

state enhancement grant assessments and strategies



WETLANDS



NOAA / NOS / Office of Ocean and Coastal Resource Management
Coastal Programs Division

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U.S. Department of Commerce
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Overview

This report describes the changes to state, territory and commonwealth coastal zone management (CZM) programs to protect and improve wetlands that were completed or initiated during the timeframe of Federal fiscal years 1992-1996. These changes were characterized by the States in the last round of Assessments, which were submitted to OCRM in February of 1997. If Strategies were developed for wetlands, the planned activities are also summarized.

The protection, restoration and enhancement of coastal wetlands has been a fundamental goal of the Coastal Zone Management Act (CZMA) since its passage in 1972. Ensuring that coastal wetlands are maintained and protected from development and fill, channelization, erosion, pollution, freshwater input, and the introduction of nuisance or exotic species are all objectives of state and territorial CZM programs. Residential and commercial development uses compete with the preservation and important environmental functions of wetlands. States and territories are encouraged to protect and preserve existing levels of wetlands by developing or improving regulatory programs.

The National Coastal Zone Management Program (CZMP) is a voluntary partnership between the Federal government and the 35 U.S. coastal states, territories, and commonwealths authorized by the CZMA to:

- Preserve, protect, develop, and where possible, restore and enhance the resources of the Nation's coastal zone for this and succeeding generations;*
- Encourage and assist the States to exercise effectively their responsibilities in the coastal zone to achieve wise use of land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development;*
- Encourage the preparation of wetlands to provide increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas and improved predictability in governmental decision-making; and*
- Encourage the participation, cooperation, and coordination of the public, Federal, State, local, inter-state and regional agencies, and governments affecting the coastal zone.*

In the 1990 reauthorization of the CZMA, Section 309 was amended to create the Coastal Zone Enhancement Program. Its intent was to provide incentives to States to make improvements to their coastal programs in any of eight areas of national significance (a ninth was added in 1996), including wetlands. As a part of the Section 309 grant process, periodically all the coastal programs must develop Assessments — a critical examination of each of the nine enhancement areas. The Assessments provide a comprehensive review of activities previously performed by the CZM program (with particular emphasis on 309-funded efforts), identify specific impediments or needs, and present a general characterization of the adequacy of the State's management framework for that area. The Assessments conclude with a ranking of the area as high, medium, or low, based on its importance in the State; the need to improve the State's ability to manage the area, and the suitability of using the Section 309 program as the means to address it. For those issues ranked as a high priority for Section 309 purposes, States develop multi-year Strategies, laying out a framework for activity and funding levels which, at the project's conclusion, should lead the State to specific program changes that also are defined.

Improvements to state coastal programs are generally intended to encompass new or strengthened laws, regulations, or other enforceable policies at the state (and local) level. In the case of wetlands, program changes could also include the utilization of non-regulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands. Wetlands protection standards, assessment methodologies, impact analysis, wetlands creation programs, and education/outreach programs could also be developed.

The report is broken down into four parts. The first section contains state-specific summaries, organized by Region. The summaries generally characterize the wetlands issue; briefly outline the activities undertaken/initiated between 1992 and 1996 (highlighting those that were 309-funded); identify obstacles to addressing wetlands issues; and if applicable, detail the State's strategy for achieving those improvements (or other planned activities). A State contact is included for the purposes of obtaining additional information.

The second section compiles the wetlands activities for all the states, and if applicable, their Strategies, and reorganizes them into seven general areas of management: (1) research and assessment; (2) planning; (3) acquisition; (4) regulatory; (5) non-regulatory; (6) outreach; and (7) restoration/creation.

The third section pertains to obstacles and needs. Brief descriptions of impediments to or areas for improvement in achieving improved wetlands protection were compiled from the Assessments.

The report concludes with a table which provides a snapshot of the overall distribution of wetlands projects by State and type, including distinguishing between Section 309-funded and non-309 funded.

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State Summaries	1
Northeast	3
Connecticut	5
Delaware	7
Maine	9
Maryland	11
Massachusetts	13
New Hampshire	15
New Jersey	17
New York	19
Rhode Island	21
Virginia	23
Southern/Caribbean	25
Alabama	27
Florida	29
Louisiana	31
Mississippi	32
North Carolina	34
Puerto Rico	36
South Carolina	38
United States Virgin Islands	40
Pacific	41
Alaska	43
American Samoa	45
California	46
Commonwealth of Northern Mariana Islands	48
Guam	50
Hawaii	51
Oregon	52
San Francisco Bay Conservation and Development Commission	54
Washington	56
Great Lakes	57
Michigan	59
Pennsylvania	60
Wisconsin	62
Activities	65
Research and Assessment	67
Planning	70
Acquisition	72
Regulation	74
Non-Regulatory	80
Outreach	82
Restoration/Creation	84
Obstacles/Needs	87
Appendices	93

state summaries



northeast

Connecticut

309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: High

Issue Characterization

Estuarine wetlands in Connecticut include tidal wetlands (salt, brackish and tidal-fresh), submerged aquatic vegetation, macrophyte beds, unvegetated tidal flats, and intertidal rocky shores. Non-tidal wetlands or mostly forested inland wetlands are found in the coastal uplands. Pollution, nuisance or exotic species, freshwater input, and hydromodification are the primary threats to Connecticut's wetlands.

State Activities 1992 to 1996

Connecticut has significantly modified its regulatory programs to enhance its wetlands' protection program: tidal wetland regulations were amended to conform with statutory changes that required regulation of all tidal wetlands regardless of their mapped status (Section 309); a wetland's compensation policy was developed and adopted internally to provide the basis for wetland gains in situations where publicly beneficial projects involved unavoidable losses (Section 309); Connecticut sought and received authority to expand the eligibility of its demonstrably successful abbreviated authorization to those activities in tidal wetlands that would likely be consistent with state wetland standards (Section 309); in the development and adoption of statewide stormwater general permits, Connecticut included the requirement for retention of stormwater that discharges into or adjacent to tidal wetlands (Section 309); and, the State made significant strides in permit and enforcement streamlining resulting in better quality decisions that afford better resource protection.

Connecticut created one of the nation's first dedicated tidal wetland restoration programs. The State also continued restoration of degraded tidal marshes along the coast; initiated restoration activities in the brackish and tidal fresh marshes of the Connecticut River; expanded the capabilities of the restoration program through purchase of an amphibious mulching mower; and applied for funding to enable additional restoration activities.

The state identified a long-term decline of eelgrass beds in Long Island Sound and initiated a restoration project; developed a Geographic Information System (GIS) database for eelgrass that establishes critical baseline conditions; and, developed baseline submerged aquatic vegetation conditions for the lower Connecticut River.

Connecticut produced various informational publications and established the Long Island Sound license plate program to raise needed funding to support projects that benefit the Sound. (Section 309)

The State acquired additional 75 acres of wetlands through existing acquisitions programs.

Obstacles/Needs

The State needs direct and stronger protection of submerged aquatic vegetation through refinements to existing statutory policy; refinements to permitting and enforcement programs; enhancement of existing statutory and enforcement tools to obtain alternative funding for acquiring tidal wetland parcels; and new and updated GIS layers to support better management and regulatory decisions.

Summary of Strategy

The Connecticut strategy for wetlands includes enhancements in the areas of acquisitions and regulation.

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Delaware 309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: High

Issue Characterization

Direct and indirect threats to Delaware's wetlands are development/fill, nuisance or exotic species, erosion, pollution, channelization, and fresh water input. Primary concerns are the natural areas in New Castle County where the current development trend is mostly in the form of single-family homes. Delaware is currently managing Phragmites with the goal of controlling the plants rather than eradicating them entirely.

State Activities 1992 to 1996

Delaware is reviewing the list of draft Nationwide Permits published by the Corps of Engineers (COE), which if reauthorized, may have an adverse effect on Delaware's freshwater wetlands.

A partnership between the Delaware Department of Natural Resources and Environmental Control (DNREC) and the State Department of Transportation led to the first statewide digital orthophoto mapping effort (Section 309).

The Northern Delaware Wetlands Rehabilitation Program has identified 35 potential wetland sites as needing rehabilitation. The sites are proposed to be restored on a site-by-site basis (Section 309). Restoration programs for Gambacorta and Broad Dyke marshes have been completed (Section 309). Two other sites are currently being restored; several more are in the planning stages (Section 309).

The Delaware Coastal Management Program, with assistance from NOAA, has developed a Special Area Management Plan (SAMP) for the Pea Patch Island Heronry Region. The SAMP has 28 management strategies of which 10 deal with wetlands protection, preservation, and enhancement within the 15 kilometer focus area. (Section 309)

The Delaware Adopt-A-Wetland Program was insti-

tuted. Currently 36 groups have voluntarily adopted wetlands throughout the State.

DNREC, in cooperation with EPA and COE, is finalizing a Wetlands Compensatory Mitigation Banking Agreement for the State.

Delaware's Open Space Program was created to support the land preservation activities of the DNREC and Delaware's Departments of Agriculture and State. The Governor's 21st Century Fund initiative invested \$6 million in the Delaware Land and Water Conservation Trust Fund to provide a greater level of community assistance.

Obstacles/Needs

Delaware has no official regulatory powers for the protection of its freshwater wetlands.

The Adopt-A-Wetland Program is very limited in manpower. Limited funding prevents the creation of a new position for a full time coordinator.

Summary of Strategy

In the first year of Section 309 funding, wetlands will be addressed as one of the elements of both SAMP and Cumulative and Secondary Impacts.

Delaware will continue to support wetland creation, restoration, and enhancement programs.

Delaware will assist with support for approval of a proposed statewide mitigation bank.

Delaware will use the Federal Coastal Zone Management Consistency Review to protect freshwater wetlands at risk under the COE Nationwide Permit Program.

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Maine

309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: Medium

Issue Characterization

By State definition, coastal wetlands include lands below an identifiable debris line left by the tide; areas that have salt tolerant vegetation; and tidal swamps, bogs, marshes or lowlands. Although development/fill is listed as a direct and indirect threat of high significance in Maine, there is a general perception that the loss of coastal wetlands due to development has declined over the past decade. Pollution, channelization and nuisance or exotic species (Phragmites) are of medium significance as threats to wetlands.

State Activities 1992 to 1996

In 1995, the freshwater wetland provisions of the Natural Resources Protection Act were amended to change the jurisdiction from any project that alters a freshwater wetland of 10 acres in size to projects that alter more than 4300 square feet of any freshwater wetland. This change brought the jurisdiction in line with federal law and allowed the state to obtain a state programmatic general permit.

The State has been developing a conservation plan to include strategies to improve the wetland inventory, improve the wetland assessment method, set priorities for wetland protection and restoration, and direct compensation projects to priority areas.

The Land for Maine's Future program has purchased acres of coastal wetlands, and the state has received grants from the U.S. Fish and Wildlife Service to acquire wetlands for wildlife habitats.

Obstacles/Needs

Public confusion about identifying wetlands and about federal, state, and local laws that regulate impacts on wetlands.

Inadequate understanding of wetland identification by municipal officials.

Need for a complete state inventory of coastal wetlands to track changes in wetlands and identify wetland restoration opportunities.

Private and public efforts to compensate for wetland losses are not always directed to the wetlands that are most valuable—largely due to lack of identified priorities for wetland restoration and preservation.

Insufficient funding for coastal wetland restoration and preservation projects.

Summary of Strategy

The Maine wetlands' strategy includes components for wetlands inventory, technical assistance for municipalities, and wetland restoration and preservation. The inventory goal is to complete a digital inventory of all coastal wetlands at the same scale. Technical assistance will rely on a method developed by the Wells National Estuarine Research Reserve and the Maine Audubon Society to identify wetlands and provide adequate protection. To improve restoration and preservation, the state will test a wetland compensation program that the Department of Environmental Protection and the State Planning Office are developing.

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Maryland

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

In Maryland, estuarine wetlands are considered tidal and palustrine are considered non-tidal. Tidal wetlands show an average increase of 9 acres per year through regulatory programs while non-tidal wetlands have average increases of 20 acres per year through regulatory and 85 acres per year through non-regulatory programs. The greatest threats to tidal wetlands are erosion and nuisance species (Phragmites). Development/fill, erosion, pollution, nuisance species, and fragmentation are the primary threats to non-tidal wetlands.

State Activities 1992 to 1996

A prototype nontidal wetlands watershed plan for the Big Annemessex River was developed using section 309 funds.

Using section 309 funds, Maryland is working with Calvert County on developing watershed plans for Parker Creek and Hunting Creek.

Maryland has also participated in Special Area Management Plans (SAMPs) in Baltimore County.

A state-wide effort to conduct a complete inventory and mapping of wetlands is about 1/3 completed.

The Water Resources Administration under the Department of Natural Resources was dissolved and its functions were transferred to the Department of the Environment. Concurrently, review for water quality certification was incorporated into the wetland license. Issuance of the Maryland State Programmatic General Permit has been negotiated with the Corps of Engineers and a single authorization was issued that incorporated all provisions.

Nontidal wetlands, water quality certification, and waterway and floodplain regulation have been combined into a single division. Nontidal wetland regulatory authority has also been expanded to include the Chesapeake Bay Critical Area, which had been

excluded from the nontidal wetlands law due to the extensive state regulations governing land use in the Chesapeake Bay Critical Area. This inclusion allows the wetland provisions to be uniform. Regulations under the tidal wetlands regulatory program providing clear guidance regarding permitting, mitigation, and enforcement became effective in 1994.

A new assessment methodology for nontidal wetlands was developed by the Nontidal Wetlands and Waterways Division for use by local planners in doing watershed management plans.

Maryland has met its goal of no net loss through its mitigation requirements and through wetland creation, restoration, and enhancement. The state also amended the nontidal wetland law to allow mitigation banking.

Maryland Department of the Environment worked with the Corps of Engineers and Baltimore County to develop and plan several SAMPs.

Obstacles/Needs

State programs and non-regulatory efforts have increased the levels of wetland acreage to exceed the no net loss goal. However, restoration and creation are pursued more often than enhancement and preservation because of limited funds and staffing constraints. Nonregulatory efforts have declined for the same reasons.

Summary of Strategy

Maryland may use section 309 funds to address the condition placed on the wetlands portion of the Nonpoint Source Pollution Control Program (See Cumulative and Secondary Impacts).

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Massachusetts

309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: Medium

Issue Characterization

Tidal wetlands in Massachusetts include emergent and scrub-shrub vegetated wetlands, beaches and bars, intertidal flats, rocky shores and aquatic beds. There are approximately 470,486 acres of freshwater wetlands in the state. Pollution, erosion, nuisance or exotic species, freshwater input and tidal restrictions are the primary threats to the wetlands. Natural processes such as ice scouring are also indirect threats. Submerged aquatic grasses have been declining over the past ten to fifteen years.

State Activities 1992 to 1996

Regulatory Program, Wetlands Protection Standards,
Assessment Methodologies (Section 309)

The 1994 Wetlands Protection Initiative included four pieces of legislation pertaining to: the State assuming responsibility for the section 401 Water Quality Certification for dredging and dredged matter disposal in State waters; the protection of estuary, wetland, and coastal waters by setting minimum water quality criteria for designated uses; the use of a more scientific definition and delineation process for the determining of boundaries for bordering vegetated wetlands; and improving the speed and efficiency of adjudicatory proceedings.

Revisions to the State Sanitary Code Title V now emphasizes treatment over disposal and provides a codified approval process for innovative and alternative systems.

The development of the coastal nonpoint pollution control program includes management measures for wetland protection and restoration.

A Stormwater Advisory Committee assisted the Massachusetts Coastal Zone Management Program (MCZMP) and the Department of Environmental Protection (DEP) to develop a stormwater policy with performance standards, design criteria and guidance to address new and existing discharges to wetlands and waters of the State.

The Rivers Protection Act which expands the jurisdiction of the Wetlands Protection Act (WPA) by creating a new resource area, the riverfront area, to be protected by the WPA.

Impact Analysis (Section 309) The Wetlands Conservation Program launched remote sensing and field verified submerged aquatic vegetation studies in special coastal areas.

The Environmental Risk Characterization for Chapter 21E (Massachusetts Oil and Hazardous Material Release Prevention and Response Act) Sites established new requirements and guidance for ecological assessments of wetlands and other resources for hazardous waste sites.

The MCZMP and the Waquoit Bay National Research Reserve are using wetlands in the Waquoit Bay watershed as a pilot study area to develop and test a transferable approach to assess wetlands impacts from nonpoint pollution.

Restoration/Enhancement_(Section 309) The Wetlands Restoration and Banking Program was established to restore degraded and destroyed wetlands and to explore the use of mitigation banking to improve mitigation success for unavoidable permitted wetland loss.

Samps (Section 309)

A resource management plan was completed for the new Neponset River Estuary Area of Critical Environmental Concern.

