduce the loss of bay/sound/bayou intertidal habitat due to bulkheading and the impacts of bulkheads.

WHO AND HOW

- Step 1: MBNEP will coordinate with a contractor to increase information concerning sedimentary dynamics of Mobile Bay and the Mobile-Tensaw River Delta by:
- a) developing a sediment budget for the Bay and Delta;\*
  - b) developing a three-dimensional hydrodynamic model for the Bay and Delta;\*
  - c) establishing baseline sediment conditions; and
  - d) determining the relationship between fringe wetlands and sediment dynamics.

\*These steps are being included in the watershed model developed by Tetra Tech for action plan WQ-A1.

- Step 2: MBNEP will coordinate with a local contractor to:
- a) research how other states have addressed boat wakes and erosion of natural shorelines;
  - b) quantify baseline erosion rates along coastline within the MBNEP area for use in evaluating future erosion rates;
  - c) monitor rates of erosion in heavy boating areas more intensely; and
  - d) propose “limited wake” or “no wake” zones in identified areas of high erosion.

- Step 3: ADCNR MRD will:
- a) adapt additional no wake zones, if feasible, as recommended from the study in Step 2.
  - b) increase enforcement of “no wake” or “limited wake” zones.

WHO AND HOW  
(continued)

Step 4: **ADCNR COASTAL PROGRAMS** will develop strategies aimed at reducing shoreline loss, particularly from bulkheads, in the MBNEP area. The strategies shall be incentive-based, where possible, and may include:

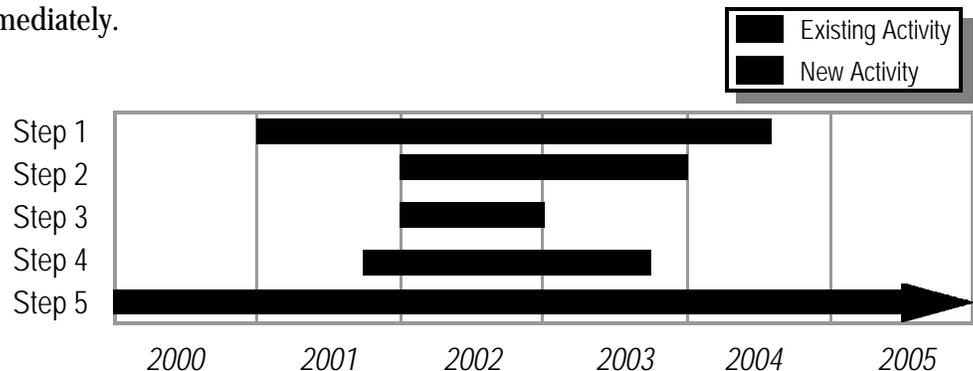
- conservation easements;
- tax incentives;
- riparian buffers; and
- increased development setbacks.

Step 5: **USA COASTAL ENGINEERING** will develop engineered alternatives to bulkheading and pilot restoration projects to address the following:

- offshore breakwaters with wetlands;
- constructed wetlands; and
- low-level bulkheads.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ACES; ADCNR SLD; Alabama Gulf Coast Chamber of Commerce; GMP; TNC; and USCG.

FUNDING

>\$400,000.

• ADCNR	\$5,000*	• MBNEP	\$4,000
• ADCNR-CP	\$15,000**	• CIAP	\$250,000
• Other (below)	\$131,285		
*same funding as for HM-B1			
**approximate annual expenditure			
TOTAL.....			>\$405,285

Please see WQ-A1 for a description of the CIAP funds.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

New “limited wake” and “no wake” zones may be needed to implement this action.

RELATED  
ACTIONS

Other CCMP Action Plans: WQ-A1, HU-B1, HU-B2, and HU-B3

ENVIRONMENTAL  
INDICATORS

Acreage (linear footage) of natural bay and bay tributary shoreline.

MONITORING  
STRATEGY

P. 64

NOTE: Incorporates Action Items HL-B5, HL-C3, HL-F1, HL-F2, and WQ-D6 as initially described in June, 1999.

ACTION PLAN ID

## ACTION HM-E1: Prevent Nesting Habitat Decline

WHAT

Prevent the decline in nesting habitat for colonial and migratory birds due to human disturbance and alterations.

WHO AND HOW

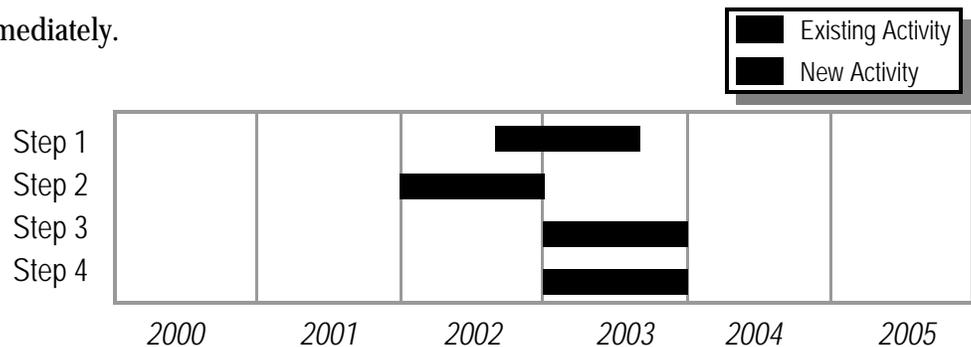
- Step 1: MBNEP will coordinate with existing agencies, groups, and individuals (eg. Ducks Unlimited, Audubon Society) to determine factors that are adversely affecting bird nesting habitats.
- Step 2: ADCNR SLD will develop a GIS-based annual monitoring effort for colonial sea bird and shorebird nesting sites with exact coordinates of the nesting sites to determine status and trends for management decisions and public information.
- Step 3: MBNEP will encourage and support improved enforcement of existing state and federal regulations pertaining to colonial and migratory bird nesting habitat. Strategies may include:
- a) increasing ADCNR, Non-Game Division enforcement personnel;
  - b) working with USFWS and the public to identify geographic areas or species where increased enforcement efforts should be targeted;
  - c) educate public and private landowners on the importance of creating and preserving nesting habitat and associated laws and regulations. Encourage these landowners to voluntarily monitor and report violations;
  - d) exploring alternative enforcement plans and approaches; and
  - e) implementing a citizen watchdog program.
- Step 4: MBNEP will foster cooperative partnerships among agencies and private property owners to identify and prioritize sites for acquisition, better manage existing publicly owned sites, and restore former colonial and migratory bird nesting sites. Efforts should include, but are not limited to, the following:

WHO AND HOW  
(continued)

- a) coordinating with local agencies to develop an agreement for funding placement of shell in appropriate nesting areas;
- b) coordinating with GSA and other groups to determine placement of nesting materials;
- c) coordinating with BSA and other volunteers to place shell, cavity nesting boxes, nesting platforms, and nesting site signs;
- d) utilizing the Coastal Habitats Coordinating Team to:
  - examine the acquisition of Cat Island;
  - establish an adopt-a-colony effort; and
  - implement recommended preservation and/or exchange programs for acquisition and/or preservation of maritime forests and scrub/shrub dune habitat.

