



RESTORE
AMERICA'S
ESTUARIES

IMPACT ASSESSMENT

**Federal Coastal Habitat Investments
Support People, Fish, & Wildlife**

Diane Hoskins • Rachel Keylon

About Restore America's Estuaries

Restore America's Estuaries is a national 501(c)(3) nonprofit organization established as an alliance of eleven community-based conservation organizations working together to protect and restore bays and estuaries as essential resources for our nation.

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Executive Summary

Federal investments in coastal habitat restoration are having a big impact for people, fish, and wildlife. While avoiding and minimizing impacts to our nation's coastal areas are always the preferred outcomes, when this is not possible restoration efforts can help restore lost functions important to fish and wildlife while simultaneously benefiting the economy and local communities in multiple ways.

This report aims to bring abstract budget line items and federal agency programs to life through a series of nine real-world case studies that highlight the positive impact of coastal habitat restoration efforts on job creation, enhanced tourism, recreation, community protection, human health, and abundant fisheries. Each case study takes an in-depth look at the unique local challenges, restoration actions, role of federal funding, and resulting beneficial impacts on the community. Case studies were developed in close coordination and extensive input from on-the-ground partners responsible for implementing each project.

The report also contains, in Appendix I, a comprehensive catalog of all federal funding opportunities for which coastal habitat restoration is an eligible activity. The inventory was developed through extensive research and outreach to federal agencies. Not all programs included presently make substantial investments in coastal habitat restoration but coastal habitat restoration is an eligible activity for all federal programs listed. The inventory of federal programs is designed to make clear that there is extensive opportunity for restoration practitioners to think creatively and develop partnerships with new federal programs.



Authors wish to emphasize that while there are a number of programs that could fund coastal habitat restoration, a limited number of federal programs prioritize and focus on coastal habitat restoration. To underscore the importance of these programs, the report identifies a handful of “Key Programs” providing the bulk of federal support and current investments in coastal habitat restoration.

The annual amount of public funding to support coastal habitat restoration remains far behind the national need. This report seeks to underscore the tremendous values restoration activities can provide to people, fish, and wildlife, and to increase the recognition that a restoration project designed and implemented for fishery benefits can also generate multiple other benefits, like storm protection for nearby communities or increased tourism opportunities.

Finally, with limited federal resources and the need to increase efficiency through leveraging funding and expertise, this report aims to serve as a resource for restoration practitioners to identify new opportunities for collaboration and increase the understanding of how federal investments in coastal habitat restoration deliver big results on-the-ground.

Our coasts and estuaries will only continue to face greater and more complex challenges while public funding remains limited. This report provides the basis to better understand the unique ways federal agencies support coastal habitat restoration and the tangible resulting benefits to people and communities, and also provides both federal and non-federal stakeholders with a resource to better leverage existing programs to support local projects.



Introduction

Coastal wetlands are critical to the health of our nation. They provide essential ecosystem services that are critical to clean, healthy, and functioning ecosystems. Coastal wetlands influence water quality, provide habitat to hundreds of species, store and sequester carbon, and help to protect coastal communities from flooding and erosion. The functions of healthy coastal wetlands have vast benefits to society and our economy including providing habitat for 75 percent of our nation's commercial catch¹ and coastal storm protection valued at \$23.2 billion per year.²

Our nation's valuable coastal wetlands are being lost at staggering rates. From the early settlement of our nation through the 1950s more than half of our estimated 220 million acres of wetlands had been lost due to conversion for agriculture and development.³ Despite efforts to reverse losses in the late 20th century, today there are only approximately 40 million acres of wetlands, less than 19 percent of our original coverage, and we continue to lose wetlands at a rate of more than 80,000 acres per year.⁴

Coastal and estuarine habitat conservation and restoration are necessary in order to reverse the dangerous trajectory of dramatic coastal wetland loss. Public-private partnership is one of the most effective ways for federal and nonfederal stakeholders to address this challenge given that 85 percent of our nation's wetlands are on non-federal lands.⁵ The effective coordination of federal activities is crucial to the success of encouraging public-private partnerships with non-federal parties to protect and restore essential coastal wetland habitats.



Habitat restoration is one of the most important investments in coastal wetland stewardship because these efforts directly counteract wetland losses by restoring previously lost habitats. This process can result in increased functioning of new and restored wetlands and reconnect previously disconnected habitats. Restoring lost and damaged ecosystems back to properly functioning ecosystems often results in dramatic benefits to water quality, fish and wildlife habitat, and can help with climate mitigation through increased carbon sequestration and storage. Restored ecosystems can also provide coastal protection functions including reducing erosion, storing floodwater, and protecting against storm damage. Restoring wetlands back to functioning habitats can also provide other people-oriented benefits including protection of human health, enhancement of tourism and commercial and recreational fisheries, as well as stimulation of local economies and job creation.

This report was developed to provide a comprehensive picture of federal investments in coastal habitat restoration projects and to highlight the ecosystem and people-oriented benefits of these federally funded efforts. To supplement the case studies highlighting the impact of federal funding, Appendix I contains a compilation of all federal funding opportunities for coastal habitat restoration. When available from federal partners, specific details about each opportunity were included. The body of the report exemplifies exceptional coastal habitat restoration projects and the federal funding programs that enabled them to happen. This report serves to highlight the importance of federal funding for coastal habitat restoration and protection for the health of our ecosystems and the people and communities that depend on them.



The Importance of Coastal Wetlands

Coastal wetlands describe a vast variety of habitats along our nation's coasts. The term "coastal wetlands" includes all tidal, non-tidal, fresh, saline, and brackish water wetlands within a coastal watershed. They include unique habitat types such as salt marshes, fresh marshes, seagrass beds, mangrove swamps, and hardwood swamps. These habitats are essential to the health of our coasts. They provide nurseries, shelter, and food to fish, shellfish, birds, and even marine mammals.

Coastal wetlands are one of the most productive ecosystems on the planet, on par with coral reefs and rainforests.⁶

Coastal wetlands are essential to our nation's fisheries and wildlife.

- Coastal habitats support 45 percent of endangered species and 85 percent of the nation's waterfowl and other migratory birds.⁷
- Approximately 80 percent of all recreational fisheries catch is dependent on coastal wetlands,⁸ and more than 75 percent of our nation's commercial catch live in coastal wetlands at some point in their life cycle.⁹
- The U.S. commercial and recreational saltwater fishing industries generated nearly \$200 billion in sales in 2011 while supporting more than 1.7 million jobs.¹⁰

Without these crucial habitats which provide nurseries and shelter to fish and shellfish, the commercial and recreational fishing industries would collapse.

The value of coastal wetlands reaches beyond fisheries and impacts entire coastal regions.

- In 2011 the commercial fishing industry supported 1.2 million jobs with \$37 billion in income,¹¹ while the leisure and hospitality industries in coastal regions provided more than \$135 billion in wages.¹²
- Coastal regions support 51 million jobs¹³ and generate almost half of our nation's gross domestic product (GDP).¹⁴
- If the coastal regions of the U.S. were combined as a separate nation they would rank 3rd in global GDP ranking, behind the U.S. and China.¹⁵

The impact of coastal regions on our nation's economy is staggering. The tremendous value of these ecosystems puts into perspective the threat that ecosystem loss presents.

Local, regional, and the national economy are dependent upon the health of our coasts. Yet demand for agricultural land and coastal development have resulted in tremendous losses of these ecosystems throughout our nation's history; a trend that still continues today. Nearly 40 percent of our nation's population lives in coastal regions and this number is continuing to grow.¹⁶ As population density increases in coastal regions demands for resources also increase, resulting in further pressure upon, and degradation and loss of, coastal wetlands. While the value of coastal wetlands is clear, restoration efforts currently cannot keep pace with losses.

This report aims to further the understanding that healthy and functioning coastal ecosystems contribute to a healthy coastal community and economy.



Living shorelines provide erosion control for property owners and habitat for fish and wildlife.

Coastal Wetland Loss is Outpacing Restoration

Recognizing the value of wetlands to our nation has been a longstanding nonpartisan issue of significance. In 1989 President George H. W. Bush established a national policy of “no net loss” of wetlands. In order to meet the goals of this policy the practice of wetland mitigation – replacing newly impacted wetlands with the creation of new wetlands of the same size and similar function and value – became a common practice. In fact, the no net loss policy was implemented and endorsed by every President following the initial announcement with the intent of preserving our nation’s wetlands and their valuable functions. Unfortunately, this goal has not been realized.

A study from the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) found that coastal watersheds of the continental United States lost wetlands at an average rate of 80,160 acres a year from 2004-2009 which is approximately seven football fields, every hour.¹⁷

Despite federal policy, wetland mitigation, has not been able to replace impacted wetlands with equally functioning wetlands, especially in coastal areas. Often mitigation projects may replace natural wetlands with lower quality wetlands that lack the equivalent ecosystem benefits of the original wetland. For example, during the study period, freshwater ponds in coastal watersheds increased by six percent. These freshwater ponds were located in urban or suburban developments as likely water detention pond or ornamental ponds as opposed to targeted wetland reestablishment. Despite having a very low contribution to habitat or the functioning of the system, these low contributing gains are included in the offsetting of full functioning wetland losses in coastal watersheds.¹⁸

Reestablishing wetlands in coastal watersheds has trailed national wetland reestablishment rates and we have yet to realize no net loss in coastal watersheds.

The rate of coastal habitat restoration has lagged far behind interior restoration rates for a variety of reasons, including the logistical difficulties of working in coastal ecosystems, competing land use interests, and higher costs to reestablish coastal wetlands. Additionally, for many coastal wetland habitats, once these habitats are lost, their functions and ecosystem values cannot



be reversed entirely through restoration. While restoration is essential for improving damaged habitats and reversing the trend of wetland habitat loss, conserving our remaining coastal wetlands must be considered a priority action. Avoiding the initial impact is always the first objective, but when this is not possible or a result of previous action, restoration efforts are our best tool to reestablish vital habitat and all the ecosystem’s benefits to society.

Why Habitat Restoration?

Our nation’s coastal wetlands and estuaries sustain fish, wildlife, and people. But when we lose these ecosystems we also lose all the benefits and services they provide. When coastal ecosystems are degraded by pollution and development it hampers the ability of these ecosystems to function properly and provide clean and healthy water, protect our coastal communities from storm damage, and provide habitat to fish and wildlife.

The most effective way to protect coastal ecosystems is to prevent habitat degradation and destruction in the first place. Despite ongoing conservation and protection efforts, we are losing 80,000 acres of coastal habitat each year.¹⁹ Given these astounding losses, there is significant need to protect our remaining coastal wetlands and increase investment in restoration efforts.

Restoration means returning an area of coastal habitat to a healthy self-sustaining ecosystem that provides clean water and healthy habitat supporting fish and wildlife as well as human uses such as swimming, boating, and recreation and commercial fishing. The goal of restoration is to help rebuild a healthy, functioning ecosystem that works as close to how it did prior to being degraded or destroyed as possible.

Restoration activities include:

- Restoring natural water flows in floodplains and wetlands;
- Removing obsolete dams, culverts, and other obstacles to restore fish passageways;
- Cleaning up chemicals and toxic substances;
- Rebuilding oyster reefs;
- Growing and planting oysters, scallops, and other shellfish;
- Creating living shorelines;
- Replanting areas with native plants and trees, while removing invasive species;
- Removing trash and marine debris; and
- Erosion control and shoreline stabilization.

Restoration not only benefits the restored ecosystem but also the surrounding coastal communities. Investing in restoration provides long-lasting benefits to people and local economies by stimulating job creation, sustaining both recreational and commercial fisheries, enhancing tourism, improving water quality and public health, and protecting coastal communities from storm damage.

The benefits to people and coastal communities from habitat restoration are clear and measurable. For example, each dollar invested in a project through the USFWS Coastal Program creates \$12.78 in economic returns.²⁰ For this same program the \$2.8 million invested nationally in 2011 for on-the-ground restoration projects resulted in a total stimulus to the economy of \$35.6 million and the creation of 473 jobs.²¹ While these numbers are highly convincing, this report goes a step further to demonstrate how individual restoration projects can provide a variety of tangible and meaningful benefits to coastal communities, jobs being just one example.

Why Partnerships?

Partnerships are necessary for the conservation and restoration of our nation's coastal wetlands. With the staggering loss of wetlands, coastal habitat conservation and restoration success requires the active participation of multiple parties and their unique resources and skills.

All of the programs covered in Appendix I of this report foster partnerships between federal agencies and non-federal entities to achieve coastal habitat restoration goals. Additionally, each case study highlighted in this report exemplifies how the multi-partner approach can work to benefit habitat restoration efforts.

Federal agencies implement restoration efforts independently in a very limited number of cases due to the fact that 85 percent of the nation's wetlands are not located on federal lands.²² There is a necessity to develop partnerships with individuals, nonprofit organizations, educational institutions, corporations, state and local governments, or tribes in order to facilitate habitat restoration. Federal funding helps facilitate partnerships to meet mutual goals and while these partnerships may prove challenging at times, the significant benefits to working collaboratively outweighs any challenges.

The primary benefit of conducting restoration in partnership with private organizations is the additional financial resources and on-the-ground expertise that is difficult to replicate inside federal agencies. Many of the non-federal entities that partner with the federal government on coastal habitat restoration efforts bring significant outside funding, resources such as a core membership of volunteers, and technical skills that serve to amplify what can be accomplished with the federal funding investment alone. For example, for each dollar invested in a project under USFWS' Coastal Program, \$6.86 is leveraged in total project funding.²³



An additional benefit of partnerships is the development of a community of environmental stewards from the local community. Individuals, communities, towns, or cities that participate and come together to implement a restoration project develop a sense of ownership and place a higher value upon protecting and maintaining that place. Communities and other local organizations that have personally participated in projects develop a sense of stewardship for their coastal environments. These communities are more apt to conserve, protect, and restore habitat in the future and are less prone to support destructive practices.