Education/Outreach (Section 309) MCZMP regional areas were modified along watershed boundaries consistent with the Executive Office of Environmental Affairs Watershed Initiative to more effectively provide technical assistance, outreach, and education to coastal communities on wetland protection and restoration issues.

DEP developed and continues to implement a comprehensive training program for the new wetland delineation and forest cutting practices guidelines. DEP also developed a new wetlands and waterways quarterly newsletter which serves as a successful communication tool for local officials and the public. Wetlands education videos were also developed.

MCZM Regional Programs sponsored regional conservation commission meetings and a stormwater Best Management Practices trade show.

Acquisition (Section 309) An Open Space Bond bill was passed by the state senate to earmark funds for acquisition of coastal lands containing wetland resources. A watershed planning grant program was also established to assist in resource protection.

Obstacles/Needs

To comprehensively address the protection and preservation of wetlands, Massachusetts must move to a holistic approach to assess the current status of wetland resources.

The MCZMP should be updated to reflect the State's role in the development of the Stormwater Management Initiative and its active role with the Wetlands and Restoration Banking Program.

Summary of Strategy

Ensure existing levels of wetlands protection and develop new strategies to preserve and sustain wetlands functions.

Implement and integrate the statewide stormwater policy and performance standards into existing programs.

Complete aerial photographic mapping of wetlands.

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New Hampshire 309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Threats identified as having a high impact on New Hampshire's wetlands include development/fill, pollution, nuisance or exotic species, freshwater input, and tidal restrictions. Many of the tidal marshes have been impacted by coastal development, including fragmentation caused by road construction and the deposition of fill on the marsh surface. In many marshes, the free flow of tidal waters at a high tide has been eliminated or restricted to passage under bridges or through culverts.

State Activities 1992 to 1996

State Programmatic General Permit issued June 1, 1992. All projects are reviewed on an individual basis by the Department of Environmental Services' (DES) Wetlands Bureau and subsequent approval results in a joint federal/state permit. Most projects now documented were previously covered by nonreporting provisions of Nationwide General Permit.

Changes were made in criteria for shoreline stabilization projects. Applicants must now demonstrate that alternative methods, such as surface water diversion or vegetative stabilization, have proven to be ineffective in stabilizing the shoreline prior to consideration of more extensive structural work.

The Wetlands Board adopted new rules relating to administrative fines.

The Wetlands Board revised its rules on delineation to require that techniques outlined in the 1987 Wetlands Manual must be used.

A law was passed to allow new rules for expedited permit processing for minimum impact projects to be developed.

In June 1996, the Wetlands Board was replaced with the Wetlands Council, composed of six state agencies and six public members. The Council serves as an administrative appeal body; DES Wetlands Bureau has authority to issue fill/dredge permits.

Buffers for Wetlands and Surface Waters in New Hampshire was developed jointly by the Audubon Society of New Hampshire, the New Hampshire Office of State Planning, the University of New Hampshire Cooperative Extension, and the Natural Resources Conservation Service (NRCS). The report focuses on water quality and wildlife habitat as key functions of upland buffers and provides municipalities with a scientific rationale and practical options for protecting naturally vegetated buffers adjacent to wetlands and surface waters.

Field Indicators for Identifying Hydric Soils in New England was published in 1995 by the New England Interstate Water Pollution Control Commission; it is required to be used in delineating hydric soils in New Hampshire.

Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire (Coastal Method) was developed to provide coastal communities with a site specific method for inventorying and evaluating vegetated tidal marshes. (Section 309)

Evaluation of Restorable Salt Marshes in New Hampshire conducted by the NRCS found 50 locations where non-natural restrictions impact tidal flux, and recommended restoration. This study provides some basis for selecting 306A restoration projects.

The Wetlands Bureau staff continues to educate the public through workshops, training sessions, newsletters, and fact sheets.

The New Hampshire Coastal Program, in coordination with DES, produced a bulletin entitled *The Tidal Buffer Zone: An Overview of the NH Wetlands Board Permitting Process*. (Section 309)

The 309 Program developed a research summary of scientific literature related to the functions and values of forested/scrub-shrub wetlands.

The State Department of Transportation has been in the process of instituting a wetland banking program to address mitigation requirements where avoidance or on-site mitigation is not achievable. (Section 309)

The 309 Program conducted an analysis of wetland mitigation issues and state regulations in an effort to educate Wetlands Bureau staff on current research findings and assist them in developing and adopting wetland mitigation regulations.

Obstacles/Needs

Need for a better approach/methodology for dealing more effectively with cumulative impacts to wetlands. The Wetlands Bureau is trying to address this information gap through the use of Geographic Information Systems to keep tabs on the locations of permitted projects. This initiative is in its early stages.

The Wetlands Bureau does not yet have a written mitigation policy; one is needed in light of the fact that the State Department of Transportation is proceeding with developing a Wetlands Mitigation Banking Program.

There is need for a better system for monitoring success of mitigated wetlands, including both compliance monitoring as well as long-term scientific evaluation of mitigated sites.

Summary of Strategy

Several questions were identified with regard to wetlands which will guide the State wetlands strategy for the near future. The questions are

- 1) what is the value of designating coastal wetlands as prime?
 - 2) should a state policy for wetlands mitigation be revisited?
 - 3) will the Comprehensive Shoreland Protection Act be an effective protection tool for the coast?
 - 4) what level of protection is appropriate for upland areas adjacent to coastal wetlands and waters?
 - 5) how will restructuring of the Wetlands Bureau and Board affect wetlands protection in the coastal zone?
- Tasks include evaluating the effectiveness of New Hampshire Wetland Protection Policies; making salt marsh restoration a key component of mitigation banking; and assessing cumulative impacts to wetlands program changes (looking at how the state can establish rules to address the problem of cumulative impacts of wetland development).

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New Jersey

309 Wetlands Enhancement Grant Summary

1992 Assessment: Medium

1997 Assessment: Medium

Issue Characterization

Although New Jersey is the fifth smallest state in areal extent, it contains the fourth largest amount of wetlands in the continental states. Key threats to wetlands are primarily due to increasing population and development in coastal areas. Illegal filling, encroachments from road creation, and nonpoint sources of pollution place the greatest stress on New Jersey's wetlands. Continued sea level rise is also a potential major factor in the loss of wetlands. Invasive species such as Phragmites are a problem in disturbed, pristine, and wetland mitigation sites.

State Activities 1992 to 1996

The Submerged Vegetation Rule was amended to include a revised definition of the resource and enlargement of the scope of the rule. As amended, the rule applies on the basis of the presence or absence of the existing or documented species habitat. In addition, freshwater submerged vegetation species habitats would be added to the existing submerged vegetation species list. The amendments provide increased protection of this resource.

The intertidal/subtidal shallows rule was amended in July 1994 to allow for the dredging of these areas to maintain access to existing marinas and public launching areas and existing dock and mooring areas.

The Wetlands Rule was modified in July 1994 to include a reference to all wetland maps available to the public, to include a reference to the Freshwater Wetlands Protection Act, and to include specific wetland mitigation requirements and standards.

The Wetlands Buffer Rule was also revised to clarify the required wetlands buffer distances which are dependent on the types of wetlands present.

The Stormwater Management Rule was revised to delete the existing rule and replace it with a new rule. The new rule provides more concise standards for designing stormwater management systems, defines

as conditionally acceptable the construction of artificial wetlands and discourages underground detention as a stormwater management technique. The rule also defines the maintenance requirements for these systems and defines the vegetation types that should be used as part of the systems.

The Department of Environmental Protection has created and maintains two database systems for monitoring mitigation projects. One tracks mitigation projects that are the result of a permit decision; the other tracks mitigation actions that are the result of a violation.

The New Jersey Wetlands Mitigation Bank, administered by the Wetlands Mitigation Council, has given approval to several projects. Litigation and settlement monies from oil spills and other industry-related cases have been used to purchase wetlands. The Office of Natural Resources Damage Assessment has coordinated with the Division of Fish, Game, and Wildlife to acquire shorebird nesting sites on beaches and wetlands along the Delaware Bay.

Obstacles/ Needs

None identified

Summary of Strategy

None

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New York

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: Medium

Issue Characterization

Existing regulations protect all tidal wetlands regardless of size, however coastal erosion and deposition are still problematic. Development and fill account for only modest coastal wetland losses. In addition to the incremental losses due to bulkhead replacement and new construction, other impacts such as the invasion and naturalization of invasive plants have greater significance. Species such as Phragmites, water chestnut, and purple loosestrife tend to crowd native plant species, negatively impacting habitat and ecosystem functioning. The channelization and artificial drainage of wetlands are presently of minor consequence. Some areas have initiated damming of historic mosquito control drainage ditches.

State Activities 1992 to 1996

There were no significant changes in major regulatory programs affecting either freshwater or tidal wetlands since 1992. In 1996, Governor Pataki initiated an effort to revise the tidal wetlands permit program to map and extend regulation of tidal wetlands along the shores of the estuarine Hudson River north from the Tappan Zee Bridge.(Section 309)

A freshwater wetland delineation technical manual has been developed.

Three state programmatic general permits are being negotiated to improve coordination among permitting state agencies and expedite reviews of projects, including those involving wetlands.

A Memorandum of Understanding has been developed regarding a compensatory mitigation wetland banking agreement.

Habitat restoration for Hudson River is continuing.

State agencies are developing a state wetland conservation plan.

The Draft Long Island Sound Regional Coastal Management Program includes priorities for wetland restoration and acquisition in the Long Island Sound region. (Section 309)

The Long Island Sound Study Habitat Restoration Effort is continuing.

The Long Island South Shore Estuary Reserve Act of 1993 was enacted, specifying that the comprehensive management plan to be developed will include recommendations to protect wetlands and other natural resources in the study area. (Section 309)

A Draft Oyster Bay-Cold Spring Harbor Outstanding Natural Coastal Area Management Plan was developed. (Section 309)

Obstacles/Needs

Protection of wetland function is an important issue that could be better addressed.

Summary of Strategy

Development of a Memorandum of Agreement (MOA) with other relevant agencies for the coordinated use of available funds to further sound management of coastal wetlands.

Development of a MOA with the US Army Corps of Engineers re. Habitat Restoration Study for the Hudson River to ensure that wetland restoration activities are efficient and effective.

Development and program incorporation of refined standards and guidelines for wetland restoration activities.

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Rhode Island

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Coastal marsh wetlands are a minor critical habitat type in Rhode Island. Much of the original acreage of coastal wetlands have been filled and altered along most of the urban waterfronts and port and harbor areas prior to regulation by State law in the 1970s. Since implementation of regulations by the State and Federal government, there has been very little tidal wetlands loss. There may be degradation of tidal wetlands from point and nonpoint sources of pollution. The effectiveness of freshwater wetlands protection is not clear due to the lack of a comprehensive analysis of freshwater wetlands' loss in the State.

State Activities 1992 to 1996

The Coastal Resources Management Council (CRMC) successfully developed and adopted coastal wetlands mitigation policies in 1993. (Section 309)

As a result of 309 efforts to develop a Memorandum of Understanding between CRMC and the Rhode Island Department of Environmental Management (RIDEM) on freshwater wetlands protection, amendments of the CRMC's enabling legislation adopted in July 1996 clarified jurisdiction geographically over freshwater wetlands in the state between CRMC and RIDEM. Previously, the CRMC had jurisdiction over all tidal wetlands. The legislation expanded CRMC's role to include jurisdiction over freshwater wetlands located in the vicinity of the coast. (Section 309)

New buffer policies and standards adopted by the CRMC have had an impact on the management and protection of Rhode Island's coastal wetlands. These program changes provide a consistent method for determining buffer and setback widths measured from the inland edge of coastal wetlands.

Development of submerged lands licensing program (Section 309) (see Strategy).

A detailed study of submerged aquatic vegetation in Narragansett Bay is being conducted.

The CRMC expects to put a greater emphasis on wetlands protection in the revised Salt Ponds and Narrow River Special Area Management Plans (SAMPS), based on the results of research on cumulative and secondary impacts and water quality. (Section 309)

Save the Bay has identified the need for a statewide coastal wetlands and submerged aquatic vegetation restoration plan and has been working with members of the General Assembly and the CRMC to gain support for legislation that mandates its development.

Obstacles/Needs

Development and implementation of an entirely new regulatory program for freshwater wetlands in the vicinity of the coast will require staff and training resources. New policies, procedures, and guidance documents will be necessary.

Summary of Strategy

Due to implementation requirements associated with the recent changes to the CRMC's wetlands management responsibilities, new coastal wetlands mitigation policies and the revision to the Salt Ponds and Narrow River SAMPs, and in anticipation of new data on the wetlands habitat in the state, wetlands remain a high priority enhancements area of the Rhode Island Coastal Program. The CRMC's top priority is the adoption of freshwater wetlands regulations and accompanying maps depicting the CRMC's jurisdiction in to the Rhode Island Coastal Resources Management Program.

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Virginia

309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: Medium

Issue Characterization

Development/fill and erosion are the primary threats to wetlands in Virginia. Virginia experienced losses of 7.28 acres/year from 1993 to 1995. Development/fill during reservoir construction and urban and rural construction is the primary cause of loss of palustrine wetlands in the southeastern section of the State. Erosion and erosion control structures are the primary cause of shoreline losses of tidal wetlands.

State Activities 1992 to 1996

A classification system and recommendations for improving the State section 401 certification program to better manage non-tidal wetlands were developed under section 309 but have not yet been implemented. (Section 309)

The Virginia Marine Resources Commission permit compliance program was strengthened by requiring better project drawing and follow-up inspections and tracking of compliance rates.

Guidelines for Mitigation Banking developed for tidal wetlands are expected to be ready for review and implementation by 1998.

Virginia developed model easement language and obtained Seaside Farm Easements to preserve critical wetland habitat for 10 eastern shore farms as part of the Northampton County Special Area Management Planning effort. (Section 309)

The Virginia coastal program purchased more than 1000 acres of wetlands.

The Nature Conservancy Wetlands Restoration Trust Fund provides certain applicants with more flexibility in wetland mitigation requirements and helps to restore and preserve as many wetlands acres in their natural condition as possible.

Obstacles/Needs

Virginia needs to implement the recommendations of the Council on the Environment and monitor the outcomes of management policies of nontidal wetlands.

Virginia needs to implement the recommendations of the Virginia Institute of Marine Science and the Department of Environmental Quality regarding how to manage nontidal wetlands.

Summary of Strategy

None

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*southern/
caribbean*

Alabama

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

The majority of the wetlands in Alabama are of the scrub-shrub/forested types. Losses of freshwater wetlands are primarily attributed to residential and commercial development and conversion to forest following drainage due to silvicultural development. The primary causes of losses of non-freshwater wetlands are industrial/navigational development, erosion/subsidence, and natural succession. A major impediment to addressing the continuing loss of wetlands is the lack of specific protection for wetlands that are located upland of the jurisdictional coastal zone boundary which is the 10-foot contour line.

State Activities 1992 to 1996

The Alabama Department of Environmental Management (ADEM) repealed the specific Alabama definition of coastal wetlands so the definition is now consistent with the Federal definition. Regulations were revised to address pile-supported structures as fill. (Section 309)

Assessment methodologies are evolving with the continued studies of the functioning values of wetlands. A successful wetlands creation project - a living marsh - has been developed at the Dauphin Island Sea Lab as part of the Estuarium site and for educational purposes.(Section 309)

U.S. Fish and Wildlife Service funds have been used to purchase significant tracts in Gulf Shores and purchase agreements are pending on Mon Louis Island. The U.S. Fish and Wildlife Service has also proceeded with the Grand Bay project.

The recently completed *Wetlands Conservation and Management Initiative - Summary Report of Alabama Wetlands* offers a description of the current knowledge regarding the State's wetlands. The sections pertaining to coastal wetlands provide an invaluable collection of relevant information as well as a framework to better manage coastal wetlands.

ment project conducted a series of public meetings of citizens, scientists, and elected officials in a Wetlands 101 workshop.

Obstacles/Needs

There is a need to develop a Coastal Wetlands Management Plan and an on-going and repeatable wetlands inventory utilizing National Wetlands Inventory classifications to accurately evaluate the status of Alabama's coastal wetlands.

The limited coastal zone boundary in Alabama does not offer protection to the majority of wetlands that many scientists identify as coastal wetlands. Therefore, a management framework which effectively networks those authorities and/or government entities that do have jurisdiction needs to be developed.

The Coastal Programs' Adaptive Resource Manage-

Summary of Strategy

Develop a comprehensive Coastal Wetlands Management Plan; develop a marsh shading study and implement/research on pile-supported structure impacts; develop a vegetative shoreline stabilization study and strategy.

