

# Acknowledgments

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# Table of Contents

Acknowledgements .....	i
Table of Contents .....	ii
Executive Summary .....	v
Summary of Case Studies .....	vii

## Section I: Why Coastal America Partnerships Work

AN INTRODUCTION .....	1
ORIGINS .....	1
OBJECTIVES .....	2
NOT BUSINESS AS USUAL .....	2
THE COLLABORATIVE PROCESS .....	3
The Principals Group .....	3
The National Implementation Team .....	4
The Regional Implementation Teams .....	4
The Coastal America Coordinating Office .....	5
THE PARTNERS .....	5
Federal Partners .....	5
Nonfederal Partners .....	6
DELIVERING A STRONG PUBLIC MESSAGE .....	6

## Section II: The Five Elements of Success

COOPERATION AND COLLABORATION .....	8
The Partnership Process .....	8
Policy and Research Coordination .....	9
Regional Environmental Management .....	9
Comprehensive Management of Coastal Problems .....	10
ENHANCED PROJECT BENEFITS AND SCALE .....	11
Level of Environmental Benefits .....	11
Expediency .....	12
FUNDING .....	13
Federal Programmatic Funds .....	13
In-Kind Transfers .....	14
Volunteer Assets .....	15
The Value of Coastal America’s Endorsement .....	15
Public-Private Cost Sharing .....	16

# Table of Contents

TECHNOLOGY TRANSFER .....	16
Technical Assistance .....	16
Emerging Techniques in Environmental Management .....	17
Data Standardization .....	18
EDUCATION AND OUTREACH .....	18
Field Studies - The Living Classroom .....	18
Interpretive Elements at Project Sites .....	19
ELEMENTS OF SUCCESS: A SUMMARY .....	19

## Section III: A Course For The 21st Century

THE WATERSHED APPROACH AND SUSTAINABLE DEVELOPMENT .....	23
COASTAL ECOSYSTEM LEARNING CENTERS .....	24
REGIONAL, STATE AND LOCAL ACTION .....	25
EXPANDING THE KNOWLEDGE BASE .....	25
A NEW CENTURY OF PARTNERS .....	26
CONCLUSION .....	26

## Appendix A: Selected Coastal America Project Case Studies

Ballard Street Salt Marsh Restoration, MA .....	A-1
Blackstone River Basin Reconnaissance Study, RI and MA .....	A-2
Connecticut Coastal Embayments, CT .....	A-4
Galilee Bird Sanctuary, RI .....	A-5
Mohegan Tribe Coastal Management Plan, CT .....	A-6
Navy Eelgrass Study - Narragansett Bay, RI .....	A-7
New England Coastal Contaminated Sediments Project, MA, CT & ME .....	A-8
Ninigret National Wildlife Refuge Restoration, RI .....	A-9
Souadabascook Stream, Grist Mill Dam Removal, MA .....	A-10
Atlantic White Cedar Ecosystem Restoration, NC .....	A-11
Little Falls Dam Fish Passage Project, MD .....	A-12
Poplar Island Restoration, MD .....	A-13
Cape Fear L&D No. 1 Fish Ladder, NC .....	A-14
Quaker Neck Dam Removal, NC .....	A-15
Northern Right Whale Project and Early Warning System, GA & FL .....	A-16
Puerto del Manglar Red Mangrove Restoration, PR .....	A-18
Aransas NWR Shoreline Protection, TX .....	A-19
Apalachicola River Slough Restoration, FL .....	A-20
Cape San Blas Dune Restoration and Habitat Preservation, FL .....	A-21
Cockroach Bay Restoration, FL .....	A-22

# Table of Contents

Galveston Bay Oyster Reef Restoration, TX .....	A-24
Mobile Bay/Delta Wetlands Restoration, AL .....	A-25
Salt Bayou, McFaddin Wetlands, TX .....	A-26
Santa Rosa Island Dune Restoration, FL .....	A-27
West Galveston Bay Seagrass Restoration, TX .....	A-29
Prospect Island Restoration, CA .....	A-30
Sonoma Baylands, CA .....	A-31
Duwamish River Estuary Intertidal Wetlands, WA .....	A-33
Barnaby's Milkvetch Reintroduction, AK .....	A-35
Duck Creek Watershed Restoration, AK .....	A-36
Kenai River Restoration, AK .....	A-37
Polar Bear Video, AK .....	A-38

## Appendix B: Project Managers

## Appendix C: Coastal America Points of Contact

# Executive Summary

## SUSTAINING OUR COASTS: Why Coastal America Partnerships Work

Coastal America is dedicated to sustainable development and coastal ecosystem protection and restoration. Partners at every level — government and nongovernment — commit to shared ideas, expertise, technology, funding and natural laboratories in which resourceful solutions to coastal concerns are inspired, tested and expedited.

