

Albemarle-Pamlico National Estuary Program



North Carolina Department of Environment
and Natural Resources

•
US Environmental Protection Agency

**Implementation
of the Albemarle-
Pamlico National
Estuary Program
Comprehensive
Conservation &
Management
Plan (CCMP)**

**CRITICAL STEPS
ASSESSMENT !**

January 2000 !

**Albemarle-Pamlico
National Estuary Program
NCDENR - DWQ
1617 Mail Service Center
Raleigh, NC 27699-1617
919-733-5083 ext 585
<http://h2o.enr.state.nc.us/nep/default.htm>**

Table of Contents

I. WATER QUALITY PLAN	1
OBJECTIVE A: Implement a Comprehensive Basinwide Approach to Water Quality Management	1
Management Action 1.....	1
Management Action 2.....	2
Management Action 3.....	2
Management Action 4.....	2
Management Action 5.....	3
Management Action 6.....	3
OBJECTIVE B: Reduce Sediments, Nutrients and Toxicants From Nonpoint Sources	4
Management Action 1.....	4
Management Action 2.....	5
Management Action 3.....	6
Management Action 4.....	7
Management Action 5.....	7
Management Action 6.....	8
Management Action 7.....	9
OBJECTIVE C: Reduce Pollution From Point Sources, such as Wastewater Treatment Facilities and Industry	9
Management Action 1.....	9
Management Action 2.....	10
OBJECTIVE D: Reduce the Risk of Toxic Contamination to Aquatic Life and Human Health	11
Management Action 1.....	11
Management Action 2.....	12
Management Action 3.....	12
OBJECTIVE E: Evaluate Indicators of Environmental Stress in the Estuary and Develop New Techniques to Better Assess Water Quality Degradation	13
Management Action 1.....	13
Management Action 2.....	14
Management Action 3.....	14
II. VITAL HABITATS PLAN	16
OBJECTIVE A: Promote Regional Planning to Protect and Restore the Natural Heritage of the APES Region	16
Management Action 1.....	16
Management Action 2.....	17
Management Action 3.....	18
OBJECTIVE B: Promote the Responsible Stewardship, Protection, and Conservation of Valuable Natural Areas in the APES Region	19
Management Action 1.....	19
Management Action 2.....	20
OBJECTIVE C: Maintain, Restore, and Enhance Vital Habitat Functions to Ensure the Survival of Wildlife and Fisheries	20
Management Action 1.....	20
Management Action 2.....	21
Management Action 3.....	22
Management Action 4.....	23
III. FISHERIES PLAN	24
OBJECTIVE A: Control Over-Fishing by Developing and Implementing Fishery Management Plans for All Important Estuarine Species	24
Management Action 1.....	24
Management Action 2.....	25
OBJECTIVE B: Promote the Use of Best Fishing Practices that Reduce Bycatch and Impacts on Fisheries Habitats	26
Management Action 1.....	26
Management Action 2.....	27

IV. STEWARDSHIP PLAN	28
OBJECTIVE A: Promote Local and Regional Planning that Protects the Environment and Allows for Economic Growth	28
Management Action 1	28
Management Action 2	28
Management Action 3	29
Management Action 4	30
OBJECTIVE B: Increase Public Understanding of Environmental Issues and Citizen Involvement in Environmental Policymaking.....	30
Management Action 1	30
Management Action 2	31
Management Action 3	31
Management Action 4	32
Management Action 5	32
OBJECTIVE C: Ensure that Students, Particularly in Grades K-5, are Exposed to Science and Environmental Education.....	33
Management Action 1	33
Management Action 2	33
V. IMPLEMENTATION PLAN.....	35
OBJECTIVE A: Coordinate Public Agencies Involved in Resource Management and Environmental Protection to Implement the Recommendations of the CCMP.	35
Management Action 1	35
Management Action 2	36
OBJECTIVE B: Assess the Progress and Success of Implementing CCMP Recommendations and the Status of Environmental Quality in the Albemarle-Pamlico Region.....	37
Management Action 1	37
Management Action 2	37

FORWARD

The Albemarle-Pamlico National Estuary Program (APNEP), a part of US Environmental Agency's National Estuary Program, culminated in the preparation of a Comprehensive Conservation and Management Plan (CCMP). The CCMP, intended as a practical, cost-effective and equitable approach to restoring, enhancing and protecting the valuable resources of the Albemarle-Pamlico watershed, was ratified by the Governor of North Carolina and US EPA in November 1994. Implementation of the CCMP is being administered through the Division of Water Quality within the NC Department of Environment and Natural Resources (DENR).

Much progress has been made in implementing the objectives of the CCMP. This report provides an assessment of the "progress" -- or lack of progress -- for each of the CCMP's 49 Management Actions since 1994. Each Management Action contains a list of "Critical Steps" which are the specific measures that need to be taken in order to implement the management action. This document is an assessment of those steps.

With substantial input from DENR agency staff and others, APNEP staff assigned the Critical Steps a numerical grade based on the level of success that has been achieved regarding implementation of the activities outlined within each Critical Step. The sum of the numeric grades of all critical steps in a Management Action was then divided by the number of critical steps in the Management Action to arrive at a numerical grade that corresponds to the final grade assigned to the overall Management Action. The results of this assessment were used to develop the 2000 APNEP CCMP Report Card.

The following scale was used during the assessment and for the development of the report card:

5 Points = Critical Step Fully implemented (100% complete)
4 Points = Substantial progress (75-99%)
3 Points = Moderate progress (50-74%)
2 Points = Some progress (25-49%)
1 Points = Minimal progress (1-24%)
0 Points = No progress (0%)

This critical steps assessment document, which supplements previous CCMP implementation progress reports developed in 1996, 1997 and 1998, contains the latest available information and represents the most comprehensive assessment of CCMP implementation activities to date.

The goals, objectives, management actions and explanations contained in this document are taken directly from the APNEP CCMP. Periodic updates to this document will occur as further progress is made in implementing the CCMP's management actions.

I. WATER QUALITY PLAN (CCMP Page 25)

GOAL: Restore, maintain or enhance water quality in the Albemarle-Pamlico region so that it is fit for fish, wildlife and recreation.

OBJECTIVE A: Implement a Comprehensive Basinwide Approach to Water Quality Management

MANAGEMENT ACTION 1

Develop and begin implementing basinwide plans to protect and restore water quality in each basin according to the schedule established by the Division of Water Quality. The plans would include provisions for basinwide wetland protection and restoration.

!

Explanation: Basinwide plans are comprehensive, targeted strategies for managing water quality. They assess the cumulative impact of individual projects on water quality within a basin. They can identify and manage pollutants in a way that protects water quality while accommodating economic growth. Basinwide protection and restoration also can help assess and preserve wetlands functions.

Critical Steps Assessment

1. **Fully implemented (5 points)**
Division of Water Quality (DWQ) continues to develop basinwide water quality plans according to schedule.
2. **Substantial progress (4 points)**
Moving forward, however, input from Regional Councils has not been achieved.
3. **Substantial progress (4 points)**
Wetland inventories and functional assessments are included in Division of Coastal Management's (DCM) Wetlands Conservation Plans and DWQ's Basinwide Wetlands and Riparian Restoration Plans on a project by project basis.
4. **Fully implemented (5 points)**
The importance of wetlands to overall water quality management is included in the basinwide water quality plans.
5. **Fully implemented (5 points)**
Portions of agriculture cost share and the federal Section 319 funds are supporting projects that protect and restore wetlands. Approved BMPs, as part of the Forested Wetlands BMP document, are in compliance with current wetlands regulations.
6. **Fully implemented (5 points)**
DWQ does utilize DCM's information regarding the identification and evaluation of wetlands on a county-level basis.
7. **This critical step is redundant.** Same as #4 above.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.67/5.0 = 93% (Substantial Progress)

MANAGEMENT ACTION 2

Establish total maximum daily loads (TMDLs) and associated control strategies for all impaired streams in the Albemarle-Pamlico region by 1999.

!

Explanation: Total maximum daily loads estimate the amount of pollution that can safely enter a body of water. To determine limits to these daily loads, current and projected levels of pollution must be considered in relation to what the system can absorb. Proper use of TMDLs will allow development of management strategies to ensure long-term sustainable growth that does not harm the state's water resources.

Critical Steps Assessment:

1. Some progress (2 points)

Division of Water Quality (DWQ) continues to establish total maximum daily loads (TMDLs) for targeted watersheds within a basin. Much focus has been applied to the Neuse River basin. However, TMDLs have not been established for the majority of freshwater bodies identified on DWQ's 303(d) list of impaired waters. DWQ continues to evaluate key parameters as necessary to ensure limited degradation of water resources.

2. Some progress (2 points)

This is part of the TMDL development process, although input from the Regional Councils has not been achieved.

MANAGEMENT ACTION SUMMARY
Management Action Points: 2.0/5.0 = 40% (Some Progress)

MANAGEMENT ACTION 3

Renew all discharge permits in a river basin simultaneously by 1999.

Explanation: Renewing permits simultaneously allows the Division of Water Quality (DWQ) to consider the total impact from all dischargers when determining how much pollution each may release into the basin.

Critical Steps Assessment:

1. Fully implemented (5 points)

DWQ places expiration dates on all permits within a basin that expire in the same year.

2. Fully implemented (5 points)

New or revised limits are incorporated into permits as appropriate.

MANAGEMENT ACTION SUMMARY
Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

MANAGEMENT ACTION 4

Consider the potential for long-term growth and its impacts when determining how a basin's assimilative capacity will be used.

!

Explanation: Assimilative capacity is the ability of a river basin to safely absorb pollutants. Basinwide planning should ensure that this capacity is used in a way that sustains long-term growth. However, planning for long-term growth also must consider how secondary impacts such as runoff from new roads will affect water quality.

Critical Steps Assessment

1. Fully implemented (5 points)

Based on available data, point source allocations are distributed on a case-by-case basis in accordance with available data.

2. Substantial progress (4 points)

Distribution of available capacity for a given receiving stream is evaluated on a case-by-case basis during both the basinwide planning and permit renewal process.

3. Fully implemented (5 points)

New permits or modifications to existing permits are required to either submit SEPA documentation or alternative analysis. Should results of the document indicate that there will be significant impacts associated with the proposed activity, the request is either denied or changed. Should the application be accepted, the permit will be developed in accordance to water quality standards and classifications associated with the receiving stream.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.7/5.0 = 94% (Substantial Progress)

MANAGEMENT ACTION 5

Improve the scientific models for understanding the estuarine system, the effects of human activities on the system and the viability of alternative management strategies.

!

Explanation: Scientists use models to understand how systems work. Models for the Albemarle-Pamlico's river basins have been developed, but further refinement and calibration are needed to determine how much pollution can be safely released into the estuary (i.e., total maximum daily loads). This would allow regulators to focus on the most critical sources of pollution, thereby reducing the cost of regulation, monitoring and enforcement. Increased knowledge gained from models will help planners manage water resources to allow for future growth.