WHEN

Immediately.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADCNR WFFD; AOS; BSA; DISL; FODIAS ; GSA; MBAS; and SABA.

FUNDING

>\$37,500.

• ADCNR	\$8,000*	• MBNEP	\$8,000
• DISL	\$21,500		
*estimated annual expenditure			
TOTAL.....		>\$37,500	

**REGULATORY  
CONSIDERATIONS**

None identified.

**RELATED  
ACTIONS**

ACEI Consensus Items: OI-23  
Other CCMP Action Plans: WQ-D1, LR-A1, LR-B1

**ENVIRONMENTAL  
INDICATORS**

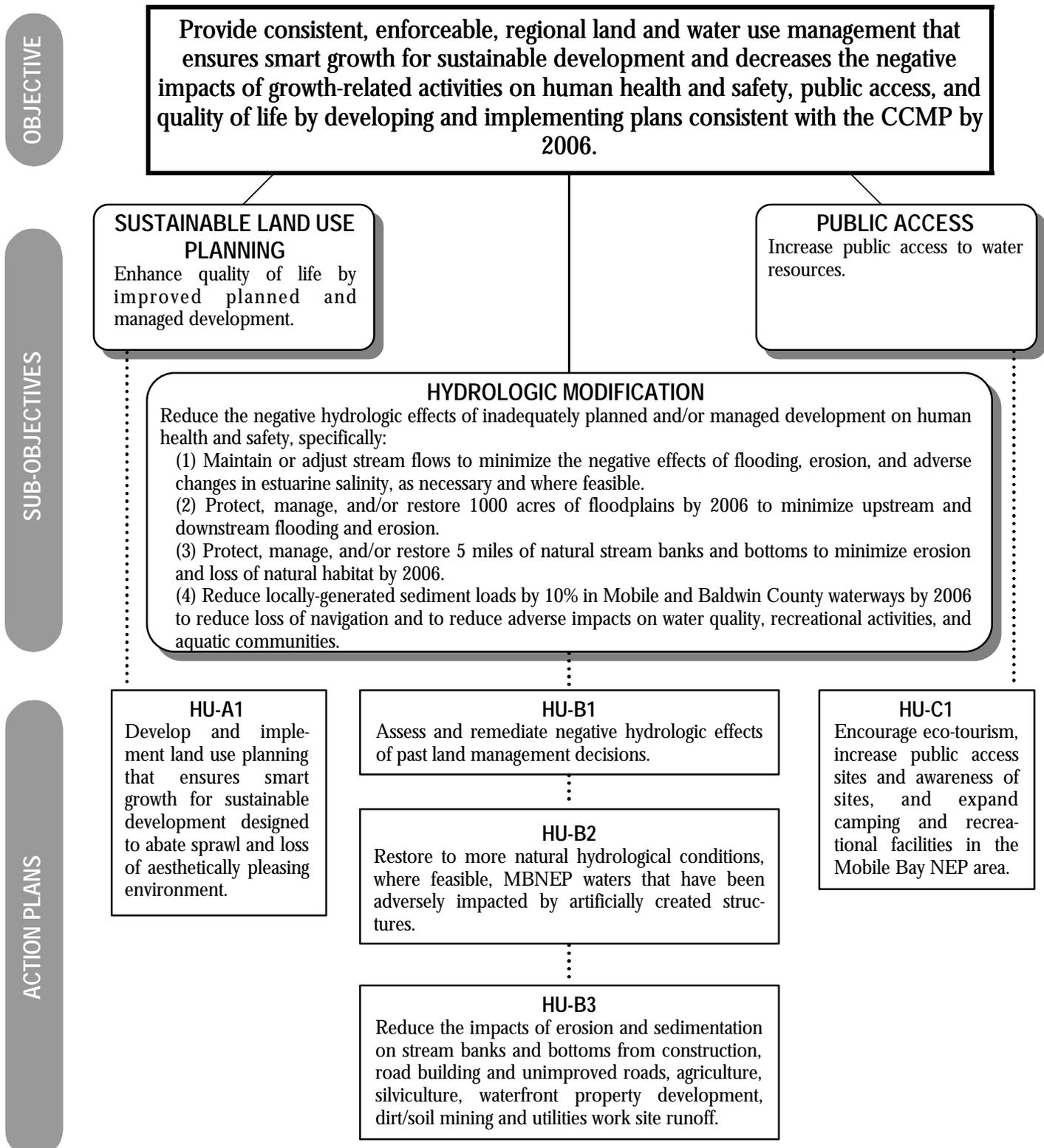
Nesting bird counts.

**MONITORING  
STRATEGY**

Not addressed.

# HUMAN USES

The Human Uses Workgroup of the Mobile Bay NEP developed three sub-objectives and 6 Action Plans to reach the Management Conference objective. Sub-objectives focused on areas of **Sustainable Land Use Planning**, **Hydrologic Modification**, and **Public Access**. The following schematic shows how the items are related:



ACTION PLAN ID

## ACTION HU-A1: Develop and Implement Comprehensive Land Use Planning

WHAT

Develop and implement land use planning that ensures smart growth for sustainable development designed to abate sprawl and loss of aesthetically pleasing environment.