With over 250 projects in five years, from marsh restoration in the Northeast, to salmon habitat restoration in the Northwest and dam removals in the Southeast, Coastal America partnerships have generated almost \$50 million in federal funding, a sum that has been nearly matched by private, state and local cost-sharing. Over 300 nonfederal organizations have further contributed a vital range of in-kind services and many thousands of volunteer hours.

Examine Coastal America partnerships and you will find their success has been aided by several critical factors:

### **Cooperation and Collaboration**

Extensive coordination of policy, research and regional environmental management efforts, together with comprehensive management of coastal problems, yield more complete and productive solutions. The collaborative process also generates strong local support. Perhaps most importantly, the process empowers the field offices of partnership agencies to shed old misperceptions, to take a fresh look at each other and engage in activities with a new spirit of collaborative problem-solving.

### **Enhanced Project Benefits & Scale**

Bridging the capabilities, assets and resources of multiple agencies, Coastal America partnerships significantly boost the level of environmental benefit and the speed with which a project can be approved.

### **Funding**

In view of austere federal agency budgets, funding for coastal restoration and protection is often the single most difficult obstacle to overcome. Coastal America partnerships cut through this obstacle on several levels: 1) funds leveraged simultaneously from several federal agencies support fully-designed plans for carefully-targeted problem sites; 2) state, local and private participation can spur additional funding, in-kind transfers and volunteer services; 3) addressing the problem and/or implementing the project more efficiently usually cuts costs; and 4) the value of Coastal America's endorsement often boosts the chances of securing funding within a partner agency's annual budget cycle.

# Executive Summary

## **Technology Transfer**

As one of the most valued assets of every Coastal America initiative, technology transfer is provided by individual specialists of partner agencies. Specialists have demonstrated expertise in such professional disciplines as wetland restoration, coastal hydrology and project management. Coastal America helps link and leverage this diverse expertise so it can be collaboratively applied to coastal problems. The results are innovative solutions and standardized methods for environmental management, restoration, enhancement and protection activities.

## **Education and Outreach Activities**

Education and outreach are exciting and integral components of Coastal America partnerships. Take a look at our unique Coastal Ecosystem Learning Centers and you will understand why. Specific project sites may stimulate unusual educational opportunities. Living classrooms, on-site displays and innovative field studies in partnership with local schools and universities do much more than rally community support for coastal restoration and protection — they serve to educate the future stewards of America’s coastal resources.

# Summary of Case Studies

*(listed alphabetically in regional order)*

## **Northeast Regional Implementation Team**

### **Ballard Street Salt Marsh, Massachusetts**

The Ballard Street Salt Marsh on the Saugus River was degraded by tidal restriction from damaged tide gates. The project will restore approximately 15 acres of freshwater wetlands which are expected to provide flood storage enhancement, non-point source pollution control and wetland habitat restoration upstream of a new tide gate. Additionally, 12 acres of salt marsh including three acres of tidal creeks supporting shellfish will be restored down stream of the new tide gate.

### **Blackstone River National Heritage Corridor, Rhode Island and Massachusetts**

The Blackstone River, which passes through Massachusetts and Rhode Island, is heavily polluted, contains contaminated sediments and continues to adversely affect the health of the river and the Narragansett Bay into which it flows. A comprehensive watershed study is being conducted to examine restoration alternatives including remediation of contaminated sediments together with wetlands and waterfowl habitat restoration.