Critical Steps Assessment

1. Substantial progress (4 points)

Although a formal work group composed of state, federal and private agencies has not been assembled to coordinate current and future hydrologic and water quality modeling efforts, input and data from these agencies is part of the Division of Water Quality's modeling development process.

2. Substantial progress (4 points)

Modeling is ongoing in the Neuse, Tar-Pamlico and Roanoke basins. Funding has been allocated from the General Assembly to develop models in the Neuse basin.

3. Substantial progress (4 points)

Models are used in the permitting strategy of point source dischargers and in the development of TMDLs. They are designed to support the overall permitting strategy.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.0/5.0 = 80% (Substantial Progress)

MANAGEMENT ACTION 6

Continue long-term, comprehensive monitoring of water quality in the APES system, collecting data to assess general system health and target regional problems.

!

Explanation: On a system-wide basis, water quality monitoring allows managers to assess the effectiveness of management strategies. In addition, monitoring data may be used to develop scientific

models or other methods of evaluating water quality on a smaller scale. Continued monitoring also would assess long-term trends.

Critical Steps Assessment

1. Fully implemented (5 points)

The Division of Water Quality (DWQ) and US Geological Survey (USGS) continue to conduct water quality monitoring at strategic locations within the Albemarle-Pamlico system. Monitoring activity has substantially increased in the Neuse and Tar-Pamlico River basins.

2. Fully implemented (5 points)

The Environmental Monitoring and Assessment Program (EMAP) has been conducted by NOAA. They did additional monitoring in response to Hurricane Floyd. The Citizens Water Quality Monitoring Program (CWQMP) remains active at various estuarine locations.

3. Fully implemented (5 points)

Work by USGS' National Water Quality Assessment Program has provided the Division of Water Quality with very useful information.

4. Fully implemented (5 points)

DWQ, USGS and CWQMP collect water quality data as needed in response to possible concerns.

5. Some progress (2 points)

DWQ is not aware of an effort to expand benthos monitoring from fixed stations in the estuaries. They will continue to rely on EMAP indicators. There is progress underway regarding pesticide monitoring - which will be incorporated into the ambient monitoring network.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.4/5.0 = 88% (Substantial Progress)

OBJECTIVE B: Reduce Sediments, Nutrients and Toxicants From Nonpoint Sources!
--

!
 **MANAGEMENT ACTION 1**

For each river basin, develop and implement a plan to control nonpoint source pollution as part of the basinwide management plans. !!

!
Explanation: Plans would address all nonpoint sources of pollution in each basin, targeting the most critical areas for controls. These plans would identify the nonpoint source pollution problems specific to each basin. Implementation would vary according to each basin's needs. Plans also would include strategies to control nonpoint source pollution in accordance with the total maximum daily loads (TMDLs) established for each basin. Possible measures include targeted funds for implementation of BMPs, buffer strips along waterways, and continued use of BMPs for highway construction.

Critical Steps Assessment

1. Substantial progress (4 points)

Although comprehensive nonpoint source control plans have not been developed, a comprehensive array of programs exist to address NPS issues (e.g., the nutrient reduction strategies of the Neuse and Tar-Pamlico basins and water quality improvements in the Chowan basin due to effective NPS efforts).

2. Substantial progress (4 points)

The current basinwide management plans developed by DWQ identify the programs that control pollutants from various sources. These documents provide a picture of the NPS impacts in each basin. Basinwide plans are not intended to "develop methods" of controlling pollution from land-disturbing activities. General recommendations for controlling NPS pollution are presented in the basinwide plans.

3. Substantial progress (4 points)

The targeting of degraded areas is moving forward through DWQ's TMDL Program, Unified Watershed Assessment (UWA), Conservation Reserve Enhancement Program (CREP), Wetlands Restoration Program and Clean Water Management Trust Fund grants (e.g., grant awarded to DWQ to increase personnel to assess problem watersheds to better understand causes and sources of impairment. The outcome of the grant is to develop fundable restoration strategies to improve impaired waters).

4. Fully implemented (5 points)

A database of use-support ratings, 303(d) list of impaired streams and 305(b) report on water quality conditions has been developed. CGIA utilized a CWMTF grant to develop a user-friendly GIS-tool containing 100 layers of geospatial data specific to each river basin.

MANAGEMENT ACTION SUMMARY
Management Action Points: 4.2/5.0 = 84% (Substantial Progress)

MANAGEMENT ACTION 2

Expand funding to implement nonpoint source pollution controls, particularly agricultural best management practices through the N.C. Agriculture Cost Share Program, and also to develop a broader Water Quality Cost Share Program. Expand the cost share programs to include wetlands restoration. Increase cost share funds to problem areas.

Explanation: Economic incentives and technical assistance have been effective in promoting nonpoint source pollution controls in agriculture. Under this initiative, the Agriculture Cost Share Program would expand and a new Water Quality Cost Share Program, modeled after the one for agriculture, would be created. Cost-sharing would give farmers, marina owners, forestry operations and individual land owners greater incentive to reduce nonpoint source pollution.

Critical Steps Assessment

1. Fully implemented (5 points)

The General Assembly increased funding to the NC Agriculture Cost Share Program in 1996 and 1997 to assist farmers with installation of BMPs and technical assistance.

2. Fully implemented (5 points)

The Division of Soil & Water Conservation (DSWC) hired 10 technicians to target funding and technical assistance in the Neuse basin. Basinwide plans and 303(d) list of impaired streams are used to target priority areas.

3. Fully Implemented (5 points)

A new Water Quality Cost Share Program has not been developed. Rather, substantial funding from the Clean Water Management Trust Fund, Wetlands Restoration Program, NRCS' EQIP (Environmental Quality Incentives Program) and USDA's CREP provide money for targeted BMP installation and technical assistance.

4. Fully Implemented (5 points)

Staff increases have occurred in DWQ, DSWC, Division of Forest Resources, Division of Land Resources, Division of Waste Management and Division of Environmental Health to implement the programs in #3 above.

5. Substantial progress (4 points)

Technical manuals have been developed to better manage land use (e.g., on-site wastewater treatment, stormwater BMPs, forestry upland/wetland BMPs, and Wetlands Restoration Plan documents).

6. Moderate (3 points)

Implementing the most cost-effective controls for NPS is ongoing in the Neuse and Tar-Pamlico basins.

7. No longer applicable.

This critical step assumes the new Water Quality Cost Share Program has been developed. The programs presented in #3 above provide a great source of funds used to control NPS pollution.

MANAGEMENT ACTION SUMMARY Management Action Points: 4.5/5.0 = 90% (Substantial Progress)

 **MANAGEMENT ACTION 3**

Continue to research and develop alternative septic systems and new best management practices to reduce nonpoint source pollution.

Explanation: Alternative septic systems will help protect the environment and support long-term growth by providing effective waste treatment for eastern North Carolina. BMPs improve septic system performance and reduce costly repairs. Developing and demonstrating additional BMPs for other sources of pollution, such as runoff from agricultural lands, urban lands, and highways, would provide proactive, cost-effective means to reduce nonpoint source pollution.

Critical Steps Assessment

- 1. Fully implemented (5 points)**
The Vernon James Research & Extension Center, located in Plymouth, is used to demonstrate various on-site wastewater technologies and to train environmental health specialists, on-site wastewater system operators, and other interested parties.
- 2. Fully implemented (5 points)**
Researchers with the NC Cooperative Extension Service have implemented alternative on-site wastewater systems at various locations in the Albemarle-Pamlico region.
- 3. Fully implemented (5 points)**
Education and outreach are a major focus of developing and implementing these alternative systems.
- 4. Moderate progress (3 points)**
The Division of Water Quality, US Geological Survey and NC Cooperative Extension Service has/is conducting research on groundwater BMPs; particularly with riparian buffers and controlled drainage structures.
- 5. Moderate progress (3 points)**
Extensive development and implementation of agricultural and non-agricultural BMPs has occurred in the Neuse and Tar-Pamlico basins.
- 6. Moderate progress (3 points)**
Federal Section 319 funds have been used to support demonstration projects regarding the development of non-agricultural BMPs to protect surface and groundwater.
- 7. Fully implemented (5 points)**
Two riparian buffer protection rules are moving forward in the Neuse and Tar-Pamlico basins. The Department of Environment & Natural Resources is forming a partnership with a federal agency to initiate a buffer incentive program totaling over \$280 million in the Chowan, Neuse, Tar-Pamlico and upper Cape Fear basins. Buffers are also a statewide agriculture cost share item.
- 8. Fully implemented (5 points)**
The Environmental Management Commission, Soil & Water Conservation Commission, Division of Soil & Water Conservation, Natural Resource Conservation Service and Crop Extension Service formed a work group to discuss buffer locations, matrix of BMPs, type of vegetation, etc. As a result, these efforts laid the foundation for buffer rules moving forward in the Neuse and Tar-Pamlico basins.
- 9. Fully implemented (5 points)**
DWQ's Wetlands Restoration Program has taken the lead in utilizing GIS to assess the current extent of stream-side buffers in river basins statewide.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.33/5.0 = 87% (Substantial Progress)
--

MANAGEMENT ACTION 4

Strengthen current enforcement to detect and correct ground and surface water quality violations from nonpoint sources.

!

Explanation: Although current enforcement authority exists, nonpoint sources of water quality violations are difficult to identify because they are varied and often widespread. The Division of Water Quality's (DWQ's) Water Quality and Groundwater Sections would strengthen enforcement to ensure that these violations are identified and corrected.

Critical Steps Assessment

1. Fully implemented (5 points)

Six inspector positions were created by DWQ and assigned to the Washington Regional Office. Four will inspect animal operations, one will be responsible for general non-discharge operations and one will implement buffer rules.

2. Fully implemented (5 points)

See #1 above.

3. Substantial progress (4 points)

Inspectors consider basinwide monitoring data as they work with violators on a case-by-case basis. Enforcement is prioritized based on the level of environmental impact.

4. Substantial progress (4 points)

DWQ has conducted workshops to assist farmers and soil/water specialists regarding the use of BMPs. Certified operator training is now required for all animal waste management systems. Stormwater technicians undergo technical training and participate in educational workshops.

5. Substantial progress (4 points)

Assessments (civil penalties) are issued according to the severity of environmental impact.

6. Fully implemented (5 points)

Staff at the Washington Regional Office, home to the Neuse and Tar-Pamlico Rapid Response Teams, coordinate work with EPA and the US Coast Guard on assessment and remedial activities.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.5/5.0 = 90% (Substantial Progress)

MANAGEMENT ACTION 5

Strengthen implementation of forestry best management practices through training, education, technical assistance and enforcement. !

!

Explanation: Proper use of forestry best management practices is critical for water quality protection in the APES region. Additional professional foresters would provide needed outreach and technical assistance to forestry operators and landowners regarding implementation of BMPs. Enhanced enforcement would ensure proper use of forestry BMPs and help to eliminate improper forestry practices. Participation by loggers and landowners in education programs, such as the Professional Loggers Program, is vital to the expanding goals of the forest products industry. Forestry workshops create an opportunity for landowners to learn about forestry management and the use of acceptable forestry BMPs.