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Florida

309 Wetlands Enhancement Grant Summary

1992 Assessment: Medium

1997 Assessment: Medium

Issue Characterization

Wetlands in Florida consist of freshwater wetlands, saltmarsh, and forested wetlands, predominately mangroves. Losses to Florida's wetlands are attributed to development/fill, nuisance or exotic species, pollution, channelization, freshwater input, and erosion. Agricultural conversion, which is exempt from permitting, is the greatest threat to wetlands. The invasion of exotic species is the second greatest threat. Population growth is the main impediment to controlling threats to coastal wetlands.

State Activities 1992 to 1996

The Florida legislature passed the Environmental Reorganization Act which merged the Department of Natural Resources and the Department of Environmental Regulation into a single agency - the Department of Environmental Protection (DEP). The legislature also created the Environmental Resource Permitting (ERP) program which is a streamlined permitting process implemented cooperatively by DEP and the water management districts. This program involves a single permit process for alteration of wetlands and mangroves. Permitting was further streamlined by a consolidated Joint Coastal Permit which is issued for an activity requiring the combination of an ERP and/or Coastal Construction Permit waterward of mean high water.

Legislative changes implementing the ERP process impacted the definition of waters of the state by adding wetlands and directing creation of a unified statewide wetland delineation methodology. Isolated wetlands are now subject to the full range of permit requirements.

In 1996, the legislature attempted to fix abuses from 1995 legislation that allowed an exemption for trimming mangroves within a 75-foot riparian fringe and restricted the authority to trim mangroves to landscape architects. New legislation was passed that reduced the riparian fringe within which mangroves

could be trimmed to 50 feet and expanded the list of professionals allowed to trim mangroves to include ecologists and arborists. The legislation also provides for a general permit for trimming in navigational channels and beyond the 50-foot riparian fringe. It also strengthened provisions for enforcement and penalties.

The legislature passed the Everglades Forever Act which requires the state to implement a cleanup and restoration plan that includes more than 40,000 acres of publicly-constructed and managed wetlands designed to remove phosphorous and improve the hydroperiod. Private agricultural interests are required to establish best management practices to reduce nutrients and other pollutants before they leave agricultural lands.

Two constitutional amendments were approved by referendum. One amendment requires all parties responsible for polluting the Everglades to pay their fair share of restoration. The second amendment establishes a trust fund dedicated to Everglades restoration.

The legislature provided statutory authority for mitigation banking as an alternative to onsite mitigation of impacts to wetlands. Chapter 62-342, Florida Administrative Code was jointly adopted by DEP and the Water Management Districts to govern the establishment and use of mitigation banking.

Obstacles/Needs

Florida needs a good monitoring program. There are no comprehensive baseline data on the extent of wetlands in Florida, so it is impossible to know precisely how many acres of wetlands are lost, degraded, protected, or held in public ownership.

Summary of Strategy

None

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Louisiana 309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Erosion, channelization, freshwater input and nuisance or exotic species (nutria) are the main threats to Louisiana's wetlands. Altered hydrology and shoreline erosion from storms are the leading localized processes contributing to coastal wetland losses. As of 1990, Louisiana was losing 16,858 acres of tidal wetlands per year. Rates of wetlands loss are decreasing in all coastal watersheds except the Barataria and Terrebone systems. Land is building in the Atchafalaya Delta.

State Activities 1992 to 1996

The Coastal Management Division (CMD) developed mitigation rules for addressing adverse impacts on the coastal zone and promulgated regulations for the initiation, operation, and long-term management of mitigation banks. The mitigation rules also established assessment methodologies and impact analysis criteria for addressing adverse impacts to wetlands.

The CMD coordinated closely with the Coastal Restoration Division (CRD) in CRD's wetlands restoration and enhancement programs.

The CMD provided speakers to schools and organizations, participated in many public forums and fairs, prepared posters, brochures, and public service announcements, and published the newsletter, the Louisiana Coast Lines.

Obstacles/Needs

None

Summary of Strategy

Since only 8 of a possible 19 local governments have approved local coastal management programs, CMD will request 309 funding to assist non-participating local governments to develop a program. Local programs greatly enhance the wetland protection aspects of the Louisiana Coastal Resources Program.

Because the introduction of large amounts of freshwater into wetlands is one of the best techniques to offset wetland loss, Louisiana has planned three major freshwater introduction projects. Louisiana has identified the changes brought on by freshwater diversion projects to be potentially significant to its coastal management program and has identified the acquisition of additional information as a program need.

CMD will request 309 funds to create a database on the problem of wetland degradation and the State's statutory responsibilities concerning accidental brine discharges.

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Mississippi

309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: High

Issue Characterization

Wetlands in Mississippi consist of tidal, non-tidal, and freshwater wetlands and submerged vegetation. Development/fill, erosion, pollution, and channelization are the primary threats to Mississippi's wetlands. Residential and commercial growth upland of coastal wetlands likely has an impact on wetlands but is outside of the jurisdiction of the coastal zone management program. The dockside gaming industry poses a threat to wetlands from the filling and channeling necessary for siting these facilities and from runoff from impervious surfaces adjacent to marshes.

State Activities 1992 to 1996

The Mississippi Code of 1972 was amended to establish the Mississippi Commission on Marine Resources (MCMR). The MCMR is responsible for regulation and policy development of all matters pertaining to saltwater aquatic life and marine resources. The Division of Coastal Ecology was established to accomplish effective management of the State's coastal habitat resources.

A legislative change to the Coastal Wetlands Protection Act strengthened the Commission's authority to levy fines by adding a penalty provision and eliminating the 5-foot exemption category.

Recommendations for improving the Mississippi's Coastal Program's ability to manage wetlands resources were proposed in a report entitled *Clarification of Wetlands Authority and Revision of Wetlands Use Plan*.

Development of mitigation banking opportunities is resulting in the development of restoration/enhancement and wetland creation programs.

The Mississippi Tidelands Trust fund is making funds available for acquisition and enhancement of wetland resources. Funds have been used for the determination of estuarine reserve sites (Grand Bay) to identify GEMS (Gulf Environmental Management Sites) for

matching funds with the Fish and Wildlife Service's Grand Bay BioReserve project, and to coordinate efforts with the Nature Conservancy for acquisitions in Hancock County.

The Mississippi Coastal Program was the major force in facilitating the meetings that addressed the needs of the Port of Pascagoula Special Management Area in relation to the need to find another dredge disposal site. A multi-agency agreement on new mitigation sites was developed through the efforts of the Department of Marine Resources.

Obstacles/Needs

The Mississippi Coastal Program lacks direct legal authority to address land uses upland of the Coastal Wetlands jurisdictional boundary of mean high tide.

Summary of Strategy

Mississippi proposes to develop a Wetlands Habitat Acquisition and Protection Strategy to complement the Tidelands Trust Fund Strategy. The new strategy will serve as guidance in identifying and prioritizing wetlands habitats in need of acquisition and/or other protection mechanisms.

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North Carolina 309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: High

Issue Characterization

Identification of coastal and freshwater wetland areas has been completed for 16 of the 20 coastal counties. Development/fill, pollution, and ditching are the primary threats to wetlands. Coastal development and highway construction is placing tremendous pressure on the state's wetlands. Stormwater runoff and runoff from livestock operations have adverse effects on wetlands. North Carolina has regulatory authority over tidal or coastal wetlands; however it has no clear authority over non-tidal, or freshwater, wetlands.

State Activities 1992 to 1996

New rules administered by the Division of Water Quality (DWQ) include requirements for enhancement, mitigation and restoration of wetlands for all wetland impacts greater than one acre.

The Division of Coastal Management (DCM) developed a functional assessment procedure that should result in the protection of functionally significant wetlands. (Section 309)

The DCM is developing a Wetlands Conservation Plan which will contain guidelines on how DCM will work with other states and federal agencies in protecting wetlands. (Section 309)

The state general assembly passed legislation in 1996 establishing a Wetlands Restoration Program which will provide assistance for general wetland restoration efforts as well as efforts related to compensatory mitigation. (Section 309)

DCM developed the North Carolina Coastal Region Evaluation of Wetland Significance procedure which allows DCM to categorize wetlands into broad classes of functional significance. (Section 309)

DCM developed and distributed a brochure for the general public entitled *Wetlands: Their Functions and Values in Coastal North Carolina*.

Obstacles/Needs

DCM has no clear jurisdiction over freshwater wetlands in coastal counties. The state's role is limited to federal consistency review and certification of 404 permit applications.

DCM has been collecting data needed to evaluate cumulative and secondary impacts and has found that some important data are not available. In addition, improvements need to be made in the DCM permit tracking system to use the system to evaluate threats from various types of development.

Summary of Strategy

Assist in implementation of NC Wetlands Restoration Program.

Implement the Wetlands Conservation Plan.

Implement revised Land Use Planning Guidelines.

Develop methods to protect estuarine and contiguous wetlands.

Promote the acquisition of functionally significant wetlands in the coastal area.

Develop procedural guidelines for the geolocation of wetland permit sites.

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Puerto Rico 309 Wetlands Enhancement Grant Summary

1992 Assessment: High
1997 Assessment: High

Issue Characterization

Development/fill, erosion, pollution, and channelization are all classified as having a significant impact on Puerto Rico's coastal wetlands. Sources of these impacts range from tourist hotel development, erosion-induced sedimentation primarily caused by open sun coffee cultivation and overgrazing of livestock to agricultural discharges and wastes, and major flood control channelization projects. These problems are exacerbated by the territory's lax development and enforcement of environmental regulations.

State Activities 1992 to 1996

Interagency agreements were developed among the Department of Natural and Environmental Resources (DNER), the Environmental Quality Board (EQB), and the Planning Board under which all will accept and implement the new wetlands preservation policy and regulation being developed under the section 309 program.

The pending DNER mangrove management plan represents the first measure to implement the new wetlands preservation policy. Its effect will be to guide enforcement activities to prohibit the alteration of wetlands.

A State declaration of policy to protect wetlands is awaiting signing by the Governor.

Data from the National Wetlands Inventory map for Puerto Rico are being entered into the Geographic Information System under development for Cumulative and Secondary Impact assessment methodology. (Section 309)

Wetlands restoration and enhancement activities are being implemented in response to Army Corps of Engineers Section 404 authorities.

Management Plans for all Special Planning Areas have been completed.

The U.S. Fish and Wildlife Service, the Natural Resources Conservation Service and the Corps of Engineers have undertaken wetlands creation programs to mitigate the loss of wetlands due to private development.

A critical mangrove area near the Phosphorescent Bay at La Parguera was acquired by a non-governmental organization.

Obstacles/Needs

Serious data gaps exist with respect to permits affecting wetlands because permitting agencies do not advise DNER about wetlands changes resulting from such permits. A similar problem exists within DNER with respect to information flow between the Division of Consultations and Endorsements, the unit which grants permits in the maritime zone.

There are inadequate resources for monitoring by DNER and the EQB. More technical and legal training is needed for personnel responsible for surveillance and reporting of violations.

Summary of Strategy

Amendments to a number of laws and regulations will be required to ensure implementation of the Executive Order on wetlands protection.

The possibility of establishing a joint permitting program with the Corps of Engineers will be reviewed. Protocol will be adopted for monitoring wetland mitigation activities.

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309 Wetlands Enhancement Grant Summary

1997 Assessment: High

Issue Characterization

Development/fill, pollution, channelization and dredging/excavation are the primary threats to South Carolina's wetlands. Since the passage of the State Coastal Zone Management Act in 1977 and federal approval of the State's Coastal Zone Management Program in 1978, negative impacts to coastal wetlands have been minor, but have come from the same types of activities.

State Activities 1992 to 1996

The following 309 changes were made to regulatory programs:

A draft Memorandum of Agreement (MOA) was developed between South Carolina's Office of Ocean and Coastal Resource Management (OCRM) and the Environmental Protection Agency (EPA) to assist EPA with investigations of wetlands violations. (Section 309)

A final MOA between OCRM and the Corps of Engineers (COE) was developed to assist with violation investigations and compliance inspections. (Section 309)

Standard operating procedures were developed for consistency certification enforcement procedures. (Section 309)

Conservation easement/restrictive covenants language was developed for use by applicants in protecting in perpetuity preserved wetland and upland buffer areas within developments. (Section 309)

OCRM's uniform signage program is being used to post permanent signs along the perimeter of preserved wetland and buffer areas. (Section 309)

There has been an increase in the numbers and effectiveness of compliance inspections. (Section 309)

A Field Incident Report form was adopted for use in notifying the COE of possible Section 404 violations. (Section 309)

The General Assembly adopted OCRM's mitigation guidelines and wetland master planning policy, thus giving the force of state law to these coastal program elements. (Section 309)

Consistency Certification Enforcement Procedures were developed. (Section 309)

A standard compliance inspection form to be used by staff engineers and biologists to document inspection findings was developed and adopted. (Section 309)

New procedures were developed for determining the zone of influence or lateral effect of ponds and ditches on wetlands. (Section 309)

A State-operated mitigation bank was developed and impaired riparian wetland habitats were identified.
(Section 309)

Revisions and updates to the South Carolina's Developer/s Handbook for Freshwater Wetlands were compiled and distributed. (Section 309)

A project was completed on critical habitats for threatened and endangered species within the coastal zone and recommendations made. (Section 309)

Although not a direct 309 change, over 16,000 additional acres were acquired through or with assistance of OCRM for wetland preservation and protection within the Ashpoo Combahee Edisto Basin National Estuarine Research Reserve and the Sandy Island/Winyah Bay Focus Area.

Obstacles/Needs

The utilization of non-regulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands is the area OCRM identified as a gap in addressing the programmatic objectives for this enhancement area.

Summary of Strategy

OCRM will work with recognized conservation organizations active in the coastal zone to identify and acquire priority habitats and establish on-going mitigation banks. This effort will involve an evaluation of proposed sites and a determination by the State and Federal agencies if these sites are priority management areas and thus qualify as preservation only mitigation banks.

OCRM will work with review agencies, bank operators, applicants and the public to develop policies for the use of fee based mitigation. Specific policies will be developed for types of projects which may use fee based mitigation, ratios for calculating mitigation credits, approving banks set up for fee based mitigation, accounting for money put into these programs, and other needs identified during the process.

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United States Virgin Islands
309 Wetlands Enhancement Grant Summary

1992 Assessment: Moderate
1997 Assessment: High

pacific

Issue Characterization

Wetlands in the Virgin Islands range from intermittent fresh water streams to mangrove-lined estuaries, salt ponds and mud flats. Erosion due to poor shoreline and upland clearing practices and development and fill for tourism-related and water-dependent businesses adversely affects wetlands. Hurricanes are a natural threat to wetlands, and are especially damaging to mangroves and other shoreline vegetation.

State Activities 1992 to 1996

The Department of Planning and Natural Resources conducted a study on wildlife use of saltwater wetlands in the Territory. (Section 309)

The University of the Virgin Islands, in collaboration with The Nature Conservancy, is continuing to inventory and map all natural resources, both terrestrial and marine, within the Virgin Islands using Geographic Information System technology. (Section 309)

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Obstacles/Needs

Accurate testing of water quality in tidal wetlands is difficult because ponds fill during the rainy season and dry out during hot periods.

Summary of Strategy

Acquire those wetlands which are most vulnerable to degradation through purchase, lease, condemnation, or acceptance as a gift. The Fish and Game Fund may be used to purchase sensitive areas such as wetlands.

Alaska

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High in Western and Southern Southeast regions. Moderately important in rest of state.

Issue Characterization

Most of Alaska's wetlands are tundras, located inland. Cumulative long-term losses total less than 200,000 acres, less than 1 percent of the State's total, but most loss is in the coastal zone and important salmon habitat. Because wetlands are prevalent in low lying coastal areas likely to be developed, Alaska's state and local policy is to protect high value wetlands and allow development in low value wetlands.

State Activities 1992 to 1996

A recent survey of Alaska's coastal management program listed setbacks/buffers and compliance monitoring/enforcement as very important regulatory tools to protect wetlands. The recently revised Juneau wetlands management plan requires setbacks from high value wetlands.

Using state and EPA funds, several state agencies are being trained in Hydrogeomorphic Assessment and Classification Methodology (HGM). HGM is expected to provide a methodology that will consider unique conditions such as permafrost. A pilot project using HGM in assessing wetlands functions was completed for the Kenai River.

The Alaska Department of Fish and Game (ADFG) compiled all aquatic (including wetland and riparian) restoration and enhancement projects that were adequately documented and selected several that could serve as case studies. ADFG analyzed the successes and failures of the projects, developed guidelines for future restoration and enhancement projects, and made recommendations for follow-up actions. (Section 309)

Using funding as an 309 Enhancement Grants Program project of special merit, ADFG led a two-year effort to establish a state aquatic habitat restoration program, develop specific protocols and standards for restoration projects, and evaluate and recommend changes to state agencies policies and procedures. (Section 309)

The State and City and Borough of Juneau identified sites and designs for off-site compensatory wetlands mitigation projects, and developed guidelines and procedures for designing appropriate on-site mitigation. The results of the project were incorporated into the Juneau Wetlands Management Plan. (Section 309)

The Juneau Wetlands Management Plan and the Anchorage Wetlands Management Plan SAMPS have been revised since the last Assessment.