Federal agency partnerships are not limited exclusively to non-federal partners, multiple federal agencies can partner together with outside partners to implement habitat restoration projects for different but complementary goals. Many of the case studies highlighted in this report demonstrate how federal agencies can work together and highlight the core competencies and specific objectives of each agency and create a stronger restoration project. For example, both NOAA and the U.S. Army Corps of Engineers (USACE) may partner on a project in which NOAA brings fisheries expertise and the USACE brings expertise on the design, engineering, and construction aspects of the project while leveraging outside partner resources. By increasing these cross agency partnerships in tandem with private organizations, our coastal habitats will continue to benefit from the most effective habitat restoration projects.

Methodology

The foundation of this report is a comprehensive catalog of all federal funding opportunities for coastal habitat restoration (Appendix I). To bring the programs to life and highlight the positive impact of federal funding to coastal communities and special coastal places this report highlights nine coastal habitat restoration efforts.

Identifying Programs of Interest

The foundational catalog of federal funding opportunities for coastal habitat restoration was developed by identifying federal funding programs through a multistep screening process. The first step was done by utilizing the Catalog of Federal Domestic Assistance (CFDA) run by the General Services Administration. The CFDA system was queried with a series of keywords to identify programs that potentially fund coastal habitat restoration. From the initial queries more than 300 programs were identified.

The second step was an analysis of program descriptions to weed out programs that came up through the keyword searches but did not meet the focus on coastal habitat restoration projects. For example, programs that focused on forest restoration or outer continental shelf research were removed. This process paired down the potential programs to 117 programs of interest.

Once all extraneous programs were removed from the program list, a point of contact (POC) was identified for each program and contacted in order to gain further insight about each program. Each POC was provided a set of questions (Appendix II) and was offered the opportunity to respond via email, phone, or in-person meeting. Most respondents selected to respond via email or with a phone conversation. For a variety of reasons not all program POCs were able to respond. As a result, programs for which the POC did not respond, or provided incomplete data, the information presented in the catalog is limited to the information provided by the CFDA.

Information received from agency POCs was used to supplement and correct CFDA data in the development of the final catalog of federal funding opportunities. Responses



also resulted in the removal of some programs that were found to lack habitat restoration components. This information is synthesized in the table in Appendix I which summarizes all federal funding opportunities for coastal habitat restoration across the entire federal family and served to inform the selection of programs to highlight in the body of the report, as well as case studies to spotlight.

Key Programs

All federal funding opportunities for coastal habitat restoration were identified as noted above. From these programs, the most relevant and focused programs were selected to highlight the best programs advancing coastal habitat restoration efforts. The programs were selected to be highlighted based on a few criteria, including:

- 1) Applicable on a national scale;
- 2) Top focus of the program is restoration rather than re-search, conservation, or mitigation;
- 3) The program focuses primarily on coastal habitat; and
- 4) Size of annual federal financial investment in the program.

Not all programs represent these four criteria equally which demonstrates in part the diversity of these programs and their benefits. Once identified, these key programs were researched further. A summary of efforts, successes, and benefits was developed to showcase the value of each program.

Case Studies

Case studies were identified through extensive outreach to restoration practitioners and in partnership with federal program contacts to identify possible case studies to highlight in the report.

Case studies were selected by asking several questions including:

- 5) Was there an on the ground restoration component of the project;
- 6) Did the project restore a coastal habitat or a habitat with significant connectivity to a coastal habitat;
- 7) Was the project funded in part by a federal funding source;
- 8) Was the project supported by local organizations and were private matching funds a part of the project funding; and
- 9) Were there any people or coastal community related benefits?

Each case study was developed through collaboration with a point of contact at one of the organizations that partnered on the project. Information was collected through research, as well as provided by points of contact in order to inform the development of each case study. As a result, case studies represent the best available information as provided by organizations affiliated with each project.

Key Programs

The following key programs represent the best opportunities to advance voluntary coastal habitat restoration and the core existing capacity within the federal government. The projects funded through these non-regulatory programs have resulted in substantial benefits to endangered and threatened species, ecosystems, local communities, and our nation as a whole.

The programs highlighted here are programs for which we received substantial feedback from agency partners. There are many other excellent programs throughout the federal government, but these particular programs place the high priority on coastal habitat protection and restoration.

NOAA Habitat Conservation, Community-Based Restoration Program

NOAA's Community-Based Restoration Program (CRP) supports locally-driven and voluntary coastal restoration projects with national, regional, and local organizations through competitively awarded, public-private partnerships. This non-regulatory tool is unique within NOAA because of its ability to provide seed funding for community-driven and innovative restoration that benefits commercial and recreational fisheries. The CRP provides a non-regulatory way to complement traditional fisheries management.

USFWS Coastal Program

The USFWS Coastal Program is a voluntary, incentive-based program that provides technical and financial assistance to coastal communities and landowners to protect and restore fish and wildlife habitat on public and private lands. The Coastal Program operates at the regional level and is a conservation delivery tool within the USFWS that builds coastal resilience in communities through public-private partnerships. The Coastal Program leverages private and local funding at a ratio of more than \$6.86 in private funding for each \$1 in federal funding.

NOAA Coastal Zone Management, National Estuarine Research Reserves

National Estuarine Research Reserves System (NERRS) funding supports a national network of protected areas dedicated to promoting research on estuaries to improve our ability to understand, manage, and restore these vital habitats. There are 28 reserves throughout the country.

USEPA National Estuary Program

The U.S. Environmental Protection Agency's (USEPA) National Estuary Program (NEP) brings together citizens, scientists, businesses, and governments to solve environmental problems and promote healthy, vibrant communities. Program stakeholders work together to develop science-based action plans that enhance the estuary as a vital environmental and economic resource benefiting local communities and the entire nation.

USACE Estuary Habitat Restoration Program

The United States Army Corps of Engineers (USACE) Estuary Habitat Restoration Program promotes a coordinated federal approach to estuary habitat restoration; forges effective partnerships among public agencies and between the public and private sectors; provides financial and technical assistance for estuary habitat restoration projects; and develops and enhances monitoring and research capabilities. The authorization for the program, The Estuary Restoration Act, established an interagency Council to carry out these directives. The council includes USACE, NOAA, USFWS, and the Natural Resources Conservation Service (NRCS); all of these agencies are authorized to receive funding but the USACE is the only agency that has regularly received funding for estuary restoration projects.



Case Studies

Federally funded coastal restoration projects are having a big impact across the nation. These case studies highlight how coastal restoration projects do not just help nature, but how investments in nature support jobs, economic growth, recreation, tourism, community protection, resilience, human health, and our commercial and recreational fisheries.

Federal investments in coastal restoration provide a huge “bang for the buck” because they leverage significant private funding. Across the nation, we have identified five of the most significant benefits of coastal restoration. Each case study will highlight two or more of these benefits:

Job Creation

These projects stimulate job creation. Job creation includes:

- **Direct jobs** – people employed by the restoration project;
- **Indirect jobs** – industries that supply materials for restoration; and
- **Induced jobs** – those in businesses that provide local goods or services to people working on restoration projects.



Tourism & Recreation

These projects support local tourism and enhance the recreational use of the restored habitat. This can be by improving recreational fishing; enhancing bird and wildlife viewing opportunities; and the creation of facilities that encourage



outdoor recreation such as boat launches, trails, and visitor centers. In turn, these nature-based activities support the local tourism economy such as restaurants, hotels, tour guide services, transportation rentals, etc.

Community Protection

These projects protect coastal communities from erosion and storm damage. The creation of natural barriers such as dunes, oyster reefs, barrier islands, etc. helps mitigate the impacts of major storms on coasts and can diminish erosion and even promote accretion.



Human Health

These projects have human health benefits. Human health benefits can include the removal of toxic substances and the removal of harmful bacteria from coastal waters. This also includes projects that conserve things that are beneficial to human health such as restoring a healthy food source.



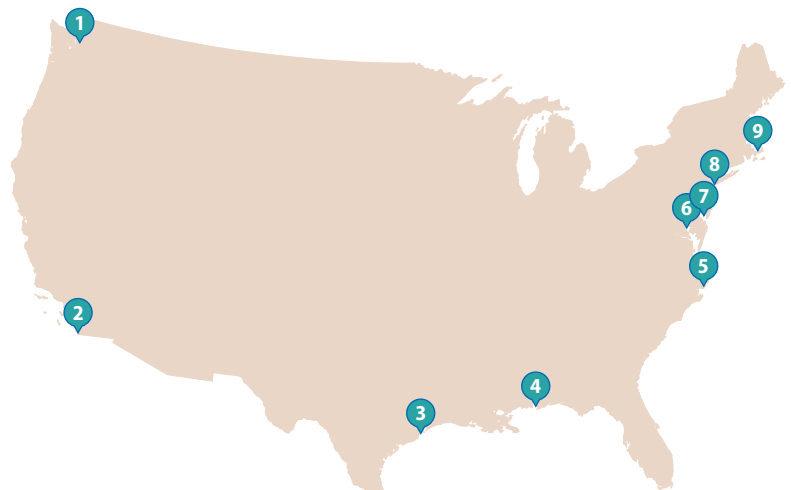
Abundant Fisheries

These projects enhance commercial and recreational fisheries. This can include the creation or improvement of coastal fish and shellfish habitat through the creation of oyster reefs or other coastal habitat. It can also include the restoration of fish passageways for anadromous fish in coastal watersheds.



Map of Case Studies

- 1) Liberty Bay Oyster Restoration, WA
- 2) San Diego Bay Salt Marsh Restoration, CA
- 3) Bay Harbor, Galveston Bay Restoration, TX
- 4) Mobile Bay Restoration, AL
- 5) Hatteras Harbor Living Shoreline Restoration, NC
- 6) Choptank River Oyster Reef Restoration, MD
- 7) Delaware Bay Horseshoe Crab Beach Restoration, NJ
- 8) Saw Mill River Daylighting in Yonkers, NY
- 9) Stony Brook River Restoration, MA



CASE STUDY:

Olympia Oyster Restoration in Liberty Bay, WA

Water quality improvements and restored habitat will enable a local tribe to restore a traditional food source in the future.

Federal Restoration Benefits



Lead Partners

Puget Sound Restoration Fund
Washington Department of Fish & Wildlife
Washington Department of Natural Resources
Suquamish Tribe
Hood Canal Oyster Company
US Navy
NOAA
The Nature Conservancy
National Fish and Wildlife Foundation
USDA
USEPA
Private tideland owners

Case Study Overview

Oysters are a critical component of our nation's seafood supply and coastal tribes have long relied on oysters for subsistence and ceremonial harvest according to archeologists and oral history. Over-harvesting and pollution caused dramatic declines in the West Coast's only native oyster, the Olympia oyster, during the boom of the Gold Rush and the introduction of logging and paper processing operations.²⁴ Impacts from pollution discharge and logging debris required the shellfish industry to begin importing oysters from Japan.

Despite these historic challenges, pollution problems have eased and increasing targeted restoration efforts are underway. While the Olympia oyster still occurs throughout its historic distribution, less than 4 percent of dense, core populations remain in Puget Sound – down from an estimated 10,000 to 20,000 acres that supported dense assemblages of oysters historically.²⁵



The Puget Sound Restoration Fund has embarked upon a 10-year endeavor to rebuild self-sustaining populations of the Olympia oyster, the West Coast's only native oyster, in Puget Sound. Liberty Bay is one of the 19 areas designated as restoration priorities by Washington Department of Fish & Wildlife (WDFW). With funding from NOAA, The Nature Conservancy, U.S. Department of Agriculture (USDA), USEPA, and National Fish and Wildlife Foundation (NFWF), the Puget Sound Restoration Fund led a collaborative effort to spread oyster shell across almost 20 acres of tideflats in Liberty Bay to provide the necessary structure for the native oysters to settle and re-establish.

Federal funding entities contributed approximately \$500,000 toward the enhancements between 2005-2014 with more than \$500,000 in additional matching funds coming from local and state partners. Rebuilding Olympia oyster populations in Puget Sound provides critical habitat and water quality attributes upon which other species depend and would not have been possible without federal support.

Results and Conservation Outcomes

The Liberty Bay oyster restoration initiative marks a major success toward bringing native Olympia oysters back to Puget Sound. Project monitoring has confirmed that the addition of shell throughout Liberty Bay has allowed the native oysters to re-colonize historic ground, reproduce, thrive, and dramatically increase their numbers. The population has also expanded beyond the enhancement footprint, which is another mark of success.

The oyster restoration project in Liberty Bay means cleaner water through increased filtration capacity, additional habitat for multiple fish species including salmon, and improved ecosystem health.

Nearby tribes and restoration partners are confident that the restoration project will one day allow for subsistence and ceremonial harvest of the Olympia oyster, which has been an important and traditional component of their diet. Many tribes have increased their consumption of processed foods as the native oyster and other seafood populations have decreased. This has resulted in health issues associated with an increasingly processed diet. The restoration effort will continue to increase the numbers of native Olympia oysters, and should allow nearby tribes the opportunity to reintroduce the native oyster into their diet.