Critical Steps Assessment

1. Substantial progress (4 points)

The Division of Forest Resources (DFR) has added seven positions across the state to provide outreach and technical assistance on forestry BMPs. Three of the five districts in the Albemarle-Pamlico region are now covered by these positions.

2. Fully implemented (5 points)

The Division of Land Resources (DLR) has increased its personnel to enforce the requirements of the Sedimentation Pollution Control Act. While not specifically hired to address forestry issues, personnel are cross-trained in areas of erosion/sedimentation control, dam safety, mining and education. Forestry issues are high priority with DLR and there has been increased coordination between DLR and DFR.

3. Fully implemented (5 points)

The DFR, Forestry Association and Cooperative Forest Extension Service have fully implemented a series of ongoing education workshops which promote the use of environmentally sound forestry practices.

MANAGEMENT ACTION SUMMARY Management Action Points: 4.67/5.0 = 93% (Substantial Progress)
--

MANAGEMENT ACTION 6

Enhance stormwater runoff control by strengthening existing regulations and developing new ones, if needed, by 1995. Improve enforcement to ensure that stormwater management systems are properly installed and regularly maintained.

! **Explanation:** At present, the North Carolina Stormwater Management Program targets priority areas and high risk pollutant sources. Additional benefits from this program may be realized by evaluating expansion of the areas of coverage to target more -- or potentially all -- waters. Under this initiative, various regulating agencies would coordinate their efforts to protect all state waters. The Division of Water Quality (DWQ) would dedicate more staff time to monitoring the installation, operation and maintenance of stormwater systems. A critical part of enforcement would be providing education and technical assistance to private land owners, industries, municipalities and others required to comply with these regulations.

Critical Steps Assessment

1. Substantial progress (4 points)

Since 1994, DWQ has modified its stormwater rules; creating a more structured permitting process. Also, DWQ has expanded stormwater rules in the Neuse and Tar-Pamlico basins. DWQ is currently evaluating the federal Phase II Stormwater Rules for future implementation.

2. N/A - Information currently unavailable

3. Moderate progress (3 points)

Most research evaluating the effectiveness of management practices in protecting water quality in coastal areas has been conducted by universities. DWQ has done some studies as funding (e.g., Section 319 funds) becomes available.

4. Substantial progress (4 points)

Since 1994, DWQ has added 1 ½ full time positions dedicated to coastal stormwater issues. DWQ has conducted many educational workshops throughout the coastal area.

MANAGEMENT ACTION SUMMARY Management Action Points: 3.67/5.0 = 73% (Moderate Progress)

MANAGEMENT ACTION 7

Implement an inter-agency state policy that addresses marina siting and integrates best management practices through permitting and better public education.

!

Explanation: There is no consensus on the cumulative impact of marinas on the estuary or on how to manage marina development. A state marinas policy would coordinate agencies concerned with regulating and planning for marinas. It would address such issues as public trust rights and siting, and would integrate new best management practices. New BMPs include designing marinas to contain oil spills and pollution, minimizing the impact of turbulence from boating outside marinas, and controlling pollution from fish wastes and boat cleansers. A marinas policy, along with the appropriate regulations, would be a guide for local government planning. Public education, particularly boater education, plays an integral role in encouraging best management practices.

Critical Steps Assessment

1. Some progress (2 points)

The current permitting process allows for inter-agency coordination (Division of Water Quality, Division of Marine Fisheries, DEH's Shellfish Sanitation Branch and Division of Coastal Management) for the review of new marina permits. Each agency has the opportunity to comment on various resource issues/concerns. However, there has been no formal organization of an inter-agency marina policy committee to address the cumulative impacts of marina sitings in the coastal zone as referred to by this management action.

2. Some progress (2 points)

A comprehensive state marina policy has not been created, but each agency involved in the permit review process has a defined role.

3. No progress (0 points)

This action is predicated on the creation of a comprehensive state marina policy.

4. No progress (0 points)

This action is predicated on the creation of a comprehensive state marina policy.

5. Substantial progress (4 points)

BMPs are considered and encouraged in the current permit review process. Applications referencing the implementation of marina BMPs, receive greater probability of acceptance than those that do not.

6. Substantial progress (4 points)

The Division of Coastal Management (DCM) provides funding (via the Clean Vessel Act) to marina operators to install pump-out stations at their facilities. More than 30 marinas located in the Albemarle-Pamlico region have installed pump-out facilities since 1995. Educational materials have been produced. DCM will also be enrolling marinas under the new Clean Marina Program -- awarded to environmental-friendly marinas.

MANAGEMENT ACTION SUMMARY

Management Action Points: 2.0/5.0 = 40% (Some Progress)

OBJECTIVE C: Reduce Pollution From Point Sources, such as Wastewater Treatment Facilities and Industry.!

!

MANAGEMENT ACTION 1

Promote pollution prevention planning and alternatives to discharge, where feasible, for all point sources to reduce the volume and toxicity of discharges.

!

Explanation: Environmental problems surface when inadequately controlled or treated wastewater is discharged into the system. Pollution prevention programs are a proactive measure aimed at reducing waste at its source. These programs make treatment more efficient, reduce pollutants in the waste stream, and lower cleanup costs for industry and government. When appropriate, alternatives to discharge should be encouraged.

Critical Steps Assessment

1. **Fully implemented (5 points)**
There is increased coordination between the Division of Pollution Prevention and Environmental Assistance (DPPEA) and DWQ's Pretreatment Program to help reduce/improve inputs and operating costs from point source discharges.
2. **Moderate progress (3 points)**
DPPEA has not done much targeting of facilities found in violation of their NPDES permit. Been more successful in working with facilities under pretreatment permits.
3. **Fully implemented (5 points)**
DPPEA provides information regarding pollution prevention planning to all facilities.
4. **Fully implemented (5 points)**
DPPEA works directly with industries to reduce waste.
5. **Fully implemented (5 points)**
DPPEA encourages all facilities with approved pretreatment programs to develop pollution prevention programs. DPPEA also provides technical support to implement this effort.
6. **Fully implemented (5 points)**
DWQ does require the use of non-discharge alternatives where feasible.

MANAGEMENT ACTION SUMMARY
Management Action Points: 4.7/5.0 = 94% (Substantial Progress)

MANAGEMENT ACTION 2

Expand and strengthen enforcement of National Pollutant Discharge Elimination System (NPDES) permits. Increase site inspections and review of self-monitoring data to improve facility compliance by 1995.

!

Explanation: Increasing the staff of the Division of Water Quality's (DWQ) Compliance Group would allow for more frequent site inspections and would enhance enforcement. More frequent inspections would improve communication between the Division and dischargers, and would help prevent some violations before they occur. Stronger enforcement would dampen incentives for dischargers to violate their permits.

Critical Steps Assessment

1. **Fully implemented (5 points)**
The General Assembly made statutory changes to increase permit fees beginning January 1999. Generally, there has been an increase in personnel in DWQ's Point Source Compliance Unit.
2. **Fully implemented (5 points)**
DWQ added personnel to their Regional Offices with specific responsibility of insuring compliance. However, there is a need for additional personnel for more frequent inspections, etc.
3. **Fully implemented (5 points)**
Since 1994, DWQ has rewritten its enforcement policies and implemented new enforcement strategies regarding NPDES and non-discharge permitted facilities. This allows for much quicker response and enforcement actions.
4. **Fully implemented (5 points)**
DWQ staff perform inspections and seek enforcement actions as necessary.

5. Fully implemented (5 points)

Review of permits and effluent data are a part of the permitting process.

6. Moderate progress (3 points)

A recent lawsuit determined that SEPS (supplementary environmental projects) are illegal, therefore, not allowing much flexibility to develop innovative methods of enforcement. DWQ has, however, reevaluated its enforcement policy and is now implementing a more rigorous policy

MANAGEMENT ACTION SUMMARY
Management Action Points: 4.7/5.0 = 94% (Substantial Progress)

OBJECTIVE D: Reduce the Risk of Toxic Contamination to Aquatic Life and Human Health.

!

MANAGEMENT ACTION 1

Increase efforts to assess and monitor the extent of estuarine sediment contamination, fish and shellfish tissue contamination, water quality violations, and to identify the causes and sources of these problems.

!

Explanation: Several areas within the Albemarle-Pamlico region have been identified as exceeding levels of concern for toxicity in water, sediment and fish tissue. Any additional contaminated sites should be identified. Existing contaminated sites would be evaluated to determine the extent of the problem and its impact on aquatic life, wildlife and human health. Management actions should focus on reducing or eliminating further contamination in areas of concern.

*Critical Steps Assessment***1. Some progress (2 points)**

As a result of Hurricane Floyd, the NC General Assembly has appropriated funds to be used by DWQ to conduct broad scale sediment sampling and tissue analyses in the Albemarle-Pamlico region. EMAP is conducting sediment sampling as well.

2. Some progress (2 points)

Closely related to #1 above.

3. No progress (0 points)

The frequency of sediment sampling and toxicity testing is dependent on the amount of funds provided by the General Assembly. This effort will include the upper and outer estuaries. It has not been determined how long DWQ would continue ambient water quality monitoring at those sites identified as being most contaminated.

4. Substantial progress (4 points)

CGIA does not have databases regarding water quality standard excesses on a case-by-case basis. Use support and benthos classification layers most closely resemble this data. DWQ uses GIS information extensively to determine potential pollution sources and causes.

5. Ranking not applicable

Feasible to do if sediment toxicants are identified as problems, but we don't know that yet.

6. Moderate progress (3 points)

Those actions have been taken where necessary.

7. Moderate progress (3 points)

Where necessary, DWQ has increased efforts to monitor the concentrations of chemical contaminants in fish and shellfish tissues to identify additional contaminated areas.

8. Fully implemented (5 points)

The Division of Epidemiology's Occupational and Environmental Epidemiology Section continues to evaluate fish data and develop criteria for appropriate action to protect public health.

9. Fully implemented (5 points)

DWQ continues to conduct intensive monitoring of fish and shellfish at sites where tissue concentrations are a human health concern.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.0/5.0 = 60% (Moderate Progress)

 **MANAGEMENT ACTION 2**

Continue to issue fish advisories as necessary to protect public health. Improve communication and education about the risks associated with eating contaminated fish and shellfish.

!

Explanation: Regional fish advisories alert the public to the potential health hazards of eating contaminated fish. The Environmental Epidemiology Section (EES) would continue to review fish tissue analyses and issue advisories as necessary. Public outreach and education should stress the risks associated with eating contaminated seafood to the general population and sensitive populations (e.g., women of child-bearing age and children).

Critical Steps Assessment

1. Fully implemented (5 points)

DWQ conducts intensive monitoring of fish at those sites where tissue concentrations are of concern to human health based on criteria developed by the Division of Epidemiology's Occupational and Environmental Epidemiology Section (DEOEE).