### **Connecticut Coastal Embayments, Connecticut**

An initial assessment identified ten wetland sites for restoration, six of which were experiencing degradation from transportation related flow restrictions. Funded under the authority of the Intermodal Surface Transportation Efficiency Act, about 50-75 acres of wetlands on Sybil Creek and Mill Meadows were restored as part of the rehabilitation of high speed rail infrastructure in the northeast.

### **Galilee Bird Sanctuary, Rhode Island**

Degradation of tidal salt marsh had occurred due to the disposal of dredged material from navigation projects and the construction of an escape road through a bird sanctuary. Restoration of 128 acres of wetlands was accomplished by re-excavating natural tidal channels and installing twin box culverts beneath the escape road to improve tidal exchange for the newly restored saltmarsh.

### **Mohegan Tribe Management Plan, Connecticut**

Trading Cove, located along the Thames River, is experiencing water quality problems and the Mohegan tribe requested help. As part of a comprehensive watershed plan, water, sediment and benthic conditions are being examined together with structures that might be adversely affecting water quality and fish migration in an attempt to develop solutions.

# Summary of Case Studies

## **Navy Eelgrass Study—Narragansett Bay, Rhode Island**

This study created an interagency effort from a previously disassociated group of efforts. The Navy was working with the detection of submerged vegetation due to its military implications for hiding undersea mines, the Corps was mapping seagrass because of its habitat value and significance for dredging projects, and the USFWS and EPA's National Estuary Program were interested in the resource for habitat management purposes. The coordination of these efforts afforded an ongoing dialogue that is producing habitat mapping to be used for management and new tools for technological advancement.

## **New England Coastal Contaminated Sediments Project**

Contaminated sediments threaten harbor and ocean health. A map of contaminated sediments was created using Geographic Information System technology from the combined data bases of several agencies. The mapping of this information is essential in identifying future management options during dredging operations and restoration projects.

## **Ninigret National Wildlife Refuge Restoration, Rhode Island**

Before the Ninigret Wildlife Refuge in Rhode Island came into being the site was used as an auxiliary Naval Air Station. Old tarmac, used as runways, still existed when the area was designated as a National Wildlife Refuge and needed to be removed in order to restore the original coastal sandplain habitat. Tarmac removal was completed by using the expertise of the 378th Army Reserve Unit as a "heavy equipment" training exercise at much reduced costs.

## **Souadabascook Stream, Grist Mill Dam Removal, Maine**

The Grist Mill dam on the Souadabascook Stream, a tributary of the Penobscot River in Maine, has hindered fish passage for nearly two hundred years, effectively eliminating the stream's anadromous fishery. Removal of the dam has restored habitat and reopened miles of stream to anadromous fisheries including brook trout, sea run Atlantic salmon, American shad and alewife populations.

## **Mid-Atlantic Regional Implementation Team**

### **Atlantic White Cedar Ecosystem Restoration, North Carolina**

The Atlantic white cedar ecosystem in Dare County has been degraded by logging activities since the 1800s. The Air Force, which owns much of the degraded land, is examining reforestation techniques to restore 3,000 acres and improve water quality in the degraded area and along the coast as part of a watershed approach. To date, 100 acres of the Atlantic white cedar ecosystem have been restored through planting of seeds and seedlings.



# Summary of Case Studies

## **Little Falls Dam Fish Passage Project, Maryland**

Little Falls Dam blocks passage of anadromous fish up the Potomac River and as a result fish populations, specifically American shad, have been declining. The Little Falls Dam project will install a labyrinth weir notch to allow anadromous fish to pass the dam and reach historic spawning grounds. Outreach efforts are also continuing within the schools where students raise fish for release as juveniles.

## **Poplar Island Restoration, Maryland**

Located in the Chesapeake Bay, Poplar Island has experienced severe erosion, reduced from nearly 1,100 acres in the 1800s to 5 acres today. The project will involve restoration to its former size by beneficially using clean dredged material from nearby navigation projects and providing wildlife habitat and wetland vegetation.

## **Southeast Regional Implementation Team**

### **Cape Fear Lock and Dam No. 1 Fish Ladder, North Carolina**

A prefabricated fish ladder was installed at Lock and Dam No.1, located on the Cape Fear River. The installation of the ladder has allowed the upstream migration of sturgeon, striped bass, shad and river herring to an additional 33 miles of river previously inaccessible to these species.