“The Olympia Oyster was Puget Sound’s only oyster in the time of my ancestors but they were mostly depleted by early settlers. I am very supportive of efforts to bring back the Olympia oyster so that we can return native oysters to the diets of our youth and elders. It’s very important that our future generations have this opportunity to be fulfilled, both spiritually and physically.”

– Rob Purser, Tribal Member, Suquamish Tribe

Olympia oysters restored to Dogfish Bay, one of two restoration sites in Liberty Bay, provide an estimated 47 percent total estuary filtration. This mitigates nutrient pollution, improves light penetration, increases nutrient cycling, preserves nearshore habitat, and enhances ecosystem function.²⁶



CASE STUDY:

Partners Pool Vision, Resources, and Expertise for Restoration of South San Diego Bay, CA

Project stimulates local economy and wildlife thrives with positive benefits for tourism industry and local fisheries after restoration of barren salt production ponds. The restoration project created 130 jobs, supports hundreds of thousands of birds, and is now home to a scenic destination for birders and major attraction along the popular San Diego Bayshore Bikeway.

Federal Restoration Benefits



Case Study Overview

Development has dramatically altered the overall health of San Diego Bay over the past 150 years. Development and salt production requiring dredging and filling has led to the loss of:

- 70 percent of the Bay's salt marshes;
- 84 percent of the intertidal mudflats;
- 42 percent of the shallow subtidal habitat; and
- Most of the wetlands and native upland habitats.²⁷

The goal of the South San Diego Bay project was to reverse this trend. The project restored and enhanced a total of 300 acres of estuarine habitats at 3 different sites in South San Diego Bay. The project was developed in partnership with federal, state, local agencies as well as nonprofit organizations.

The largest part of the project was at the Western Salt Ponds where 223 acres of subtidal, intertidal, and wetland-upland transitional habitat were restored. The Western Salt Ponds area is part of the San Diego Bay National Wildlife Refuge.

The restoration process required a number of steps. First, the salt ponds were taken out of salt production. Then in order to be restored, channels were cut and the dredged material deposited to help create a range of habitats including elevated bird habitat. Levees that separated the ponds from the rest of the bay were breached to restore hydrologic connection and reintroduce tidal influence to the ponds.

Two additional sites were completed to complement the larger salt pond restoration. At the neighboring Chula Vista Wildlife Reserve, 11 acres of salt marsh habitat were created while 30



acres of intertidal habitat were enhanced by establishing tidal channels and plantings of native marsh species. At the Port of Emory Cove, 28 acres of wetland-upland transitional habitat were enhanced with the removal of non-native vegetation and other debris and were planted with native vegetation.

Results and Conservation Outcomes

This project had a large and lasting impact on the local San Diego Bay economy. The project employed people in the service, construction, and agricultural industries, and due to the diverse and integrated economy in the San Diego region the multiplier effect of this project was substantial. **This \$7.7 million project created 130 jobs in the region and added \$13.4 million to the local economy.**²⁸

Fish, wildlife, and the Bay environment have all greatly benefited from the restoration. South San Diego Bay is a very important area to shorebirds and has been designated a Western Hemisphere Shorebird Reserve Network Site and a Globally Important Bird Area. The value of these bird habitats

was enhanced by the project with more than 90 species of migratory and coastally dependent birds, including federally listed species, utilizing the newly restored habitat for nesting, foraging, and roosting.²⁹ Additionally, the expanded fish habitat has created new spawning and feeding grounds which are expected to benefit commercially important fish species in the future.

Beyond the substantial economic and environmental benefits there are more abstract but countless quality of life and recreational benefits generated because of the project. The South San Diego Bay salt ponds over the course of the restoration project have gone from a barren wasteland to a birder's paradise teeming with activity and life. The restored ponds are located conveniently within the San Diego Bay National Wildlife Refuge providing additional habitat for threatened and endangered species as well as adjacent to the popular San Diego Bayshore Bikeway. The Refuge hosts special tours led by the San Diego Audubon Society during the non-breeding season.³⁰ The San Diego Bayshore Bikeway, which is one of the nation's best bike paths according to *The Active Times*³¹, provides views of both the refuge and the newly restored ponds.

While the project did conduct some planting of native estuarine vegetation (less than half the area), native salt marsh vegetation recruited on its own to the remainder of the restored habitat.

“The restoration and enhancement of South San Diego Bay wetlands is a great example of partnerships. The Port of San Diego worked hand in hand with the USFWS, the USEPA, NOAA, and the California Coastal Conservancy on the South San Diego Bay Restoration and Enhancement Project. The partnership was important because we are all in this together and the restoration benefits the entire region.”

– Dan Malcolm, 2015 Chair,
Board of Port Commissioners, Port of San Diego

Overall, the project restored 50 acres of shallow subtidal habitat, 215 acres of intertidal habitat, 15 acres of wetland and upland ecotone habitat and 20 acres of native upland scrub habitat. It had been more than 50 years since the Bay waters flowed into the salt ponds but within days of restoring tidal action to the western salt ponds, tens of thousands of shorebirds immediately started utilizing the new habitat.

Partner	Monetary	In-Kind
California Coastal Conservancy	\$1,200,000	—
USFWS, National Coastal Wetlands Conservation Grant	\$1,000,000	—
San Diego National Wildlife Refuge	\$50,000	—
NOAA, Restoration Center	\$2,975,000	—
USEPA	\$1,000,000	—
Port of San Diego	\$1,300,000	\$150,000
San Diego Audubon Society	—	\$15,500
San Diego Oceans Foundation	—	\$15,500
Ocean Discovery Institute	—	\$15,500
Coronado Cays Homeowners Association	—	\$15,500
USFWS Coastal Program	\$90,000	91 Staff Days
Southwest Wetlands Interpretive Association		Project Proponent

CASE STUDY:

Dredge Material Reused to Create a Marsh Island in Galveston Bay, TX

A motivated community association rallies interest and resources to make an impact for the environment in a big way. The Bay Harbor subdivision of Galveston, TX spearheaded a project to transform dredge material from Galveston Bay into habitat for birds, fish, and wildlife.

Federal Restoration Benefits



Case Study Overview

Galveston Bay is the second most productive estuary in the U.S., supporting recreational and commercial fisheries valued at \$3 billion annually and more than 40,000 jobs.³² In addition to the Bay's valuable fisheries, bird and wildlife viewing provides a major attraction for Texas' thriving \$2.9 billion tourism industry.³³ The natural wetlands habitats of Galveston Bay that support the fisheries and tourism industries have been disappearing over the last 75 years. In fact, Galveston Bay had an average net loss of 1,600 acres of estuarine wetlands per year since 1950 and some areas of Galveston Island have lost nearly 80 percent of their marshes.³⁴ Much of this loss is due to subsidence drowning marshes faster than they can adapt and the subsequent erosion of land due to the lack of soil-stabilizing vegetation.³⁵ The marshy bird island adjacent to the Galveston Island subdivision of Bay Harbor was one such marsh that was experiencing subsidence and erosion when the community decided to act to protect it.



The Bay Harbor subdivision was planning a routine marine channel dredging project to facilitate access for boats between the Bay Harbor Marina and the Bay when the Bay Harbor Improvement Association decided to research opportunities to utilize the dredge material which ultimately helped to restore an adjacent eroding marsh island. The Improvement Association raised funds within the community for the project and partnered with NOAA, USFWS, USACE, the Texas General Land Office, the Coastal Beach and Bays Foundation, the National Fish and Wildlife Foundation, and the Galveston Bay Foundation.

The community spearheaded the project relocated dredge material to restore and expand an eroding island to approximately two acres of elevated area for bird nesting and marsh area for fish habitat. The island was reinforced with geo-tubes, surrounded by reef balls to bolster the fisheries habitat and encourage additional accretion to the island, and completed with the planting of native marsh grasses.

Results and Conservation Outcomes

The Bay Harbor community successfully partnered with local nonprofits and state and federal agencies to design the project, raise necessary funds, and ultimately implement this coastal habitat restoration project. This project is an excellent example of the value of community-based restoration in both benefiting a community and the environment.

The restoration project has proved beneficial to native fish and wildlife. The island is now a popular nesting ground for shorebirds and the reef balls surrounding the island have created a complex fish habitat. This project helps support Texas’ profitable wildlife viewing tourism industry by providing critical habitat to native wildlife.

“Since we completed the Bay Harbor Island restoration project, we have seen increased rental activity for the Bay Harbor community and I suspect this is due to the very visible enhanced fishing and boating opportunities that have resulted for the community.”

—Betsy Redfield, Bay Harbor Homeowner



The reef balls surrounding the restored island have not only benefited the marine environment but have also resulted in accretion of sediment to the island. The growth of the island, both through the restoration project and accretion, has provided community protection benefits. The presence of the island serves as a breakwater to the community and helps protect the coastal community from further erosion and buffers the community from the impacts of major tropical storms and hurricanes.

Partner	Monetary	In-Kind
Coastal Beach & Bay Foundation + Bay Harbor Homeowners	\$210,000	—
NOAA Community-based Restoration Program	\$74,000	—
NOAA Coastal Counties Restoration Initiative	\$50,000	—
National Fish & Wildlife Foundation	\$50,000	—
USFWS Coastal Program	\$40,000	—
Kempner Fund	\$2,000	—
NRG Energy	\$16,185	—
Marsh Mania Volunteer Hours	—	\$18,626

CASE STUDY:

Out-of-Work Fishermen Find Jobs Restoring Alabama's Coast After Deepwater Horizon

After the BP oil spill, Alabama's coastal communities and fisheries took a severe hit. In response, the community came together to restore their coastline one mile of oyster reef at a time.

Federal Restoration Benefits



Lead Partners

Alabama Coastal Foundation

Boat People SOS

Dauphin Island Sea Lab

Gulf of Mexico Foundation

Mobile Baykeeper

The Nature Conservancy

The Ocean Foundation

NOAA

USFWS

USACE

Alabama Department of Conservation and Natural Resources

Alabama Department of Environmental Management

Case Study Overview

Mobile Bay on the AL coast is the 4th largest estuary in the U.S. and plays a vital role in the fish, oyster, and shrimp fishing industries in the Gulf.³⁶ Over several decades, Mobile Bay has suffered severe coastal habitat degradation caused by multiple sources: including extensive shoreline development, coastal erosion, upstream pollution, and extreme storm events. The cumulative impact of these stressors has significantly reduced natural coastal buffers creating a negative cycle resulting in further loss of coastal habitats.

When Mobile Bay was hit by the effects of the *Deepwater Horizon* oil rig explosion in 2010, a major public-private



partnership was formed to address not only the spill impacts but also address the cumulative impacts on the Bay for the long-term. Leading nonprofits including, the Alabama Coastal Foundation, Mobile Baykeeper, The Nature Conservancy, the Ocean Foundation, alongside NOAA, the USFWS, the USACE, the Alabama Department of Environmental Management, and the Alabama Department of Conservation and Natural Resources joined together to leverage resources, expertise, and shared vision. The restoration project provided benefits to both people and nature, including:

- Reduction in shoreline erosion and subsequent property loss;
- Improved and expanded tourism opportunities; and
- Nursery habitat for commercially and recreationally important fish and shellfish (shrimp, blue crab, speckled trout, red drum, southern flounder, ladyfish, and gray snapper).

To date, the partnership has built more than 2 miles of oyster reef with labor through an exciting combination of 20 jobs created for out-of-work fisherman and thousands of volunteers which help to engage the local community and reduce overall project costs. Fundraising efforts are underway for the partnership to expand upon the initial project to restore a total of 100 miles of oyster reef over the next 10 years.

Results and Conservation Outcomes

Early results for the initial two miles of restoration have already demonstrated striking benefits to the local community in the form of jobs, fishery habitat, and increased shoreline resiliency.

At the first restoration site: Helen Wood Park, near the mouth of Dog River, there has been a decrease in erosion from wave action at the shoreline and a significant increase in marsh vegetation. Scientists on the project have seen an increase in fish, wildlife, and birds utilizing the newly revitalized habitat.

This project has also helped to boost the local economy. The coastal Bayou La Batre town, where 75 percent of the community derives a portion of their income from seafood-related businesses, was hit hard by post oil spill fishery closures in the Gulf.³⁷

Working with a local social service agency, Boat People SOS, out of work Gulf coast fishermen and processing workers were employed to construct and bag oyster shell for the reef restoration project. Approximately 20 fisherman were employed and trained in oyster restoration at a time when there were very limited fishing opportunities. The project provided training and job opportunities and helped to develop local oyster restoration experts to draw upon as the restoration effort continues.³⁸

"I think this is the best kind of win-win. We all depend on the resources of the Gulf. By restoring the health of our natural resources, we begin to restore and strengthen the health of our communities at the same time."

—Judy Haner, Program Director for
The Nature Conservancy in Alabama

An economic analysis by The Nature Conservancy shows that when the project is expanded and fully funded for 100 miles of oyster reef, the restoration process will:

- Create 308 jobs per year or 3,000 jobs total;
- Boost regional household income by \$9.7 million a year;
- Increase revenue and sales of crab, fish, and oyster harvest by \$6.87 million annually;
- Save property owners up to \$150 million in construction costs for bulkheads;
- Enhance yearly saltwater angler spending in AL by \$4.9 million; and
- Increase annual sales by \$7.3 million in the commercial seafood supply chain.³⁹



CASE STUDY:

Living Shoreline Protects a North Carolina Community

Erosion of Durant's Point threatened the future livelihood of Hatteras Village; rather than armoring their coast they built a living shoreline.