WHO AND HOW

Step 1: SARPC, ADCNR COASTAL PROGRAMS, and LOCAL GOVERNMENTS will attempt to develop a long-range strategy for consistent, enforceable, regional land and water use management within Mobile and Baldwin Counties that:

- a) examines the cost versus benefits for redevelopment compared to new development;
- b) includes incentives to encourage redevelopment and preservation of existing environment;
- c) supports Brownfields concept and other government efforts designed to encourage reinvestment;
- d) encourages landscaping and tree ordinances throughout the program area;
- e) suggests parking garages as alternatives to conventional parking;
- f) incorporates the use of alternative paving methods, including the use of semi-pervious materials;
- g) focuses on compact development to reduce sprawl and related impacts; and
- h) requires engineering, and best management practices that maintain pre-development hydrology, minimize stream warming, and reduce sediment loading
- i) encourages the further development of Environmental Courts in both counties.

Step 2: MBNEP will:

- a) support efforts of Mobile/Baldwin United and Envision Mobile Baldwin to develop sustainable development indicators;
- b) implement a recognition program that encourages environmentally sound development practices (e.g., Busi-

WHO AND HOW  
(continued)

nesses for the Bay);

- c) provide incentives and education promoting environmentally sound business and/or industrial activities; and
- d) investigate model incentive-based programs and replicate as feasible.

Step 3:

ADCNR Coastal Programs will coordinate with the ALABAMA GULF COAST CONVENTION AND VISITORS BUREAU and ALABAMA GULF COAST CHAMBER OF COMMERCE to ensure that the Alabama Coastal Area Management Program incorporates tourism impacts and protection of beaches and dunes compatible with CCMP objectives. The parameters of the Construction Control Line will include population impacts per foot of beach frontage.

The Construction Control Line is a line of prohibition set by state plane coordinates which parallels the Gulf of Mexico shoreline seaward of which the no person may remove primary dune or beach sands and/or vegetation or otherwise alter the primary dune system, construct any new structure, or make any substantial improvement to any existing structure.

Step 4:

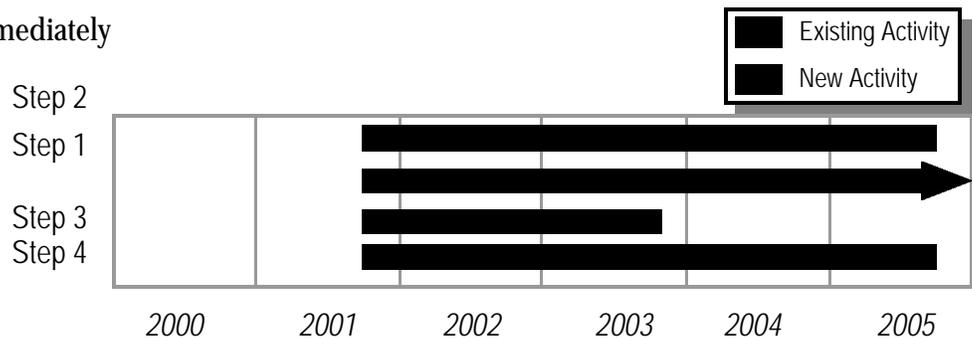
ADCNR COASTAL PROGRAMS, CPI, MBNEP, LOCAL GOVERNMENTS, and SARPC will develop a shoreline, corridor and greenway plan to decrease and/or halt habitat fragmentation. The plan will create a multi-agency task force (possibly in conjunction with CHCT) that will:

- a) examine existing plans and formulate consistent, county-wide land use management plans for the whole Mobile Bay NEP area (to include the Bay, rivers, the Delta, creeks and beaches);
- b) identify and classify streams, greenbelts, and riparian corridors by sub-watershed as either sensitive or degraded based on amount of impervious surface and review of existing preservation/acquisition programs;
- c) investigate funding programs to develop shoreline, corridor, and greenway plans; such as ADCNR 306 grants, Federal Hazard Mitigation grants, Flood Mitigation Assistance, etc.
- d) coordinate with existing programs; like the Crepe Myrtle Trail, Greenways Program, CRP, and Partners for Wildlife to protect and restore these habitats;

- e) develop incentive-based programs to encourage preservation of green belts, riparian corridors, stream fisheries habitat, and non-fragmented habitats by sub-watershed and set limits on the amount of impervious surface allowed;
- f) work with city and county governments to implement the shoreline, corridor, and greenway plan based on local and county zoning;
- g) monitor both the amount of impervious surface and riparian habitat, as well as the physical and biological parameters of these habitats.

WHEN

Immediately



WHERE

Mobile Bay NEP Area.

COOPERATORS

BCEDA; City of Mobile; Chambers of Commerce; and HBA.

FUNDING

>\$2.3 million.

• ADCNR-CP	\$37,500**	• MBNEP	\$4,000
• SARPC	\$500,000*	• CIAP	\$1,540,000
• DISL	\$60,000	• Other (below)	\$200,063
*funding for five years.			
**approximate annual expenditure			
<b>TOTAL.....&gt;\$2,341,563</b>			

Please see WQ-A1 for a description of the CIAP funds.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

- Lack of home rule.
- Lack of zoning.

RELATED  
ACTIONS

ACEI Consensus Items: ACEI WI-3, 4, 6, 9; OI-4, 5, 6, 9, 10, 11  
Other CCMP Action Plans: WQ-A1, A2, A3, and HM-A1

ENVIRONMENTAL  
INDICATORS

- Agricultural acreage
- Conversion of undeveloped land
- Housing starts
- Impervious surface
- Population density
- Riparian habitat

MONITORING  
STRATEGY

Pp. 101, 106

**NOTE: Incorporates Action Items WQ-D1, HU-B1, HU-B2, HU-B3, HU-B5, HU-C1, HU-D1 and HL-A8 as initially described in June, 1999.**

## ACTION HU-B1: Assess Hydrologic Effects of Development Practices

### ACTION PLAN ID

### WHAT

Assess and remediate negative hydrologic effects of past land management decisions.

### WHO AND HOW

Step 1: MBNEP will assemble a hydrologic review panel of government agencies, county and municipal sewer boards, and private entities to assess cumulative hydrologic impacts of past land management practices and to develop remediation strategies where possible.