### **Quaker Neck Dam Removal, North Carolina**

In the Neuse River basin of North Carolina, anadromous fish passage was obstructed by the Quaker Neck Dam, blocking important spawning grounds for many anadromous fish species, including sturgeon, striped bass, shad and river herring. Removal of the Quaker Neck Dam restored 75 miles of mainstem river and 925 miles of tributaries, reestablishing a significant amount of spawning area and habitat for these anadromous fish species.

### **Northern Right Whale Project and Early Warning System, Georgia and Florida**

Ship strikes and net entanglement kill one or two endangered northern right whales annually in their breeding grounds off the coast of Georgia and northern Florida. An “early warning” system was developed to inform mariners of the presence and location of whales, thereby avoiding collisions while maintaining appropriate speed entering and exiting ports. This effort has been successful in reducing ship strikes to zero in 1997.

### **Puerto del Manglar Red Mangrove Restoration, Puerto Rico**

In 1989, Hurricane Hugo destroyed 20 acres of red mangrove forest on the island of Culebra, Puerto Rico. Since the mangroves had not naturally regenerated three years later, it was determined that a restoration effort was needed so that the forest could continue to serve as protection against storms

# Summary of Case Studies

and as habitat for many vital organisms. Twenty acres of fringing red mangrove were restored by this project.

## **Gulf of Mexico Regional Implementation Team**

### **Aransas NWR Shoreline Protection, Texas**

The Aransas Wildlife Refuge, located along the Gulf Intracoastal Waterway in Texas, is the wintering grounds and critical habitat for the endangered whooping crane. Due to wave action from storms and boats 1,000 acres of critical habitat have been eroded since 1950. In a temporary solution to stop the erosion, numerous volunteers placed cement bags along 3,850 feet of channel bank from 1989 to 1992. As a result of this volunteer effort, a Corps feasibility study examined the installation of a permanent solution and recommended federal construction.

### **Apalachicola River Slough Restoration, Texas**

At the mouth of Big Spring Run, on the Apalachicola River, an excavated depression was constructed to provide a thermal refuge for striped bass during warm, low flow conditions. Postconstruction monitoring has demonstrated the thermal refuge is working as expected.

### **Cape San Blas Dune Restoration and Habitat Restoration, Florida**

A collaborative investigation into the natural resources of Cape San Blas, an Air Force property, revealed information not previously known and helped Eglin Air Force Base develop a better stewardship management plan for its property and its natural resources.

### **Cockroach Bay Restoration, Florida**

Cockroach Bay has been degraded as a result of development, shell mining and agricultural activities. Resulting runoff has adversely affected important fishery nursery grounds and habitat. The Cockroach Bay Restoration Alliance was established through cooperation between federal, state and local organizations to plan and carry out the restoration. Their objective is to restore a mosaic of 651 acres of habitat typical of estuarine/coastal environments while at the same time contributing to the improvement of the water quality of the bay. One hundred and seventy five acres of various types of intertidal wetlands have been restored to date, ranging from intertidal wetland channel systems to open salterns.

### **Galveston Bay Oyster Reef Creation, Texas**

In response to two evolving problems in Galveston Bay, Texas—the loss of suitable substrate for oyster production and an increase in fly ash production—the idea to construct oyster reefs using pellets made of fly ash was developed. Test sites have demonstrated significant oyster recruitment on the artificial reef material.

# Summary of Case Studies

## **Mobile Bay/Delta Wetland & Oyster Reef Restoration, Alabama**

Coastal America's initial efforts involved the placement of signs and buoys to mark the locations of over 2,000 acres of oyster reefs. In addition, different types of artificial reef material were examined and monitored so that future reef restoration efforts could be undertaken. Wetland restoration was conducted as part of a major educational exhibit at the Dauphin Island Sea Laboratory.

## **Salt Bayou, McFaddin Wetlands Restoration, Texas**

Construction of the Sabines-Neches Waterway and the Gulf Intracoastal Waterway caused the degradation of fresh and brackish water wetlands by opening the area to tidal influence. Former freshwater wetlands became open waterways losing value as wildlife habitat. The Salt Bayou structure was constructed to prevent seawater intrusion into the wetland area and as a result 60,000 acres of fresh to brackish water wetlands are being preserved and restored.