Federal Restoration Benefits



Lead Partners

NOAA

North Carolina Coastal Federation

Restore America's Estuaries

Carlson Family Foundation

Kitty Hawk Kites

Hatteras Watersports

Hatteras Village

Case Study Overview

Coastal communities of North Carolina have a long rich history of living close to the sea and the natural coastal environment. The town of Hatteras Village, like many other North Carolina coastal communities, is a small and tight knit community that has traditionally derived its livelihood from the sea. As roads and ferries have increased access to Hatteras Village, the local economy has also expanded to coastal tourism.

Hatteras Village, located on Hatteras Harbor, is protected from the strong coastal currents and weather by a narrow spit of land called Durant's Point. Durant's Point has natural marsh habitat and provides a buffer that absorbs these strong natural forces. But with increased intense weather and rising seas, this stretch of land that protects the harbor was quickly eroding at a startling average rate of two feet per year.⁴⁰



To protect the way of life in Hatteras Village, the North Carolina Coastal Federation worked with the local community and engineers to build a living shoreline on Durant's Point with primary funding from NOAA's Community-based Restoration Program and Carlson Family Foundation. The project involved stabilizing the shoreline and creating needed marsh habitat for fish. An offshore granite sill was installed to buffer the coast from strong waves, and the community donated more than 300 hours of time to plant native marsh grasses to stabilize the shoreline and help rebuild a vibrant marsh habitat.

"If Durant's Point washes out, the protection of the harbor will be gone."

— Jan DeBlieu,
Coastal Advocate and Hatteras Village Local

Results and Conservation Outcomes

The sill installed as part of the living shoreline project helps to buffer more than 300 feet of the shoreline from strong waves. This has helped to slow and may eventually help reverse erosion as sediment accumulates behind the sill.⁴¹

The sill was also affectively designed with openings to allow water circulation and fish passage, as a result of the new creation of marsh habitat behind the sill, there is enhanced fisheries habitat and water quality in the area adjacent to restoration.

The living shoreline which was built by the community has had multiple benefits. Not only does the living shoreline establish and enhance the area's rich variety of fish, shellfish, and other wildlife habitat, it also helps to filter pollutants out of runoff⁴² and absorb the waves that crash on the shore, protecting the entrance to Hatteras Harbor.⁴³

This restoration project has helped stabilize Durant's Point and has ensured the protection of Hatteras Harbor. The project has not only protected the way of life in Hatteras Village, but has actually enhanced it. Today Durant's Point is used as an outdoor classroom, teaching local students about the importance of estuaries, the causes and effects of coastal erosion, and ways to protect the coastline while also protecting natural resources.⁴⁴

"The idea of doing something that would not only protect the harbor, from a very pragmatic, practical standpoint, but would be able to do that in such a way that you were also creating a better habitat for all the little creatures, it's just a win-win for everybody"

– Ernie Foster, Hatteras Village Native and owner of the Albatross Fleet

Aerial view of Hatteras Harbor. Durant's Point is the narrow strip of uninhabited land protecting the harbor to the right of the harbor entrance.



CASE STUDY:

Choptank Oyster Restoration Improves Recreational Fishing in Chesapeake Bay

Recreational fishermen team up with environmental nonprofit and state environmental agencies to build oyster reefs to help enhance fishing opportunities.

Federal Restoration Benefits



Lead Partners

Chesapeake Bay Foundation

NOAA

Restore America's Estuaries

Maryland Department of Natural Resources

Maryland Artificial Reef Initiative

Maryland Saltwater Sportfishing Association

University of Maryland

Maryland Geological Survey

Case Study Overview

Overharvesting and destructive fishing practices, such as dredging, led to the destruction of much of the natural oyster reefs in the Chesapeake Bay during the 19th and 20th centuries. As a result, the once booming oyster industry has nearly disappeared while the loss of reef habitat has harmed fisheries for species that use the reefs for habitat. In addition, the loss of these exceptional filter feeders has removed a vital mechanism of the Bay for controlling pollution. The Chesapeake's compromised health and productivity due to pollution has landed the Bay on the USEPA's Impaired Waters List.

In an effort to restore the natural filtering capacity of the Bay, the Chesapeake Bay Foundation and partners have taken on large-scale projects to restore oyster reef habitats to the Bay. One project in the Choptank River involved the creation of more than 1,400 concrete reef balls, seeding them with oyster spat, and placement in 8 acres of the 17-acre Cook's Point



Oyster Sanctuary. This site is adjacent to the Cook Point Airplane Wreck, which is a historically important area for sport fishing in the Choptank River. The reef balls were overlaid with more than 28 million spat on shell and adult oysters to create an oyster reef teaming with life in the Chesapeake Bay tributary.

The reef balls create habitat for oysters, mussels, and finfish, and offer a place for spat to attach and grow. In addition, the newly thriving oysters also help filter the water and complement other initiatives at the state and local level to cut back on nutrient pollution.

Results and Conservation Outcomes

Since the reef balls and seed oysters were planted in the Cook's Point Oyster Sanctuary the oyster and reef fish populations have boomed. Oysters on the reef balls are surviving, growing, and serving as the base for a rich reef community. Recreational fishermen have reported that fishing in the sanctuary has seen vast improvements, including increased occurrence, size, and diversity of target sport fish including striped bass, perch, croaker, bluefish, and black drum. Notably, catches often include black sea bass, a species that in recent memory had only been found in the southern most parts of the Bay. Sea bass are a reef-dependent species, and their habitat was severely diminished in the Bay when the natural oyster reefs were destroyed historically. The restoration of reef habitat in the Cook's Point Sanctuary demonstrates the old adage, "build it, and they will come." This resurgence has led to marked improvements in recreational fishing in the area and has bolstered the charter fishing industry out of Cambridge, Maryland.

In addition, oysters are remarkable filter feeders that can greatly improve water quality. A single oyster can filter up to 50 gallons per day.⁴⁵ So it is not surprising that since completion of the project unusually high water clarity events have been recorded in the area, suggesting that these filter feeders are dramatically helping to improve the surrounding water quality.

Perhaps most importantly for the river, the concentrated oysters in the sanctuary reproduce much more effectively than the more scattered oysters in nearby harvested beds. And when they spawn, their larvae drift for miles and settle on other beds. In addition to providing fish habitat and filtering, the oysters restored to the Cook's Point Sanctuary are like a reproductive engine for helping repopulate the rest of the river.

"When I first heard about the artificial reef project, it was something I wanted to participate in. Maryland has great fishing and it's all we can do to continue that great tradition. We've made about 600 reef balls since we began to help and it's definitely making a difference. We've created a whole new fishery with the new reef."

– Clint Waters,
MSSA Dorchester County Chapter President



CASE STUDY:

Horseshoe Crab Beach Restoration in Delaware Bay, NJ

After Hurricane Sandy destroyed one of New Jersey's famous ecotourism sites, a partnership of conservation organizations, government agencies, and philanthropic foundations acted quickly to restore beaches along the Delaware Bay just in time for the annual arrival of hundreds of thousands of spawning horseshoe crabs and migrating birds.

Federal Restoration Benefits



Lead Partners

American Littoral Society

Conserve Wildlife Foundation of New Jersey

L.J. Niles Associates

National Fish and Wildlife Foundation

New Jersey Recovery Fund

New Jersey Department of Environmental Protection

USFWS

Middle Township

NJ Corporate Wetlands Restoration Partnership

Wetlands Institute

Case Study Overview

Delaware Bay is home to one of nature's most spectacular mass breeding events. Every year hundreds of thousands of horseshoe crabs come ashore all at once to mate. Concurrently the endangered red knot (*Rufa c.*) and other shorebirds descend upon the beach to feast on the fatty horseshoe crab eggs during their annual migration from the tip of South America to their Arctic nesting grounds. This event draws thousands of birders and ecotourists from around the world to Delaware Bay and is a multimillion dollar annual contributor to the Bayshore economy.⁴⁶



But protecting the horseshoe crabs is not just a nice thing to do to help sustain the endangered red knot population. Habitat conservation efforts in Delaware Bay support local businesses from thriving tourism and a lesser known benefit of helping to protect human health. Horseshoe crabs provide a vitally important biomedical service. A unique chemical, found only in horseshoe crab blood, can detect and trap small traces of bacterial contamination as small as one part per trillion. In fact, in the U.S., every FDA certified drug, surgical implant, or prosthetic device must be tested using the chemical only found in the horseshoe crab's blood.⁴⁷

Prior to Hurricane Sandy, the red knot populations had plummeted from 150,000 to fewer than 14,000 due primarily to the overharvesting of horseshoe crabs.⁴⁸ Then when Hurricane Sandy made landfall on Delaware Bay, more than 70 percent of New Jersey's horseshoe crab habitat was destroyed⁴⁹ including a 2.5 mile stretch of beach used by more than 50 percent of the shorebirds during their migration.⁵⁰

“Through a unique and effective partnership between philanthropy, government programs, and nonprofit organizations, this project came to the aid of imperiled wildlife and helped protect local communities.”

– Tim Dillingham
Executive Director, American Littoral Society

In order to protect the valuable horseshoe crab population, the endangered red knot population, and the booming ecotourism business, the American Littoral Society and the Conserve Wildlife Foundation of New Jersey, partnered with the New Jersey Department of Environmental Protection, the USFWS, the Middle Township, and other nonprofit and corporate partners to restore this destroyed beach habitat just in time for the annual breeding event.

Over a period of 5 months, the project partners raised more than \$1.4 million, obtained permits, hired contractors, removed more than 800 tons of debris, and restored more than 1.2 miles of 5 New Jersey beaches with more than 40,000 tons of sand. In addition, an oyster reef was put in place offshore of one of the restored stretches of beach to reduce wave action and a few beach access roads were restored.

Results and Conservation Outcomes

The rapid restoration project resulted in a success for the 2013 spawning season. The horseshoe crabs utilized the restored beaches drawing thousands of red knots and tourists. The successful spawning season will support the continuation of the horseshoe crab population in Delaware Bay which is essential to protecting human health, the tourism industry, and the endangered red knots.

The project results were monitored by partners from the American Littoral Society, L.J. Niles Associates, the New Jersey Division of Fish and Wildlife, the Richard Stockton College of New Jersey, and the Conserve Wildlife Foundation of New Jersey. The restored beaches had significantly more horseshoe crabs successfully spawning and had higher abundance of shorebirds foraging than beaches that were damaged and not restored, and were equivalent to beaches that had not been damaged and had maintained optimal habitats.⁵¹

In addition they found that very little erosion of sand occurred, and that the sand that did erode accumulated along local creek shoals which provide ideal habitat for horseshoe crab spawning.⁵²

Due to the timely restoration of these beaches, the ecotourism spectacle went off without a hitch and continues to draw tourists from around the world, and to support the more than \$11 million annual benefit to the Bayshore economy.⁵³



CASE STUDY:

Restoration Project Revitalizes Yonkers, NY Neighborhood

Daylighting and fishery restoration project spurs neighborhood revitalization, creates hundreds of jobs and dramatically increases economic development in the community.

Federal Restoration Benefits



Case Study Overview

For more than a decade the Saw Mill River Coalition and Groundwork Hudson Valley, have led the effort to bring the Saw Mill River to daylight. Part of the revitalization of downtown Yonkers, this project has enormous ecological, economic, and cultural significance.

The project recreated 13,775 square feet of aquatic habitat, including a tidal pool and two freshwater pools. The new natural river flows parallel to the preexisting underground flume, which now serves as an overflow channel to protect the integrity of the new park and the downtown area from floods.

The Saw Mill River which flows into the Hudson River Estuary was once a vibrant river which gave rise to early development and made Yonkers an industrial powerhouse. More than 200 years of urbanization degraded and left the river extremely impaired. In the 1920s, the final 800 meters of the river was buried underground in a subterranean flume in an effort to reduce flooding, address sanitation problems, and address fears of water-borne diseases such as cholera.

The city partnered with many nonprofit organizations and federal and state partners to design, plan, and implement the project. Groundwork Hudson Valley led a series of community meetings that drove the design of the economic and environmental restoration project.⁵⁴

The end project involved diverting the river into a new channel that was created adjacent to the original underground tunnel while leaving that tunnel in place as a flood overflow protection. The new river bed was designed with fish ladders and rock riffles. These enhancements helped maximize fish passage for multiple species including American eel. Further



the project was also designed to attract Alewife—a species that could not get into the upper watershed before because of natural and man-made dams—by optimizing flow conditions and creating varied in-stream habitats to ensure areas for spawning and that the stream would attract a variety of species. All of these actions were aimed at boosting the local fishery. After daylighting was completed, planting along the banks of the river was completed with a variety of native plants including submerged aquatic vegetation, marsh vegetation, and other native plants with both habitat and aesthetic values.

Results and Conservation Outcomes

The river daylighting had dramatic ecological benefits. Shortly after restoring the river to more natural habitats, local fish species were found utilizing the rocky habitat for nurseries,⁵⁵ turtles have found the rocks for sunning, a night heron positioned itself to capture fish from upstream, and a mallard female was coaxing her ducklings into the water.

While the ecological benefits of the project are exciting, the most staggering transformation came to the local Yonkers



community. As the stream was restored the community has begun to be revitalized from an economically depressed industrial district to welcoming new housing, renovated historical buildings, and reinvigorating shopping and dining areas. The river daylighting and restoration effort has drawn developers to invest millions in revitalizing the once nearly abandoned neighborhood and attracted hi-tech and other employers from New York City to renovate vacant commercial spaces.

In addition to the economic boost to the community there have been quality of life benefits from the project. The new park provides a natural environment in a bustling city where individuals and families can relax and experience the joy of a vibrant river, and environmental programs for the public, school groups, and summer camps can take place. Additional outdoor programming such as festivals and film screenings are also held in the park.