Alaska selected the estuary at the mouth of Kachemak Bay as a candidate site for National Estuarine Research Reserve designation. State agencies and municipalities have worked together on local wetlands or watershed planning projects, including the Mendenhall Watershed Management Plan, the Chester Creek Watershed Plan, and the Little Susitna Watershed Plan.

Obstacles/Needs

Coastal Districts do not have sufficient staff or data to implement proposed regulations.

Coastal Districts need access to and training in the use of scientific data and need technical assistance from state and Federal agencies in identifying and mapping wetlands.

Statewide efforts to improve and enhance Corps of Engineers General and Nationwide Permits will help protect valuable wetlands while increasing the efficiency of permit issuance.

Summary of Strategy

Alaska proposes to conduct a project entitled "South-east district tidal/estuarine wetlands mapping and database study." This project would identify and map wetlands that provide key ecological functions such as habitat, flood mitigation, etc.; identify rarely occurring wetlands; and minimize development footprints. The goal would be to develop state permit review guidelines and zoning regulations for balancing uses and development with wetlands conservation.

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American Samoa

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Since 1961, about one-quarter of American Samoa's wetland areas have been lost to development. While the overall rate of loss has declined since 1991, the largest mangrove swamp areas on Tutuila continue to lose ground. Development/fill, pollution, channelization, erosion and conversion to agricultural uses are the primary threats to the wetlands. Population pressure and the demand for mangroves for firewood has resulted in unsustainable harvesting in some areas on Tutuila.

State Activities 1992 to 1996

The adoption of American Samoa's Coastal Management Program's (ASCMP) administrative rules in 1994 and amendments in 1997 have enhanced enforcement of wetland violations in the Territory. Increased tools such as the development of a Comprehensive Wetlands Management Plan for Tutuila, Aunu, and the Manua Islands, wetlands guides for the Territory, public awareness materials (such as videos, pamphlets, etc.) and the village facilitator program have presented ASCMP with an opportunity to limit additional depletion in wetland acreage.

Institutionalization of the Community Based Wetlands Management Program (CBWMP). The CBWMP utilizes the strength of the traditional village council system in delineating and managing wetlands. An integral part of the CBWMP is the village liaison/facilitator program which has led to delineation and establishment of buffers which limit residential and commercial/industrial development. In addition, issuance of stop orders for development and waste dumping has notably increased.

A no net loss policy has been defined for wetlands, and a 1:2 mitigation standard has been adopted.

Techniques used to delineate wetlands have improved.

A number of villages have been targeted for nonregulatory restoration involving restoration and clean up of wetlands.

Obstacles/Needs

There is a need to competitively recruit a wetlands specialist to oversee the CBWMP. This process has been hindered by local government processes and salary classification. There is a need to increase use of village councils, improve public education and awareness, increase enforcement, increase funding for restoration project, accelerate surveying process, hire a hydrologist, reduce unplanned activities affecting wetlands, undertake more hydrological assessments, increase work with partner agencies, and increase integration of regulatory programs with cultural practices. A need exists to establish a technical mapping system which will assist with a more accurate delineation and survey process.

Summary of Strategy

Goals of the strategy are to utilize community-based programs to complete delineation and surveying work and development of ordinances for villages.

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309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Approximately 91% of California's wetland acreage present before European settlement has been lost. The major impact is direct loss or degradation due to human activities. Agricultural activities are the primary cause of wetland loss. Development/fill, erosion, pollution, channelization, nuisance or exotic species, alteration of hydrology, and lack of proper buffers are all threats to wetlands. In urbanized areas, the limited availability of suitable upland area has increased the pressure to develop the remaining wetlands.

State Activities 1992 to 1996

Changes that have improved the description of wetlands and provided a more consistent means for assessing mitigation include:

Implementation of the Hydrogeomorphic Approach for wetland assessment and improvement in wetland delineations using established methodologies.
(Section 309)

Development and distribution by the California Coastal Commission of two procedural guidance manuals dealing with the review of projects affecting wetlands and planning and evaluation of appropriate mitigation. These manuals have enhanced the consistency of impact analysis by Commission staff and provide early information to project sponsors describing necessary and essential information. (Section 309)

Development of management plans and Local Coastal Programs for specific wetlands within the coastal zone and initial work by resources agency to develop a strategy for a regional planning framework for southern California coastal wetlands.

Better interagency communication in relation to the completion of certain 309 projects. (Section 309)

Interaction with local government, site representatives and individuals from academic institutions through seminars and conferences. (Section 309)

Obstacles/Needs

Improved methods to review and incorporate into the California Coastal Management Program the extensive data and information that has been developed on wetlands over the last 15 years; support for staff to participate in interagency and interdisciplinary forums to resolve wetland management and restoration issues; monitoring and developing a series of restoration projects to demonstrate alternative restoration techniques to study their long term effectiveness and to test the economic and scientific factors; research in and consistent implementation of adequate sized buffers and transition zones

Developing a comprehensive, coordinated, and focused wetland protection and restoration program for California's coast.

Application of Regional Cumulative Assessment Project (ReCAP) framework to undertake review of wetlands and watershed management policies of Malibu/Santa Monica Mountains region.

Guidance to develop regional wetland and watershed management plans.

Interagency procedures for monitoring wetland development, mitigation, and restoration.

Refined criteria for permit conditions and mitigation and restoration policies for interagency use that adequately account for the unique attributes of California's wetlands systems.

Summary of Strategy

California does not have a separate strategy for wetlands but will apply the ReCAP framework to identify issues related to wetlands.

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Commonwealth of Northern Mariana Islands

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: Medium

Issue Characterization

Much of the original extent of coastal and freshwater wetlands in the CNMI have been altered by filling with materials dredged during urban expansion and port and harbor development. Development/fill, pollution and nuisance or exotic species (tilapia) are the primary threats to wetlands. Current trends include extreme pressure to develop wetlands for urban uses, hotel and resort development, and dredging and filling for harbor and marina development. Agricultural conversion, groundwater withdrawal and livestock grazing also threaten wetlands.

State Activities 1992 to 1996

CNMI organized a wetlands assessment training workshop attended by government agency staff and private consulting firms and conducted by COE wetland scientists. The workshop launched an effort to classify Saipan wetlands according to natural resources value.

CNMI requires mitigation for wetland fill at the ratio of 1.5 to 1, as utilized by the COE. The mitigation areas are all considered to be successful in terms of wetland functions and endangered species habitat for the Mariana moorhen.

CNMI began work to create an endangered species mitigation bank utilizing wetlands and designated conservation areas of Saipan. This is not a 309 change. Program is also underway for Tinian Magpo Wetlands. Rota riverine wetlands are being addressed in the Rota Habitat Conservation Plan. The Rota project is a 309 change.

CNMI accelerated wetlands acquisitions by delineating and classifying private wetlands for which other public lands were traded in order to gain public wetland ownership.

Obstacles/Needs

Current Federal and CNMI wetlands policies primarily address direct impacts. There is a need to address management of cumulative and secondary impacts to wetlands.

Summary of Strategy

Increase public education on the importance of wetlands and on the fines and mitigation measures that are applicable to anyone found damaging wetlands.

Clarify and solve public acquisitions questions in an equitable fashion.

Carefully consider the benefits of applying for large scale funding available through the Section 7 funds for endangered species habitat conservation planning. Continue interagency and intergovernmental coordination with the joint CNMI - Federal Environmental Agency Task Force.

Fully explore the benefits available from participation in COE Special Management Area Planning.

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Guam

1992 Assessment: High

1997 Assessment: Medium

Five types of wetlands are found on Guam: marine, estuarine, palustrine, lacustrine, and riverine. Development/fill, erosion and channelization are the primary threats to the wetlands because these activities are related directly and indirectly to all types of development activities. Because of the small size of the island (212 square miles), any earth altering activities related to development eventually affect the wetlands. Farming and golf course activities contribute fertilizers and pesticides to the wetlands.

Wetland regulations have now become institutionalized standards within the recently passed I Tanota land use plan.

The Guam Environmental Protection Agency and Division of Aquatic and Wildlife Resources reevaluated and restructured their review process for wetland development activities in terms of what they look for in wetland proposals and how proposed activities will affect wetlands.

The Guam Coastal Management Program (GCMP) contracted out a project to convert or digitize existing Wetlands Inventory and other wetland delineation maps for the entire island. This information will be used to update the existing *Guam Natural and Manmade Constraints* document and be used to determine the presence of wetlands during development.

Policies for wetlands restoration, enhancement, and creation programs have been suggested and utilized as guidelines by the wetland agencies.

Monitoring of mitigation plans by the wetland agencies has become more proficient as a result of both successful and failed experiences with several construction projects.

The GCMP printed wetland posters, filmed a 16-minute wetland video for decision-makers and students, published numerous wetland articles, and

featured various wetland species on the GCMPS public television show.

The GCMP successfully fought an attempt by the Guam Chamber of Commerce to have the entire volume of Environmental Protection Standards removed from the I Tanota Land Use Plan.

Although the recently passed land use plan for Guam (Tanota) contains wetland regulations, it is unclear whether this will take the place of specific, comprehensive wetland policy, legislation, and rules and regulations. There are inadequate enforcement tools and personnel and a lack of incentives (i.e., tax credits, mitigation banking) or disincentives (inadequate fine structures to protect wetlands).

Although the recently passed land use plan for Guam (Tanota) contains wetland regulations, it is unclear whether this will take the place of specific, comprehensive wetland policy, legislation, and rules and regulations. There are inadequate enforcement tools and personnel and a lack of incentives (i.e., tax credits, mitigation banking) or disincentives (inadequate fine structures to protect wetlands).

None

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309 Wetlands Enhancement Grant Summary

1992 Assessment: Medium
1997 Assessment: Medium

Erosion, nuisance or exotic species, freshwater input, and development/fill are the primary threats to Hawaii's wetlands. Development in upland watersheds causes excessive upstream erosion and an increase in sedimentation in coastal wetlands. Invasion of nuisance and exotic species such as mangroves and California grass are also a threat. Diversion and depletion of stream flows upstream of coastal wetlands for agriculture alters the dynamics of the ecosystem.

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There was a comprehensive review of State Land Use District boundaries, which identified important and sensitive wetlands, among other conservation resources. Many of these wetland areas not currently in the state conservation district have been designated for boundary amendments to place them in the conservation district. (Part Section 309)

There was a comprehensive review of State Land Use District boundaries, which identified important and sensitive wetlands, among other conservation resources. Many of these wetland areas not currently in the state conservation district have been designated for boundary amendments to place them in the conservation district. (Part Section 309)

In 1993, the City and County of Honolulu adopted a wetlands buffer ordinance providing for increased controls on development adjacent to delineated wetlands.

Representative Patsy Mink has successfully obtained congressional approval to purchase Waihee Wetlands, a privately held 30-plus acres site in Oahu.

See Cumulative and Secondary Impacts

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There are limited state and federal funds for acquisition of wetlands.

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There is limited state wetland management, planning, and coordination. It is unclear which state agency or agencies have the lead in wetland planning and protection efforts outside of existing state owned and managed wetlands.

There is a failure to consider alternative protection approaches. Hawaii does not have an active program for transfers or purchases of development rights, mitigation banking and other techniques for enhancing wetland protection efforts.

There is limited information on wetlands. Data are needed on the location and various functions of wetlands.

There is a lack of statewide wetland policies. There is a need to review and evaluate existing regulatory activities for wetlands to determine if they protect wetlands.

There are no maps showing all of the regulated wetlands in Hawaii.

Oregon

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: Medium

Issue Characterization

Oregon has thirty-nine estuaries with wetlands types including high and low salt marsh, tidflats, eelgrass beds, and riparian wetlands. Non-estuarine wetlands include inland marshes, wet meadows, riparian wetlands, swamps/bogs and interdunal wetlands. Development and implementation of local estuary management plans have largely stopped the loss of estuarine wetlands. Development/fill, pollution, and channelization are the primary treats to coastal wetlands.

State Activities 1992 to 1996

The Removal - Fill Law was amended to define essential indigenous anadromous salmonid habitat and remove the 50 cubic yards removal-fill thresholds for permits in salmonid habitat areas.

The Oregon Division of State Lands (DSL) modified and renewed the Road Construction and the Erosion Control General Authorizations to increase the emphasis on bioengineering instead of rock riprap for streambanks stabilization.

A new administrative rule was adopted that made changes to requirements for local jurisdictions to address wetlands during or before their next periodic reviews. Local governments are required to inventory wetlands inside urban growth boundaries and urban unincorporated communities following DSL standards and procedures.

DSL adopted rules outlining compensatory mitigation requirements for freshwater wetlands. The rules establish priorities for type, location, and required acreage of wetlands mitigation projects.

The Oregon Legislature mandated that DSL develop criteria for defining significant wetlands in Oregon. DSL adopted criteria for designating outstanding state freshwater wetlands to be applied outside of urban growth boundaries and proposed adoption of criteria for designating locally significant wetlands to be applied within urban growth boundaries and unincorporated urban areas.

The Oregon Legislature passed a law that authorizes DSL to submit an application to the Federal Environmental Protection Agency for assumption of the Federal section 404 program.

The Oregon Legislature enacted a law that prohibits DSL or local jurisdictions from regulating alterations of one acre or less to certain artificially-created freshwater wetlands. The exception applies to stormwater detention/retention facilities, drainage ditches, and other wetlands created to control, store, or maintain stormwater.

The Mitigation Banking Law of 1987 was amended to authorize privately-owned and operated mitigation banks in addition to the public banks already allowed by the law. DSL is also required to develop rules for implementing statutory provisions for mitigation banking and payment or protection in lieu of mitigation.

DSL adopted rules establishing and explaining local governments' responsibilities in DSL's wetland conservation planning process.

The Department Environmental Quality and DSL developed a memorandum of understanding regarding the conditions for preventing degradation of wetlands and other waters that would not be included in DSL wetlands permits.

Moderate changes include:
DSL completed the Freshwater Wetlands Assessment

Methodology which must be used by local governments conducting wetland inventories or developing local wetlands conservation plans.

As a result of an earlier study completed by DSL on wetlands mitigation projects in the Portland area, DSL adopted freshwater wetlands compensatory mitigation rules and hired a mitigation specialist to review mitigation plans.

DSL is conducting a pilot study of historic wetlands loss in the Willamette Valley.

The Watershed Health Program was established by the Legislature to allow development of local watershed councils which carry out watershed planning and restoration/enhancement projects for riparian and upland areas. The Governor's Watershed Enhancement Board was also established to manage this program.

The Oregon Coastal Salmon Initiative was developed as a partnership between state agencies and local governments and groups to conserve and restore coastal salmon. Wetland's protection, restoration, and enhancement projects will likely be a part of this initiative.

DSL is currently investigating establishment of a wetland restoration policy for Oregon.

Bay City, Cannon Beach, Gearhart, Dunes City, Florence, Lincoln City, Port Oxford, Rockaway Beach, Tillamook, Toledo, and Warrenton have all completed local wetlands inventories.

DSL has included education and outreach in its efforts to improve the state wetlands program. A wetlands assessment workshop was held and newsletters, guides, and brochures have been published.

DSL adopted Oregon's Wetland Conservation Program to provide direction and establish priorities for DSL's Removal-Fill and Wetlands Planning Programs.

Obstacles/Needs

Improve baseline information on existing and historical wetlands, coastal wetlands acreage, losses, and impacts.

Identify and allocate additional resources to enforcement and monitoring of wetlands projects.

Continue work on the mitigation banking program to encourage wetland restoration.

Develop non-regulatory restoration, enhancement, or creation projects.

Work with local governments and DSL staff to determine the relationships between various wetlands requirements and the Removal-Fill Law.

Determine and then prioritize coastal wetlands restoration and enhancement needs.

Identify and allocate additional resources for local wetlands planning.

Investigate the use of watershed planning as a tool for coastal wetlands protection.

Adapt for use in Oregon the hydrogeomorphic wetlands assessment methodology developed by the Corps of Engineers.

Summary of Strategy

None

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San Francisco Bay Conservation and Development Commission

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

Since 1850, more than 80 percent of the Bay's tidal wetlands have been filled or diked. Farming, salt production and urbanization have led to wetland conversion and filling of the Bay. Since 1950, the rate of wetland conversion has slowed considerably, due in large part to the creation of BCDC. BCDC's efforts have resulted in an increase of 1,360 acres of the Bay's surface.

State Activities 1992 to 1996

The California Court of Appeals held that the upper limit of BCDC's Bay jurisdiction extends only to the mean high water mark and to five feet above mean sea level in areas of tidal marsh. Areas inundated by the daily high tide above the mean high tide level are now excluded from the legal definition of Bay in non-tidal marsh and are treated as dry land under the McAteer-Petris Act.