Step 2: The MBNEP HYDROLOGIC REVIEW PANEL will:

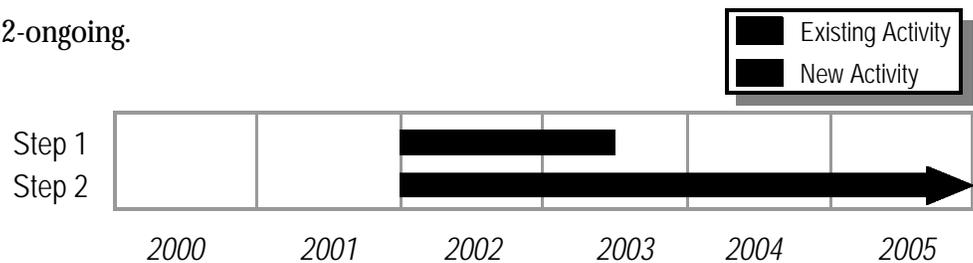
- a) emphasize a holistic, watershed-based approach to addressing water quantity, quality, and flood management in the Mobile Bay estuary;
- b) develop land use planning principles tailored for the Mobile Bay NEP area using information from other successful programs;
- c) evaluate existing engineering design criteria and establish improved or updated criteria, where applicable;
- d) prepare land use ordinances modeled after programs in similarly populated areas (notable programs exist in Huntsville and Birmingham);
- e) develop an incentive-based retrofit program emphasizing urban stream retrofitting (retrofitting is returning a stream to a more natural state);
- f) preserve municipal riparian corridors;
- g) develop solutions to loss of pervious surface, which contributes to localized flooding and infiltration of municipal and/or private sewage systems;
- h) promote outreach and technology transfer to smaller communities and unincorporated areas;
- i) establish water quality and quantity requirements for the MBNEP area;

WHO AND HOW  
(continued)

- j) develop incentives for reducing stormwater runoff and increasing filtration on development sites; and
- k) create non-traditional means for enhanced water quality and quantity provisions.

WHEN

2002-ongoing.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ADPH (including Mobile and Baldwin County Health Departments); Alabama Bureau of Tourism; ALDOT (District 9); Baldwin County Planning, Engineering, and Zoning Departments; BCEAB; Envision Mobile/Baldwin; ESCOC; FEMA; MACOC; MAWSS; Mobile-Baldwin Stormwater Consortium; Mobile County Planning, Engineering, and Zoning Departments; MBW/MBK; Municipal Planning Commissions; NRCS; Phase 2 municipalities; SARPC; unincorporated area governments; and water and sewer boards.

FUNDING

>\$120,000 per year.

• MBNEP	\$8,000	• Other (below)	\$112,280
TOTAL.....		>\$120,000	

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

MS4 permitting and FEMA regulations.

RELATED  
ACTIONS

ACEI Consensus Items: WI 3, 4; OI 4-6  
Other CCMP Action Plans: WQ-A1, A3, WQ-C1, HM-A1

**ENVIRONMENTAL  
INDICATORS**

- Acres of floodway impacted by development
- Areal extent of dredging activities
- Areal extent of wetland filling and excavation
- Conversion of floodplain habitat
- Linear extent of stream and creek channelization
- Minimum flows and riverlevels
- Common and Optional Indicators (P. 131)

**MONITORING  
STRATEGY**

Pp. 52, 59, 131

ACTION PLAN ID

## ACTION HU-B2: Restore Natural Hydrologic Conditions

WHAT

Restore to more natural hydrological conditions, where feasible, MBNEP waters that have been adversely impacted by artificially created structures.

WHO AND HOW

Step 1: Hydrologic impacts of the man-made, 6-mile stretch of Highway 90 (a.k.a. “the Causeway”) between downtown Mobile and Spanish Fort will be addressed as follows:

- a) USACE, through the Planning Assistance to States (PAS) program, will conduct a feasibility study to determine the Causeway’s impact on hydrologic flow regimes, water quality, and living resources. USACE will also develop a remediation strategy for the Causeway, including a prioritized list of appropriate areas for remediation efforts, suggested engineering designs, analysis of expected environmental impacts of proposed remediation, and budget estimates for remediation.
- b) ADCNR, ADEM, and DISL, in conjunction with USA’s ACES program, will conduct further assessments of the Causeway’s effect on health and abundance of aquatic species due to altered water flow patterns and /or salinity gradients (e. g., correlate white shrimp data with inflow data).
- c) The SCENIC CAUSEWAY COALITION (SCC) will:
  - i) develop a Corridor Management Plan (CMP) for the 6-mile stretch of Highway 90 (a.k.a. “the Causeway” and adjoining roads); and
  - ii) submit proposals to designate the Causeway as a State Scenic Highway and, subsequently as a National Scenic Byway.
- d) ADCNR and ALDOT will develop a funding strategy and implement proposed restoration activities along the Causeway.

WHO AND HOW  
(continued)

- Step 2: **MBNEP** will address and remediate hydrographic impacts associated with navigation channel operations and maintenance by:
- a) determining the level of significance and real extent of possible impacts associated with existing navigation channels utilizing the water quality modeling effort;
  - b) developing management options to minimize navigation channel impacts, if necessary;
  - c) determining the changes/impacts due to modification of salt wedge intrusion as a result of construction and/or operation and maintenance of channels;
  - d) developing of management options to repair/minimize salt wedge intrusion problems, if necessary.

Step 3: Hydrologic impacts to D'Olive Bay will be assessed as follows:  
**USACE**, **ADCNR** and **ADEM** will conduct a comprehensive biological, hydrologic, and engineering study of D'Olive Bay to determine existing conditions and make recommendations for improvements. This will include finding determinations of pre-modification water quantity and quality conditions and development of a stepwise strategy to return the area to a more natural hydrologic condition, to the extent possible.

Step 4: Hydrologic impacts of a man-made dike in Pinto Pass will be addressed as follows:  
**USACE** will coordinate with a local non-Federal partner and a local contractor to design and implement a plan to remove the dike in the Pinto Pass area.

WHEN

- Step 1: Oct. 2000 - June, 2002  
Step 2: 2000-2003  
Steps 3-4: To be determined.



**WHERE**

Mobile Bay NEP Area.

**COOPERATORS**

Alabama Bureau of Tourism; ALDOT (District 9); Auburn University; Environ Mobile/Baldwin; ESCOC; MACOC; MAWSS; MBW/MBK; SARPC; and Scenic Causeway Coalition.