Investments in the community surrounding the newly daylighted river:

- \$35 million public library
- \$52 million investment for development of low-rise loft buildings for work-live residences and street-level cafes and shops
- \$200 million for the preservation and redevelopment of the abandoned 1907 Glenwood Power Plant and four acres along the waterfront
- \$109 million for a mixed-use development, River Park Center, along the daylighted river
- \$40 million project by L&M that built workforce housing and new retail sites

"I saw the success of the library and apartments next to the river and realized this is a place I want to invest in heavily."

– Nicholas Sprayregen,
Managing Member of Rising Development,
Yonkers real estate development company

Partner	FUNDING
City Capital Fund	\$13,500,000
Empire State Development Corp	\$5,400,000
New York State Department of Environmental Conservation	\$2,000,000
Environmental Facilities Green Innovation	\$750,000
New York-New Jersey Harbor and Estuary Program Grant to Groundwork Hudson Valley	\$75,000
USEPA Targeted Watersheds Grant	\$889,000

CASE STUDY:

Community Restores Habitat to Protect Historic Herring Run in MA

When a cultural icon was disappearing, a town came together to restore habitat and their economy.

Federal Restoration Benefits



Lead Partners

NOAA

Town of Brewster, MA

Association to Preserve Cape Cod

Massachusetts Division of Ecological Restoration

Massachusetts Bay Program

Cape Code Museum of Natural History

Case Study Overview

The Town of Brewster, MA is home to Stony Brook, a vibrant coastal watershed that supports Cape Cod's second largest and most popular herring run.⁵⁶ This popular herring run drives a local ecotourism industry.

The natural habitat of the Stony Brook watershed was drastically altered in the late 18th century due to development and industrialization.⁵⁷ Features such as mills, roads, and culverts have altered the natural flow of water, changing Stony Brook from a thriving salt marsh to a tidally restricted marsh overgrown with invasive species that choke out native vegetation.⁵⁸

The degradation of the river herring's spawning habitats coupled with overharvesting led to the near collapse of the Northeast's river herring stocks in 2005. The loss of these fish would not only harm the fishery, but also the tourism based economy, and the way of life on Cape Cod. In an effort to preserve this important fishery, the Town of Brewster and its partners began work to restore vital herring spawning habitat in Stony Brook.



A watershed-based project was implemented to restore the full function of Stony Brook. The final project included:

- Restoring tidal flow to 20 acres of salt marsh and improving fish passage to Stony Brook by replacing an old, undersized 4-foot pipe culvert with an 18-foot-wide box culvert;
- Rebuilding a failing dam with water level controls to maintain nearly 400 acres of ponds that provide spawning habitat for river herring and other diadromous species;
- Rebuilding a fishway to improve fish passage;
- Acquiring open space for habitat and buffers;
- Rebuilding trails to improve tidal flow and building a marsh overlook for the public;
- Relocating a parking lot and restoring a beach with natural dune habitat; and
- Several projects to address water quality and storm water runoff discharges in the watershed.

Results and Conservation Outcomes

Monitoring of Stony Brook has shown dramatic benefits to the habitat and river herring post restoration. The health of the salt marsh has been improved, with decreases of invasive species and increases of native salt marsh species, increased tidal flow, and a growth of marsh plant covering from 71 percent pre-restoration to more than 91 percent today.⁵⁹ These changes have had beneficial outcomes for river herring as well. The change in culvert size makes it easier for the herring to travel freely and for their populations to rebound as greater numbers of fish are able to reach critical feeding and breeding grounds.⁶⁰

Since restoration, this famous Cape Cod herring run has seen a record number of fish: more than a 1,000 percent increase in herring run size over the four years since restoration.⁶¹ Several other herring runs in Cape Cod also saw small increases due to a fishing moratorium, but no other run on Cape Cod has experienced the dramatic increases seen at Stony Brook.

The successful restoration of Stony Brook has ensured the health of their famous run for future generations and will continue to support the tourism industry in the Town of Brewster.

“The Stony Brook Salt Marsh and Fish Passage Restoration Project presents a win-win situation by restoring a natural system so vital to Brewster and Cape Cod from both an environmental and economic perspective. Not only will the project directly create regional jobs, but the improvements to this popular herring run will likely mean increased tourism into the future.”

– Charles Sumner, Brewster Town Administrator

Partner	Monetary	In-Kind
NOAA American Recovery & Reinvestment Act (ARRA) Grant	\$1,647,600	—
NRCS ARRA Grant	\$524,250	—
USEPA DEP 319 Grant	\$346,800	—
Massachusetts Coastal Zone Management (CZM) Coastal Community Resilience Grant	\$200,000	—
Private Foundations Grants	\$60,000	—
NOAA Habitat Restoration Grant/ Gulf of Maine Council	\$58,600	—
USEPA DEP 604(b) ARRA Grant	\$58,000	—
Massachusetts CZM Coastal Pollutant Remediation Grants	\$39,292	—
Massachusetts Corporate Wetlands Restoration Program	\$15,000	—
USEPA Mass Bays Program	—	\$85,500
Town of Brewster and Alewife Committee Volunteers	—	\$65,832
Association to Preserve Cape Cod	—	\$65,832

Conclusion

Federal coastal habitat restoration investments drive on-the-ground impacts that are good for people, fish, and wildlife. Despite the broad range of public benefits from coastal restoration, public funding for restoration remains far less than the national need and demand. With increasing extreme weather events and habitat limited fisheries, coastal habitat restoration will remain a crucial strategy for communities and the federal government to meet economic, environmental, and quality of life goals. Investments to increase fish habitat can help prevent a species from being listed under the Endangered Species Act, and natural infrastructure investments can support fish and wildlife while reducing coastal exposure to extreme weather events, saving taxpayers money in disaster recovery down the road.

This report was developed to provide a comprehensive picture of federal investments through an in-depth review of nine restoration case studies and extensive research to identify existing federal programs that can increase support for coastal habitat restoration projects.

Increased public investments in the key programs identified and further work to leverage new federal programs for coastal habitat restoration should be priority actions for stakeholders interested in advancing restoration efforts. With limited resources, there is an ever-increasing need to strategically target particular outcomes, but this should not come at the expense of recognizing and accounting for the full suite of benefits that healthy, clean, and thriving coasts and estuaries provide for our nation.



Appendix I. Federal Programs

There are numerous federal programs that can provide assistance and financial support for coastal habitat restoration. In an effort to help connect states, territories, tribes, local governments, organizations, and individuals with federal funding, Restore America's Estuaries has developed a comprehensive listing of federal programs that support coastal restoration.

The following pages contain federal funding programs organized by the department which administers the program. While we have made every effort to develop a comprehensive list of programs, there may be additional federal funding programs that were omitted that provide coastal habitat restoration benefits. The programs contained in this report were identified through the Catalog of Federal Domestic Assistance (CFDA) as described in the Methodology section of this report. Due to the incomplete nature of the CFDA data set, we attempted to confirm the information provided for each program with a federal agency contact. In cases where a federal agency contact was not available to review and confirm information, only CFDA data are provided.

The following information is provided for each program entry:

- Program Title – As it appears under the CFDA
- Support Type – Type of grants awarded
- Purpose – The intended use or outcome of the grant program
- Authority – The law under which the program is authorized
- Agent – The entity which administers the grant
- Available Funding – Funding available from FY07 to FY13 (not all years available in some cases)
- Proportion to Coastal Habitat Restoration – An exact or estimated proportion (not available for some programs)
- Eligibility – Who is eligible to apply and receive grants
- Examples/Successes – Examples of projects completed, or statistics on successes (not available for some programs)
- Contact – An agency contact who can provide further information on the program

Notes to Users:

- Many of the programs included in the report are not traditional program grants, please pay attention to the Support Type.
- Many of the programs are only available to specific entities, please pay attention to Eligibility.
- Some programs may provide all available funds to a primary grantee who disperses secondary grants, you may need to apply directly to the primary grant holder.
- Some programs may not be funded for the current or future fiscal years.
- Some programs may have the jurisdiction to fund coastal habitat restoration programs but have not previously funded this work.

Department of Agriculture

PROGRAM	Emergency Conservation Program	Conservation Reserve Program	Wetlands Reserve Program	Voluntary Public Access and Habitat Incentive Program
SUPPORT TYPE	Direct Payments for a Specified Use	Direct Payments for a Specified Use	Direct Payments for a Specified Use	Formula Grant
PURPOSE	For emergency conservation measures to rehabilitate farmlands damaged by floods, hurricanes, or other natural disasters and for emergency water conservation or water enhancing measures during severe drought.	To protect the nation's long-term capability to produce food and fiber; to reduce soil erosion and sedimentation, improve water quality, and create or enhance habitat for wildlife.	To assist landowners in restoring and protecting wetlands on eligible lands on which they agree to enter into a permanent or 30 year easement, or a restoration cost-share agreement with the Secretary.	To encourage owners and operators of privately-held farm, ranch, and forest land to voluntarily make that land available for access by the public for wildlife-dependent recreation, including hunting or fishing.
AUTHORITY	Agricultural Credit Act of 1978	Food Security Act of 1985	Food Security Act of 1985	Food Security Act of 1985
AGENT	Farm Service Agency	Farm Service Agency	Natural Resources Conservation Service	Farm Service Agency
AVAILABLE FUNDING	FY 07: \$0 FY 08: unavailable FY 09: \$153,044,356 FY 10: \$92,502,221 FY 11: \$64,318,000 FY 12: \$74,575,886 FY 13: unavailable	FY 07: \$1,969,880,000 FY 08: unavailable FY 09: \$1,855,274,000 FY 10: \$1,841,396,000 FY 11: \$1,938,872,000 FY 12: \$1,968,624,000 FY 13: unavailable	FY 07: \$211,006,348 FY 08: \$149,757,783 FY 09: \$404,942,681 FY 10: \$594,219,384 FY 11: \$523,034,288 FY 12: \$515,881,259 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: \$0 FY 10: \$11,756,000 FY 11: \$17,833,000 FY 12: \$0 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	Any agricultural producer eligible to apply for cost-share conservation assistance	States, local governments, individuals, corporations, estates, trusts, tribes	Individuals, corporations, estates, trusts, tribes	State and tribal governments
EXAMPLES				
CONTACT	Martin Bomar martin.bomar@wdc.usda.gov	Beverly Preston beverly.preston@wdc.usda.gov	Steve Parkin steve.parkin@wdc.usda.gov	David Hoge david.hoge@wdc.usda.gov

Department of Agriculture (CONTINUED)

PROGRAM	Soil and Water Conservation	Environmental Quality Incentives Program	Wildlife Habitat Incentive Program	Watershed Rehabilitation Program
SUPPORT TYPE	Advisory Services and Counseling	Direct Payments for a Specified Use	Direct Payments for a Specified Use	Advisory Services and Counseling
PURPOSE	To assist private landowners, conservation districts, tribes, and other organizations through technical assistance to conserve, improve, and sustain our natural resources and environment.	Promotes agricultural production, forest management, and environmental quality as compatible national goals and optimizes environmental benefits on eligible land.	To help participants protect, restore, develop, or enhance habitat for upland wildlife, wetland wildlife, threatened and endangered species, fisheries, and other types of wildlife.	To provide technical and financial assistance to rehabilitate dams originally constructed with assistance of USDA Watershed Programs.
AUTHORITY	Soil Conservation and Domestic Allotment Act	The Food Security Act of 1985	The Food Security Act of 1985	American Recovery and Reinvestment Act of 2009
AGENT	Natural Resources Conservation Service	Natural Resources Conservation Service	Natural Resources Conservation Service	Natural Resources Conservation Service
AVAILABLE FUNDING	FY 07: \$634,320,000 FY 08: \$727,353,190 FY 09: \$724,635,350 FY 10: \$768,911,359 FY 11: \$753,208,779 FY 12: \$711,456,721 FY 13: unavailable	FY 07: \$755,010,208 FY 08: \$925,990,053 FY 09: \$757,388,939 FY 10: \$856,697,477 FY 11: \$894,508,727 FY 12: \$1,000,549,351 FY 13: unavailable	FY 07: \$32,697,700 FY 08: \$57,106,833 FY 09: \$52,146,044 FY 10: \$62,602,140 FY 11: \$60,580,860 FY 12: \$33,682,225 FY 13: unavailable	FY 07: \$8,262,000 FY 08: \$12,474,354 FY 09: \$25,548,064 FY 10: \$51,966,819 FY 11: \$9,661,300 FY 12: \$11,066,367 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	States, local governments, individuals, tribes, and non-governmental organizations	Agricultural producers	Agricultural producers	States, local governments, tribes, nonprofit organizations
EXAMPLES				
CONTACT	Dan Lawson dan.lawson@wdc.usda.gov	Mark Rose mark.rose@wdc.usda.gov	Albert Cerna albert.cerna@wdc.usda.gov	Idle Chavez idle.chavez@wdc.usda.gov

Department of Agriculture (CONTINUED)