## **Santa Rosa Island Dune Restoration, Florida**

After the devastating impact of Hurricane Opal, Eglin Air Force Base conducted a study to examine the best techniques for restoring damaged dune systems. The collaborative investigation utilized the specialized expertise of the Coastal America partners leading to a more comprehensive study whose results will benefit local communities.

## **West Galveston Bay Seagrass Restoration, Texas**

Because of improving water quality and clarity conditions in West Galveston Bay, an investigation into transplanting shoalgrass into areas previously vegetated with this species was undertaken. Results demonstrated successful techniques and will be used in a state program to restore some 1,400 acres over the next decade.

## **Southwest Regional Implementation Team**

### **Prospect Island Restoration, California**

The Sacramento-San Joaquin river delta in California has experienced high levels of wetland loss and, as a result, habitat loss for many species of fish and wildlife. Restoration of Prospect Island will involve the removal of existing containment dikes and result in the restoration of 1,309 acres of former riparian wetlands.

### **Sonoma Baylands, California**

Over 90 percent of wetlands in the San Francisco Bay area have been degraded due to development. The Sonoma Baylands site had been diked, dewatered and used as oat hay field. Using funds provided by the Coastal Conservancy, the Sonoma Land Trust purchased the site and, through a collaborative effort, restored this 348 acre plot back to its original state as a

# Summary of Case Studies

wetland with the beneficial use of dredge material restoring habitat for migratory birds and other species.

## **Northwest Regional Implementation Team**

### **Duwamish River Estuary Intertidal Wetlands Restoration, Washington**

The Port of Seattle, Washington, located on the Duwamish River Estuary, is an industrialized area whose construction had contributed to the degradation of important wetland habitat. This restoration effort was executed in three phases: 1) the removal of debris; 2) the restoration of appropriate intertidal elevations; and 3) the reestablishment of riparian buffers. The restored habitat is now home for juvenile salmon as well as other aquatic and terrestrial wildlife, creating safe, clean recreation areas within an urban community.

## **Alaska Regional Implementation Team**

### **Barneby's Milkvetch, Alaska**

Barneby's Milkvetch, a rare plant species, is under threat due to development. The partners developed a conservation MOU, planted seeds and seedlings and are now monitoring the plants to ensure their successful growth, thereby avoiding listing the plant as endangered. Maps, including the location of the plants, were also created to educate people on their location and value.

### **Duck Creek Watershed Restoration Project, Alaska**

Duck Creek is a small stream in Juneau's Mendenhall River Valley, which previously supported large populations of salmon and trout. Today in Duck Creek chum salmon are extinct, coho salmon have been reduced to remnant numbers and trout fishing is closed. The stream resembles a ditch suffering from unchecked development and neglect. An advisory group was formed in 1992 to look at the problems of Duck Creek and is in the process of collaboratively developing a planning document for the long range restoration and management of the watershed.

### **Kenai River Restoration, Alaska**

River bank, wetland and salmon habitat degradation were occurring along the Kenai River due primarily to development and heavy fishing pressure. Several restoration techniques were used to stop the erosion including vegetated cribwalls and the revegetation of denuded banks using native grasses and willow species. Elevated walkways, leading down to the river, were also constructed to prevent damage of new vegetation from fisherman and an educational program was initiated. A total of 80 miles of river bank was restored in this effort.

### **Polar Bear Video, Alaska**

Polar bears are inquisitive, highly mobile and wide ranging, and their interactions with humans may result in the death of the bear or sometimes may

## Summary of Case Studies

result in the death of the human. To educate people who may interact with polar bears, the team developed a video, *Polar Bear Awareness at Air Force Sites*, to supplement written guidance on how to avoid interactions with polar bears.



The regional chairs and national team members at the 1998 Annual Retreat on the banks of the Kenai River, AK.



# **Why Coastal America Partnerships Work**

AN INTRODUCTION

ORIGINS

OBJECTIVES

NOT BUSINESS AS USUAL

THE COLLABORATIVE PROCESS

THE PARTNERS

DELIVERING A STRONG PUBLIC MESSAGE