**FUNDING**

Step 1: \$10,000 for CMP development; \$50,000 for USACE feasibility study; \$100,000 aquatic studies; TEA-21 money for remediation (undetermined amount); \$15,000 for MBW/MBK public outreach.  
 Step 2: Undetermined.  
 Step 3: Undetermined.  
 Step 4: \$125,000

• USACE	\$45,000	• MBNEP	\$4,000
• ADCNR	\$5,000	• ADEM	\$35,000*
• MBW/MBK	\$15,000		
*new			
<b>TOTAL.....&gt;\$104,000</b>			

Please refer to HM-C1 for funding opportunities with the USACE under Section 206.

**REGULATORY  
CONSIDERATIONS**

None identified.

**RELATED  
ACTIONS**

ACEI Consensus Items: WI 3, 4; OI 4-6  
 Other CCMP Action Plans: WQ-A1, LR-A1, HM-A1

**ENVIRONMENTAL  
INDICATORS**

None identified.

**MONITORING  
STRATEGY**

Undetermined.

ACTION PLAN ID

## ACTION HU-B3: Better Control Erosion and Sedimentation

WHAT

Reduce the impacts of erosion and sedimentation on stream banks and bottoms from construction, road building and unimproved roads, agriculture, silviculture, waterfront property development, dirt/soil mining and utilities work site runoff.

WHO AND HOW

Step 1: LOCAL GOVERNMENTS will coordinate with NRCS and ADEM to:

- a) establish criteria for a water body buffer zone on both sides of stream banks;
- b) develop and implement a water body bank conservation easement and/or buyout program;
- c) establish and encourage the use of development setbacks from water bodies;
- d) assess the possibility of requiring drainage plans based on 15-to-25 year or greater storm events; the City of Mobile is currently investigating a change in the current storm design and implementation is anticipated in the revised storm water ordinance.
- e) establish side slope requirements not to exceed 1:4;
- f) establish slope stabilization requirements, such as erosion control netting or extending concrete beyond crest of slope or bank (currently being implemented by the City of Mobile); and
- g) establish erosion control requirements (in stages) within buffer zones and beyond (currently being implemented by the City of Mobile).

Step 2: ADCNR COASTAL PROGRAMS will:

- a) coordinate with the local legislative delegation to develop and implement legislation giving counties the authority to develop and enforce uniform, performance-based, countywide ordinances to manage and oversee land disturbing activities;
- b) support development of BMPs designed specifically for

WHO AND HOW  
(continued)

rainfall and soil conditions in the MBNEP area and incorporate locally-based BMPs into the Supplemental Building Code;

- c) support the development of SARPC's BMP guidebook; and
- d) develop incentives and/or appropriate planning tools to reduce sediment and turbidity impacts from waterfront property development and related runoff (e.g., conservation easements, tax incentives, riparian buffers, removal of low-strength soil from site as soon as possible, use of detention structures, such as sediment traps, during construction, installation of permanent retention structures after construction etc.).

Step 3: ADEM will support the Alabama Forestry Commission, Alabama Treasure Forest Foundation, and Forever Wild in their education and BMP implementation efforts to reduce sediment and turbidity effects to surface waters from silvicultural runoff.

Step 4: LOCAL GOVERNMENTS will:

- a) consider potential impacts to surface waters when prioritizing and planning improvements to dirt roads;
- b) utilize alternative road surfacing material in appropriate places, if feasible; and
- c) prohibit the development of new major subdivisions, consisting of more than four dwelling units, that use dirt roads (Note: Similar subdivision regulations currently exist in Baldwin County.)

Step 5: ADCNR and ADEM Coastal Programs will:

- a) support the NRCS, Soil and Water Conservation Districts, and the ACES in continued development and implementation of agricultural education and BMP standards (e.g., establish and encourage buffer zones with perennial vegetation; encourage the use of conservation tillage practices; develop education materials pertaining to conservation practices; etc.); and
- b) support the NRCS development and implementation of grazing plans for livestock operations to protect sensitive areas, such as stream banks, wetlands, ponds, and riparian zones.

WHO AND HOW  
(continued)

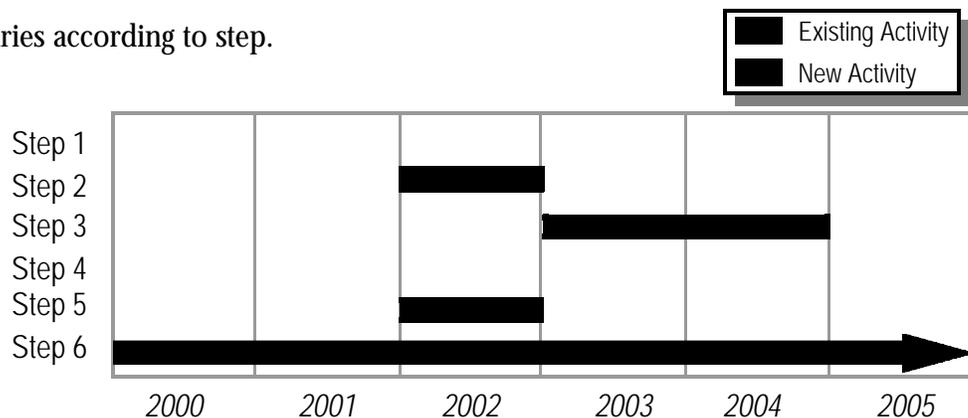
Step 6:

MBNEP will work with LOCAL GOVERNMENTS to:

- a) encourage use of alternative and enhanced efforts to control erosion (e.g., develop impact fees and credits for permeable surfaces, create a “Green Card Program” to encourage environmentally friendly contractors to include awareness of their responsibility in enforcement of BMPs on sites, give credits through public bidding processes for certified, environmental friendly builders that take into account long-term environmental impacts of projects, etc.);
- b) develop and/or support incentive programs for maintaining ground cover (e.g., implement a stream bank conservation easement program with tax credit incentives; encourage and support efforts to revise federal inheritance tax laws; etc.);
- c) support state-level legislative action and develop local regulations to address reduction of sediment and turbidity impacts on surface waters from dirt/soil mining activities (e.g., borrow pits, etc.), requiring use of treated sludge or other material (e.g., “Hydroseed,” etc.) to re-establish ground cover in abandoned pits or use of alternative surfacing material to decrease erosion; and
- d) encourage the use of alternative practices (e.g., mixed uses that include pervious and impervious surfaces, etc.) to limit the amount of potential runoff from impervious surfaces;
- e) work with lending institutions, architects, contractors, and developers to encourage redevelopment practices, and to establish a recognition program to highlight examples of

WHEN

Varies according to step.



