

Estuary Restoration Act of 2000
Title I of Estuaries and Clean Waters Act of 2000
Public Law 106-457 dated November 7, 2000

Report to Congress

This is the second report prepared to meet the requirements of Section 108 of the Estuary Restoration Act, Title I of P.L. 106-457 (Act). This report covers the fiscal years 2004 through 2006 and reflects the views of the Estuary Habitat Restoration Council (Council) members and the Assistant Secretary of the Army (Civil Works).

Background:

The purposes of the Act are to promote the restoration of estuary habitat; develop a national estuary habitat restoration strategy for creating and maintaining effective partnerships within the federal government and with the private sector; provide federal assistance for and promote efficient financing of estuary habitat restoration projects; and develop and enhance monitoring, data sharing, and research capabilities. The Act establishes a Council consisting of representatives of five agencies (National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), Department of Agriculture, and Army). The Council is charged with development and implementation of a national estuary restoration strategy, designed in part to meet the goal of restoring one million acres of estuarine habitat by 2010. The Act authorizes the Secretary of the Army to carry out a cost-shared program for design and construction of habitat restoration projects in accordance with the national Strategy developed by the Council (Federal Register, Vol. 67, No. 232).

Funds were authorized to be appropriated to the Army for fiscal years 2001 through 2005, to remain available until expended. Additionally, \$1,500,000 was authorized to be appropriated to the Under Secretary of Oceans and Atmosphere of the Department of Commerce in each of fiscal years 2001 through 2005, for the acquisition, maintenance, and management of restoration project information. The U.S. Army Corps of Engineers received project funding totaling \$ 3,974,000 for fiscal years 2004 through 2006. NOAA received \$2,241,268, including rescissions/supplementals, in fiscal years 2005 and 2006 for development of a national restoration project inventory and establishment of monitoring protocols for restoration projects. NOAA did not receive an Act appropriation in 2004.

Accomplishments:

The staff representatives of the five agencies comprise a workgroup that meets regularly to accomplish implementation of this Act. This dedicated group continues to exemplify the partnerships envisioned by the authors of the Act. As an example of this close working relationship, an EPA member of the work group was detailed to the FWS for six months. This detail proved to be an enriching and rewarding experience for all involved and fostered an even closer working relationship between the EPA and FWS. The work group is considering future interagency details at both the Washington Office and field levels.

The Council met in October of 2004 and 2005 and in February 2006. Lists of projects recommended for the Army to consider funding were approved at those meetings. By statute, all of the Council meetings must be open to the general public and announced in advance in the *Federal Register*. Additional information about the Council and links to minutes of the meeting may be accessed through <http://www.usace.army.mil/estuary.html>. In addition, individuals may subscribe to an electronic list server that is used to send notices and information to the interested public about Council activities.

In February 2004, NOAA released the National Estuaries Restoration Inventory (NERI), a database developed in consultation with the other agencies in compliance with section 107 of the Act. NERI houses data on restoration techniques, monitoring parameters, and acres restored by habitat type. This information will assist restoration practitioners in prioritizing projects through evaluating the effectiveness of specific techniques, and providing guidance for better design and improved success of future restoration projects. NERI is Internet-accessible for project searches and uploading of information on restoration projects and is accessible at <https://neri.noaa.gov>. An interactive mapping component was released in August 2004, displaying project locations along with additional resource information. As of September 2006, nearly 1,500 projects had been entered into NERI. The estimated restored acreage of these projects totals over 72,000 acres and over 17,000 acres are either enhanced or protected.

Various data-sharing activities have been pursued since NERI's initial release. NOAA regularly contributes project information to the inventory from the Restoration Center Database. FWS and NOAA are working towards importing restoration project information from the FWS Habitat Information Tracking System into NERI. The Gulf of Maine Council on the Environment provides an interface for viewing NERI restoration projects through their Habitat Restoration Web Portal. EPA's National Estuary Program has revised elements in their restoration project tracking system that increase its compatibility with NERI

NOAA staff presented information regarding NERI in various formats at the following venues: 6th Annual Southern and Caribbean Regional Coastal Program Managers meeting (February 2004), Society for Ecological Restoration - Coastal Plain Chapter meeting (March 2004), NOAA's Annual Ocean and Coastal Program Managers meeting (March, 2004), Army Corps of Engineers Economic and Environmental Analysis Conference (April 2004), Society for Wetland Scientists (July 2004), Federal Symposium on Coastal Habitat Restoration (July 2004), Restore Americas Estuaries conference (Sept 2004), and the National Conference on Ecosystem Restoration (Dec 2004).