Since 1995, BCDC has participated in the Bay Area Habitat Goals Project sponsored by the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the State Department of Fish and Game, Regional Water Quality Control Board, State Environmental Protection Agency, the Resources Agency, and BCDC. (Section 309)

In 1996, as part of the Sonoma Baylands project, levees were breached and tidal action reintroduced to a 322-acre hayfield at the mouth of the Petaluma River at San Pablo Bay. (Section 309)

A partnership between BCDC and four cities and four counties in the North Bay to develop a Wetlands Protection Program for the historical tidelands of the North Bay was initiated in 1995. (Section 309)

Obstacles/Needs

To better understand the area of Bay resources impacted by the *Littoral decision*, accurate measurements of the mean high water line at specific sites around the Bay should be made using GPS technology.

The Bay Plan wetlands findings and policies and BCDC's mitigation policies should be updated.

BCDC should continue to work with the Corps of Engineers, the Resources Agency and the Regional Water Board to obtain section 404 permitting authority.

Wetlands at Hamilton Army Airfield should be restored.

BCDC should coordinate its wetland permitting process with other Bay regulatory agencies.

The North Bay Corridor Study should be completed.

Summary of Strategy

Work on the North Bay Wetlands Protection Program should continue.

A Wetland Mitigation Banking System should be created.

Establish a San Francisco Bay Trust to help BCDC to coordinate the acquisition and management of Bay open space, natural resources and wetlands.

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309 Wetlands Enhancement Grant Summary

1997 Assessment: Medium

*The primary threats to Washington's wetlands are development, fill, pollution and nuisance or exotic species. Development continues to be the major threat, causing fragmentation of wetland systems and changes in hydroperiods. Discharges of materials, mainly from nonpoint sources, degrades wetlands and impairs their functional capabilities. Nuisance plants are a problem in both freshwater wetlands and estuaries. Infestations of *Spartina* in Willapa Bay are locally of high significance.*

Washington Departments of Ecology and Community, Trade, and Economic Development developed the State Wetlands Integration Strategy (SWIS) to develop and implement a more effective, efficient, and coordinated system to better protect the wetland resources of Washington State. The strategy includes recommendations on a state wetland's policy, wetlands planning, permitting, non-regulatory actions, and education.

The Growth Management Act (GMA) was passed and local critical areas ordinances and comprehensive plans were established. (Section 309)

The SWIS process identified a number of regulatory improvements, several of which are being addressed. The Washington legislature passed legislation directing the Department of Ecology to develop a delineation manual consistent with the current Corps of Engineers 1987 manual. It also required the state to change terminology to provide uniform usage of the term wetlands under the GMA and Shorelines Management Act. (Part Section 309)

The Wetlands Function Assessment Project, with funding from the Environmental Protection Agency, is underway which aims to develop new assessment methods for specific wetland types that build on current methods.

The Puget Sound Wetlands Restoration Program was successfully tested in the Stillaguamish River basin and is now being applied to the Nooksack River basin.

The Wildlife and Recreation Program was established to provide funding to government entities for the purchase of habitat conservation and recreation lands.

None

None

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great lakes

309 Wetlands Enhancement Grant Summary

1997 Assessment: High

Issue Characterization

Agriculture, development/fill, pollution, channelization, nuisance or exotic species, and silviculture are all identified as medium or high in significance. Wetlands currently in agricultural production through on-going hydrologic manipulation are further threatened by conversion to upland uses, primarily residential development. Some coastal wetlands have been degraded by historical inputs of toxic substances, which is still evident in the sediments at these sites. County drain commissioners may drastically alter wetlands in coastal areas through channelization or drain maintenance work. Many nuisance exotic species threaten the integrity of Michigan's coastal wetlands, growing aggressively and out-competing native species. There are several exemptions in the wetland protection legislation for agricultural and silvicultural activities.

State Activities 1992 to 1996

Changes were considered to the Natural Resource and Environmental Protection Act, which would reduce regulation of some incidentally created wetlands, allow mitigation banking, and allow increased and graduated permit application fees. Michigan's Department of Environmental Quality (DEQ) also requested state funding to complete the statewide wetlands' inventory. (Section 309)

First phase of developing regulatory guidelines for applying cumulative impact analysis in wetland permit reviews was completed in 1995. (Section 309)

A guidebook was produced in 1996 titled *Living with Michigan's Wetlands: A Landowner's Guide*.

Obstacles/Needs

Standardized methods for decision-making in the permit review process are needed, particularly for assessing cumulative impacts to wetlands

Funding is needed to complete the statewide wetlands inventory and to ensure regulatory jurisdiction over wetland areas.

Summary of Strategy

Tasks include implementing the Statewide Wetlands Inventory on a county by county basis.

DEQ will also develop standardized methods for assessing cumulative impacts to wetlands in the permit review process

Critical wetlands will be added to the state's regulatory jurisdiction.

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1992 Assessment: High
1997 Assessment: Medium

Issue Characterization

Wetlands in the Delaware Estuary Coastal Zone (DECZ) are both tidal and non-tidal with non-tidal emergent and non-tidal unconsolidated bottom wetlands being the dominant types. Wetlands in the Lake Erie Coastal Zone (LECZ) are mainly lacustrine associated with the littoral zone of Lake Erie. Development/fill, nuisance or exotic species, erosion and pollution are the primary threats to the wetlands. Most wetlands in the DECZ have already been impacted by development and fills. Development pressures are increasing and potentially threatening relatively undisturbed wetlands in the LECZ.

State Activities 1992 to 1996

Pennsylvania amended its Coastal Zone Management Program (CZMP) by expanding the coastal zone boundary to incorporate into the DECZ hydrologically connected wetlands, potential wetland mitigation sites, and natural resource areas currently located outside the designated DECZ. The expansion area was determined by watershed boundaries, and the occurrence of wetlands and wetland mitigation sites. This boundary change has improved the Commonwealth's ability to enhance its coastal wetlands and to provide for wetland habitat restoration. (Section 309)

The Department of Environmental Protection (DEP) revamped its Chapter 105 regulations to further protect the Commonwealth's wetlands. The Pennsylvania CZMP formally revised its Wetlands Policy so that it now protects state threatened and endangered species and requires that wetlands which are destroyed in the coastal zone are mitigated in the coastal zone.

DEP published General Permit 15 which authorizes up to 2 acre of wetland fill for residential housing and establishes the Wetland Replacement Fund which provides applicants and DEP with the flexibility needed to meet wetland replacement requirements in the regulation of small wetland impacts. Areas

designated as Prior Converted Cropland are excluded from jurisdiction.

DEP has adopted the 1987 Corps of Engineers Wetland Delineation Manual as the methodology for identifying and delineating wetlands.

The Bureau of Dams, Waterways, and Wetlands now tracks statewide wetland impacts by using the Chapter 105 permit activity report and recording the information, including whether the permits are in the coastal zone, on a database.

The 1996 Wetlands Replacement Fund, which allows for payment in lieu of mitigation, and the new wetlands registry, which identifies property owners who wish to have wetlands created or restored on their property, allows for future restorations and enhancements to occur.

Education and outreach efforts include interagency wetlands training for staff of the DEP and other State agencies, seminars for the public, and the creation of a Wetlands Advisory Board composed of agency personnel, academia, and the public.

Obstacles/Needs

Studies are needed on possible control methods for the exotic plant problem at Presque Isle.

The Pennsylvania CZMP should do a bluff wetland inventory and analysis and produce a map of the sites and the occurrence of rare species.

The CZMP should work with the Wetlands Division of DEP during the siting and construction of wetland replacement fund projects.

Summary of Strategy

Wetlands will not be considered for an overall 309 change, but will be considered a major component of the Special Area Management Plan designation.

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Wisconsin

309 Wetlands Enhancement Grant Summary

1992 Assessment: High

1997 Assessment: High

Issue Characterization

An estimated 50 percent of the wetlands that originally covered Wisconsin have been lost and wetlands continue to be altered. There are five categories of wetlands in Wisconsin: open water marshes, emergent wet meadows, scrub/shrub wetlands, forested and aquatic bed. Two unique types of wetlands occur only within the State's coastal zone: red clay complex wetlands and ridge and swale complexes. Development/fill, erosion and lack of federal enforcement are the primary threats to Wisconsin's wetlands.

State Activities 1992 to 1996

The Department of Natural Resources (DNR) is proposing that the Corps of Engineers develop a state Programmatic General Permit.

DNR staff have recommended changes in the water quality standards for wetlands to streamline the process for projects having minimal wetland impacts; amend NR 103 b be more consistent with federal wetland delineation protocol; and streamline the permit process by eliminating mandatory public notice requirements and unsubstantiated and duplicative hearing requests. In addition, DNR requests approval to develop guidance for a mitigation banking program for department regulatory programs.

Recommendation was made to the Natural Resources Board that the *Basic Guide to Wisconsin Wetlands and Their Boundaries* be used as the official delineation guidelines in Wisconsin. These recommendations have not been implemented. (Section 309)

Wisconsin and Minnesota undertook a joint project to identify wetland restoration opportunities in the St. Louis River estuary. The field work for this project illuminated the need for coastal wetland research of a more detailed nature.

Wetland's restoration has been promoted through the section 306 funds

Basic Wetland Delineation Training Workshops have been held in various coastal locations. (Section 309)

Obstacles/Needs

More accurate maps of coastal wetlands.

Education on the need to protect wetlands.

Ongoing delineation training; voluntary certification program for local zoning staff.

Adequate fiscal and personnel resources to ensure quick and thorough review of permits and local decisions.

Comprehensive field assessment of coastal wetlands as a first step toward developing a priority plan for restoration and preservation.

Comprehensive and prioritized wetland acquisition program that addresses all wetland uses and functions.

Summary of Strategy

The Wisconsin program plans to continue to support compliance monitoring and enforcement programs at the state and local levels by supporting efforts to characterize wetland problems, improving voluntary compliance, supporting local regulatory efforts, and supporting state regulatory efforts. The state will continue implementing the voluntary wetland professional certification program for zoning and tribal officials that was begun under previous 309 grants. Continuing this training will help standardize the methodology for delineating wetlands in Wisconsin according to state protocol.

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activities

research and assessment

State Activities 1992 to 1996

AL Assessment methodologies are evolving with the continued studies of the functioning values of wetlands. A successful wetlands creation project - a living marsh - has been developed at the Dauphin Island Sea Lab as part of the Estuarium site and for educational purposes. The recently completed *Wetlands Conservation and Management Initiative - Summary Report of Alabama Wetlands* offers a description of the current knowledge regarding the State's wetlands. The sections pertaining to coastal wetlands provide an invaluable collection of relevant information as well as a framework to better manage coastal wetlands.

AK Using state and U.S. Environmental Protection Agency funds, several state agencies are being trained in Hydrogeomorphic Assessment and Classification Methodology. This technique is expected to provide a methodology that will consider unique conditions such as permafrost. A pilot project using the methodology in assessing wetlands functions is planned for the Kenai River.

AS *Inventory and Mapping.* Techniques used to delineate wetlands have improved.

CA *Inventory and Mapping.* Changes that have improved the description of wetlands and provided a more consistent means for assessing mitigation include the implementation of the Hydrogeomorphic Approach for wetland assessment and an improvement in wetland delineations using established methodologies.

CT *Geographic Information System.* Connecticut developed a Geographic Information System database for eelgrass that establishes critical baseline conditions and developed baseline submerged aquatic vegetation conditions for the lower Connecticut River.

DE *Inventory and Mapping.* A partnership between the Delaware Department of Natural Resources and Environmental Control and the State Department of Transportation led to the first statewide digital orthophoto mapping effort. The Northern Delaware Wetlands Rehabilitation Program has identified 35 potential wetland sites as needing rehabilitation and are proposed to be restored on a site-by-site basis.

GU The Guam Coastal Management Program contracted out a project to convert or digitize existing Wetlands Inventory and other wetland delineation maps for the entire island. This information will be used to update the existing *Guam Natural and Manmade Constraints* document and be used to determine the presence of wetlands during development.

HI Hawaii conducted a comprehensive review of State Land Use District boundaries which identified important and sensitive wetlands, among other conservation resources. Many of these wetland areas not currently in the state conservation district have been designated for boundary amendments to place them in the conservation district.

MD A state-wide effort to conduct a complete inventory and mapping of wetlands is about 1/3 completed. A new assessment methodology for nontidal wetlands was developed by the Nontidal Wetlands and Waterways Division for use by local planners in doing watershed management plans.

MA *Inventory and Mapping.* The Wetlands Conservation Program launched remote sensing and field verified submerged aquatic vegetation studies in special coastal areas. The Massachusetts Coastal Zone Management program and the Waquoit Bay National Research Reserve are using wetlands in the Waquoit Bay watershed as a pilot study area to develop and test a transferable approach to assess

wetlands impacts from nonpoint pollution.

NH The 309 Program developed a research summary of scientific literature related to the functions and values of forested/scrub-shrub wetlands.

NJ Database. The Department of Environmental Protection has created and maintains two database systems for monitoring mitigation projects. One tracks mitigation projects that are the result of a permit decision; the other tracks mitigation actions that are the result of a violation.

NY Inventory and Mapping. A freshwater wetland delineation technical manual has been developed.

NC Wetland Functional Assessment. The Division of Coastal Management developed a North Carolina Coastal Region Evaluation of Wetland Significance procedure that should result in the protection of functionally significant wetlands. These data are being provided to local governments as the wetlands in coastal counties are assessed. Wetlands mapping is the basis for the Division of Coastal Management's wetland assessment and the wetland restoration identification and prioritization.

OR The Division of State Lands completed the Freshwater Wetlands Assessment Methodology which must be used by local governments conducting wetland inventories or developing local wetlands conservation plans. The Division of State Lands is conducting a pilot study of historic wetlands loss in the Willamette Valley. Bay City, Cannon Beach, Gearhart, Dunes City, Florence, Lincoln City, Port Oxford, Rockaway Beach, Tillamook, Toledo, and Warrenton have all completed local wetlands inventories.

PR Geographic Information System. Data from the National Wetlands Inventory map for Puerto Rico are being entered into the Geographic Information System under development for cumulative and secondary impact assessment methodology.

RI Inventory and Mapping. A detailed study of submerged aquatic vegetation in Narragansett Bay is being conducted. The Coastal Resources Management Council expects to put a greater emphasis on wetlands protection in the revised Salt Ponds and Narrow River Special Area Management Plans, based on the results of research on cumulative and secondary impacts and water quality.

SC Wetland Change Monitoring. New procedures were developed for determining the zone of influence or lateral effect of ponds and ditches on wetlands.

USVI Inventory and Mapping. The Department of Planning and Natural Resources conducted a study on wildlife use of saltwater wetlands in the Territory. The University of the Virgin Islands, in collaboration with The Nature Conservancy, is continuing to inventory and map all natural resources, both terrestrial and marine, within the Virgin Islands using Geographic Information System technology.

VA Functional Assessment. A classification system and recommendations for improving the State section 401 certification program to better manage non-tidal wetlands were developed under section 309 but have not yet been implemented.

WA The Wetlands Function Assessment Project with funding from the Environmental Protection Agency is underway which aims to develop new assessment methods for specific wetland types that build on current methods.

309 strategies

AL Alabama will develop a marsh shading study and implement/research on pile-supported structure impacts and develop a vegetative shoreline stabilization study and strategy.

AK Alaska proposes to conduct a project entitled Southeast District Tidal/Estuarine Wetlands Mapping and Database Study. This project would identify and map wetlands that provide key ecological functions such as habitat, flood mitigation, etc.; identify rarely occurring wetlands; and minimize development footprints. The goal would be to develop State permit review guidelines and zoning regulations for balancing uses and development with wetlands conservation.

DE See Cumulative and Secondary Impacts

LA Because the introduction of large amounts of freshwater into wetlands is one of the best techniques to offset wetland loss, Louisiana has planned three major freshwater introduction projects. Louisiana has identified the changes brought on by freshwater diversion projects to be potentially significant to its coastal management program and has identified the acquisition of additional information as a program need. The Coastal Management Division will request 309 funds to create a database on the problem of wetland degradation and the State's statutory responsibilities concerning accidental brine discharges.

ME The Maine wetlands' strategy includes components for wetlands inventory, technical assistance for municipalities, and wetland restoration and preservation. The inventory goal is to complete a digital inventory of all coastal wetlands at the same scale. Technical assistance will rely on a method developed by the Wells National Estuarine Research Reserve and the Maine Audubon Society to identify wetlands and provide adequate protection. To improve restoration and preservation, the state will test a wetland compensation program that the Department of Environmental Protection and the State Planning Office are developing.

MA The State will complete aerial photographic mapping of wetlands.