2. Fully implemented (5 points)

DEOEE evaluates EPA's risk assessment approach whenever issuing fish consumption advisories.

3. Fully implemented (5 points)

Creel surveys of fishermen are conducted as needed on a case-by-case basis. Recently, a survey of bank fishermen was conducted in an effort to learn more about mercury contamination in fish tissue.

4. Fully implemented (5 points)

Fish consumption advisories are determined by DEOEE utilizing a risk assessment approach for fish and shellfish consumption at known contaminated sites. Public information is disseminated.

MANAGEMENT ACTION SUMMARY
Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

 **MANAGEMENT ACTION 3**

Remediate toxic contamination where necessary and feasible.

!

Explanation: Considerable efforts should be made to remedy contamination that is an immediate threat to human health and aquatic life. The Division of Water Quality (DWQ) would proceed with sediment cleanup only where necessary and where remediation activities would not cause further damage to ecological communities.

Critical Steps Assessment

1. **Some progress (2 points)**
DWQ and Division of Solid Waste Management evaluate remediation actions of contaminated areas as necessary.
2. **Some progress (2 points)**
Responsible parties are identified and sediment clean-up is pursued where necessary. Known contaminated sediment sites are being monitored.
3. **Some progress (2 points)**
Consider placement of contaminated sites on the National Priority List for clean-up.

MANAGEMENT ACTION SUMMARY

Management Action Points: 2.0/5.0 = 40% (Some Progress)

OBJECTIVE E: Evaluate Indicators of Environmental Stress in the Estuary and Develop New Techniques to Better Assess Water Quality Degradation. !

MANAGEMENT ACTION 1

Continue to track and evaluate indicators of environmental stress, including algal blooms, fish kills, and fish and shellfish diseases. !

!

Explanation: Biological assessments are useful in evaluating the integrity of the estuarine system. Traditional biological indicators such as algal blooms and fish kills can signify water quality problems that chemical and toxicological monitoring may have missed or underestimated.

Critical Steps Assessment

1. **Substantial progress (4 points)**
Although North Carolina already had among the most complete fish kill monitoring records, there has been increased coordination between agencies responsible for responding to algal blooms, fish kills, and fish and shellfish diseases. DENR established a team to develop a comprehensive response to *Pfiesteria* occurrences. Rapid response teams have been established in the Neuse and Tar-Pamlico basins. There has been progress in phytoplankton and algal bloom monitoring, but there is a need for more organismal-level monitoring of stressors regarding fish and shellfish populations.
2. **Fully implemented (5 points)**
Databases on algal blooms and fish kills are being developed and maintained.
3. **Fully implemented (5 points)**
Collaboration and partnerships between DENR, scientists and other relevant experts has occurred.
4. **Fully implemented (5 points)**
In 1996, DWQ, in consultation with the Wildlife Resources Commission and Division of Marine Fisheries, instituted a new fish kill investigation procedure which established a set of protocols and standardized reporting sheets for better documentation.
5. **Minimal progress (1 point)**
There has been minimal involvement by members of the Citizens Water Quality Monitoring Program to assist in acquiring data for algal blooms and/or fish kills.
6. **Substantial progress (4 points)**
Appropriate agencies have utilized information generated by the Albemarle-Pamlico Estuarine Study

and other research by scientists. Necessary research continues through MODMON in the Neuse basin and will get a boost from recent General Assembly allocations resulting from Hurricane Floyd.

7. Minimal progress (1 point)

CGIA does not develop data layers regarding environmental events on a case-by-case basis.

8. Fully implemented (5 points)

Although CGIA does not maintain this information, reliable maps of fish kill events are developed and utilized to track the frequency and extent of these events.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.75/5.0 = 75% (Substantial Progress)

 **MANAGEMENT ACTION 2**

Improve the techniques for evaluating the overall environmental health of estuarine waters.

! **Explanation:** The sensitivity and diversity of organisms inhabiting an area can be an indication of the system's overall environmental health. Further research is needed to target these "indicator species" in the estuary. Once found, these organisms could be used to monitor the general state of the system and indicate areas that warrant further attention.

Critical Steps Assessment

1. Substantial progress (4 points)

DWQ has determined that the most effective bio-assessment techniques in the estuaries are the population level indicators (e.g., algal populations, fish species populations and fish catches). Significant progress has also been made in bioassessment techniques utilizing benthos.

2. Moderate progress (3 points)

Standardized benthic sampling protocols have been established.

3. Moderate progress (3 points)

On-going as part of DWQ's effort to develop estuarine biological criteria to evaluate indicators of water quality degradation in the estuaries.

4. Moderate progress (3 points)

Types of population-level assessments in the estuaries do not lend themselves to a numeric or narrative criteria due to longer temporal variations in the estuaries as compared to freshwater systems.

MANAGEMENT ACTION SUMMARY
Management Action Points: 2.6/5.0 = 52% (Some Progress)

 **MANAGEMENT ACTION 3**

Develop and adopt better indicators of shellfish contamination as soon as possible.

! **Explanation:** The presence of fecal coliform bacteria currently is used to detect sewage contamination in shellfish beds. This practice has been criticized, however, and the National Oceanic and Atmospheric Administration's (NOAA) National Indicator Study is investigating better indicator tests. These tests, which assess both bacterial and viral contamination, better indicate the health risk from eating contaminated shellfish. They also would establish more reliable criteria for closing shellfish areas or re-opening previously closed areas.

Critical Steps Assessment

1. Moderate progress (3 points)

The DEH shellfish sanitation branch continues to monitor alternative indicator bacteria in cooperation

with national efforts. No significant national trend exists from which to begin alteration of existing water quality standards.

2. Fully implemented (5 points)

The Division of Environmental Health's Shellfish Sanitation Branch (SSB) continues to monitor bacterial contamination levels in water and shellfish at appropriate estuarine locations.

3. Fully implemented (5 points)

CGIA produces maps of shellfish closure areas utilizing information from SSB.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.33/5.0 = 87% (Substantial Progress)

II. VITAL HABITATS PLAN (CCMP Page 81)

GOAL: *Conserve and protect vital fish and wildlife habitats and maintain the natural heritage of the Albemarle-Pamlico region.*

OBJECTIVE A: Promote Regional Planning to Protect and Restore the Natural Heritage of the APES Region.

MANAGEMENT ACTION 1

Develop ecosystem protection and restoration plans (basinwide ecosystem plans) for each river basin in the region. Individual basinwide ecosystem plans will be completed and implemented according to the schedule established for basinwide water quality management plans. (See Objective A in the Water Quality Plan.) Plans should establish coordinated priorities for protecting habitats and critical areas in each basin, and should target areas most vital to the survival of wildlife and fisheries and the protection of natural heritage.

Explanation: Protecting vital habitats involves a great number of agencies and organizations. The coordination of their efforts with strategies that target management at the most critical areas would be best accomplished through basinwide ecosystem planning. Planning on a river basin level encompasses important ecological habitats that do not correspond to local jurisdictional boundaries. Restoration plans for river basins would provide a means for assessing the sources and causes of habitat damage and enable the appropriate agencies and organizations to coordinate priorities within the entire basin.

Critical Steps Assessment

1. Substantial Progress (4 points)

Although no formal interagency committee has been formed to develop ecosystem protection plans, this initiative is linked closely with the Basinwide Wetlands and Riparian Restoration Plans (BWRRP) being developed by the NC Wetlands Restoration Program. The BWRRPs consider the use of USGS hydrologic units, and utilize information on submerged rooted vasculars, closed shellfish harvest areas, fishery nursery areas, percentage of land cover under existing uses and percentage of stream miles that are non-supporting, partially supporting, and support threatened.

2. Moderate Progress (3 points)

A vital habitat plan is being developed for the lower Roanoke basin by the Nature Conservancy.

3. Moderate Progress (3 Points)

The development of Basinwide Wetlands and Riparian Restoration Plans is in sync with the basinwide water quality plans being developed by DWQ. The BWRRPs integrate water quality and sensitive resource information regarding habitat areas and species. This information is limited to the priority subbasins identified by the NC Wetlands Restoration Program.

4. Substantial Progress (4 points)

Basinwide and regional needs for protecting wildlife, fisheries, buffers and natural heritage in the APNEP Region are being addressed by DWQ, the NC Division of Parks and Recreation, Basinwide Wetlands and Riparian Restoration Plans, the Nature Conservancy and the Conservation Fund among many others.

5. Moderate Progress (3 points)

It is not known if a Forestry, Fish & Wildlife Coordinating Committee has been created, but substantial forestry resource information is distributed by the NC Division of Forest Resources (DFR). DFR also provides technical assistance to the forest industry and interested landowners.

6. Substantial Progress (4 points)

The North Carolina Natural Heritage Program, part of the Division of Parks and Recreation within the Department of Environment and Natural Resources, inventories, catalogues, and facilitates protection of the rarest and the most outstanding elements of the natural diversity of North Carolina. These elements of natural diversity include those plants and animals which are so rare or the natural communities which are so significant that they merit special consideration as land-use decisions are made. This is also accomplished through the Basinwide Wetlands and Riparian Restoration Plans and the Coastal Habitat Protection Plans.

7. Substantial Progress (4 points)

The Basinwide Wetlands and Riparian Restoration Plans are closely coordinated with the basinwide water quality plan schedule

8. Some Progress (2 point)

The NC Wetlands Restoration Program is implementing projects within these areas. The NC Coastal Federation has also been involved in some coastal stabilization projects and land purchasing activities. In addition, lands adjacent to waters designated as vital fisheries habitats have been purchased - on a limited basis - with funds provided by the NC Clean Water Management Trust Fund.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.38/5.0 = 68% (Moderate Progress)

 **MANAGEMENT ACTION 2**

Develop and maintain accurate maps and records of wetlands, fisheries habitats, federal and state endangered species and their habitats, natural areas, and natural communities.

Explanation: Accurate maps of natural areas are essential to the development of basinwide ecosystem plans. They allow for more accurate analysis of protection and enhancement priorities for various habitat types. A biological inventory of the region was part of the Albemarle-Pamlico Study and additional detailed inventory and monitoring projects would be completed for individual counties and for the most significant natural areas. This information would be kept current and accurate. Up-to-date, readily available biological inventories, maps, and data would provide local governments, planners, land managers, and private citizens with the information they need to protect habitats.

Critical Steps Assessment

1. Fully implemented (5 Points)

The NC Center for Geographic Information and Analysis (CGIA) has developed policies and definitions for habitat mapping

2. Moderate Progress (3 Points)

The Division of Marine Fisheries (DMF) has mapped over 95,000 acres of waters from the Cape Fear River to the Newport River, including South River and areas in Core and Roanoke sounds.