WHERE

Mobile Bay NEP Area.

COOPERATORS

ACES; ADIR; AFC; AL Soil and Water Conservation Districts; AUMERC; BCC; CACWP; City of Mobile; County extension agencies; County planning and engineering departments; CPI; dirt road owners; EPA; FEMA; legislative delegation; MCC; MS-4 cooperative partners; Non-permitted governments; NRCS; Phase 2 municipalities; POTF; SARPC; USDA; USFWS, Weeks Bay Watershed Program; and 6217 Programs.

FUNDING

>\$4.2 million.

• ADEM	\$92,000*	• MBNEP	\$8,000
• NRCS	\$65,000	• CIAP	\$943,570
• City of Mobile	\$3,000,000	• Other (below)	\$145,000
*\$12,000 ongoing & \$80,000 new.			
TOTAL.....		>\$4,253,570	

Please see WQ-A1 for a description of the CIAP funds.

Other—University of South Alabama ACES funded projects that relate to this action item.

REGULATORY  
CONSIDERATIONS

- MS4 permitting
- FEMA regulations

RELATED  
ACTIONS

ACEI Consensus Items: ACEI OI 4, 7  
Other CCMP Action Plans: WQ-A1, A2, WQ-D1, HM-A1, HM-D3

ENVIRONMENTAL  
INDICATORS

- Current flow and direction
- Maximum flood and river levels
- Sediment content
- Grain size
- Sedimentation rates

MONITORING  
STRATEGY

Pp. 56, 94, 99

NOTE: Incorporates Action Items HM-C1, HU-A3, WQ-D1, WQ-D3, WQ-D4, WQ-D5, WQ-D6, WQ-D7, WQ-D8, and WQ-D9 as initially described in June, 1999.

## ACTION HU-C1: Increase Public Access and Eco-tourism Opportunities

ACTION PLAN ID

WHAT

Encourage eco-tourism, increase public access sites and awareness of sites and expand camping and recreational facilities in the Mobile Bay NEP area.

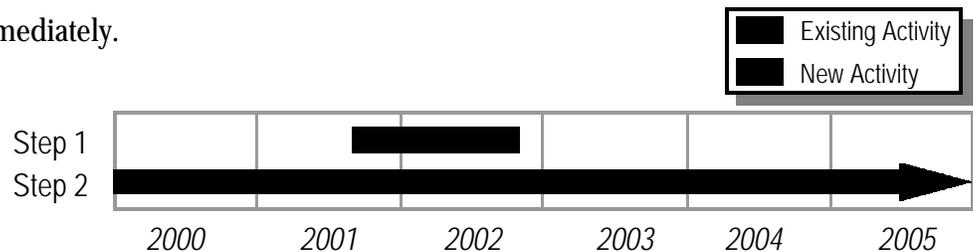
WHO AND HOW

Step 1: MBNEP and ADCNR COASTAL PROGRAMS will conduct a cost/benefit analysis of increasing the availability of camping and recreational facilities and investigate camping on ADCNR land in the Mobile-Tensaw River Delta during off-season.

Step 2: MBNEP, ADCNR COASTAL PROGRAMS, and LOCAL GOVERNMENTS will encourage new developments to provide access such as boardwalks to beaches or waterfront and develop plans to maintain and/or increase public access throughout the study area, including public boat launching facilities.

WHEN

Immediately.



WHERE

Mobile Bay NEP area.

COOPERATORS

ACF; BCC; CVB; ESCOC; local governments; MACOC; MBW/MBK; MCC; MCWCA; SCC; and USFWS.

FUNDING

>\$3 million.

• ADCNR-MRD \$250,000*	• MBNEP	\$4,000
• ADCNR-CP \$15,000*	• CIAP	\$2,735,313
*approximate annual expenditure		
TOTAL .....		>\$3,004,313

Please see WQ-A1 for a description of the CIAP funds.

REGULATORY  
CONSIDERATIONS

None identified.

RELATED  
ACTIONS

ACEI Consensus Items: OI-10, 11, 14  
Other CCMP Action Plans: HM-A1, HM-D1, D2, and D3

ENVIRONMENTAL  
INDICATORS

Recreational boat registrations.