MI Tasks include implementing the Statewide Wetlands Inventory on a county by county basis. There is no estimate of acres that would be affected.

WI The Wisconsin program plans to continue to support compliance monitoring and enforcement programs at the State and local levels by supporting efforts to characterize wetland problems, improving voluntary compliance, supporting local regulatory efforts, and supporting State regulatory efforts. The state will continue implementing the voluntary wetland professional certification program for zoning and tribal officials that was begun under previous 309 grants. Continuing this training will help standardize the methodology for delineating wetlands in Wisconsin according to state protocol.

planning

state activities 1992 to 1996

AK Using 309 funds, the state and City and Borough of Juneau identified sites and designs for off-site compensatory wetlands mitigation projects, and developed guidelines and procedures for designing appropriate on-site mitigation. The results of the project were incorporated into the Juneau Wetlands Management Plan. The Juneau Wetlands Management Plan and the Anchorage Wetlands Management Plan Special Area Management Plans have been revised since the last Assessment. Alaska selected the estuary at the mouth of Kachemak Bay as a candidate site for National Estuarine Research Reserve designation. State agencies and municipalities have worked together on local wetlands or watershed planning projects, including the Mendenhall Watershed Management Plan, the Chester Creek Watershed Plan, and the Little Susitna Watershed Plan.

BCDC Since 1995, the Commission has participated in the Bay Area Habitat Goals Project sponsored by the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, the State Department of Fish and Game, Regional Water Quality Control Board, State Environmental Protection Agency, the Resources Agency, and the Commission. A partnership between the Commission and four cities and four counties in the North Bay to develop a Wetlands Protection Program for the historical tidelands of the North Bay was initiated in 1995.

CA *Land Use Planning.* Management plans and Local Coastal Programs for specific wetlands within the coastal zone were developed and initial work by Resources Agency was begun to develop a strategy for a regional planning framework for southern California coastal wetlands.

DE The Delaware Coastal Management Program, with assistance from NOAA, has developed a Special

Area Management Plan for the Pea Patch Island Heronry Region. The plan has 28 management strategies of which 10 deal with wetlands protection, preservation, and enhancement within the 15 kilometer focus area.

ME *Land Use Planning.* The State was developing a conservation plan to include strategies to improve the wetland inventory, improve the wetland assessment method, set priorities for wetland protection and restoration, and direct compensation projects to priority areas.

MD A prototype nontidal wetlands watershed plan for the Big Annemessex River was developed using section 309 funds. Maryland has also participated in Special Area Management Plans in Baltimore County. Using section 309 funds, Maryland is working with Calvert County on developing watershed plans for Parker Creek and Hunting Creek. Maryland Department of the Environment worked with the Corps of Engineers and Baltimore County to develop and plan several Special Area Management Plans.

MA A resource management plan was completed for the new Neponset River Estuary Area of Critical Environmental Concern.

MS *Land Use Planning.* The Mississippi Coastal Program was the major force in facilitating the meetings that addressed the needs of the Port of Pascagoula Special Management Area in relation to the need to find another dredge disposal site. A multi-agency agreement on new mitigation sites was developed through the efforts of the Department of Marine Resources.

NC *Land Use Planning.* The Division of Coastal Management is developing a Wetlands Conservation Plan which will contain guidelines on how the Division will work with other states and federal agencies in protecting wetlands.

NY *Land Use Planning.* State agencies are developing a state wetland conservation plan. A Draft Oyster Bay-Cold Spring Harbor Outstanding Natural Coastal Area Management Plan was developed.

PR *Land Use Planning and Special Area Management Planning.* The pending Department of Natural and Environmental Resources mangrove management plan represents the first measure to implement the new wetlands preservation policy. Its effect will be to guide enforcement activities to prohibit wetlands alteration. Management Plans for all Special Planning Areas have been completed.

RI *Critical Areas.* Save the Bay has identified the need for a statewide coastal wetlands and submerged aquatic vegetation restoration plan and has been working with members of the General Assembly and the Council to gain support for legislation that mandates its development.

309 strategies

AL Alabama will develop a comprehensive Coastal Wetlands Management Plan.

BCDC Work on the North Bay Wetlands Protection Program should continue. A Wetland Mitigation Banking System should be created. A San Francisco Bay Trust should be established to help the Commission to coordinate the acquisition and management of Bay open space, natural resources and wetlands.

CNMI The Commonwealth will carefully consider the benefits of applying for large scale funding available through the Section 7 funds for endangered species habitat conservation planning. Fully explore the benefits available from participation in the Corps of Engineers Special Management Area Planning.

DE See Special Area Management Plans

HI See Cumulative and Secondary Impacts

MA Ensure existing levels of wetlands protection and develop new strategies to preserve and sustain wetlands functions.

MI See Special Area Management Plans

NC North Carolina plans to implement the Wetlands Conservation Plan and the revised Land Use Planning Guidelines; develop methods to protect estuarine and contiguous wetlands; and develop procedural guidelines for the geolocation of wetland permit sites.

acquisition

state activities 1992 to 1996

AL U.S. Fish and Wildlife Service funds have been used to purchase significant tracts in Gulf Shores and purchase agreements are pending on Mon Louis Island. The U.S. Fish and Wildlife Service has also proceeded with the Grand Bay project.

CNMI The Commonwealth accelerated wetlands acquisitions by delineating and classifying private wetlands for which other public lands were traded in order to gain public wetland ownership.

CT The State acquired an additional 75 acres of wetlands through existing acquisitions programs.

HI Representative Patsy Mink has successfully obtained congressional approval to purchase Waihee Wetlands, a privately held 30-plus acres site in Oahu.

ME The Land for Maine's Future program has purchased acres of coastal wetlands, and the state has received grants from the U.S. Fish and Wildlife Service to acquire wetlands for wildlife habitat.

MA An Open Space Bond bill was passed by the state senate to earmark funds for acquisition of coastal lands containing wetland resources. A watershed planning grant program was also established to assist in resource protection.

MS The Mississippi Tidelands Trust fund is making funds available for acquisition and enhancement of wetland resources. Funds have been used for the determination of estuarine reserve sites (Grand Bay), to identify Gulf Environmental Management Sites, for match funds with the Fish and Wildlife Services Grand Bay Bio Reserve project, and to coordinate efforts with the Nature Conservancy for acquisitions in Hancock County.

NY The Draft Long Island Sound Coastal Management Program, includes priorities for wetland restoration and acquisition in the Long Island Sound region.

PR A critical mangrove area near the Phosphorescent Bay at La Parguera was acquired by a non-governmental organization.

SC Although not a direct 309 change, over 16,000 additional acres were acquired through or with assistance of the State Office of Ocean and Coastal Resource Management for wetland preservation and protection within the Ashepoo Combahee Edisto Basin National Estuarine Research Reserve and the Sandy Island/Winyah Bay Focus Area.

VA The Virginia Coastal Program purchased more than 1000 acres of wetlands.

WA The Wildlife and Recreation Program was established to provide funding to government entities for the purchase of habitat conservation and recreation lands.

309 strategies

CNMI The Territory will clarify and solve public acquisitions questions in a most equitable fashion.

CT The Connecticut strategy for wetlands includes enhancements in the areas of acquisitions and regulation.

MI Critical wetlands will be added to the state's regulatory jurisdiction.

MS Mississippi proposes to develop a Wetlands Habitat Acquisition and Protection Strategy to complement the Tidelands Trust Fund Strategy. The new strategy will serve as guidance in identifying and prioritizing wetlands habitats in need of acquisition and/or other protection mechanisms.

NC North Carolina intends to promote the acquisition of functionally significant wetlands in the coastal area.

USVI The Territory plans to acquire those wetlands which are most vulnerable to degradation through purchase, lease, condemnation, or acceptance as a gift. The Fish and Game Fund may be used to purchase sensitive areas such as wetlands.

regulation

state activities 1992 to 1996

AL The Alabama Department of Environmental Management repealed the specific Alabama definition of coastal wetlands so the definition is now consistent with the Federal definition. Regulations were revised to address pile-supported structures as fill.

AK Compliance: A recent survey of Alaska's Coastal Management Program listed setbacks/buffers and compliance monitoring/enforcement as very important regulatory tools to protect wetlands. The recently revised Juneau wetlands management plan requires setbacks from high value wetlands.

AS The adoption of the American Samoa Coastal Management Program administrative rules in 1994 and amendments in 1997 have enhanced enforcement of wetland violations in the Territory. Increased tools such as the development of a Comprehensive Wetlands Management Plan for Tutuila, Aunuu, and the Manua Islands, wetlands guides for the Territory, public awareness materials (such as videos, pamphlets, etc.) and the village facilitator program have provided the American Samoa Coastal Management Program with an opportunity to limit additional depletion in wetland acreage.

BCDC The California Court of Appeals held that the upper limit of BCDC's Bay jurisdiction extends only to the mean high water mark and to five feet above mean sea level in areas of tidal marsh. Areas inundated by the daily high tide above the mean high tide level are now excluded from the legal definition of Bay in non-tidal marsh and are treated as dry land under the McAteer-Petris Act.

CT Compliance: Connecticut has significantly modified its regulatory programs to enhance its wetlands protection program: tidal wetland regulations were amended to conform with statutory changes that required regulation of all tidal wetlands regardless of

their mapped status; Connecticut sought and received authority to expand the eligibility of its demonstrably successful abbreviated authorization to those activities in tidal wetlands that would likely be consisted with state wetland standards; in the development and adoption of statewide stormwater general permits, Connecticut included the requirement for retention of stormwater that discharges into or adjacent to tidal wetlands; and, the state made significant strides in permit and enforcement streamlining resulting in better quality decisions that afford better resource protection.

FL The Florida legislature passed the Environmental Reorganization Act which merged the Department of Natural Resources and the Department of Environmental Regulation into the Department of Environmental Protection. The legislature also created the Environmental Resource Permitting program which is a streamlined permitting process implemented cooperatively with the water management districts. This program involves a single permit process for alteration of wetlands and mangroves. Permitting was further streamlined by a consolidated Joint Coastal Permit which is issued for an activity requiring the combination of an Environmental Resource Permit and/or Coastal Construction Permit waterward of mean high water. Legislative changes implementing the Environmental Resource Permitting program process impacted the definition of waters of the state by adding wetlands and directing creation of a unified statewide wetland delineation methodology. Isolated wetlands are now subject to the full range of permit requirements.

In 1996, the legislature attempted to fix abuses from 1995 legislation that allowed an exemption for trimming mangroves within a 75-foot riparian fringe and restricted the authority to trim mangroves to landscape architects. New legislation was passed that reduced the riparian fringe within which mangroves could be trimmed to 50 feet and expanded the

list of professionals allowed to trim mangroves to include ecologists and arborists. The legislation also provides for a general permit for trimming in navigational channels and beyond the 50-foot riparian fringe. It also strengthened provisions for enforcement and penalties.

The legislature passed the Everglades Forever Act which requires the state to implement a cleanup and restoration plan that includes more than 40,000 acres of publicly-constructed and managed wetlands designed to remove phosphorous and improve the hydroperiod. Private agricultural interests are required to establish best management practices to reduce nutrients and other pollutants before they leave agricultural lands. Two constitutional amendments were approved by referendum. One amendment requires all parties responsible for polluting the Everglades to pay their fair share of restoration. The second amendment establishes a trust fund dedicated to Everglades restoration. The legislature provided statutory authority for mitigation banking as an alternative to onsite mitigation of impacts to wetlands. Chapter 62-342, Florida Administrative Code was jointly adopted by the Department of Environmental Protection and the Water Management Districts to govern the establishment and use of mitigation banking.

GU Wetland regulations have now become institutionalized standards within the recently passed Tanota land use plan.

HI In 1993, the City and County of Honolulu adopted a wetlands buffer ordinance providing for increased controls on development adjacent to delineated wetlands.

LA The Coastal Management Division developed mitigation rules for addressing adverse impacts on the coastal zone and promulgated regulations for the initiation, operation, and long-term management of mitigation banks. The mitigation rules also established assessment methodologies and impact analysis criteria for addressing adverse impacts to wetlands.

ME Compliance: In 1995, the freshwater wetland

provisions of the Natural Resources Protection Act were amended to change the jurisdiction from any project that alters a freshwater wetlands of 10 acres in size to projects that alter more than 4300 square feet of any freshwater wetland. This change brought the jurisdiction in line with federal law and allowed the state to obtain a state programmatic general permit.

MD The Water Resources Administration under the Department of Natural Resources was dissolved and its functions were transferred to the Department of the Environment. Concurrently, review for water quality certification was incorporated into the wetland license. Issuance of the Maryland State Programmatic General Permit has been negotiated with the Corps of Engineers and a single authorization is issued that incorporated all provisions. Nontidal wetlands, water quality certification, and waterway and floodplain regulation have been combined into a single division. Nontidal wetland regulatory authority has also been expanded to include the Chesapeake Bay Critical Area, which had been excluded from the nontidal wetlands law due to the extensive state regulations governing land use in the Chesapeake Bay Critical Area. This inclusion allows the wetland provisions to be uniform. Regulations under the tidal wetlands regulatory program providing clear guidance regarding permitting, mitigation, and enforcement became effective in 1994.

MA Compliance: The 1994 Wetlands Protection Initiative included four pieces of legislation pertaining to: the State assuming responsibility for the section 401 Water Quality Certification for dredging and dredged matter disposal in state waters; the protection of estuary, wetland, and coastal waters by setting minimum water quality criteria for designated uses; the use of a more scientific definition and delineation process for the determining of boundaries for bordering vegetated wetlands; and improving the speed and efficiency of adjudicatory proceedings. Revisions made to the State Sanitary Code Title V now emphasize treatment over disposal, provide steps toward soil evaluations, and provide a codified approval process for innovative and alternative systems. The coastal nonpoint pollution control program, which includes management measures for wetland protection and

restoration, was developed. The Stormwater Advisory Committee drafted new statewide stormwater management performance standards, policies, and guidance to address new and existing discharges to wetlands and waters of the State. The Rivers Protection Act expands the jurisdiction of the Wetlands Protection Act by creating a new resource area, the riverfront area, to be protected by the Wetlands Protection Act.

MI Compliance. Changes were considered to the Natural Resource and Environmental Protection Act which would reduce regulation of some incidentally created wetlands, allow mitigation banking, and provide increased and graduated permit application fees. The Michigan Department of Environmental Quality also requested state funding to complete statewide wetlands inventory. The first phase of developing regulatory guidelines for applying cumulative impact analysis in wetland permit reviews was completed in 1995.

MS Compliance enforcement. The Mississippi Code of 1972 was amended to establish the Mississippi Commission on Marine Resources. The Commission is responsible for regulation and policy development of all matters pertaining to saltwater aquatic life and marine resources. The Division of Coastal Ecology was established to accomplish effective management of the State's coastal habitat resources. A legislative change to the Coastal Wetlands Protection Act strengthened the Commission's authority to levy fines by adding a penalty provision and an elimination of the 5-foot exemption category.

NH Compliance. The State Programmatic General Permit was issued June 1, 1992. All projects are reviewed on an individual basis by the Department of Environmental Services/Wetlands Bureau and subsequent approval results in a joint federal/state permit. Most projects now documented were previously covered by nonreporting provisions of the Nationwide General Permit. The Wetlands Board adopted new rules relating to administrative fines. A law was passed to allow new rules for expedited permit processing for minimum impact projects to be developed. The Wetlands Board was replaced with the

Wetlands Council, composed of six state agencies and six public members. The Wetlands Council serves as an administrative appeals body. The Department of Environmental Services Wetlands Bureau has authority to issue fill/dredge permits.

NJ Compliance. The Submerged Vegetation rule was amended to include a revised definition of the resource and enlargement of the scope of the rule. As amended, the rule applies on the basis of the presence or absence of the existing or documented species habitat. In addition, freshwater submerged vegetation species habitats would be added to the existing submerged vegetation species list. The amendments provide increased protection of this resource. The intertidal/subtidal shallows rule was amended in July 1994 to allow for the dredging of these areas to maintain access to existing marinas and public launching areas and existing dock and mooring areas. The Wetlands rule was modified in July 1994 to include a reference to all wetland maps available to the public, to include a reference to the Freshwater Wetlands Protection Act, and to include specific wetland mitigation requirements and standards.

The Wetlands Buffer rule was also revised to clarify the required wetlands buffer distances which are dependent on the types of wetlands present. The stormwater management rule was revised to delete the existing rule and replace it with a new rule which provides more concise standards for designing stormwater management systems, defines as conditionally acceptable the construction of artificial wetlands, and discourages underground detention as a stormwater management technique. It also defines the maintenance requirements for these systems and define the vegetation types that should be used as part of the systems.