3. Substantial progress (4 points)

DMF's GIS staff of 3 people is creating data layers of all the areas described by rule. Data layers for fish nursery areas, crab spawning sanctuaries, no trawl areas and boundaries for coastal-joint-inland waters are being undertaken. Maps of nurseries and anadromous fish spawning areas are completed and maintained by CGIA.

4. No progress (0 Points) - No progress has been made on this step**5. Fully implemented (5 Points)**

The Division of Parks and Recreation's Biological and Conservation Database is a dynamic atlas that includes ecological and location information about the elements of natural diversity in North Carolina. The North Carolina Natural Heritage Program's database contains nearly 18,000 records of element occurrences and information on more than 1400 rare plants, animals, and natural communities.

6. Substantial progress (4 Points)

The NHP has completed surveys for 34 of the 36 counties in the APNEP region. Dare and Tyrrell counties are pending.

7. Fully implemented (5 Points)

All NWI maps for the APNEP Region have been completed and are available in digital and hard-copy paper formats from USFS. Other state and federal wetlands mapping efforts continue to compliment USFWS efforts.

8. Substantial progress (4 Points)

33 of the 36 counties in the APNEP Region have digitized soil survey maps available from CGIA (Franklin, Vance and Warren are not yet available).

9. Substantial progress (4 Points)

Areas identifying human uses on land, vegetation, water, and natural surfaces, were coded according to the 20 categories of Land use / Land cover classifications used in the Albemarle-Pamlico Estuarine Study (APES). The data is from 1987-89 LandSat Thematic Mapper (TM) images from LandSat 5. No updates are scheduled for this data layer.

10. Substantial progress (4 Points)

The Nature Conservancy (TNC) maintains maps of ecologically significant areas on lands they own or help manage.

11. Fully implemented (5 Points)

Locations of rare and endangered species population and occurrences of exemplary or unique natural ecosystems (terrestrial and palustrine) and special wildlife habitats have been mapped and are updated quarterly, or as needed.

12. Minimal Progress (2 points)

The locations of major development permits authorized by the Division of Coastal Management through the Coastal Area Management Act (CAMA) are being collected for Gates, Chowan, Perquimans, Pasquotank, Camden, Currituck, Hyde and Dare counties.

13. Fully implemented (5 Points)

All maps described in this management action are available through CGIA's Corporate Geographic Database.

14. Fully implemented (5 Points)

CGIA maintains a comprehensive database of digital GIS map layers that are available to government and non-government organizations online, by CD-ROM or hard-copy map.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.93/5.0 = 79% (Substantial Progress)

 **MANAGEMENT ACTION 3**

Expand programs to identify wetlands on a regional scale and to evaluate and rank wetland function.

Explanation: An accurate identification and evaluation of wetlands, in advance of proposed activities that disturb wetlands, improves our ability to protect the most critical wetlands and to make wetlands permitting more predictable for developers and local governments. An Advanced Identification (ADID) program is a multi-agency effort that tests a variety of methods to evaluate wetlands. Under this program, wetlands regulations would not be expanded. Instead, the wetlands permitting process would become more efficient.

Critical Steps Assessment

1. Substantial progress (4 Points)

DCM has mapped wetlands in all 20 coastal counties, completed a functional assessment for most areas in the 20 coastal counties and begun restoration/ prioritization projects in Craven County. DCM is also conducting a comprehensive Accuracy Assessment Project to determine the accuracy of the wetland type and functional assessment maps that it creates. The NC Wetlands Restoration Program has also mapped areas of water quality degradation and integrated these areas with known habitat areas of concern. The NCWRP has evaluated the opportunity for restoration at these sites to provide effective water quality improvements.

2. Moderate Progress (3 points)

DCM has applied its wetland evaluation methodology in all coastal counties in the APNEP region. The methodology has not yet been expanded for use in other counties.

3. Moderate Progress (3 points)

DWQ's 1996 Wetland Water Quality Standards provide some protection for wetlands. DWQ began using these standards in March 1999 to protect wetlands from activities that were in violation of the standards.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.33/5.0 = 67% (Moderate Progress)

<p>OBJECTIVE B: Promote the Responsible Stewardship, Protection, and Conservation of Valuable Natural Areas in the APES Region.</p>
--

 MANAGEMENT ACTION 1

Bring areas identified as having the highest priority for protection into public ownership and/or management. Expand funding for public acquisition of park lands, gamelands, coastal reserves, and other natural areas.

Explanation: Natural areas that are most vital to maintaining the region's natural heritage have been identified. Further priorities will be determined through basinwide ecosystem planning. Where possible, voluntary acquisition is an important tool for protecting these areas. In addition to preserving rare species and natural communities, public areas that are managed by different agencies can serve a variety of purposes such as recreation, education, or hunting.

Critical Steps Assessment

1. Fully implemented (5 Points)

The North Carolina Natural Heritage Program provides natural area and rare species information to landowners, consulting firms, local, state, and federal agencies, as well as conservation organizations and private citizens. This information is used for conservation planning and to facilitate the design and implementation of ecologically sound development projects. The NC Wetlands Restoration Program also identifies priority areas for protection based on data provided by the Natural Heritage Program.

2. NA - No action defined in this step.**3. Substantial progress (4 Points)**

Areas of ecological importance have been targeted for voluntary acquisition and conservation easements by the U.S. Fish and Wildlife Service's National Wetlands Priority Conservation Plan. The Basinwide Wetlands and Riparian Restoration Plans utilize this data for targeting areas for restoration.

4. NA - No action defined in this step.**5. Substantial progress (4 Points)**

Fourteen significant natural areas, encompassing over 6,000 acres, identified in the APNEP region by the Natural Heritage Program have been acquired and are being preserved by numerous state resource management agencies. Significant natural areas (dedicated lands) are also identified by the NC Wetlands Restoration Program.

6. Moderate Progress (3 points)

Agencies develop management plans for land that is acquired and retained in federal ownership.

7. Moderate Progress (3 points)

The N.C. Wildlife Resources Commission (WRC) has purchased land on the North Landing River in Currituck County that will be incorporated into a watershed protection project in the upper Currituck

Sound. Other examples include the Alligator River National Wildlife Refuge and components of the NC Coastal Reserve and associated National Estuarine Research Reserve Program such as the Rachel Carson National Estuarine Research Reserve.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.8/5.0 = 76% (Substantial Progress)

 **MANAGEMENT ACTION 2**

Provide incentives and technical assistance for the protection of privately owned vital habitats.

Explanation: High-priority natural areas that are not brought into public ownership can be targeted for private conservation. Efforts would be expanded to inform private land owners of the ecological values of their land, to advise them on appropriate management strategies, and to help them explore options for voluntary protection. Where possible, conservation organizations could acquire vital habitats in order to consolidate management and protection efforts.

Critical Steps Assessment

1. Moderate Progress (3 points)

The Conservation Fund has protected a total of 148,629.01 acres of important natural areas (statewide); the North Carolina Coastal Land Trust owns, or has protected, approximately 5,000 acres in the APNEP region and the Nature Conservancy and Roanoke River Partners are involved in many aspects of protecting the lower Roanoke River.

2. Fully implemented (5 Points)

Each of the agencies listed in this critical step have expanded their existing stewardship and/or incentive programs that focus on vital habitats. Examples include the USDA Conservation Reserve Enhancement Program, the NC Natural Heritage Trust Fund and the USF&WS' Partners for Fish and Wildlife in North Carolina.

3. Status of this Critical Step Unknown at This Time

4. Fully implemented (5 Points)

The Division of Coastal Management (DCM) has developed a guide for managing privately-owned wetlands. The NC Wetlands Restoration Program has developed a document entitled "A Guide for North Carolina Landowners" that provides landowners with information on financial incentives and technical assistance programs related to habitat protection.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.33/5.0 = 87% (Substantial Progress)

OBJECTIVE C: Maintain, Restore, and Enhance Vital Habitat Functions to Ensure the Survival of Wildlife and Fisheries.

 **MANAGEMENT ACTION 1**

Enhance the ability of state and federal agencies to enforce existing wetlands regulations by 1995.

Explanation: Strengthening enforcement of current wetlands regulations and ensuring compliance with the existing permitting process are essential to minimizing inappropriate development in wetlands areas. Aerial monitoring would be expanded to increase coverage and ensure efficient enforcement. Enhanced

enforcement would prevent some actors from gaining an unfair advantage through their failure to comply with wetlands regulations.

Critical Steps Assessment

1. Fully implemented (5 Points)

Aerial compliance monitoring to detect wetlands permit violations, along with aerial wetlands data collection and mapping efforts, are being undertaken by DCM with technical assistance provided by CGIA.

2. Moderate Progress (3 points)

The Wetlands/401 Water Quality Certification Unit of the Division of Water Quality is working with the U.S. Environmental Protection Agency and the Army Corps of Engineers to enforce against illegal wetlands ditching and draining activities. The Corps and DWQ will work to issue any required Permits and Certifications in a timely manner in order to facilitate the expeditious restoration of natural wetland hydrology.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.0/5.0 = 80% (Substantial Progress)

MANAGEMENT ACTION 2

Strengthen regulatory programs to protect vital fisheries habitats, which include submerged aquatic vegetation, shellfish beds, and spawning areas by 1995.

Explanation: Vital fisheries habitats are threatened by water quality degradation, physical destruction and the cumulative impacts of development in the region. Protecting areas in which aquatic organisms breed, live, and feed is essential to the successful propagation of many finfish and shellfish species. Increased protection for vital fisheries habitats will help maintain healthy fish populations for abundant commercial and recreational harvests.

Critical Steps Assessment

1. Substantial progress (4 Points)

The development of Coastal Habitat Protection Plans (CHPPs) is mandated by the Fisheries Reform Act of 1997(FRA). The DMF, DCM, DWQ, WRC and DEH have formed a CHPPs development team and a plan framework has been approved by the MFC, MC and CRC. Under the FRA, the completion of the CHPPs is scheduled for September 2003. It is through the implementation of these plans that vital habitats will be designated and delineated. Exclusive of this process, the MFC has defined SAV, shellfish beds, anadromous fish spawning areas and anadromous fish nursery areas as "critical habitat areas" under rule 15A NCAC 3I (20). The Wildlife Resources Commission has designated a part of the Roanoke River as an Inland Primary Nursery Area, and reaches of the Tar and Neuse rivers have also been proposed for similar designation.

2. No progress (0 Points)

Specific sites have not been specified by rule. Data is available to delineate most areas, but they are located in "Inland Waters" under the jurisdiction of the Wildlife Resources Commission.

3. No progress (0 Points)

Specific CRC rules to protect SAV, shellfish beds, anadromous fish spawning areas and anadromous fish nursery areas have not been developed because specific sites have not yet been designated.

4. No progress (0 Points)

Specific EMC rules to protect SAV, shellfish beds, anadromous fish spawning areas and anadromous fish nursery areas have not been developed because specific sites have not yet been designated. Work has, however, started on the protection of water quality in Inland Primary Nursery areas.