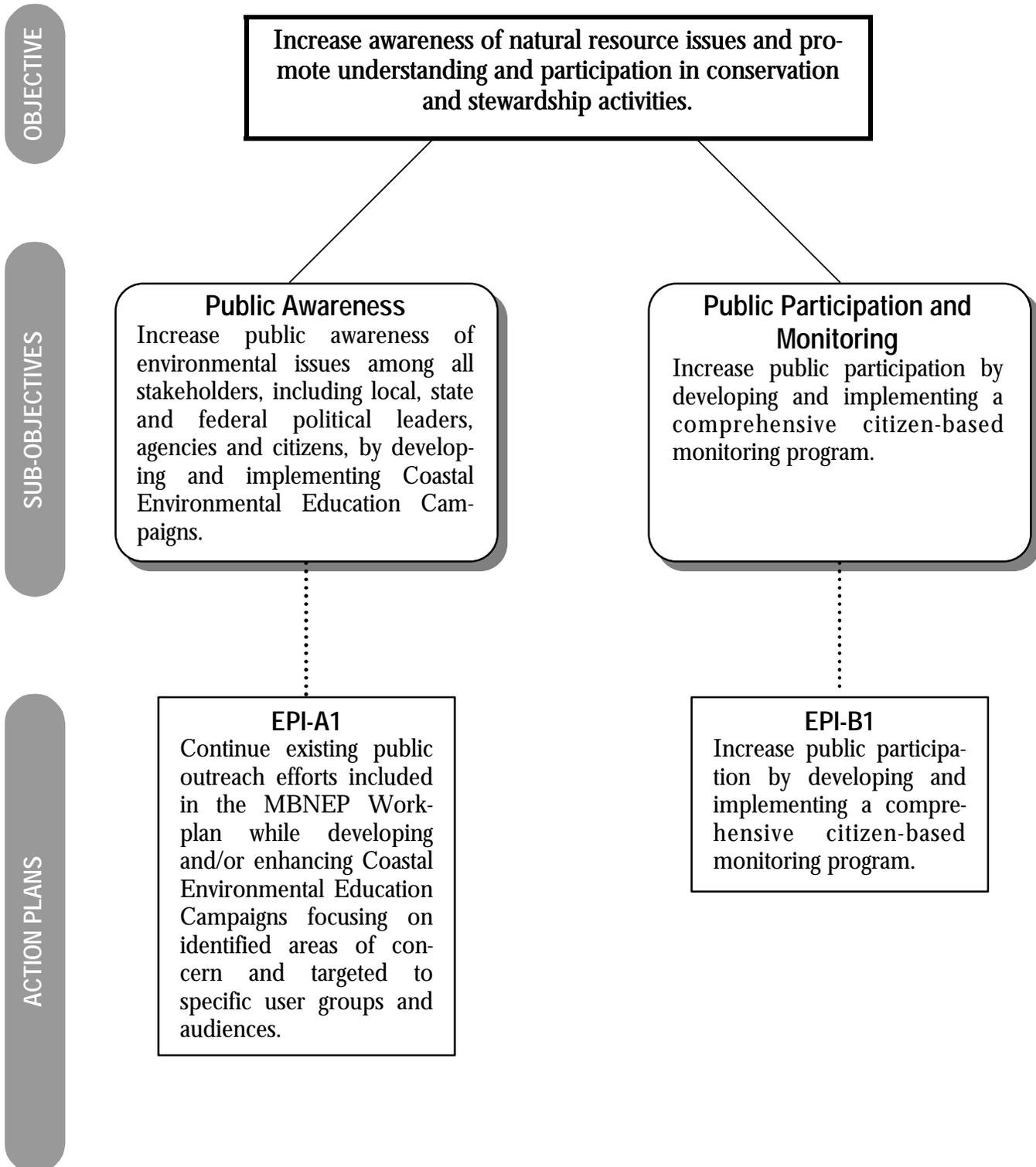
MONITORING  
STRATEGY

Undetermined.

NOTE: Incorporates Action Items HU-C2 and HU-C3 as initially described in June, 1999.

# EDUCATION AND PUBLIC INVOLVEMENT

The Education and Public Involvement Workgroup of the Mobile Bay NEP developed two sub-objectives and two Action Plans to reach the Management Conference objective. Sub-objectives focused on areas of **Public Awareness** and **Public Participation and Monitoring**. The following schematic shows how the items are related:



ACTION PLAN ID

## ACTION EPI-A1: Enhance Public Education and Outreach

WHAT

Continue existing public outreach efforts included in the MBNEP Workplan while developing and/or enhancing Coastal Environmental Education Campaigns focusing on identified areas of concern and targeted to specific user groups and audiences.

WHO AND HOW

Step 1: MBNEP will:

- a) organize, publicize, and implement Local Community Initiatives to effectively collect and incorporate public comment into the draft CCMP; and
- b) continue to update, refine, and implement its Public Outreach Strategy (*see Volume 3 of the CCMP for details*).

Step 2: MBNEP and the Public Outreach Task Force (POTF) will work together to:

- a) assess available educational materials and programs for implementation and/or enhancement locally;
- b) identify gaps in existing educational materials and programs;
- c) coordinate with coastal agencies and educational programs to provide enhanced materials and opportunities for materials delivery;
- d) organize and implement citizen-based activities related to Coast-weeks, Earth Day, and May as “National Wetlands Month.”
- e) develop and distribute educational materials, programs, workshops, etc., on priority environmental issues geared for targeted audiences; and
- f) coordinate outreach efforts with citizen organizations to assure continued citizen input and support.

Step 3: MBNEP and POTF will pool local environmental education and outreach resources and share responsibility for developing and implementing comprehensive Coastal Environmental Education Campaigns to reach *targeted audiences* and address the *priority environmental issues* of the Mobile Bay estuary.

WHO AND HOW  
(continued)

**Targeted Audiences** will include all stakeholders, and efforts will be made to match education programs to those stakeholders who utilize or depend upon the resources of the Mobile Bay estuary.

**Outreach mechanisms** will include, but are not limited to:

- a. Media campaigns;
- b. Development of NPS training and certification programs for municipal officials, developers (for example, include mandatory erosion control training as a component of construction licensing);
- c. Inclusion of environmental education components to licensing programs for boating (specifically include awareness of sensitive estuarine habitat, such as SAV);
- d. Development of brochures targeted to specific issues and audiences;
- e. Creation and installation of signage to mark significant habitats (i.e., SAV, nesting habitat, oyster beds, etc.) and post appropriate behaviors in sensitive habitats;
- f. Development of Public Service Announcements (PSA) and paid advertising, where appropriate, to raise awareness of the MBNEP and local environmental issues;
- g. Creation and distribution of interactive video/computer environmental education activities for students;
- h. Creation of an MBNEP speakers bureau to deliver environmental education messages to a wide audience;
- i. Creation, through partnership with coastal resource management agencies, a Coastal Environmental Resource Center;
- j. Creation and distribution of area maps to user groups (e.g., maps depicting soil erosion potential for use by property owners and developers); and
- k. Creation of incentives to promote sustainable development practices among both contractors and consumers.

**Priority Issue Areas** for targeted education efforts will include:

Water Quality Issues

Nutrients	Pathogens
Toxic chemicals	Hazardous waste disposal
Boat waste	Septic systems
Constructed wetlands	Groundwater
Atmospheric deposition	Ballast discharges

WHO AND HOW  
(continued)

Living Resources Issues

Endangered/threatened species  
Exotic species  
Commercial and recreational fisheries

Harvesting regulations/enforcement  
Biodiversity

Habitat Loss Issues

Wetlands  
Submerged aquatic vegetation  
Dredge materials management  
High priority/critical habitats

Bird breeding and nesting habitats  
Marsh habitats  
Beach dune habitat

Human Uses Issues

Stormwater management  
Greenbelts /riparian corridors  
Redevelopment  
Comprehensive land use planning  
Litter  
Camping and recreation  
Erosion and sedimentation

Water conservation  
Best management practices  
Sustainable development  
Coastal construction line  
Public access  
Inadequately planned development  
Hydrologic modifications