NY Compliance. In 1996, Governor Pataki initiated an effort to revise the tidal wetlands permit program to map and extend regulation of tidal wetlands along the shores of the estuarine Hudson River north from the Tappan Zee Bridge. Three state programmatic general permits are being negotiated to improve coordination among permitting state agencies and expedite reviews of projects, including those involving

wetlands. The Long Island South Shore Estuary Reserve Act of 1993 was enacted, specifying that the comprehensive management plan to be developed will include recommendations to protect wetlands and other natural resources in the study area.

NC Mitigation. The state General Assembly passed legislation in 1996 establishing a Wetlands Restoration Program which will provide assistance for general wetland restoration efforts as well as efforts related to compensatory mitigation. New rules administered by the Division of Water Quality include requirements for enhancement, mitigation and restoration of wetlands for all wetland impacts greater than one acre.

OR The Removal - Fill Law was amended to define essential indigenous anadromous salmonid habitat and remove the 50 cy removal-fill thresholds for permits in salmonid habitat areas. The Oregon Division of State Lands modified and renewed the Road Construction and the Erosion Control General Authorizations to increase the emphasis on bioengineering instead of rock riprap for streambank stabilization.

A new administrative rule was adopted that made changes to requirements for local jurisdictions to address wetlands during or before their next periodic reviews. Local governments are required to inventory wetlands inside urban growth boundaries and urban unincorporated communities following the Division of State Lands standards and procedures. The Division adopted rules outlining compensatory mitigation requirements for freshwater wetlands. The rules establish priorities for type, location, and required acreage of wetlands mitigation projects.

The Oregon Legislature mandated that the Division of State Lands develop criteria for defining significant wetlands in Oregon. The Division adopted criteria for designating outstanding state freshwater wetlands to be applied outside of urban growth boundaries and proposed adoption of criteria for designating locally significant wetlands to be applied within urban growth boundaries and unincorporated urban areas.

The Oregon Legislature passed a law that authorizes the Division of State Lands to submit an application to the Federal Environmental Protection

Agency for assumption of the Federal section 404 program. The Oregon Legislature enacted a law that prohibits the Division or local jurisdictions from regulating alterations of one acre or less to certain artificially-created freshwater wetlands. The exception applies to stormwater detention/retention facilities, drainage ditches, and other wetlands created to control, store, or maintain stormwater. The Mitigation Banking Law of 1987 was amended to authorize privately-owned and operated mitigation banks in addition to the public banks already allowed by the law. The Division of State Lands is also required to develop rules for implementing statutory provisions for mitigation banking and payment or protection in lieu of mitigation. The Division adopted rules establishing and explaining local governments' responsibilities in the Division of State Lands wetland conservation planning process. The Department of Environmental Quality and the Division of State Lands developed a memorandum of understanding regarding the conditions for preventing degradation of wetlands and other waters that would not be included in the Division of State Lands wetlands permits. As a result of an earlier study completed by the Division of State Lands on wetlands mitigation projects in the Portland area, the Division adopted freshwater wetlands compensatory mitigation rules and hired a mitigation specialist to review mitigation plans.

PA Pennsylvania amended its Coastal Zone Management Program by expanding the coastal zone management boundary to incorporate into the Delaware Estuary Coastal Zone hydrologically connected wetlands, potential wetland mitigation sites, and natural resource areas currently located outside the designated Delaware Estuary Coastal Zone. The expansion area was determined by watershed boundaries, and the occurrence of wetlands and wetland mitigation sites. This boundary change has improved the Commonwealth's ability to enhance its coastal wetlands and to provide for wetland habitat restoration. The Department of Environmental Protection revamped its Chapter 105 regulations to further protect the Commonwealth's wetlands. The Pennsylvania Coastal Zone Management Program formally revised its Wetlands Policy so that it now protects state threatened and endangered species and requires that wetlands which are destroyed in the

coastal zone are mitigated in the coastal zone. The Department of Environmental Protection published General Permit 15 which authorizes up to 2 acre of wetland fill for residential housing and establishes the Wetland Replacement Fund which provides applicants and the Department of Environmental Protection with the flexibility needed to meet wetland replacement requirements in the regulation of small wetland impacts. Areas designated as Prior Converted Cropland are excluded from jurisdiction. The Department of Environmental Protection has adopted the 1987 Corps of Engineers Wetland Delineation Manual as the methodology for identifying and delineating wetlands. The Bureau of Dams, Waterways, and Wetlands now tracks statewide wetland impacts by using the Chapter 105 permit activity report and recording the information, including whether the permits are in the coastal zone, on a database.

PR Compliance: Interagency agreements were established among the Department of Natural and Environmental Resources, the Environmental Quality Board, and the Planning Board under which all will accept and implement the new wetlands preservation policy and regulation being developed under the section 309 program. A declaration of policy to protect wetlands is awaiting signature by the Governor.

RI Compliance: The Coastal Resources Management Council successfully developed and adopted coastal wetlands mitigation policies in 1993. Amendments of the Council's enabling legislation adopted in July 1996 divide jurisdiction geographically over wetlands in the state between the Council and the Rhode Island Department of Environmental Management. Previously, the Council had jurisdiction over all coastal wetlands. The Council now has jurisdiction over not only coastal wetlands but also freshwater wetlands located in the vicinity of the coast. New buffer policies and standards adopted by the Council have had an impact on the management and protection of Rhode Island's coastal wetlands. These program changes provide a consistent method for determining buffer and setback widths measured from the inland edge of coastal wetlands.

SC Compliance: A draft Memorandum of Agreement was developed between the State Office of Ocean and Coastal Resource Management and the Environmental Protection Agency to assist the Agency with investigations of wetlands violations. A final Memorandum of Agreement between the Office of Ocean and Coastal Resource Management and the Corps of Engineers was developed to assist with violation investigations and compliance inspections. Conservation easement/restrictive covenants language was developed for use by applicants in protecting in perpetuity preserved wetland and upland buffer areas within developments. There has been an increase in the numbers and effectiveness of compliance inspections. A Field Incident Report form was adopted for use in notifying the Corps of Engineers of possible Section 404 violations. The General Assembly adopted the Office of Ocean and Coastal Resource Management's mitigation guidelines and wetland master planning policy, thus giving the force of state law to these coastal program elements. Consistency Certification Enforcement Procedures were developed. A standard compliance inspection form to be used by staff engineers and biologists to document inspection findings was developed and adopted.

VA Compliance: The Virginia Marine Resources Commission permit compliance program was strengthened by requiring better project drawing and follow-up inspections and tracking of compliance rates. Guidelines for Mitigation Banking developed for tidal wetlands are expected to be ready for review and implementation by 1998. Virginia developed model easement language and obtained Seaside Farm Easements to preserve critical wetland habitat for 10 eastern shore farms as part of the Northampton County Special Area Management Planning effort.

WA Compliance: The Growth Management Act was passed and local critical areas ordinances and comprehensive plans were established. The State Wetlands Integration Strategy process identified a number of regulatory improvements, several of which are being addressed. The Washington legislature passed legislation directing the Department of Ecology to develop a delineation manual consistent with the current Corps of Engineers 1987 manual.

WI Compliance: The Department of Natural Resources is proposing that the Corps of Engineers develop a state Programmatic General Permit. Department staff have recommended changes in the water quality standards for wetlands to streamline the process for projects having minimal wetland impacts; amend NR 103 to be more consistent with federal wetland delineation protocol; and streamline the permit process by eliminating mandatory public notice requirements and unsubstantiated and duplicative hearing requests. In addition, the Department of Natural Resources requests approval to develop guidance for a mitigation banking program for department regulatory programs.

309 Strategies

CT The Connecticut strategy for wetlands includes enhancements in the areas of acquisitions and regulation.

DE See Special Area Management Planning

MD Maryland may use section 309 funds to address the condition placed on the wetlands portion of the Nonpoint Source Pollution Control Program (See Cumulative and Secondary Impacts).

MA Implement and integrate the statewide stormwater policy and performance standards into existing programs.

MI The Department of Environmental Quality will also develop standardized methods for assessing cumulative impacts to wetlands in the permit review process

PR Puerto Rico's strategy includes amending a number of laws and regulations to ensure implementation of the Executive Order on wetlands protection. The Territory will also review the possibility of establishing a joint permitting program with the Corps of Engineers. A protocol will be adopted for monitoring wetland mitigation activities.

RI The Coastal Resources Management Council's top priority is the adoption of freshwater wetlands regulations and accompanying maps depicting the Council's jurisdiction in to the Rhode Island Coastal Resources Management Program.

non-regulatory

state activities 1992 to 1996

AK Using 309 funds, the Alaska Department of Fish and Game compiled all aquatic (including wetland and riparian) restoration and enhancement projects that were adequately documented and selected several that could serve as case studies. The Department analyzed the successes and failures of the projects, developed guidelines for future restoration and enhancement projects, and made recommendations for follow-up actions.

AS A no net loss policy has been defined for wetlands, and a 1:2 mitigation standard has been adopted.

CA The California Coastal Commission developed and distributed two procedural guidance manuals dealing with the review of projects affecting wetlands and planning and evaluation of appropriate mitigation. These manuals have enhanced the consistency of impact analysis by Commission staff and provide early information to project sponsors describing necessary and essential information.

CT A wetlands compensation policy was developed and adopted internally to provide the basis for wetland gains in situations where publicly beneficial projects involved unavoidable losses.

DE DNREC, in cooperation with EPA and COE, is finalizing a Wetlands Compensatory Mitigation Banking Agreement for the state.

GU The Guam Environmental Protection Agency and Division of Aquatic and Wildlife Resources reevaluated and restructured their review process for wetland development activities in terms of what they look for in wetland proposals and how proposed activities will affect wetlands. Monitoring of mitigation plans by the wetland agencies has become more proficient as a

result of both successful and failed experiences with several construction projects. The Guam Coastal Management Program successfully fought an attempt by the Guam Chamber of Commerce to have the entire volume of Environmental Protection Standards removed from the Tanota Land Use Plan.

MA The Environmental Risk Characterization for 21E Hazardous Waste Sites established new requirements and guidance for ecological assessments of wetlands and other resources for hazardous waste sites.

MS Recommendations for improving the Mississippi Coastal Program's ability to manage wetlands resources were proposed in a report entitled *Clarification of Wetlands Authority and Revision of Wetlands Use Plan*.

NH Changes were made in criteria for shoreline stabilization projects. The Wetlands Board revised its rules on delineation to require that techniques outlined in the 1987 Wetlands Manual must be used.

NY A Memorandum of Understanding has been developed regarding a compensatory mitigation wetland banking agreement.

OR The Watershed Health Program was established by the Legislature to allow development of local watershed councils which carry out watershed planning and restoration/enhancement projects for riparian and upland areas. The Governor's Watershed Enhancement Board was also established to manage this program. The Oregon Coastal Salmon Initiative was developed as a partnership between state agencies and local governments and groups to conserve and restore coastal salmon. Wetlands protection, restoration, and enhancement projects will likely be a part of this initiative. The Division of State Lands adopted Oregon's Wetland Conservation

Program to provide direction and establish priorities for the Division's Removal-Fill and Wetlands Planning Programs.

SC Standard operating procedures were developed for consistency certification enforcement procedures. A project was completed on critical habitats for threatened and endangered species within the coastal zone and recommendations made.

WA Washington Departments of Ecology and Community, Trade, and Economic Development developed the State Wetlands Integration Strategy to develop and implement a more effective, efficient, and coordinated system to better protect the wetland resources of Washington State. The strategy includes recommendations on a state wetlands policy, wetlands planning, permitting, non-regulatory actions, and education.

WI Recommendation was made to the board that the *Basic Guide to Wisconsin Wetlands and Their Boundaries* be used as the official delineation guidelines in Wisconsin. Use of this guide will ensure delineation consistency between the state and federal agencies.

309 strategies

DE See Special Area Management Planning

LA Since only 8 of a possible 19 local governments have approved local coastal management programs, the Coastal Management Division will request Section 309 funding to assist non-participating local governments to develop a program. Local programs greatly enhance the wetland protection aspects of the Louisiana Coastal Resources Program.

NH Tasks include evaluating the effectiveness of New Hampshire Wetland Protection Policies; making salt marsh restoration a key component of mitigation banking; and cumulative impacts to wetlands program changes (looking at how the state can establish rules to address the problem of cumulative impacts of wetland development).

outreach

state activities 1992 to 1996

AL The Coastal Programs' Adaptive Resource Management project conducted a series of public meetings of citizens, scientists, and elected officials in a "Wetlands 101" workshop.

CA There has been better interagency communication in relation to the completion of certain Section 309 projects and interaction with local government, site representatives and individuals from academic institutions through seminars and conferences.

CNMI The Commonwealth organized a wetlands assessment training workshop attended by government agency staff and private consulting firms and conducted by the Corps of Engineers wetland scientists. The workshop launched an effort to classify Saipan wetlands according to natural resources value.

CT The State established the Long Island Sound license plate program to raise needed funding to support projects that benefit the sound. Connecticut also produced various informational publications.

DE The Delaware Adopt-A-Wetland Program was instituted. Currently 36 groups have voluntarily adopted wetlands throughout the state. Delaware's Open Space Program was created to support the land preservation activities of the DNREC and Delaware's Departments of Agriculture and State. The Governor's 21st Century Fund Initiative invested \$6 million in the Delaware Land and Water Conservation Trust Fund to provide a greater level of community assistance.

GU The Guam Coastal Management Program printed wetland posters, filmed a 16-minute wetland video for decision-makers and students, published numerous wetland articles, and featured various wetland species on the Program's public television show.

LA The Coastal Management Division provided speakers to schools and organizations, participated in many public forums and fairs, prepared posters, brochures, and public service announcements, and published the newsletter, the Louisiana Coast Lines.

MA Massachusetts coastal zone management regional areas were modified along watershed boundaries consistent with the Executive Office of Environmental Affairs Watershed Initiative to more effectively provide technical assistance, outreach, and education to coastal communities on wetland protection and restoration issues. The Department of Environmental Protection developed and continues to implement a comprehensive training program for the new wetland delineation and forest cutting practices guidelines. The Department also developed a new wetlands and waterways quarterly newsletter which serves as a successful communication tool to local officials and the public. Wetlands education videos were also developed. Massachusetts Coastal Zone Management Regional Programs sponsored regional conservation commission meetings and a stormwater Best Management Programs trade show.

MI A guidebook was produced in 1996 titled *Living with Michigan's Wetlands; A Landowner's Guide*.

NH *Buffers for Wetlands and Surface Waters in New Hampshire* was developed jointly by the Audubon Society of New Hampshire, the Office of State Planning, University of New Hampshire Cooperative Extension, and Natural Resources Conservation Services. The document focuses on water quality and wildlife habitat as key functions of upland buffers and provides municipalities with a scientific rationale and practical options for protecting naturally vegetated buffers adjacent to wetlands and surface waters.

Field Indicators for Identifying Hydric Soils in New England was published in 1995 by the New England Interstate Water Pollution Control Commission; its use in delineating hydric soils in New Hampshire is required.

Method for Evaluation and Inventory of Vegetated Tidal Marshes in New Hampshire (Coastal Method) was developed to provide coastal communities with a site specific method for inventorying and evaluating vegetated tidal marshes. The Wetlands Bureau staff continues to educate the public through workshops, training sessions, newsletters, and fact sheets. The New Hampshire Coastal Program, in coordination with the Department of Environmental Services, produced a bulletin entitled *The Tidal Buffer Zone: An Overview of the NH Wetlands Board Permitting Process*. The 309 Program conducted an analysis of wetland mitigation issues and state regulations in an effort to educate Wetlands Bureau staff on current research findings and assist them in developing and adopting wetland mitigation regulations.

NC The Division of Coastal Management developed and distributed a brochure for the general public entitled *Wetlands: Their Functions and Values in Coastal North Carolina*.

OR The Division of State Lands has included education and outreach in its efforts to improve the state wetlands program. A wetlands assessment workshop was held and newsletters, guides, and brochures have been published.

PA Education and outreach efforts include inter-agency wetlands training for staff of the Department of Environmental Protection and other State agencies, seminars for the public, and the creation of a Wetlands Advisory Board composed of agency personnel, academia, and the public.

SC The State Office of Ocean and Coastal Resource Management's uniform signage program is being used to post permanent signs along the perimeter of preserved wetland and buffer areas. Revisions and updates to the *South Carolina's Developers/Handbook for Freshwater Wetlands* were compiled and distributed.

WI Basic Wetland Delineation Training Workshops have been held in various coastal locations.

309 strategies

CNMI The Territory will increase public education on the importance of wetlands and on the fines and mitigation measures that are applicable to anyone found damaging wetlands. CNMI will continue interagency and intergovernmental coordination with the joint Commonwealth - Federal Environmental Agency Task Force.

DE See Special Area Management Planning

restoration/creation

state activities 1992 to 1996

AL Assessment methodologies are evolving with the continued studies of the functioning values of wetlands. A successful wetlands creation project - a living marsh - has been developed at the Dauphin Island Sea Lab as part of the Estuarium site and for educational purposes.