In addition to the various presentations related to NERI, other members of the working group gave presentations at the National Conference on Ecosystem Restoration in December 2004. NOAA, in collaboration with the other Council agencies, organized a session at the Coastal Zone 2005 conference on regional coastal habitat restoration planning and priority setting. Four panelists representing various geographic regions (Gulf of Mexico, Great Lakes, Gulf of Maine, and Coos Bay, Oregon Watershed) provided examples of coastal habitat restoration planning and priority setting efforts within their region. Outcomes of the session included an understanding of:

- The state of regional habitat restoration prioritization (and the planning efforts used to achieve that state)
- The types of criteria used to determine restoration priorities
- How criteria are developed (including partners, coordination efforts, etc.)
- How regional organizations/programs use criteria and determine if some criteria are more important than others
- How planning and priority setting have affected the results of restoration efforts
- Ideas for how national coastal habitat restoration priorities can be built from regional restoration planning and priority setting efforts
- What steps are needed for future coordination between the regional and national levels

NOAA wrote two guidance manuals aimed at improving monitoring of coastal habitats. The first manual, *Volume One: A framework for Monitoring Plans Under the Estuaries and Clean Waters Act of 2000*, came out in October 2003. *Volume Two: Tools for Monitoring Coastal Habitats* was produced in April 2005. The manuals can be found at <http://era.noaa.gov/htmls/era/eramonitoring.html> and provide technical assistance, outline necessary steps, and provide useful tools for the development and implementation of sound scientific monitoring of coastal restoration efforts. Volume One covers the stages of restoration and monitoring, the process of developing a monitoring plan, and the basic elements that should be considered when writing a restoration monitoring plan. Volume Two includes detailed descriptions of coastal habitat types, a discussion on selection of reference sites or conditions, cost estimates for monitoring, and human dimensions issues in coastal restoration.

The workgroup sponsored the first ever Federal Symposium on Coastal Habitat Restoration (FSCHR) in July 2004. To further advance the goals of the Act, FSCHR was held to increase coordination within the federal habitat restoration community by bringing together varying programs that conduct or fund coastal habitat restoration. Creating and maintaining effective partnerships is one of the major purposes of the Act as stated in Section 102 of the Act. Discussions during FSCHR were aimed at identifying common program goals and objectives, restoration definitions, performance measures, and monitoring guidelines. There were 49 participants, representing 30 restoration programs from seven federal agencies. The four major themes addressed in FSCHR were: 1) coastal habitat restoration goals, objectives, priorities; 2) measuring restoration success; 3) restoration tracking tools and reporting; and 4) coastal habitat restoration coordination.

In support of the Strategy's goal to encourage regional restoration planning, NOAA sponsored a pilot regional restoration planning effort for the lowlands of the Coos Bay Estuary, Oregon. The watershed restoration plan developed for lowland tributary streams in the estuary resulted in a model that can be used for other estuary-related watersheds. The success of the project was due to the high public involvement of private landowners and development of a system to prioritize potential restoration actions. This project resulted in numerous public meetings, known as coffee klatches, talks at the Natural Resources Extension Professionals Conference and the Society and Natural Resources conference, and training at Oregon State University's Extension Watershed Stewardship Education Program. Approximately \$250,000 in high-priority restoration projects in one of the sub-basins have been proposed for grants as a

result of the assessment and outreach from this project. For access to the report, please go to http://www.cooswatershed.org/assess_cblowlands.html.

In the first quarter of fiscal year 2005, the Corps of Engineers drafted a cost share agreement to be used for Estuary Habitat Restoration Program projects and provided additional guidance to facilitate implementation of the first three projects. This included an emphasis on streamlining the planning and design process. The Corps obtained approval for the form used to solicit proposals in compliance with the Paperwork Reduction Act in the second quarter, and the first formal solicitation for proposals was conducted. Based on the results of the solicitation, the Council approved a prioritized list of six projects be recommended to the Army for funding. In addition to three projects initiated in 2004, these projects will utilize the majority of the funds appropriated through fiscal year 2006. Summaries of the nine projects are included in Appendix A. A second solicitation for project proposals was announced in the summer of 2006 to identify candidates for consideration if additional funds are appropriated for fiscal year 2007.

Future: NOAA will continue to populate NERI with project information from throughout the nation, actively compiling data and working with the Council agencies and other public and private restoration organizations to encourage use of the national inventory for tracking progress toward the Strategy's million-acre goal. The Council agencies will also continue working together, and in conjunction with non-Federal partners, to promote estuary restoration, facilitating the development of regional restoration plans, and working to define common restoration goals and measures of success. As funds allow, additional projects will be recommended for funding.