5. Moderate Progress (3 points)

Through the Coastal Habitat Protection Plan Development Team, the DMF, DWQ, DCM, WRC and DEH (Shellfish Sanitation) have begun to coordinate each agencies' policies regarding habitat and water quality protection. For example, the group is working to develop consistent terms and definitions for vital habitats.

6. Substantial progress (4 Points)

The agencies comment on permit applications in order to avoid and minimize impacts.

7. Substantial progress (4 Points)

DCM has established a staff position to address the issue of cumulative impacts. This topic will also be addressed in the Coastal Habitat Protection Plans prepared pursuant to the Fisheries Reform Act of 1997.

8. No progress (0 Points)

No specific cumulative impact research projects by DMF, DWQ, WRC, or DCM are underway in the field.

9. Substantial progress (4 Points)

The DOT has initiated interagency coordination to address potential environmental impacts at the early stages of many projects.

MANAGEMENT ACTION SUMMARY
Management Action Points: 2.11/5.0 = 42% (Some Progress)

 **MANAGEMENT ACTION 3**

Enhance existing efforts to restore the functions and values of degraded wetlands and vital fisheries habitats. Develop and begin implementing an expanded program to restore wetlands.

Explanation: Natural areas that have been slightly or moderately damaged may be restored by means such as replanting vegetation, repairing hydrological systems and improving water quality. Expanding restoration will increase the region's acreage of valuable, functioning vital habitats. Research and development of successful restoration techniques will ensure that these efforts are cost-effective.

Critical Steps Assessment

1. Fully implemented (5 Points)

DWQ's Wetlands Restoration Program and DCM both target areas for wetlands restoration projects. DCM has identified 31 potential sites in its Wetland Restoration and Creation Site Database. From 1994 - 1999 NC DOT developed 55 wetland and stream mitigation sites for a total of 10,800 acres of wetland restoration and preservation and 24,000 linear feet of stream restoration statewide.

2. Fully implemented (5 Points)

To improve wetland protection coordination, the state departments of Transportation and Environment and Natural Resources formed a partnership to protect the state's wetlands and streams. The agreement calls for the Department of Transportation to pay DENR \$17.5 million over seven years to locate wetlands and streams most in need of restoration. Also, during the seven years, DOT's Transportation Improvement Program will set aside \$175 million to protect wetlands, restore streams and preserve wildlife habitat. In addition, the US Fish & Wildlife Service has restored the hydrology and/or vegetation on 1150 acres of wetlands habitat in the Pocosin Lakes National Wildlife Refuge.

3. No progress (0 Points) - No progress has been made on this step

4. Fully implemented (5 Points)

Through a multi-agency effort coordinated by the APNEP, over 1,050 miles of impeded anadromous fish migration routes were re-opened with the removal of three dams.

5. Moderate Progress (3 points)

The Division of Coastal Management is working with NCDOT on a wetland restoration project designed to compensate for wetland losses associated with the New Bern Bypass and Neuse River Bridge projects in Craven County. The project will provide up-front wetland restoration for unavoidable impacts.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.6/5.0 = 72% (Moderate Progress)

MANAGEMENT ACTION 4

Establish by 1995 a consistent and effective mitigation program to compensate for unavoidable permitted wetlands losses.

Explanation: Mitigation compensates for the loss of smaller, fragmented wetlands with the acquisition, enhancement or restoration of larger, contiguous wetlands. A practical and coordinated system of mitigating wetlands damage, that is permitted only after all efforts to avoid and minimize alteration of wetlands have been considered, would ensure the greatest possible long-term benefit to vital habitats. Mitigation banking is a mechanism that allows land developers to alter wetlands in exchange for financial contributions toward the acquisition, enhancement, restoration, or creation of wetlands with similar value. This practice would be evaluated for expanded use in the region.

Critical Steps Assessment

1. Moderate Progress (3 points)

The Division of Water Quality, Division of Coastal Management, NC Department of Transportation and U.S. Fish and Wildlife Service (USFWS) continue to develop effective wetland mitigation procedures that compensate for unavoidable wetlands impacts. DCM has 31 sites in its Wetland Restoration and Creation Site Database. Through the Wetlands Restoration Program Fund, the NC Wetlands Restoration Program (NCWRP) is able to accept mitigation fee payments and apply them where the greatest need/opportunity for restoration exists. The NCWRP is implementing those funds based on the Basinwide Wetlands and Riparian Restoration Plans.

2. Moderate Progress (3 points)

The opportunity to participate in the Wetlands Restoration Program Fund through payment of mitigation fees enhances the Federal 404 and State 401 permitting process. Participation is voluntary (not required).

3. Minimal Progress (1 point)

The Mitigation Bank Review Team (MBRT) consists of representatives from US Army Corps of Engineers, US EPA, US Fish & Wildlife Service, NC Wildlife Resources Commission, Division of Coastal Management and Division of Water Quality. The function of the MBRT is to work with the bank sponsor to develop the Mitigation Banking Instrument (MBI) for the prospective bank. The MBI consists of the plans, specifications, monitoring regimes and performance standards for the proposed mitigation bank.

4. Substantial progress (4 Points)

DCM has an interactive wetlands mitigation information and mapping area on its web site that provides education and public awareness of wetland mitigation procedures. A document entitled "A Guide for North Carolina Landowners" developed by the NC Wetlands Restoration Program (see Obj. B, Management Action 2, Critical step 4) assist slandowners in managing properties

MANAGEMENT ACTION SUMMARY

Management Action Points: 2.75/5.0 = 55% (Substantial Progress)

III. FISHERIES PLAN (CCMP Page 112) !

GOAL: *Restore or maintain fisheries and provide for their long-term, sustainable use, both commercial and recreational.*

OBJECTIVE A: Control Over-Fishing by Developing and Implementing Fishery Management Plans for All Important Estuarine Species.

MANAGEMENT ACTION 1

Develop and implement management plans for fisheries that are important to recreational and commercial fishing interests. These plans would include recovery objectives for severely depleted stocks by 1999.

!

Explanation: State fishery management plans will allow the Marine Fisheries Commission (MFC) and Wildlife Resources Commission (WRC) to identify and maintain healthy stocks of important commercial and recreational fish. The plans will enhance depleted and declining stocks and restore economically important species for future harvest.

Critical Steps Assessment

1. Fully implemented (5 Points)

Fisheries Reform Act of 1997 (FRA) requires preparation of FMPs for those coastal fisheries under Marine Fisheries Commission (MFC) jurisdiction. Implementation will be achieved principally through direct actions of the Division and the MFC. Actions by other agencies will be recommended as appropriate. MFC has formalized and approved established guidelines for these FMPs.

2. Moderate Progress (3 points)

DMF has submitted expansion budget requests to provide the necessary staff support to acquire data and write FMPs and has received partial support from the General Assembly through the creation of 9 new fisheries management positions and substantial resources (non-reoccurring development funds of ~\$3 million and 2 new positions) for the development of an improved computer network (FIN- Fisheries Information Network)

3. Substantial progress (4 Points)

There is an existing MOA with WRC and USFWS for joint consideration of management actions for anadromous species. The federal regional Fishery Management Councils also develop FMPs for species in the federal EEZ (exclusive economic zone) and the MFC has temporary rule making authority to enact complimentary measures in state waters if the MFC deems it necessary. The MFC is also considering the development of a state plan that would adopt FMPs developed by the ASMFC and Council, thereby avoiding a duplication of effort in the creation of state FMPs for the same species as mandated by the FRA. This "umbrella FMP" would include over 20 species or species groups.

4. Moderate Progress (3 points)

The Division continues to lead the coastal states in its long-term fishery dependent and independent data collection programs. The mandatory reporting of commercial trips by fish dealers, the extensive sampling and interviewing (over 20,000 in a year) of recreational fisherman, and a broad-based fish house sampling program provide valuable catch, effort, and biological data for stock assessments. Several independent surveys compliment these efforts. Two major data gaps are the assessment of bycatch in all major fisheries and the development of an independent relative abundance index of adult stocks. Both of these data gaps are complex and would take substantial increases in staff and funding to fulfill.

5. Fully implemented for those FMPs completed (5 Points)

All management alternatives are evaluated in the FMPs and implemented by rules of the MFC, in accordance with the requirements of the FRA. One amendment to the FRA restricted the use of

limited participation measures only to those fisheries where Optimum Yield could not be met in any other way.

6. Minimal Progress (2 points)

Only the blue crab MFP has been approved by the MFC. Guidelines include the criteria for FMP development, provide for interim measures while FMPs are being developed and give a generic timeline for individual FMP development.

7. Minimal Progress (2 points)

A joint WRC/MFC group composed of 3 members from each commission discusses overlapping issues. Most joint actions to date have been in regards to striped bass management under the ASMFC plan. WRC staff participates on several MFC FMP plan development teams.

8. No progress (0 Points) - No progress has been made on this step

The draft river herring FMP discusses the potential for stocking, but no official actions have been taken to date

9. Substantial progress/Nearing completion (4 Points)

See comment under #5 about FRA requirement for limited participation measures. Another FRA amendment also required that all FMP measures be reviewed by the standing regional committees of the MFC, prior to any adoption by the MFC. These citizen advisors are familiar with local fisheries and are able to comment on the social and economic impacts of proposed measure. Each FMP also contains a social and economic section. The Administrative Procedure Act requires an economic evaluation of proposed rule

10. Substantial progress (4 Points)

See comment under #5 about FRA requirement for limited participation measures

11. Moderate Progress (3 points)

Restoration efforts and aquaculture are major issues being addressed in the development of oyster and clam FMPs.

12. Substantial progress (4 Points)

Striped Bass in the Albemarle Sound Management Area have been designated by the ASMFC as a recovered stock. WRC and MFC have increased the harvest quotas with the approval of the ASMFC. The status of the non-ASMA stocks is still unknown and an amendment to the state estuarine Striped Bass FMP is needed to address this issue.

13. Substantial progress (4 Points)

MFC guidelines provide ample opportunity for public comment and review, and plan development teams may include biologists outside of DMF. However, specific scientific review by outside agencies has not been directly solicited. The DENR Science Advisory Council may be an appropriate entity to comment on the draft FMP.

14. Fully implemented (5 Points)

See comments under #9 and #13

15. Fully implemented (5 Points)

MFC guideline provide for the review of FMPs every three years, and includes an approval process for plan revisions.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.53/5.0 = 71% (Moderate Progress)

 **MANAGEMENT ACTION 2**

Modify the existing marine fisheries license structure to improve data collection with respect to landings, demographics and fishing effort, and to generate increased revenues for fisheries management.

!

Explanation: A license system that enhances fisheries data collection is critical to developing and implementing state fishery management plans. The data collected is necessary for additional research on how regulations impact the fisheries. License revenues can support fisheries research, habitat restoration and other management improvements.

Critical Steps Assessment

1. Fully implemented (5 Points)

Effective July, 1999 a new license structure was implemented. The General Assembly created 6 new positions for licensing. Revenues generated cover the cost of computer support and administering the new system and help support the trip ticket program.