AK Using funding as an 309 Enhancement Grants Program project of special merit, Alaska Department of Fish and Game led a two-year effort to establish a state aquatic habitat restoration program, develop specific protocols and standards for restoration projects, and evaluate and recommend changes to state agencies' policies and procedures.

AS A number of villages have been targeted for nonregulatory restoration involving restoration and clean up.

BCDC In 1996, as part of the Sonoma Baylands project, levees were breached and tidal action reintroduced to a 322-acre hayfield at the mouth of the Petaluma River at San Pablo Bay.

CNMI The Commonwealth requires mitigation for wetland fill at the ratio of 1.5 to 1, as utilized by the Corps of Engineers. The mitigation areas are all considered to be successful in terms of wetland functions and endangered species habitat for the Mariana moorhen. The Commonwealth began work to create an endangered species mitigation bank utilizing wetlands and designated conservation areas of Saipan. A similar program is also underway for Tinian Magpo Wetlands.

CT Connecticut created one for the nations' first dedicated tidal wetland restoration programs; continued restoration of degraded tidal marshes along the coast; initiated restoration activities in the brackish and tidal fresh marshes of the Connecticut River; expanded the capabilities of the restoration program

through purchase of an amphibious mulching mower; and applied for funding to enable additional restoration activities. The state identified a long-term decline of eelgrass beds in Long Island Sound and initiated a restoration project.

DE The Northern Delaware Wetlands Rehabilitation Program has identified 35 potential wetland sites as needing rehabilitation and are proposed to be restored on a site-by-site basis. Restoration programs for Gambacorta and Broad Dyke marshes have been completed. Two other sites are currently being restored; several more are in the planning stages.

GU Policies for wetlands restoration, enhancement, and creation programs have been suggested and utilized as guidelines by the wetland agencies.

LA The Coastal Management Division coordinated closely with the Coastal Restoration Division in the Coastal Restoration Division's wetlands restoration and enhancement programs.

MD Maryland has met its goal of no net loss through its mitigation requirements and through wetland creation, restoration, and enhancement. The state also amended the nontidal wetland law to allow mitigation banking.

MA The Wetlands Restoration and Banking Program was established to restore degraded and destroyed wetlands and to explore the use of mitigation banking to improve mitigation success for unavoidable permitted wetland loss.

MS Development of mitigation banking opportunities is resulting in the development of restoration/enhancement and wetland creation programs.

NH *Evaluation of Restorable Salt Marshes in New*

Hampshire conducted by the Natural Resources Conservation Service found 50 locations where non-natural restrictions impact tidal flux, and recommended restoration. This study provides some basis for selecting 306A restoration projects. The State Department of Transportation has been in the process of instituting a wetland banking program to address mitigation requirements where avoidance or on-site mitigation is not achievable.

NJ The New Jersey Wetlands Mitigation Bank, administered by the Wetlands Mitigation Council, has given approval to several projects. Litigation and settlement monies from oil spills and other industry-related cases have been used to purchase wetlands. The Office of Natural Resources Damage Assessment has coordinated with the Division of Fish, Game, and Wildlife to acquire shorebird nesting sites on beaches and wetlands along the Delaware Bay.

NY Habitat restoration for Hudson River is continuing. Long Island Sound Study Habitat Restoration effort is continuing.

OR The Division of State Lands is currently investigating establishment of a wetland restoration policy for Oregon.

PA The 1996 Wetlands Replacement Fund, which allows for payment in lieu of mitigation, and the new wetlands registry, which identifies property owners who wish to have wetlands created or restored on their property, allows for future restorations and enhancements to occur.

PR Wetlands restoration and enhancement activities are being implemented in response to Army Corps of Engineers Section 404 authorities. The U.S. Fish and Wildlife Service, the Natural Resources Conservation Service and the Corps of Engineers have undertaken wetlands creation programs to mitigate the loss of wetlands due to private development.

SC A State-operated mitigation bank was developed and impaired riparian wetland habitats were identified.

VA The Nature Conservancy Wetlands Restoration Trust Fund provides certain applicants with more flexibility in wetland mitigation requirements and helps to restore and preserve as many wetlands acres in their natural condition as possible.

WA The Puget Sound Wetlands Restoration Program was successfully tested in the Stillaguamish River basin and is now being applied to the Nooksack River basin.

WI Wisconsin and Minnesota undertook a joint project to identify wetland restoration opportunities in the St. Louis River estuary. The field work for this project illuminated the need for coastal wetland research of a more detailed nature. Wetlands restoration has been promoted through the section 306 funds.

ME The Maine wetlands' strategy includes components for wetlands inventory, technical assistance for municipalities, and wetland restoration and preservation. The inventory goal is to complete a digital inventory of all coastal wetlands at the same scale. Technical assistance will rely on a method developed by the Wells National Estuarine Research Reserve and the Maine Audubon Society to identify wetlands and provide adequate protection. To improve restoration and preservation, the State will test a wetland compensation program that the Department of Environmental Protection and the State Planning Office are developing.

NC North Carolina will assist in implementation of the State Wetlands Restoration Program.

SC The State Office of Ocean and Coastal Resource Management will work with recognized conservation organizations active in the coastal zone to identify and acquire priority habitats and establish ongoing mitigation banks. This effort will involve an evaluation of proposed sites and a determination by the State and Federal agencies if these sites are priority management areas and thus qualify as preservation only mitigation banks. The State Office of Ocean and Coastal Resource Management will work with review agencies, bank operators, applicants and the public to develop policies for the use of fee based mitigation. Specific policies will be developed for types of projects which may use fee based mitigation, ratios for calculating mitigation credits, approving banks set up for fee based mitigation, accounting for money put into these programs, and other needs identified during the process.

*obstacles/
needs*

AL There is a need to develop a Coastal Wetlands Management Plan and an on-going and repeatable wetlands inventory utilizing National Wetlands Inventory classifications to accurately evaluate the status of Alabama's coastal wetlands. The limited coastal zone boundary in Alabama does not offer protection to the majority of wetlands that many scientists identify as coastal wetlands. Therefore, a management framework which effectively networks those authorities and/or government entities that do have jurisdiction needs to be developed.

AK Districts do not have sufficient staff or data to implement proposed regulations. Districts need access to and training in the use of scientific data and need technical assistance from state and Federal agencies in identifying and mapping wetlands. Statewide efforts to improve and enhance Corps of Engineers General and Nationwide Permits will help protect valuable wetlands while increasing the efficiency of permit issuance.

AS There is a need to competitively recruit a wetlands specialist to oversee the Community Based Wetlands Management Program. This process has been hindered by local government processes and salary classification. There is a need to increase use of village councils, improve public education and awareness, increase enforcement, increase funding for restoration project, accelerate surveying processes, hire a hydrologists, reduce unplanned activities affecting wetlands, undertake more hydrological assessments, increase work with partner agencies, and increase integration of regulatory programs with cultural practices. A need exists to establish a technical mapping system which will assist with a more accurate delineation and survey process.

BCDC To better understand the area of Bay resources impacted by the Littoral decision, accurate measurements of the mean high water line at specific sites around the Bay should be made using Global Positioning System technology. The Bay Plan wetlands findings and policies and BCDC's mitigation policies should be updated. BCDC should continue to work with the U.S. Corps of Engineers, the State

Resources Agency and Regional Water Board to obtain section 404 permitting authority. Wetlands at Hamilton Army Airfield should be restored. BCDC should coordinate its wetland permitting process with other Bay regulatory agencies. The North Bay Corridor Study should be completed.

CA Improved methods to review and incorporate into the California Coastal Management Program the extensive data and information that has been developed on wetlands over the last 15 years; support for staff to participate in interagency and interdisciplinary forums to resolve wetland management and restoration issues; monitoring or developing a series of restoration projects to demonstrate alternative restoration techniques to study their long term effectiveness and to test the economic and scientific factors; research in and consistent implementation of adequate sized buffers and transition zones. Developing a comprehensive, coordinated, and focused wetland protection and restoration program for California's coast. Application of Regional Cumulative Assessment Project (ReCAP) framework to undertake review of wetlands and watershed management policies of Malibu/Santa Monica Mountains region. Guidance to develop regional wetland and watershed management plans. Interagency procedures for monitoring wetland development, mitigation, and restoration. Refined criteria for permit conditions and mitigation and restoration policies for interagency use that adequately account for the unique attributes of California's wetlands systems.

CNMI Because current Federal and Commonwealth wetlands policies primarily address direct impacts, there is a need to address management of cumulative and secondary impacts to wetlands.

CT The State needs direct and stronger protection of submerged aquatic vegetation through refinements to existing statutory policy; refinements to permitting and enforcement programs; enhancement of existing statutory and enforcement tools to obtain alternative funding for acquiring tidal wetland parcels; and new and updated Geographic Information Systems layers to support better management and regulatory decisions.

DE Delaware has no official regulatory powers for the protection of its freshwater wetlands. The Adopt-A-Wetland Program is very limited in manpower. Limited funding prevents the creation of a new position for a full time coordinator.

FL Florida needs a good monitoring program. There are no comprehensive baseline data on the extent of wetlands in Florida, so it is impossible to know precisely how many acres of wetlands are lost, degraded, protected, or held in public ownership.

GU Although the recently passed land use plan for Guam (I Tano'ta) contains wetland regulations, it is unclear whether this will take the place of specific, comprehensive wetland policy, legislation, and rules and regulations. There are inadequate enforcement tools and personnel and a lack of incentives (i.e., tax credits, mitigation banking) or disincentives (inadequate fine structures).

HI There are limited State and Federal funds for acquisition. There is limited state wetland management, planning, and coordination. It is unclear which state agency or agencies have the lead in wetland planning and protection efforts outside of existing state owned and managed wetlands. There is a failure to consider alternative protection approaches. Hawaii does not have an active program for transfers or purchases of development rights, mitigation banking and other techniques for enhancing wetland protection efforts. There is limited information on wetlands. Data are needed on the location and various functions of wetlands. There is a lack of statewide wetland policies. There is a need to review and evaluate existing regulatory activities for wetlands to determine if they protect wetlands. There are no maps showing all of the regulated wetlands in Hawaii.

ME There is public confusion about identifying wetlands and about federal, state, and local laws that regulate impacts on wetlands. There is also inadequate understanding of wetland identification by municipal officials. Maine needs a complete state inventory of coastal wetlands to track changes in

wetlands and identify wetland restoration opportunities. Private and public efforts to compensate for wetland losses are not always directed to the wetlands that are most valuable—largely due to lack of identified priorities for wetland restoration and preservation. There is insufficient funding for coastal wetland restoration and preservation projects.

MD State programs and non-regulatory efforts have increased the levels of wetland acreage to exceed the no net loss goal. However, restoration and creation are pursued more often than enhancement and preservation because of limited funds and staffing constraints. Nonregulatory efforts have declined for the same reasons.

MA To comprehensively address the protection and preservation of wetlands, Massachusetts must move to a holistic approach to assess the current status of wetland resources. The Massachusetts Coastal Zone Management Program should be updated to reflect the State's role in the development of the Stormwater Management Initiative and its active role with the Wetlands and Restoration Banking Program.

MI Michigan needs standardized methods for decision-making in the permit review process, especially for assessing cumulative impacts to wetlands. Funding is needed to complete the statewide wetlands inventory and to ensure regulatory jurisdiction over wetland areas.

MS The Mississippi Coastal Program lacks direct legal authority to address land uses upland of the Coastal Wetlands jurisdictional boundary of mean high tide.

NH There is a need for a better approach/methodology for dealing more effectively with cumulative impacts to wetlands. The Wetlands Bureau is trying to address this information gap through the use of a Geographic Information System to keep tabs on the locations of permitted projects, but this initiative is in early stages. The Wetlands Bureau does not yet have a written mitigation policy; one is needed in light of the fact that the State Department of Transportation

is proceeding with developing a Wetlands Mitigation Banking Program. There is a need for a better system for monitoring success of mitigated wetlands, including compliance monitoring as well as long-term scientific evaluation of mitigated sites.

NY Protection of wetland function is an important issue that could be better addressed.

NC The Division of Coastal Management has no clear jurisdiction over freshwater wetlands in coastal counties; the State's role there is limited to federal consistency review and certification of 404 permit applications. The Division has been collecting data needed to evaluate cumulative and secondary impacts and has found that some important data are not available. In addition, improvements need to be made in the Division's permit tracking system to use the system to evaluate threats from various types of development.

OR Improved baseline information is needed on existing and historical wetlands, coastal wetlands acreage, losses, and impacts. There is a need to identify and allocate additional resources to enforcement and monitoring of wetlands projects; to continue work on the mitigation banking program to encourage wetland restoration; to develop non-regulatory restoration, enhancement, or creation projects; to work with local governments and the Division of State Lands staff to determine the relationships between various wetlands requirements and the Removal-Fill Law; to determine and then prioritize coastal wetlands restoration and enhancement needs; to identify and allocate additional resources for local wetlands planning; to investigate the use of watershed planning as a tool for coastal wetlands protection; and to adapt for use in Oregon the hydrogeomorphic wetlands assessment methodology developed by the Corps of Engineers.

PA Studies are needed on possible control methods for the exotic plant problem at Presque Isle. The Pennsylvania Coastal Zone Management Program should do a bluff wetland inventory and analysis and produce a map of the sites and the occurrence of rare

species. The Coastal Zone Management Program should also work with the Wetlands Division of the Department of Environmental Protection during the siting and construction of wetland replacement fund projects.

PR There are serious data gaps. The permitting agencies do not advise the Department of Natural and Environmental Resources about wetlands changes resulting from such permits. There are other information flow problems and inadequate resources for monitoring by the Department of Natural and Environmental Resources and the Environmental Quality Board.

RI Development and implementation of an entirely new regulatory program for freshwater wetlands in the vicinity of the coast will require staff and training resources. New policies, procedures, and guidance documents will be necessary.

SC The utilization of non-regulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands is the area that the Office of Ocean and Coastal Resource Management identified as a gap in addressing the programmatic objectives for this enhancement area.

USVI Accurate testing of water quality in tidal wetlands is difficult because ponds fill during the rainy season and dry out during hot periods.

VA Virginia needs to implement the recommendations of the Council on the Environment and monitor the outcomes of management policies of nontidal wetlands. Virginia needs to implement the recommendations of the Virginia Institute of Marine Science and the Department of Environmental Quality regarding how to manage nontidal wetlands.

WI More accurate maps of coastal wetlands are needed. There is also a need for education on the need to protect wetlands; for ongoing delineation training; for a voluntary certification program for local zoning staff; for adequate fiscal and personnel resources to ensure quick and thorough review of

permits and local decisions; for comprehensive field assessment of coastal wetlands as a first step toward developing a priority plan for restoration and preservation; and for a comprehensive and prioritized wetland acquisition program that addresses all wetland uses and functions.

appendices

**STATE
WETLANDS
CHANGES AND STRATEGIES**

STATE	RESEARCH ASSESSMENT		PLANNING		ACQUISITION		REGULATORY		NON REGULATORY		OUTREACH		RESTORATION CREATION	
	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy
Alabama	√•	√		√	•		√				•		√	
Alaska	•	√	√••				•		√				√	
A. Samoa	•						•		••				•	
BCDC			√√	√√√			•						√	
California	√		••						√		√√			
CNMI				√√	•	√					•	√	••	
Connecticut	√•				•	√	√√√•	√	√		√		√••	
Delaware	√√•	*	√◇	◇				◇	•	◇	••	◇	√	
Florida							•••••							
Guam	•						•		•••		•		•	
Hawaii	√•			*	•		•							
Louisiana		√√					•			√	•		•	
Maine		√	•		•		•							√

STATE	RESEARCH ASSESSMENT		PLANNING		ACQUISITION		REGULATORY		NON REGULATORY		OUTREACH		RESTORATION CREATION	
	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy	▲s since '92	Current 309 Strategy
Maryland	••		√•√ •				••	*					•	
Massachusetts	√√	√	√	√	√√		√√√√ √	√	√		√√√		√	
Michigan		√		◇		√	√√	√			•			
Mississippi			•		•	√	••		•				•	
New Hampshire	√						••••		••	√	•√•√ •√		√	
New Jersey	•						•••••						•	
New York	•		•√		√		•√√		•				••	
North Carolina	√√		√	√√√√		√	•√				•			√
Oregon	•••						••••• ••••• •		•••		•		•	
Pennsylvania							••√••				•		•	
Puerto Rico	√		••		•		••	√√					••	
Rhode Island	√•		•				√√√	√						
South Carolina	√				•		√√√√ √√√√		√√		√√		√	√√

USVI	√√					√								
Virginia	√				•		√••						•	
Washington	•				•		√•		•				•	
Wisconsin		√					••		√		√		••	

√ 309 • non-309 * See CSI ◇ See SAMPS

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