Summary: The Act has been a catalyst for increased cooperation among the Agencies represented on the Council. Even though none of the projects approved for funding in fiscal year 2004 have been constructed, significant progress has been made in developing the program framework and working with the specific project sponsors to determine how the available funds may be used most effectively. The Council agencies continue to work together well and contacts developed here have facilitated cooperation on other interagency endeavors. There continues to be great interest in making the Act a success and continuing the collaboration necessary to identify and implement more effective restoration activities. The first formal solicitation for projects has increased momentum and provides a secure foundation for future successes.

Appendix A
ERA Project Summaries

NAME: City of Long Beach's Colorado Lagoon

LOCATION: Long Beach, California

ACRES/RIVER MILES: 28.3 acres

NON-FEDERAL SPONSOR(S):

City of Long Beach

Friends of Colorado Lagoon

PROJECT DESCRIPTION:

The Colorado Lagoon is a 28.3 acre tidal lagoon that serves three main functions: hosting sensitive estuarine, wetlands and wildlife habitats, providing areas for public recreation and conveying storm floods. The Lagoon is used by hundreds of visitors from communities within and surrounding the City of Long Beach, California. There are over 700,000 local residents living in these communities. Project activities will consist of excavating contaminated sediment in the western arm of the Lagoon, re-contouring the slopes around the Lagoon, which will provide for increased and enhanced intertidal, mid and upland habitats, and re-vegetating these habitats by removing invasive non-native and ornamental plant species and replacing them with native plant species. The Lagoon is listed on the State of California's 303(d) list as an impaired water body.

EXPECTED BENEFITS:

This project will improve the estuarine habitat and prevent further native habitat loss by removing invasive ornamental landscaping and re-vegetating the Lagoon with native plant species. It will also create a better estuary habitat than currently exists by regrading the slopes surrounding the Lagoon to increase the amount of intertidal and upland habitat and will provide additional and improved estuary habitat such that animal and plant species are increased and/or introduced to the Lagoon. By removing contaminated sediments, biodiversity of the benthic community can be expected to thrive. This ensures that public access, use, and enjoyment of the Lagoon are enhanced.

NAME: Seal Island Restoration Project

LOCATION: Fenwick Island, Sussex County, Delaware

ACRES/RIVER MILES: 5 acres

NON-FEDERAL SPONSOR(S):

Delaware Center for the Inland Bays National Estuary Program

PROJECT PARTNERS:

Citizen Volunteers

City of Fenwick Island

Inland Bays Technical Assistance Team

PROJECT DESCRIPTION:

The project proposes to utilize bio-stabilization techniques to reduce shoreline erosion and to replant smooth cordgrass (*Spartina alterniflora*) that has been destroyed, primarily by large numbers of migratory Snow Geese. Coir fiber logs will be installed along the western shoreline of the island to stabilize the eroding area. The tidal marsh area will be planted with native cordgrass and will be protected by a goose exclusion system placed over the plants and around the perimeter. The goose exclusion system will be designed in consultation with experts from FWS' Prime Hook National Wildlife Refuge.

EXPECTED BENEFITS:

By restoring the smooth cordgrass marshes, this project will re-establish foraging and resting habitat for fish, crustacean, and insect species, which will in turn benefit wading and shore birds. The combination of shoreline stabilization and marsh restoration will also benefit the socio-economic value of Seal Island, which serves the local tourist industry (kayaking, sightseeing, fishing, crabbing, and bird watching) as well as protecting nearby residential and commercial property from storm damage.

NAME: Alligator Creek Addition Restoration Project

LOCATION: Charlotte County, Florida

ACRES/RIVER MILES: 350 acres

NON-FEDERAL SPONSOR(S):

Charlotte Harbor National Estuary Program

PROJECT PARTNERS:

Southwest Florida Water Management District

Florida Department of Environmental Protection

National Oceanic and Atmospheric Administration (NOAA)

U.S. Fish and Wildlife Service (FWS)

PROJECT DESCRIPTION:

The primary goal of this project is to restore the historic saltern that once comprised the majority of the west central portions of the Alligator Creek Addition parcel. The area has been severely impacted by the construction of mosquito ditches, which functioned to divert water flow and subsequently altered the hydroperiod of the saltern. Restoration will involve backfilling approximately 35,000 linear feet of mosquito ditches. Backfilling will allow a more diffuse sheet flow of fresh water from upland areas and will allow extreme high tide events to flood the salterns and slowly flow out through the mangrove forest fringe to the west. This project is anticipated to restore the natural hydroperiod, raise the interstitial salinities, and restore the natural sill in the saltern resulting in approximately 350 acres of saltern restoration and enhancement.