PROGRAM	Emergency Watershed Protection Program	Conservation Stewardship Program	Chesapeake Bay Watershed Program	Water Bank Program
SUPPORT TYPE	Project Grants	Cooperative Agreements	Direct Payments for a Specified Use	Direct Payments for a Specified Use
PURPOSE	To assist in implementing emergency recovery measures for runoff retardation and erosion prevention to relieve imminent hazards created by a natural disaster that causes a sudden impairment of a watershed.	To conserve and enhance soil, water, air, and related natural resources on cropland, grassland, prairie land, improved pastureland, rangeland, nonindustrial private forest lands, and private or tribal agricultural land.	Help agricultural producers improve water quality and quantity, and restore, enhance, and preserve soil, air, and related resources in the Chesapeake Bay Watershed through the implementation of conservation practices.	To conserve surface waters; preserve and improve the nation's wetlands; increase migratory waterfowl habitat in nesting, breeding, and feeding areas in the U.S.; and secure environmental benefits for the nation.
AUTHORITY	American Recovery and Reinvestment Act of 2009; Agricultural Credit Act of 1978; Flood Control Act of 1950; and Federal Agriculture Improvement and Reform Act of 1996	Food Security Act of 1985	Food Security Act of 1985	Water Bank Act
AGENT	Natural Resources Conservation Service	Natural Resources Conservation Service	Natural Resources Conservation Service	Natural Resources Conservation Service
AVAILABLE FUNDING	FY 07: \$172,697,406 FY 08: \$147,393,731 FY 09: \$279,760,331 FY 10: \$255,578,220 FY 11: \$53,774,042 FY 12: \$187,136,464 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$320,397,800 FY 11: \$508,135,666 FY 12: \$671,545,544 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$33,517,619 FY 11: \$60,072,994 FY 12: \$41,246,513 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: unavailable FY 12: \$6,999,991 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	Landowners represented by a state, local, or tribal government sponsor	Agricultural producers	Agricultural producers	Landowners
EXAMPLES				
CONTACT	Fred Reaves fred.reaves@wdc.usda.gov	Jeffrey White jeffrey.white@wdc.usda.gov	Mark Rose mark.rose@wdc.usda.gov	Dave Mason dave.mason@wdc.usda.gov

Department of Commerce - NOAA

PROGRAM	Financial Assistance for National Centers for Coastal Ocean Science	Coastal Zone Management Administration Awards	Coastal Zone Management Estuarine Research Reserves	Center for Sponsored Coastal Ocean Research/ Coastal Ocean Program
SUPPORT TYPE	Cooperative Agreements, Project Grants	Formula Grants, Project Grants	Project Grants	Cooperative Agreements, Project Grants
PURPOSE	To develop research and tools to assist coastal communities in protecting themselves from harmful algae, contamination, and the implications of changing climate.	To implement and enhance state coastal management goals of the CZMA. State coastal programs will protect and restore coastal habitat, promote coastal community development, mitigate risks from coastal hazards, and protect coastal water quality.	To assist states in the development, research, monitoring, acquisition, education, operation, and facilities construction for National Estuarine Research Reserves in order to educate people about estuaries and the coastal zone.	To provide predictive capabilities on harmful algal blooms, hypoxia, and other regional ecosystem issues for managing coastal waters, estuaries, and the Great Lakes. Protect fish stocks, habitats, wildlife, and fishing industry in Gulf.
AUTHORITY	Marine Protection, Research, and Sanctuaries Act of 1972	Coastal Zone Management Act of 1972	Coastal Zone Management Act of 1972	Coastal Ocean Program
AGENT	National Ocean Service	National Ocean Service	National Ocean Service	National Ocean Service
AVAILABLE FUNDING	FY 07: \$1,000,000 FY 08: \$1,696,305 FY 09: unavailable FY 10: unavailable FY 11: \$783,375 FY 12: \$602,879 FY 13: unavailable	FY 07: \$65,780,000 FY 08: \$67,516,000 FY 09: \$69,441,000 FY 10: \$68,085,000 FY 11: \$66,024,134 FY 12: \$65,700,206 FY 13: \$61,242,476	FY 07: \$23,178,000 FY 08: \$22,664,549 FY 09: unavailable FY 10: unavailable FY 11: unavailable FY 12: \$15,997,684 FY 13: unavailable	FY 07: \$15,900,000 FY 08: \$13,800,000 FY 09: \$18,900,000 FY 10: \$20,900,000 FY 11: \$17,000,000 FY 12: \$10,300,000 FY 13: \$9,200,000
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Approximately 27%	Unknown	While no funds are allocated for habitat restoration, some efforts may include habitat restoration benefits
ELIGIBILITY	States, local governments, nonprofit organizations, public institutions	Coastal states and territories with federally approved coastal management programs	States and territories with designated estuaries	States, tribes, local governments, nonprofit organizations, public institutions
EXAMPLES		Over 14,500 acres of coastal habitat have been protected and over 28,000 acres of degraded coastal habitat have been restored through this program.		A moratorium on clearing and grading of mangroves in Airai Bay, Palau was the direct outcome of NCCOS-supported research on the cause and cost of mangrove declines.
CONTACT	Mary Erickson mary.erickson@noaa.gov (301) 713-3020 ext. 183	Joelle Gore joelle.gore@noaa.gov (301) 563-1177	Joelle Gore joelle.gore@noaa.gov (301) 563-1177	John Wickham john.wickham@noaa.gov

Department of Commerce - NOAA (CONTINUED)

PROGRAM	Coastal Services Center	Chesapeake Bay Studies	Pacific Coast Salmon Recovery	Pacific Salmon Treaty Program
SUPPORT TYPE	Project Grants	Project Grants	Program and Project Grants	Project Grants
PURPOSE	To support the development of science-based multi-dimensional approach to maintaining and improving environmental quality and economic growth.	For research and development projects that will provide information for the living marine resources of Chesapeake Bay and for research and restoration of Submerged Aquatic Vegetation.	Supplement state and tribal programs for salmon restoration and conservation through projects and activities that provide demonstrable and measurable benefits to Pacific anadromous fish and their habitat.	To assist treaty Indian tribes in salmon recovery and to meet the needs of the Pacific Salmon Commission and U.S. international commitments under the treaty.
AUTHORITY	Coastal Zone Management Act of 1972	Fish and Wildlife Coordination Act	Pacific Coastal Salmon Recovery Act	Pacific Coast Salmon Treaty Act
AGENT	National Ocean Service	Chesapeake Bay Office	National Marine Fisheries Service	National Marine Fisheries Service
AVAILABLE FUNDING	FY 07: \$27,000,000 FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: \$416,440 FY 12: \$10,554,241 FY 13: unavailable	FY 07: \$13,500,000 FY 08: \$7,717,411 FY 09: unavailable FY 10: unavailable FY 11: \$3,818,346 FY 12: unavailable FY 13: unavailable	FY 07: \$66,600,000 FY 08: \$67,000,000 FY 09: \$80,000,000 FY 10: \$80,000,000 FY 11: \$79,800,000 FY 12: \$65,000,000 FY 13: \$60,300,000	FY 07: \$0 FY 08: \$0 FY 09: \$0 FY 10: \$3,048,100 FY 11: \$0 FY 12: \$0 FY 13: \$0
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Approximately \$1 million per year	Approximately 56%	Approximately 67%
ELIGIBILITY	States, tribes, local governments, nonprofit organizations, public institutions	States, tribes, local governments, nonprofit organizations, public institutions	States and treaty tribes	States and treaty tribes
EXAMPLES		In Harris Creek the program is restoring oyster reefs over 377 acres and is monitoring the restoration.	Funded over 11,500 projects restoring and protecting over 1,000,000 acres of spawning and rearing habitat, restoring access to over 8,100 miles of previously inaccessible streams, and leveraging over \$1.3 billion in non-federal funds.	The Skokomish Indian tribe improved and restored 214 acres of habitat in the Skokomish River that provides rearing habitat for federally listed Chinook.
CONTACT	Joelle Gore joelle.gore@noaa.gov (301) 563-1177	Bruce Vogt bruce.vogt@noaa.gov (410) 267-5655	Scott M. Rumsey scott.rumsey@noaa.gov (503) 872-2791	Cheryl Ryder cheryl.ryder@noaa.gov

Department of Commerce - NOAA (CONTINUED)

PROGRAM	Fisheries Development and Utilization Research and Development Grants	Community-based Restoration Program	Marine Fisheries Initiative	Columbia River Fisheries Development Program
SUPPORT TYPE	Cooperative Agreements, Project Grants	Cooperative Agreements	Project Grants	Project Grants
PURPOSE	To increase greatly the nation's wealth and quality of life through sustainable fisheries that support fishing industry jobs, safe and wholesome seafood, and recreational opportunities.	To support proactive habitat restoration projects that use an ecosystem approach to foster species recovery and increase fish production.	Research and development projects that will provide information for the use and enhancement of fishery resources in the Southeast Gulf of Mexico, the South Atlantic, and the New England states.	To protect and enhance the salmon and steelhead resources in the Columbia River Basin.
AUTHORITY	Saltonstall-Kennedy Act	Fish and Wildlife Coordination Act of 1956; Oil Pollution Act; CERCLA; CWPRA	Cooperative Research and Training Programs for Fish and Wildlife Resources	Mitchell Act
AGENT	National Marine Fisheries Service	Office of Habitat Conservation	National Marine Fisheries Service	National Marine Fisheries Service
AVAILABLE FUNDING	FY 07: \$0 FY 08: \$2,423,878 FY 09: unavailable FY 10: unavailable FY 11: \$0 FY 12: unavailable FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: \$9,000,000 FY 12: \$10,800,000 FY 13: \$10,000,000	FY 07: \$2,074,197 FY 08: \$2,064,584 FY 09: \$2,074,287 FY 10: \$2,189,859 FY 11: \$2,058,698 FY 12: \$2,003,329 FY 13: \$1,741,389	FY 07: \$13,200,000 FY 08: \$12,741,548 FY 09: unavailable FY 10: unavailable FY 11: \$15,747,497 FY 12: unavailable FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	100%	10%	Unknown
ELIGIBILITY	States, local governments, public individuals	States, tribes, local governments, nonprofit organizations, public institutions, individuals	States, local governments, nonprofit organizations, public institutions, individuals	States and Quasi-public nonprofit organizations
EXAMPLES		The Tillamook County Southern Flow Corridor project will restore natural hydrology to over 500 wetland acres to provide habitat to Oregon coast coho salmon and alleviate local flooding.	Creation of a user friendly, interactive database that identifies seabed habitat of the Gulf of Mexico and can be used for designating essential fish habitat and marine protected areas, and identifying habitat restoration needs.	
CONTACT	Dan Namur dan.namur@noaa.gov (301) 427-8730	Tisa Shostik tisa.shostik@noaa.gov (301) 427-8690	Bob Sadler robert.sadler@noaa.gov (727) 824-5324	

Department of Defense - Army Corps of Engineers

PROGRAM	Beach Erosion Control Projects	Estuary Habitat Restoration Program	Florida Keys Water Quality Improvement Program - ARRA	Mississippi Environmental Infrastructure - ARRA
SUPPORT TYPE	Provision of Specialized Services	Cooperative Agreements	Cooperative Agreements	Project Grants Cooperative Agreements
PURPOSE	To control beach and shore erosion to public shores through projects not specifically authorized by Congress.	Provide assistance for estuary habitat restoration projects while encouraging partnerships among public agencies and non-governmental organizations, supporting innovation, and monitoring the success of funded projects.	Provide technical and financial assistance to carry out projects for the planning, design, and construction of treatment works to improve water quality in the Florida Keys National Marine Sanctuary.	Provide assistance for water-related environmental infrastructure and resource protection and development projects in Mississippi.
AUTHORITY	River and Harbor Act of 1962	Estuary Restoration Act of 2000	Miscellaneous Appropriations Act, 2001	Water Resources Development Act of 1999
AGENT	U.S. Army Corps of Engineers Headquarters	U.S. Army Corps of Engineers Headquarters	U.S. Army Corps of Engineers Headquarters	U.S. Army Corps of Engineers Headquarters
AVAILABLE FUNDING	FY 07: \$75,180,000 FY 08: \$83,705,684 FY 09: \$54,039,300 FY 10: \$59,550,850 FY 11: \$136,973,000 FY 12: \$55,966,000 FY 13: \$86,172,657	FY 07: \$0 FY 08: \$396,237 FY 09: \$204,000 FY 10: \$56,121 FY 11: \$2,625,000 FY 12: \$1,960,000 FY 13: \$947,786	FY 07: \$0 FY 08: \$0 FY 09: \$7,000,000 FY 10: \$8,408,000 FY 11: \$0 FY 12: \$0 FY 13: \$0	FY 07: \$0 FY 08: \$0 FY 09: \$17,408,000 FY 10: \$7,863,072 FY 11: \$0 FY 12: \$0 FY 13: \$0
PROPORTION TO COASTAL HABITAT RESTORATION	Estimated 5%	100%	100%	Estimated 0%
ELIGIBILITY	States, local communities	States, local communities	Appropriate agencies of the State of Florida or Monroe County	Appropriate agencies of the State of Mississippi
EXAMPLES	Construction of the Virginia Beach Hurricane Protection System which protects the city from tropical storm damage.	Skokomish Estuary restoration in Washington State which enhanced endangered salmon habitat.	The planning, construction, and implementation of advanced wastewater treatment systems throughout the Florida Keys and the National Marine Sanctuary.	Assist the Vicksburg District with improving wastewater and surface water facilities.
CONTACT	Joe Aldridge joseph.w.aldridge@usace.army.mil	Mindy Simmons mindy.m.simmons@usace.army.mil	Doris Valentin-Meyer doris.valentin-meyer@usace.army.mil	John Lucyshyn john.lucyshyn@usace.army.mil

Department of Defense - Army Corps of Engineers (CONTINUED)