2. Minimal Progress (1 point)

G.S.113-169.1 allows the MFC to adopt rules to establish permits for gear, equipment and other specialized activities. The MFC has not established any new gear permits, but is considering a permit system for crab pots. !

3. Minimal Progress (1 point)

Revenues generated under #1 above cover the cost of administering the new system and help support the trip ticket program. Revenues are not sufficient to support fisheries research, habitat restoration or other management improvements. !

MANAGEMENT ACTION SUMMARY

Management Action Points: 2.33/5.0 = 47% (Some Progress)

OBJECTIVE B: Promote the Use of Best Fishing Practices that Reduce Bycatch and Impacts on Fisheries Habitats.

 MANAGEMENT ACTION 1

Continue and expand the development of bycatch reduction gear and practices, and require their use as practicality is demonstrated. Aim to reduce inside trawl, long haul seine, pound net, and gill net bycatch by at least 50 percent by 1995.

! **Explanation:** Minimizing non-targeted harvests will preserve the diversity of fish populations and support the long-term use of fisheries resources. Implementing efficient and effective measures to reduce bycatch eventually may result in lower costs to commercial fishermen.

Critical Steps Assessment

1. Minimal Progress (1 point)

Funds from the ASMFC were used to initiate a bycatch reduction program in the Division. However, funding and projects were both limited in scope. When the General Assembly provided expansion positions to implement the FRA, two ASMFC positions were placed on state funds. This provided more stability to the program and allowed ASMFC monies to be used for additional temporary personnel. With additional staff, more labor-intensive projects, such as the determination of bycatch mortality from gill nets in eastern and western Pamlico Sound, have begun.

2. Substantial progress (4 Points)

While still somewhat limited in resources, such a program exists within DMF.

3. Minimal Progress (2 points)

The focus of the program has been to develop gears that minimize bycatch and to quantify bycatch estimates. Given the spatial and temporal variation in bycatch, available resources have not been sufficient to adequately determine statistical valid estimates for major fisheries

4. Fully implemented (5 Points)

Fishermen have been active participants in the development of bycatch reduction devices and have voluntarily used these devices prior to being mandated by the MFC.

5. Substantial progress (4 Points)

Use of devices by MFC rule and Division proclamation have been required in the shrimp trawl, flounder pound net and long haul seine fisheries. Gill net attendance and specified fishing techniques have also been required for flounder nets in the Albemarle Sound to reduce striped bass bycatch, and in small mesh gill nets statewide to reduce red drum bycatch.

6. Minimal Progress (2 points)

As FMPs are developed, relevant bycatch issues will be addressed through the plans. However without adequate estimates and modeling, the need for, and scope of, management actions will be open to debate (see #3). In most cases the MFC and the Division have implemented restrictions to the level that existing data support.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.6/5.0 = 72% (Moderate Progress)

MANAGEMENT ACTION 2

Institute a cost share program for best fishing practices for commercial fishing gear by 1995.

!

Explanation: A cost share program would help alleviate the financial burden and encourage commercial fishermen to implement best fishing practices.

Critical Steps Assessment

1. Fully implemented (5 Points)

The Fisheries Resource Grant Program (FRG) is a \$1 million annual grant program. The 1999 General Assembly (Senate Bill 1048) changed the process for awarding the grants. The new process created a "Grant Committee" to conduct proposal reviews and for the final decisions on funding.

2. Minimal Progress (1 point)

The FRG provides funds for development of gear, but not for the other tiers in this critical step.

3. No progress (0 Points) - No progress has been made on this step**4. No progress (0 Points) - No progress has been made on this step****5. Not Applicable**

The MFC is not responsible for the FRG program. Sea Grant administers the grants. !

6. No progress (0 Points) - No progress has been made on this step

MANAGEMENT ACTION SUMMARY
Management Action Points: 1.2/5.0 = 24% (Minimal Progress)

IV. STEWARDSHIP PLAN (CCMP Page 131)

GOAL: *Promote responsible stewardship of the natural resources of the Albemarle-Pamlico region.*

OBJECTIVE A: Promote Local and Regional Planning that Protects the Environment and Allows for Economic Growth.

MANAGEMENT ACTION 1

Support local planning by providing funding and economic incentives to local governments to integrate environmental and economic planning by 1999.

Explanation: Local planning gives governments the opportunity to direct their own growth and enables private investors and local citizens to make informed decisions. Comprehensive planning also promotes economic development and environmental protection that are compatible. Financial assistance to local communities would encourage land and water uses that have the least impact on natural resources while promoting sound economic growth, included increased opportunities for nature-based tourism.

Critical Steps Assessment

1. Moderate progress (3 points)

The critical steps designed to support this management action have not been accomplished as proposed. However, there has been moderate progress in attaining the management action through an alternative route - the Department of Commerce's (Division of Community Assistance) development of "Guidelines for North Carolina Local Government Development Plans: Incorporating Water Quality Objectives in a Comprehensive Land Planning Framework." This document is similar in content, and patterned after, the Division of Coastal Management's land-use plan guidance. It was promulgated by legislation in 1997(HB 515) which states that "Local government units are encouraged to adopt comprehensive land-use plans..." The Divisions of Coastal Management and Water Quality were partners in the development of the guidelines.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.0/5.0 = 60% (Moderate Progress)

MANAGEMENT ACTION 2

Provide to local governments affordable and accessible data from the state Geographic Information System (GIS) for use in planning and public education within the region by 1996.

Explanation: Local comprehensive plans influence private and public development and management decisions, and should be supported with accurate and timely geographic information. Increasing the availability of state GIS data to local governments will help in environmental and economic planning.

Critical Steps Assessment

1. **Moderate progress (3 points)**
CGIA provides services to numerous users (local governments, state agencies, private sector business) of GIS technology including custom maps, customized data, and analytical reports. However, these services are rendered on a fee-for-use basis.
2. **Some progress (2 points)**
the distribution of digital data to APES region users occurs, but on a fee-for-use basis. Regional office and central office staffing has not occurred because of the absence of funding from the General Assembly.
3. **Moderate progress (3 points)**
CGIA has a pricing schedule in place for use in billing their users. It would be easy to amend this schedule to reflect a contribution of funds by the General Assembly.
4. **Some progress (2 points)**
Neither the 6 planning positions within DOC (Obj. A, Management Action 1) nor the installation of CGIA workstations located in the regional offices, has occurred. However, progress is being made in delivering GIS technology and assistance to area local governments various other means such as the Corporate Geographic Database.
5. **Moderate progress (3 points)**
This critical step is based upon the completion of Obj. A, Management Action 1 and critical step #4, neither of which has been implemented. This step however, has occurred through an alternative path. The APNEP has joined with CGIA on three occasions in delivering GIS workshops throughout the region.
6. **Fully implemented (5 points)**
CGIA heavily participates in educating the public relative to GIS technology through distribution of their Corporate Geographic Data Base (CGDB), interactive exhibits at fairs, festivals, conferences, etc. and development of teacher training workshops under the auspices of DENR's Office of Environmental Education.
7. **Fully implemented (5 points)**
CGIA now uses a 1:24,000 scale in production of their products
8. **Fully implemented (5 points)**
The source agencies and CGIA regularly update -GIS data layers contained in the CGDB. Other databases are updated as funding permits. All data layers are available through CGIA. The CGDB is available "on-line" to more than a dozen state agencies. The NC Div. of Coastal Management and the NOAA Coastal Services center directly assist local governments using this data.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.5/5.0 = 70% (Moderate Progress)

MANAGEMENT ACTION 3

Implement a comprehensive, coordinated and proactive approach to managing the state's public trust waters by 1996.

Explanation: North Carolina holds the waters, the lands beneath them and the resources living in them in trust for its citizens. The state has the authority and responsibility to preserve their natural value as a part of our common heritage. Several state agencies are responsible for the stewardship of this public trust. As the region's population continues to grow, public use of the sounds and waterways will increase as well. Greater conflicts are likely between various groups, including those who use the resources of public trust areas for profit. Therefore, closer coordination is necessary between the agencies that manage these resources. Public trust policy should be proactive and should consider issues related to future population growth, including public access and compensation for uses of public trust resources.

Critical Steps Assessment

1. Some progress (2 points)

A few actions have taken place: the Coastal Resources Commission (CRC) now requires local governments to develop water use plans as part of the process for establishing boat mooring areas; and the NC Legislature, in 1997, funded a 1-year user study of Core Sound.

MANAGEMENT ACTION SUMMARY
Management Action Points: 2.0/5.0 = 40% (Some Progress)

 **MANAGEMENT ACTION 4**

Provide support to organizations that promote nature-based tourism and environmental education as a way of fostering environmentally sound economic development in the region.

Explanation: The mission of the Partnership for the Sounds, Inc. (PfS) is to stimulate local, sustainable, community-driven economic well-being within the Albemarle-Pamlico region through the promotion of eco/cultural tourism, environmental stewardship, and education.

PfS was chartered in 1993 as a non-profit organization. It is overseen by a Board of Directors comprised of representatives from local governments, non-profit organizations, businesses, and industries in the Albemarle-Pamlico region. The focus area of Partnership activities includes Beaufort, Bertie, mainland Dare, Hyde, Tyrrell, and Washington counties.

The diverse groups represented by the Partnership were brought together by a common interest in developing environmental/cultural education facilities that would provide focal points for tourism in the region. With coordinated infrastructure improvement, the area could become an appealing destination to the rapidly growing ecotourism and heritage tourism markets. By helping develop that infrastructure, PfS hopes to foster an economic niche that celebrates and conserves the region's unique ecology and ways of life.

Critical Steps Assessment

1. Fully implemented (5 points)

The NC Legislature has appropriated funds for the PfS each year since 1993-'94. Capital funding has been provided for the construction and/or renovation of sites while a recurring line item helps cover staffing and administrative costs.

MANAGEMENT ACTION SUMMARY
Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

**OBJECTIVE B: Increase Public Understanding
of Environmental Issues and Citizen
Involvement in Environmental
Policymaking.**

 **MANAGEMENT ACTION 1**

Expand and coordinate education projects about the Albemarle-Pamlico estuary, focusing on both environmental and economic issues.

Explanation: The future security of the estuary depends on whether people, who live, work and vacation there understand its environmental challenges. These education efforts must be innovative, must include adults as well as children, and must take place outside of traditional school settings as well as in the classroom.

Critical Steps Assessment

1. Fully implemented (5 points)

the Office of Environmental Education within DENR continues to excel in the provision of materials, workshops, in-service, a biennial EE conference, guides, and EE certification to the public, agencies, private sector business and others.

2. Fully implemented (5 points)

the EE Advisory Board (within OEE) and the 5 Regional Councils corresponding to the 5 major river basins in the APEP area, complete this critical step.

3. Fully implemented (5 points)

OEE's website, newspaper supplements and inserts, guide to NC EE Centers, and Project Tomorrow EE Model Library Grants program, and the APNEP newsletter "The Beacon" fulfill this critical step.