EXPECTED BENEFITS:

This project will restore and increase the diversity of coastal habitats by returning the historic hydroperiod and historic function to the area. The project will also compliment and enhance the environmental value of adjacent restoration activities.

NAME: Indian River Lagoon

LOCATION: Brevard and Indian River counties, Florida

ACRES/RIVER MILES: 47.5 acres

NON-FEDERAL SPONSOR(S):

Marine Resources Council

Florida Department of Transportation (DOT)

Indian River Lagoon Program

PROJECT DESCRIPTION:

The goal of this project is to restore 47.5 acres of estuarine habitat in the Indian River Lagoon by removing invasive species, such as Brazilian pepper, and planting red and white mangroves. Invasive species will be removed using the basal bark and cut stump method. Once the invasive species are removed, 4,500 smaller red mangroves and 300 large red and white mangroves will be planted. The larger mangroves will be established within 30 to 90 days and will immediately provide habitat for aquatic species and birds.

EXPECTED BENEFITS:

The Indian River Lagoon has long been purported to be one of the most diverse estuaries in North America and is an Estuary of National Significance. It is the home of more protected species than any estuary in the U.S. The restored area will support over 50 rare, threatened or endangered species including the West Indian manatee, the Florida scrub jay, Johnson seagrass, and seven species of fish. This project supports the Comprehensive Conservation Management Plans for the Indian River Lagoon and the Indian River Lagoon Scenic Highway Corridor Management Plan. The mangroves will reduce erosion, filter runoff, and improve water quality. They will also help reduce wave and wind energy.

NAME: Robinson Estuary Preserve Coastal Habitat Restoration

LOCATION: Manatee County, Florida

ACRES/RIVER MILES: 120 acres

NON-FEDERAL SPONSOR(S):

Florida Department of Environmental Protection

PROJECT PARTNERS:

Florida Communities Trust

PROJECT DESCRIPTION:

Implementation of this project will address the Sarasota Bay Comprehensive Conservation and Management Plan goal for wetland restoration of shoreline habitats. The project will result in the restoration/creation of a mosaic of habitats including tidal lagoons, emergent marsh, high marsh and oligohaline habitat, totaling over 120 acres. Boardwalks and trail systems will be constructed to allow for passive recreation and educational outreach.

EXPECTED BENEFITS:

Implementation of this project will increase the quantity, improve the quality, and protect the diversity of coastal wetlands within the Sarasota Bay and Tampa Bay watersheds.

NAME: St. Martins River Restoration Project

LOCATION: Bishopville, Worcester County, Maryland

ACRES/RIVER MILES: 12 acres, 9 stream miles

NON-FEDERAL SPONSOR(S):

Maryland Coastal Bays National Estuary Program
Maryland State Highway Administration
Maryland Department of Natural Resources

PROJECT PARTNERS:

Worcester County, Maryland
American Rivers

PROJECT DESCRIPTION: The project would be split into two related components:

1. **BISHOPSVILLE POND:** The project will remove an existing dam that will open suitable anadromous fish spawning habitat. Opening of 9 miles of stream to fish movement in the coastal bays watershed is significant considering the generally small size of streams in the watershed. In addition to restoring fish passage and stream habitat, the project will improve water quality by removing sediment that has accumulated behind the dam and periodically flushes into the stream exacerbating low DO conditions. This component was approved by the council in October 2005 and the ASA(CW) in November 2005
2. **LIZARD HILL:** The project will use material dredged from Bishopville Pond to restore an abandoned sand and gravel quarry and convert it into a mix of emergent and forested wetlands. Water from Buntings Branch will be diverted into a 35 acre site, before returning to the stream. This is expected to remove excessive nutrients, sediments, and allow for more stable hydrology in the stream. This is expected to make the fish passage more effective. As an additional benefit, on site concrete may be recycled to be used for Oyster reefs within the St. Martin's River, adding additional habitat and completeness to the project.

EXPECTED BENEFITS:

Project funds will allow for the beneficial use of the material dredged during the pond restoration. The wetland restoration will provide both water quality and habitat benefits and will reclaim an under-utilized site. Concrete, which would normally be buried or land filled, may be used to create oyster habitat, providing additional habitat and function.