PROGRAM	Aquatic Plant Control	Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works
SUPPORT TYPE	Provision of Specialized Services; Dissemination of Technical Information	Provision of Specialized Services
PURPOSE	To develop cost efficient and environmentally friendly control technologies for the control of invasive nonnative aquatic plant species, provision of technical guidance to assist in control for navigable waters of the U.S. and their associated tributaries.	To assist in the repair and restoration of flood control works damaged by flood, or federally authorized hurricane flood and shore protection works damaged by extraordinary wind, wave, or water action.
AUTHORITY	River and Harbor Act of 1958, Section 104 as amended	Flood Control Act of 1941
AGENT	Office of the Chief of Engineers	Office of the Chief of Engineers
AVAILABLE FUNDING	FY 07: \$4,000,000 FY 08: \$3,936,000 FY 09: \$3,828,000 FY 10: \$4,450,000 FY 11: \$4,429,555 FY 12: \$3,000,000 FY 13: \$4,069,794	FY 07: \$860,651 FY 08: \$169,195,367 FY 09: \$630,148,622 FY 10: \$1,957,893 FY 11: \$181,639,407 FY 12: \$372,522,196 FY 13: \$651,363,594
PROPORTION TO COASTAL HABITAT RESTORATION	Estimated 0%	Estimated 0%
ELIGIBILITY	N/A	States, local communities, individuals
EXAMPLES	Development of biological controls for hydrilla, low cost identification and mapping processes for aquatic plant invasive species.	
CONTACT	Tim Toplisek timothy.r.toplisek@usace.army.mil	Jim Wojtala jim.m.wojtala@usace.army.mil

Environmental Protection Agency

PROGRAM	Coastal Wetlands Planning Protection and Restoration Act	National Estuary Program	Regional Wetland Program Development Grants	Targeted Watersheds Grants
SUPPORT TYPE	Cooperative Agreement	Project Grants	Cooperative Agreements	Cooperative Agreements
PURPOSE	To assist the state, local government, college, or university in planning and implementing projects that create, protect, restore, and enhance wetlands in coastal Louisiana.	Implement estuarine ecosystem based management to protect and restore the water quality and estuarine resources of estuaries and associated watersheds of national significance.	Building state, local, and tribal programs which protect, manage, and restore wetlands.	To support innovative, community-based watershed approaches aimed at preventing, reducing, or eliminating water pollution.
AUTHORITY	Clean Water Act	Clean Water Act	Clean Water Act	Consolidated Appropriations Act 2008
AGENT	Region 6	Office of Water	Office of Water	Office of Water
AVAILABLE FUNDING	FY 07: unavailable FY 08: unavailable FY 09: \$0 FY 10: \$0 FY 11: \$0 FY 12: \$1,031,893 FY 13: unavailable	FY 07: \$12,257,200 FY 08: \$16,576,000 FY 09: \$17,524,300 FY 10: \$20,541,900 FY 11: \$20,326,100 FY 12: \$16,716,100 FY 13: unavailable	FY 07: \$9,300,000 FY 08: \$15,829,000 FY 09: \$14,845,000 FY 10: \$16,236,000 FY 11: \$26,138,100 FY 12: \$15,737,860 FY 13: unavailable	FY 07: \$4,000,000 FY 08: \$11,700,000 FY 09: \$3,700,000 FY 10: \$2,827,200 FY 11: \$1,663,960 FY 12: \$0 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State, local governments, institutions of higher education	State and interstate agencies, coastal zone management agencies, nonprofit organizations	States, tribes, local governments, interstate agencies	States, tribes, local governments, interstate agencies, nonprofit organizations
EXAMPLES				
CONTACT	Sondra McDonald mcdonald.sondra@epa.gov	Bernice L. Smith smith.bernicel@epa.gov	Myra Price price.myra@epa.gov	Felicia Palmer-Greene palmer-greene.felicia@epa.gov

Environmental Protection Agency (CONTINUED)

PROGRAM	Urban Waters Small Grants	Water Quality Management Planning	Capitalization Grants for Clean Water State Revolving Funds	Nonpoint Source Implementation Grants
SUPPORT TYPE	Project Grants	Formula Grants	Formula Grants	Formula Grants
PURPOSE	To protect and restore America's urban waterways while engaging communities with environmental justice concerns.	To determine the nature and extent of point and non-point source water pollution and to develop water quality management plans giving priority to watershed restoration planning.	To create State Revolving Funds which will provide a long term source of state financing for construction of waste water treatment facilities and implementation of other water quality management activities.	Promote the development and implementation of watershed-based plans, focusing on watersheds with water quality impairments caused by nonpoint sources, which result in improved water quality in impaired waters.
AUTHORITY	Clean Water Act; National Environmental Policy Act	Clean Water Act; Water Quality Act of 1987; American Recovery and Reinvestment Act of 2009	Clean Water Act; American Recovery and Reinvestment Act of 2009	Clean Water Act
AGENT	Office of Water	Office of Water	Office of Water	Office of Water
AVAILABLE FUNDING	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$0 FY 11: \$0 FY 12: \$2,880,000 FY 13: unavailable	FY 07: \$11,080,000 FY 08: \$8,618,863 FY 09: \$48,310,559 FY 10: \$20,682,000 FY 11: \$15,419,000 FY 12: \$15,419,000 FY 13: unavailable	FY 07: \$1,017,073,535 FY 08: \$826,700,600 FY 09: \$4,664,080,000 FY 10: \$1,659,696,500 FY 11: \$1,905,386,600 FY 12: \$1,423,498,500 FY 13: unavailable	FY 07: \$199,300,000 FY 08: \$200,857,000 FY 09: \$200,857,200 FY 10: \$194,178,500 FY 11: \$201,615,800 FY 12: \$164,493,000 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	States, local governments, tribes, institutions of higher education, nonprofit organizations	State Water Quality Management Agencies	States, territories, and tribes	States, territories, local governments, and tribes
EXAMPLES				
CONTACT	Ji-Sun Yi yi.ji-sun@epa.gov (202) 566-0730	Meghan Klasic klasic.meghan@epa.gov	Sheila Platt platt.sheila@epa.gov	Nancy Yoshikawa (202) 566-3012

Environmental Protection Agency (CONTINUED)

PROGRAM	Water Quality Cooperative Agreements	Beach Monitoring and Notification Program Implementation Grants	Source Reduction Assistance	Construction Grants for Wastewater Treatment Works
SUPPORT TYPE	Project Grants	Formula Grants	Project Grants	Project Grants
PURPOSE	To assist in developing, implementing, and demonstrating innovative approaches relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.	To assist in developing and implementing programs for monitoring and notification for coastal recreation waters adjacent to beaches or similar points of access that are used by the public.	To support pollution prevention, source reduction and/or resource conservation activities.	Construction of municipal wastewater treatment works including privately owned individual treatment systems.
AUTHORITY	Clean Water Act	Clean Water Act; Beaches Environmental Assessment and Coastal Health Act of 2000	Clean Water Act; Clean Air Act; Solid Waste Disposal Act; Toxic Substances Control Act	Clean Water Act; American Recovery and Reinvestment Act of 2009
AGENT	Office of Water	Office of Water	Office of Chemical Safety and Pollution Prevention	Office of Water
AVAILABLE FUNDING	FY 07: \$1,258,100 FY 08: \$445,300 FY 09: \$14,000 FY 10: \$26,000 FY 11: \$1,335,500 FY 12: \$0 FY 13: unavailable	FY 07: \$10,573,400 FY 08: \$10,642,200 FY 09: \$9,905,200 FY 10: \$10,194,200 FY 11: \$11,001,300 FY 12: \$10,887,100 FY 13: unavailable	FY 07: \$1,249,076 FY 08: \$633,515 FY 09: \$1,058,785 FY 10: \$896,224 FY 11: \$1,063,074 FY 12: \$1,048,323 FY 13: unavailable	FY 07: \$7,994,000 FY 08: \$11,000,000 FY 09: \$34,356,300 FY 10: \$40,915,000 FY 11: \$29,652,000 FY 12: \$28,422,000 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State and interstate agencies, tribes, colleges and universities, nonprofit organizations	Coastal and Great Lakes states, territories, and tribes	State and local governments, tribes, colleges and universities, nonprofit organizations	Tribes, state, local, intrastate, and interstate agencies
EXAMPLES				
CONTACT	Dan Malloy malloy.daniel@epa.gov (202) 564-1724	Richard Healy healy.richard@epa.gov (202) 566-0405	Michele Amhaz amhaz.michele@epa.gov	Tara Johnson johnson.tara@epa.gov

Environmental Protection Agency (CONTINUED)

PROGRAM	Water Pollution Control State, Interstate, and Tribal Program Support	Direct Implementation Tribal Cooperative Agreements	Indian Environmental General Assistance Program	Lake Pontchartrain Basin Restoration Program
SUPPORT TYPE	Formula Grants	Project Grants	Project Grants	Cooperative Agreements
PURPOSE	To assist states, tribes and interstate agencies in establishing and maintaining adequate measures for prevention and control of surface and ground water pollution from both point and nonpoint sources.	An avenue for EPA to partner with tribes to help fulfill its direct implementation authorities and yield meaningful environmental protection in Indian Country.	To provide general and technical assistance to tribes to build capacity to administer environmental regulatory programs on Indian lands.	To restore the ecological health of the Basin by developing and funding restoration projects and related scientific and public education projects.
AUTHORITY	Clean Water Act	Department of Defense, Military Construction and Veterans Affairs, and Full-Year Continuing Appropriations Act	Indian Environmental General Assistance Program Act of 1992	Lake Pontchartrain Basin Restoration Act of 2000; Clean Water Act
AGENT	Office of Water	Office of International and Tribal Affairs	Office of International and Tribal Affairs	Region 6
AVAILABLE FUNDING	FY 07: \$211,210,800 FY 08: \$218,206,000 FY 09: \$218,495,000 FY 10: \$229,264,000 FY 11: \$262,732,500 FY 12: \$253,063,200 FY 13: unavailable	FY 07: \$604,024 FY 08: \$803,500 FY 09: \$1,160,542 FY 10: \$771,800 FY 11: \$1,900,000 FY 12: \$1,900,000 FY 13: unavailable	FY 07: \$56,654,000 FY 08: \$58,628,800 FY 09: \$57,925,000 FY 10: \$64,500,000 FY 11: \$69,000,000 FY 12: \$67,300,000 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: \$950,000 FY 10: \$1,122,800 FY 11: \$1,100,000 FY 12: \$1,912,000 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	States, interstate water pollution control agencies, and tribes	Tribes and intertribal consortia	Tribes and intertribal consortia	The Management Conference
EXAMPLES				
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Environmental Protection Agency (CONTINUED)

PROGRAM	The San Francisco Bay Water Quality Improvement Fund	Long Island Sound Program	Chesapeake Bay Program	Gulf of Mexico Program
SUPPORT TYPE	Project Grants	Project Grants	Project Grants	Cooperative Agreements
PURPOSE	Protect and restore the water quality and aquatic habitat of the San Francisco Bay and its watersheds.	To assist in conducting research, experiments, investigations, training, demonstration, surveys, or studies related to reducing pollution and improving the quality of the environment to sustain living resources in the Long Island Sound.	To expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay and to achieve the goals and commitments established in the Chesapeake 2000 agreement.	To expand and strengthen cooperative efforts to restore and protect the health and productivity of the Gulf of Mexico in ways consistent with the economic well-being of the region.
AUTHORITY	Clean Water Act	Clean Water Act	Clean Water Act	Clean Water Act
AGENT	Region 9	Office of Water	Office of Water	Office of Water
AVAILABLE FUNDING	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$7,000,000 FY 11: \$5,333,000 FY 12: \$5,494,000 FY 13: unavailable	FY 07: \$1,362,800 FY 08: \$4,489,134 FY 09: \$3,370,258 FY 10: \$7,000,000 FY 11: \$2,962,000 FY 12: \$3,954,500 FY 13: unavailable	FY 07: \$14,154,594 FY 08: \$30,555,518 FY 09: \$22,705,202 FY 10: \$33,345,631 FY 11: \$47,733,315 FY 12: \$42,841,000 FY 13: unavailable	FY 07: \$2,258,800 FY 08: \$1,540,700 FY 09: \$1,759,000 FY 10: \$4,722,300 FY 11: \$1,571,200 FY 12: \$2,481,300 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	States, local governments, institutions of higher education, nonprofit organizations	State, interstate, and regional water pollution control agencies, nonprofit organizations, public institutions	State and local governments, colleges, universities, and interstate agencies, nonprofit organizations	State and local governments, colleges, universities, and interstate agencies, nonprofit organizations
EXAMPLES				
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Environmental Protection Agency (CONTINUED)

PROGRAM	Puget Sound Protection and Restoration: Tribal Implementation Assistance Program	Puget Sound Action Agenda Outreach, Education, and Stewardship Support Program	Puget Sound Action Agenda: Technical Investigations and Implementation Assistance Program
SUPPORT TYPE	Cooperative Agreements	Cooperative Agreements	Cooperative Agreements
PURPOSE	Provide financial assistance to federally recognized Indian Tribes in the greater Puget Sound basin to help them implement priority strategies and actions to restore and maintain the Puget Sound estuarine environment.	Building and sustaining coordinated efforts for outreach and education to increase public awareness and encourage individual stewardship to protect both local and basin-wide ecosystems.	Restore and maintain the Puget Sound estuarine environment by 2020 so that it will support balanced indigenous populations of shellfish, fish, and wildlife and support the extensive list of recognized uses of Puget Sound.
AUTHORITY	Clean Water Act	Clean Water Act	Clean Water Act
AGENT	Region 10	Region 10	Region 10
AVAILABLE FUNDING	FY 07: unavailable FY 08: \$0 FY 09: \$5,000,000 FY 10: \$11,526,324 FY 11: \$9,480,000 FY 12: \$7,600,000 FY 13: unavailable	FY 07: unavailable FY 08: \$0 FY 09: \$2,000,000 FY 10: \$3,000,000 FY 11: \$1,000,000 FY 12: \$1,000,000 FY 13: unavailable	FY 07: \$0 FY 08: \$0 FY 09: \$32,000,000 FY 10: \$21,600,000 FY 11: \$19,200,000 FY 12: unavailable FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown
ELIGIBILITY	Tribes, federal and state agencies, institutions of higher learning, local governments	Tribes, federal and state agencies, institutions of higher learning, local governments	Tribes, federal and state agencies, institutions of higher learning, local governments
EXAMPLES			
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Environmental Protection Agency (CONTINUED)