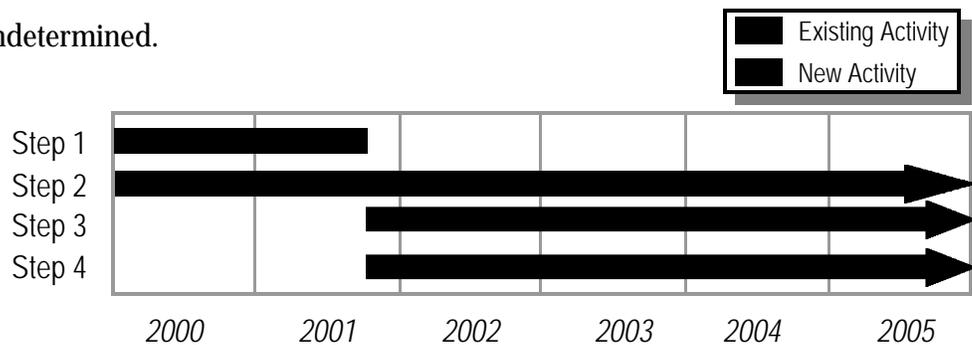
- Step 4. In addition to general Coastal Environmental Education Campaigns, issue Workgroups identified the following specific outreach needs. To fulfill these needs, **MBNEP** and **POTF** will:
- a) work with local governments, GSA, NRCS, and Soil and Water Conservation Districts to produce publicly accessible geologic maps of the MBNEP area to provide advance identification of erosion potential for development areas;
  - b) develop continuing education and instructional training programs addressing erosion control and encourage local governments and permitting authorities to include these programs in licensing requirements for contractors, developers, etc.;
  - c) prepare an informational brochure about fragile SAV habitat, including maps of SAV habitat in the area; brochures will be distributed at public boat launches. In addition, signage will be placed around SAV habitat, cautioning boaters about the consequences of passing over or too near the beds;
  - d) develop a public awareness campaign for at-risk species and coordinate with USFWS, NMFS, and ADCNR to provide publicly available GIS maps and descriptions of listed at-risk species;
  - e) encourage implementation of a fishing license conservation education component for commercial and recreational applicants by:

WHO AND HOW  
(continued)

- identifying or creating a fishing education curriculum that covers basic management and regulatory issues;
- seeking assistance and support of fishers' organizations in developing an education program; and
- encouraging appropriate legislation to add a fishing license education component.

WHEN

Undetermined.



WHERE

Mobile Bay NEP Area, Baldwin and Mobile Counties, and the Mobile Bay Watershed.

COOPERATORS

ACES; ADCNR; ADIR; AFC; Alabama Alternative Fuel Program; Alabama Soil and Water Conservation Districts; Associated Builders and Contractors; Alabama Seafood Association; AUMERC; BASS; CACWP; CCA; County extension agencies; CPI; dirt road owners; DISL; EPA; fisher's organizations; GMP; GSA; HBA; legislative delegation; MCC; MS-4 cooperative partners; MBW/MBK; NRCS; POTF; SARPC; USDA; USGS; watershed groups; Weeks Bay Watershed Program; and 6217 Programs.

FUNDING

\$2.3 million.

• CIAP	\$1,206,000	• MBNEP	\$63,001
• DISL	\$1,020,000	• ADCNR-CP	\$50,000
<b>TOTAL.....</b>		<b>\$2,339,001</b>	

Please see WQ-A1 for a description of the CIAP funds.

**REGULATORY  
CONSIDERATIONS**

Legislative action is needed to change fishing license requirements and possibly license fees to fund the program.

**RELATED  
ACTIONS**

ACEI Consensus Items: OI-17, 18, 19, 20, and 21  
Other CCMP Action Plans: All other issue areas

**ENVIRONMENTAL  
INDICATORS**

None identified.

**MONITORING  
STRATEGY**

Undetermined.

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**NOTE: Incorporates Action Items as initially described in June, 1999.**

## ACTION EPI-B1: Develop Comprehensive Citizen Monitoring and Reporting Programs

ACTION PLAN ID

WHAT

Increase public participation by developing and implementing a comprehensive citizen-based monitoring program.

WHO AND HOW

Step 1: MBNEP and POTF will work with existing citizen-based environmental monitoring efforts to enhance and support their activities.

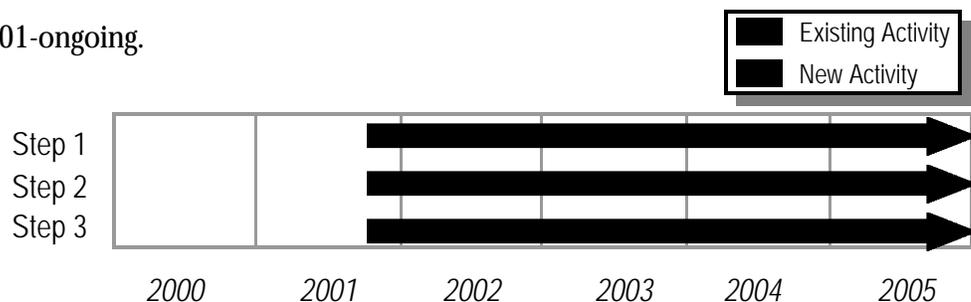
Step 2: MBNEP and POTF will identify additional needs and opportunities, as well as appropriate agencies or partners and facilitate efforts to expand existing monitoring programs and/or create new ones, where appropriate.

Step 3: MBNEP and POTF will establish a one-stop, comprehensive citizen reporting system to:

- a) serve as a clearinghouse for citizen environmental concerns;
- b) educate citizens on reportable violations and responsible agencies;
- c) reduce nuisance complaints to agencies while increasing effectiveness of 'early warning' calls;
- d) track regulatory and public official response to citizen concerns; and
- e) provide additional information to the public and media.

WHEN

2001-ongoing.



WHERE

Mobile Bay NEP Study Area, plus other areas throughout Mobile and Baldwin Counties.

COOPERATORS

ACF; ADCNR Coastal Programs; ADEM; AEC; AWW; CCA; DISL; GMP; and MBW/MBK.

FUNDING

>\$470K.

• CIAP	\$476,500
TOTAL.....\$476,500	

Please see WQ-A1 for a description of the CIAP funds.

REGULATORY  
CONSIDERATIONS

Undetermined.

RELATED  
ACTIONS

None identified

ENVIRONMENTAL  
INDICATORS

None identified.

MONITORING  
STRATEGY

**Undetermined.**

NOTE: Incorporates Action Item EPI-2 as initially described in June, 1999.



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