NAME: Stewart's Creek

LOCATION: Barnstable, Massachusetts

ACRES/RIVER MILES: 14 acres

NON-FEDERAL SPONSOR(S):

Town of Barnstable, Massachusetts

PROJECT PARTNERS:

Massachusetts Wetlands Restoration Program

Harbor Village Association

PROJECT DESCRIPTION:

The project will restore a degraded salt marsh and an estuarine embayment (open water and intertidal flat) at Stewart's Creek in Hyannis, Massachusetts. The restoration plan involves restoring tidal flushing to a salt pond/marsh system by replacing an existing undersized culvert. Approximately 3,200 cubic yards of material will be dredged to restore the salt pond. The salt marsh habitat in Stewart's Creek will be restored using this dredged material and then planted with smooth cordgrass to stabilize and colonize the area.

EXPECTED BENEFITS:

The project will restore pond and intertidal flat habitat to a condition suitable for high quality benthic invertebrate, fish, and wildlife habitat. Low quality *Phragmites australis* (an invasive plant) dominated areas will be restored with high quality smooth cordgrass habitat, which provides multiple benefits, including: increased biological productivity; nursery grounds for marine and estuarine species; increased recreational fishing potential; and increased filtering capabilities for the creek. The project is also expected to improve water quality and reduce the number of beach closures at Keyes Memorial Beach.

NAME: Lower Columbia Slough Off-Channel and Floodplain Habitat Restoration Project

LOCATION: Portland, Oregon

ACRES/RIVER MILES: 5 acres

NON-FEDERAL SPONSOR(S):

City of Portland, Oregon

PROJECT PARTNERS:

Columbia Slough Watershed Council

Oregon Watershed Enhancement Board

The Nature Conservancy / Pacific Gas and Electric

Oregon Division of State Lands

Portland's Environmental Services

PROJECT DESCRIPTION:

The project will restore five acres of tidal floodplain habitat (forested wetland and soft bottom mud backwater sloughs) in the Lower Columbia Slough. The project site is located in the historic floodplain of the Columbia River, where the Columbia River and Willamette River join to form the Lower Columbia River estuary area. The project will provide critical, high quality rearing and refuge habitat for juvenile chinook and coho salmon, and steelhead and restore hydrologic connectivity between the Lower Columbia Slough and Ramsey Lake Wetland Complex. This project provides a valuable opportunity to reclaim historically lost off-channel habitat, while simultaneously restoring tidal connections, improving water quality, and contributing to species recovery.

EXPECTED BENEFITS:

The project will improve floodplain wetland functions and benefit salmon and other native fish and wildlife species including shorebirds and neotropical songbirds as well as the Oregon-protected Western painted turtle and Northern red-legged frog. The project will help achieve restoration goals identified by regional resource managers, including the City of Portland, Columbia Slough Watershed Council, Lower Columbia River Estuary Partnership, Northwest Power and Conservation Council, Oregon Department of Fish and Wildlife, and Oregon Water Enhancement Board. Improvements in ecosystem functions will be monitored to ensure that the project restores hydrologic connectivity, is used by juvenile salmon and other target species, and improves water quality.

NAME: Restoration of Submerged Aquatic Vegetation (SAV) on the Seaside of Virginia's Eastern Shore

LOCATION: Northampton County, Virginia

ACRES/RIVER MILES: 40 acres

NON-FEDERAL SPONSORS:

Commonwealth of Virginia

Virginia Institute of Marine Science (VIMS)

PROJECT DESCRIPTION:

The goal of this project is to restore submerged aquatic vegetation (SAV) in seaside lagoons of Virginia's eastern shore. Eel grass (*Zostera marina*) seeds will be planted near Wreck and Gull Marsh Islands. Seed planting has been shown to be more cost-effective than planting vegetative parts. A SAV restoration program was initiated on the seaside eastern shore of Virginia in 1998 when VIMS first planted eelgrass test plots. Since that time, over 50 acres of eelgrass have been planted and over 90% of the plots have been successful. Despite a sharp die-off of SAV in the Chesapeake Bay in 2003, restored SAV beds on the seaside of the eastern shore continue to thrive. The proposed project would allow for rapid expansion of this restoration effort into additional areas of the seaside lagoons not yet planted. Seeding will take place within a 400 acre polygon. With current success estimates, seeding will result in projected restoration of 40 acres of SAV habitat

EXPECTED BENEFITS:

This project will improve habitat for interjurisdictional fish and migratory birds. It will provide habitat for the biotic community that depends on submerged aquatic vegetation for various life history requirements. It will also improve water quality by removing nutrients, stabilizing sediments, and buffering wave energy. SAV restoration could protect oyster reefs from excessive sedimentation and ameliorate siltation of navigation channels, thereby reducing the necessity of dredging existing channels.