MANAGEMENT ACTION SUMMARY

Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

MANAGEMENT ACTION 2

Increase opportunities for citizens to communicate with members of environmental agencies and policy-making commissions.

Explanation: Citizens are more like to support environmental protection and be involved in decision making when they feel governments and regulatory agencies are working with them as equal partners. Increased opportunities for public participation and education will promote citizen involvement in environmental policy making.

Critical Steps Assessment

1. Substantial progress (4 points)

Regional Councils are meeting regularly with widespread topical representation. In addition, public meetings were held in conjunction with the writing and updating of DWQ's basinwide management plans

2. Moderate progress (3 points)

Many of DENR's Divisions participate on the EE Advisory Council and played an important part in developing OEE's Guide to Environmental Education Programs and Resources.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.5/5.0 = 70% (Moderate Progress)

MANAGEMENT ACTION 3

Enhance and heighten local public involvement in issues affecting the estuary.

Explanation: Public involvement in local policy processes can be promoted through Environmental Advisory Boards. These boards would not have a regulatory role. Instead, they would provide credible information and insight to local governments on the environmental issues surrounding projects such as landfill and roadway siting, water supply and sewage discharge, land use planning and stormwater control.

Critical Steps Assessment

1. Some progress (2 points)

Some formally organized Environmental Advisory Boards exist in the APENP area, although most grassroots input is conveyed through large fora and public meetings, i.e. stakeholder meetings conducted by independent facilitators for DCM and DWQ, APNEP Regional Councils, etc.

MANAGEMENT ACTION SUMMARY
Management Action Points: 2.0/5.0 = 40% (Some Progress)

 MANAGEMENT ACTION 4

Expand involvement in the Citizens' Water Quality Monitoring Program (CWQMP) and make the program more interactive with regulatory agencies.

Explanation: Citizen monitoring gauges the estuary's health and is an important effort and educational tool. In the APNEP region, the CWQMP serves both purposes. The CWQMP would continue and broaden efforts to provide accurate data to water quality management agencies, thereby expanding their ability to track potential problems.

Critical Steps Assessment

1. Minimal progress (1 point)

While no long-term funding source has been identified for support of this program, the Coordinator's position has been institutionalized at ECU.

2. Some progress (2 points)

Monitoring sites and volunteers are routinely employed in areas of concern. The Coordinator is working on involving DWQ in the utilization of volunteer-gathered data, revamping the data entry program and analyzing historical data.

3. Some progress (2 points)

The CWQMP has association with the NC Rivers Association and the NC Streamwatch group housed in DENR's Division of Water Resources.

MANAGEMENT ACTION SUMMARY
Management Action Points: 1.67/5.0 = 33% (Some Progress)

 MANAGEMENT ACTION 5

Create a citizen ombudsman position within the Department of Environment, Health and Natural Resources (DEHNR).

Explanation: A citizen ombudsman is an independent advocate for citizen concerns within a government agency. An ombudsman would respond to and track these concerns, and would serve as the public's "eyes and ears" with regard to activities of DEHNR divisions.

Critical Steps Assessment

1. Moderate progress (3 points)

While the position of a citizen ombudsman has not been established the DENR has established the Customer Service and Hurricane Response centers. These efforts contribute greatly to the awareness and concerns of eastern NC citizenry.

MANAGEMENT ACTION SUMMARY
Management Action Points: 3.0/5.0 = 60% (Moderate Progress)

**OBJECTIVE C: Ensure that Students,
Particularly in Grades K-5, are
Exposed to Science and
Environmental Education.**

MANAGEMENT ACTION 1

Support the development of a comprehensive environmental science and education curriculum.

Explanation: The Department of Environment, Health and Natural Resources (DEHNR) will expand the operation of the Office of Environmental Education (OEE) to establish an ongoing liaison between the Department of Public Instruction (DPI) and OEE. DPI must address a variety of concerns in developing curriculum. However, OEE would provide assistance as needed in targeting environmental education components.

Critical Steps Assessment

1. Fully implemented (5 points)

The OEE enjoys an ongoing association with DPI. Environmental education has been included in the NC Standard Course of Study for all school children.

2. Fully implemented (5) points

The OEE routinely updates the "Teachers' Guide to Environmental Education Programs and Resources." These documents array the many, many programs available to teachers and citizens dealing with environmental education.

MANAGEMENT ACTION SUMMARY

Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

MANAGEMENT ACTION 2

Provide for teachers, at all levels, ongoing opportunities to gain renewal credits in workshops on environmental and estuarine education.

Explanation: The Office of Environmental Education would assist DPI and other state agencies, such as the Wildlife Resources Commission (WRC), Division of Parks and Recreation (DPR), and the Division of Soil and Water Conservation (DSWC), in conducting teacher in-service workshops that provide renewal credits. These workshops not only would help teachers stay current in environmental science, but also would provide broad perspectives on the relationship between the estuary and human activities.

Critical Steps Assessment

1. Fully implemented (5 points)

Numerous opportunities exist through the OEE for gaining teaching renewal credits. An Environmental Educators Certificate program also exists for those teachers (and others) who wish to become proficient in this area.

MANAGEMENT ACTION SUMMARY

Management Action Points: 5.0/5.0 = 100% (Fully Implemented)

V. IMPLEMENTATION PLAN (CCMP Page 161)

OBJECTIVE A: Coordinate Public Agencies Involved in Resource Management and Environmental Protection to Implement the Recommendations of the CCMP.

MANAGEMENT ACTION 1

Create a Coordinating Council and five Regional Councils through executive order by the Governor of North Carolina upon approval of the CCMP.

Explanation: The APES program has provided extensive opportunities for interaction between government agencies, private organizations, citizens and local governments. Continued coordination in implementing recommendations in the CCMP would be provided through a Coordinating Council (CC) and five Regional Councils (RCs). The RCs would include representatives from each county in the region, including elected and/or appointed local government officials, interest groups, and members of the general public in each river basin. The CC would include fifteen representatives from the RCs (ten of whom will be local elected and/or appointed officials), seven representatives of citizen commissions and councils, four representatives of federal resource agencies and three representatives of state government. This structure would provide continued opportunity for interagency coordination and citizen and local government input.

Critical Steps Assessment

1. Substantial progress (4 points)

While there has not been Memoranda of Agreement between federal agencies to continue CCMP coordination efforts, the five RCs and the CC have been formed and meet with regularity.

2. Fully implemented (5 points)

The five RCs, corresponding to each of the major river basins in the APNEP region, have been formed and meet with regularity.

3. Fully implemented (5 points)

The formula for CC composition has been accomplished

4. Moderate progress (3 points)

While the CC has been formed according to CCMP recommendations, they are not functioning as effectively as is possible. This is due, in part, to poor attendance at meetings, non-participation by certain of the citizen commissions, and a possibly limited understanding of the CC members' roles.

5. Moderate progress (3 points)

There is representation by the RCs to the CC and reporting by them occurs at each CC meeting. The CC has not assumed the role of defining implementation strategy so this critical step is only partially fulfilled.

6. Fully implemented (5 points)

The Program and Outreach Coordinators serve in this capacity.

MANAGEMENT ACTION SUMMARY

Management Action Points: 4.16/5.0 = 83% (Substantial Progress)

MANAGEMENT ACTION 2

Coordinate implementation of the CCMP.

Explanation: The best way to ensure efficient operation of government is to increase the coordination and cooperation of existing agencies. Each agency should fulfill its responsibilities without duplicating the efforts of other agencies. The Coordinating Council would take advantage of existing resources and staff, establishing connections between public and private interests and all levels of government, rather than creating another layer of government. The Coordinating Council will guide the implementation process to ensure the highest level of cooperation and coordination among interested parties, as was demonstrated by the original APES Management Conference during the plan's development.

Critical Steps Assessment

- 1. Fully implemented (5 points)**
The MOA awaits only a formal signing ceremony.
- 2. No progress (0 points)**
There has been no movement toward fulfilling this critical step.
- 3. Some progress (2 points)**
Only a partial number of the CC membership complies.
- 4. Minimal progress (1 point)**
This critical step has had little attention directed to it.
- 5. No progress (0 points)**
There has been no movement toward this critical step.
- 6. No progress (0 points)**
There has been no movement toward this critical step.
- 7. Minimal progress (1 point)**
The Secretary of the DENR, acting as CC Chair, has kept the CC informed of legislative issues of interest and environmental developments occurring in the General Assembly.
- 8. Some progress (2 points)**
While the CC does not do this as a council, these reviews are conducted within the various Divisions of the DENR whose representatives sit on the CC.
- 9. Minimal progress (1 point)**
There has been no movement toward a formal MOA between CC members, however there is a spirit of cooperation among them which supports collegiality and information sharing.
- 10. Some progress (2 points)**
While the CC itself does not function as a whole, with respect to this critical step, individual members' organizations and agencies do.
- 11. No progress (0 points)**
There has been no movement toward this critical step.

MANAGEMENT ACTION SUMMARY
Management Action Points: 1.27/5.0 = 25% (Minimal Progress)

OBJECTIVE B: Assess the Progress and Success of Implementing CCMP Recommendations and the Status of Environmental Quality in the Albemarle-Pamlico Region.

MANAGEMENT ACTION 1

Develop an annual "progress review" of the implementation of CCMP recommendations.

Explanation: The most critical stage of the management program is its implementation. Without carefully thought-out and monitored implementation, the goals of the management plan may never be achieved. A progress review would allow the Coordinating Council, or any interested party to comment on the implementation process. It also allows corrections or changes to be made as necessary.

Critical Steps Assessment

1. Some progress (2 points)

The RCs report annually to the CC on their progress toward implementation vis-a-vis their annual reports. To date, the CC has not assessed implementation success although a workshop for this purpose will occur in February 2000.

2. Fully implemented (5 points)

An Implementation Summary was prepared three years ago and is updated annually. Also, the Biennial Review report card and the document in-hand, fulfill this critical step.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.5/5.0 = 70% (Moderate Progress)

MANAGEMENT ACTION 2

Assess the health of the Albemarle-Pamlico Estuary and the success of CCMP recommendations in protecting the environment.

Explanation: Assessing the success of the implementation of the CCMP also requires monitoring of the environment and a thorough evaluation of the results. The CCMP must be flexible to adapt to natural conditions. Data gathered on the state of water quality, habitats, and fisheries may be used to adjust strategies as necessary.

Critical Steps Assessment

1. Moderate progress (3 points)

While this critical step does not occur as such (the CC as a body determining long-term trends), the monitoring to which it refers does exist and is assessed as (high) moderate.

2. Substantial progress (4 points)

Monitoring data are interpreted and incorporated in reports such as the basinwide water quality management plans.

3. Moderate progress (3 points)

There is much support for environmental education and public outreach among individual CC members, however, the CC as a body has not moved toward fulfilling this critical step.

MANAGEMENT ACTION SUMMARY

Management Action Points: 3.33/5.0 = 67% (Moderate Progress)