PROGRAM	National Wetland Program Development Grants and Five-Star Restoration Training Grant	Disaster Relief Appropriations Act (DRAA) Hurricane Sandy Capitalization Grants for Clean Water State Revolving Funds	Surveys, Studies, Investigations, and Demonstrations of the Clean Water Act
SUPPORT TYPE	Cooperative Agreements	Formula Grants	Project Grants
PURPOSE	Building state, local, and tribal programs which protect, manage, and restore wetlands.	Grants are made to New York and New Jersey to fund resiliency projects for facilities impacted by Hurricane Sandy through the State CWSRF Program.	To support the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.
AUTHORITY	Clean Water Act	Disaster Relief Appropriations Act	Clean Water Act; National Environmental Policy Act
AGENT	Office of Water	Office of Water	Office of Water
AVAILABLE FUNDING	FY 07: \$500,000 FY 08: \$600,000 FY 09: \$1,800,000 FY 10: \$500,000 FY 11: \$500,000 FY 12: \$792,440 FY 13: unavailable	FY 07: \$0 FY 08: \$0 FY 09: \$0 FY 10: \$0 FY 11: \$0 FY 12: \$0 FY 13: unavailable	FY 07: \$23,584,634 FY 08: \$3,063,422 FY 09: \$4,342,878 FY 10: \$2,499,565 FY 11: \$1,604,000 FY 12: \$5,042,143 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown
ELIGIBILITY	States, tribes, local governments, nonprofit organizations	The States of New York and New Jersey	States, local governments, territories, tribes, institutions of higher learning, nonprofit organizations, and individuals
EXAMPLES			
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Department of Interior

PROGRAM	Sport Fish Restoration Program	Fish and Wildlife Management Assistance	Wildlife Restoration and Basic Hunter Education	Coastal Wetlands Planning, Protection, and Restoration
SUPPORT TYPE	Formula Grants	Project Grants	Formula Grants	Project Grants
PURPOSE	To support activities designed to restore, conserve, manage, or enhance sport fish populations; the public use and benefits from these resources; and activities that provide boat access to public waters.	To provide assistance on the conservation and management of fish and wildlife resources, including minimizing the establishment, spread, and impact of aquatic invasive species and the management of marine mammals for subsistence.	For projects to restore, conserve, manage, and enhance wild birds and mammals and their habitat.	To acquire, restore, and enhance wetlands in coastal states and for coastal wetlands conservation projects.
AUTHORITY	Dingell-Johnson Sport Fish Restoration Act of 1950	Fish and Wildlife Act of 1956	Pittman-Robertson Wildlife Restoration Act	Coastal Wetlands Planning, Protection, and Restoration Act
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: \$349,089,063 FY 08: \$398,337,729 FY 09: \$404,449,843 FY 10: \$389,552,973 FY 11: \$364,694,799 FY 12: \$349,763,692 FY 13: \$325,740,235	FY 07: \$250,000 FY 08: \$11,000,000 FY 09: \$62,532,000 FY 10: \$62,532,000 FY 11: \$14,000,000 FY 12: \$16,000,000 FY13: unavailable	FY 07: \$266,592,809 FY 08: \$309,686,579 FY 09: \$336,474,545 FY 10: \$472,719,710 FY 11: \$384,318,790 FY 12: \$371,274,752 FY 13: \$522,552,011	FY 07: \$18,750,000 FY 08: \$20,800,000 FY 09: \$20,100,000 FY 10: \$19,200,000 FY 11: \$19,100,000 FY 12: \$20,500,000 FY 13: \$20,000,000
PROPORTION TO COASTAL HABITAT RESTORATION	A small percentage	Unknown	Unknown	Variable annually
ELIGIBILITY	States	State and local governments, tribes, nonprofits	States	States
EXAMPLES	The Mississippi Artificial Reef program has created 16,000 acres of offshore artificial reef as well as numerous inshore reefs. The total economic impact has been calculated at \$78.4 million annually.			The Veazy Dam on the Penobscot River is being removed restoring 225 acres of in-stream habitat, 65 acres of streamside habitat, and connectivity to 188,000 acres of wetland for Atlantic salmon and sturgeon.
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Department of Interior (CONTINUED)

PROGRAM	Cooperative Endangered Species Conservation Fund	Clean Vessel Act	North American Wetlands Conservation Fund	Multistate Conservation Grant Program
SUPPORT TYPE	Project Grants	Project Grants	Project Grants	Project Grants
PURPOSE	To assist in the development of programs for the conservation of endangered and threatened species.	For the construction, renovation, operation, and maintenance of sewage pumpout stations for recreational boaters and for educational programs on the importance of proper disposal of sewage.	To provide grant funds for wetlands conservation projects in the United States, Canada, and Mexico.	To fund sport fish and wildlife restoration projects identified by the Association of Fish and Wildlife Agencies.
AUTHORITY	Endangered Species Act of 1973	Clean Vessel Act of 1992	North American Wetlands Conservation Act	The Wildlife and Sport Fish Restoration Programs Improvement Act of 2000
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: \$81,001,000 FY 08: \$73,831,000 FY 09: \$75,501,000 FY 10: \$41,000,000 FY 11: \$79,141,000 FY 12: \$47,681,000 FY13: unavailable	FY 07: \$13,200,000 FY 08: \$13,600,000 FY 09: \$14,600,000 FY 10: \$12,800,000 FY 11: \$11,730,000 FY 12: \$11,400,000 FY 13: \$14,757,000	FY 07: \$67,079,040 FY 08: \$83,500,000 FY 09: \$83,675,000 FY 10: \$92,301,478 FY 11: \$82,568,177 FY 12: \$70,540,304 FY 13: \$76,215,072	FY 07: \$6,000,000 FY 08: \$6,000,000 FY 09: \$6,000,000 FY 10: \$6,000,000 FY 11: \$6,000,000 FY 12: \$6,000,000 FY13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	None directly for habitat restoration, however habitat benefits from most/all projects	30% of U.S. projects are in coastal habitat, of those proportion to habitat restoration is unknown	Unknown
ELIGIBILITY	States	States	Private and public organizations or individuals in U.S., Canada, and Mexico	States, nongovernmental organizations
EXAMPLES	The development of a Habitat Conservation Plan Land Acquisition Grant that protects Florida's loggerhead turtle habitat while also enabling shoreline protection.	Washington State was awarded grants to install new pump-out facilities near shellfish harvesting sites, high recreational areas, and population centers to protect water quality in these sensitive areas.	From September 1990 through March 2014, approximately 5,000 partners in 2,421 projects have received nearly \$1.3 billion in grants. They have contributed another \$2.7 billion in matching funds to affect 27.5 million acres of habitat.	
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Department of Interior (CONTINUED)

PROGRAM	Coastal Program	Partners for Fish and Wildlife	Conservation Grants Private Stewardship for Imperiled Species	State Wildlife Grants
SUPPORT TYPE	Cooperative Agreements	Cooperative Agreements	Project Grants	Formula Grants; Project Grants
PURPOSE	To provide technical and financial assistance via partnerships to identify, protect, and restore or improve habitats in priority coastal areas for fish and wildlife.	Provide technical and financial assistance to private landowners and Native American Tribes interested in voluntarily restoring or otherwise improving native habitats for fish and wildlife on their lands.	To provide assistance for conservation efforts to be carried out on private lands that benefit species listed or proposed as endangered or threatened under the U.S. Endangered Species Act, candidate species, or other at-risk species.	For the development and implementation of projects for the benefit of fish and wildlife and their habitats, including species that are not hunted or fished. Priority is placed on projects that benefit species of greatest conservation concern.
AUTHORITY	Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act of 1958	Partners for Fish and Wildlife Act of 2006	Endangered Species Act of 1973	Consolidated Appropriations Act of 2012
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: \$13,477,000 FY 08: \$14,054,000 FY 09: \$14,736,000 FY 10: \$15,931,000 FY 11: \$15,137,000 FY 12: \$14,870,000 FY 13: \$13,184,000	FY 07: \$45,838,000 FY 08: \$50,135,000 FY 09: \$52,943,000 FY 10: \$60,134,000 FY 11: \$55,304,000 FY 12: \$54,768,000 FY 13: \$51,776,000	FY 07: \$8,930,000 FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: unavailable FY 12: unavailable FY 13: unavailable	FY 07: \$60,754,843 FY 08: \$62,724,000 FY 09: \$61,070,312 FY 10: \$76,496,527 FY 11: \$52,990,000 FY 12: \$56,700,000 FY13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	100%	Although few projects specifically for habitat restoration, many beneficial from watershed perspective	Unknown	10-20%
ELIGIBILITY	State and local governments, tribes, public and private landowners, nonprofits	State and local governments, tribes, public and private landowners, nonprofits	State and local governments, nonprofits, individuals, corporations	States
EXAMPLES	South San Diego Bay project—highlighted case study, see page 14.	The Hancock Springs Project in Washington restored salmon streams and added 2 million to the local economy and 28 jobs.	Worked with residents living adjacent to Little Campbell Creek to rehabilitate degraded riparian buffers and restore healthy fish habitat for chinook, coho, and sockeye salmon.	Biological hotspots in the Gulf of Maine were mapped in order to identify key areas to conserve.
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Department of Interior (CONTINUED)

PROGRAM	Neotropical Migratory Bird Conservation	Migratory Bird Joint Ventures	Tribal Wildlife Grants Program	Challenge Cost Share
SUPPORT TYPE	Project Grants	Cooperative Agreements	Project Grants	Project Grants
PURPOSE	To assist in the conservation of neotropical migratory birds by providing financial resources for the projects of partnerships in countries within the ranges of neotropical migratory birds.	To protect, restore, and enhance wetland and upland ecosystems for the conservation of migratory birds.	To develop and implement programs for the benefit of wildlife and their habitat, including species that are not hunted or fished.	Encourage partnerships with nonfederal groups, institutions, individuals, and businesses to conserve, protect, and enhance fish, wildlife, and plants.
AUTHORITY	Neotropical Migratory Bird Conservation Act of 2000	Fish and Wildlife Act of 1956; Migratory Bird Treaty Act	Land and Water Conservation Fund Act of 1965	DOI and Related Agencies Appropriations Act, 2004
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: \$3,822,915 FY 08: \$4,296,906 FY 09: \$4,607,500 FY 10: \$4,850,000 FY 11: \$4,314,731 FY 12: \$3,781,488 FY13: unavailable	FY 07: \$4,019,000 FY 08: \$4,067,545 FY 09: \$5,006,886 FY 10: \$5,836,335 FY 11: \$5,061,000 FY 12: \$5,372,563 FY13: unavailable	FY 07: \$6,000,000 FY 08: \$6,000,000 FY 09: \$7,000,000 FY 10: \$7,000,000 FY 11: \$7,000,000 FY 12: \$4,268,000 FY13: unavailable	FY 07: \$12,000,000 FY 08: unavailable FY 09: \$6,400,000 FY 10: \$6,500,000 FY 11: \$589,000 FY 12: \$0 FY13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	Individuals, corporations, trusts, state and local governments, foreign countries, nonprofits	State and local governments, tribes, nonprofits	Tribes	State and local governments, tribes, nonprofits
EXAMPLES	Since 2002, more than \$50.1 million in grants. Grants have supported 451 projects in 36 countries. Partners have contributed an additional \$190.6 million. More than 3.7 million acres of habitat affected.	The Giacomini Wetlands Project in the San Francisco Bay Joint Venture is restoring 560 acres of pasture back to wetlands, the equivalent of 12% of lost coastal wetlands in central California.	The program has provided over \$60 million for tribal conservation initiatives with more than 300 tribes.	
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Department of Interior (CONTINUED)

PROGRAM	Central Valley Project Improvement Anadromous Fish Restoration Program	Undesirable/Noxious Plant Species	Migratory Bird Monitoring, Assessment and Conservation	Recovery Act Funds - Habitat Enhancement, Restoration and Improvement
SUPPORT TYPE	Project Grants	Project Grants	Cooperative Agreements	Cooperative Agreements
PURPOSE	To improve water conservation and achieve a balance in competing demands for water in the Central Valley and Trinity River basins and to protect, restore, and enhance fish, wildlife, and associated habitats.	To accomplish successful management of undesirable plant species.	Working with others to conserve, enhance, and better understand the ecology and habitats of migratory bird species.	To provide technical and financial assistance to identify, protect, conserve, manage, enhance, or restore habitat or species on both public and private lands.
AUTHORITY	Central Valley Project Improvement Act	Fish and Wildlife Act of 1956	Fish and Wildlife Act of 1956; Migratory Bird Treaty Act	American Recovery and Reinvestment Act of 2009
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: \$8,754,544 FY 08: unavailable FY 09: unavailable FY 10: \$2,557,516 FY 11: \$3,778,905 FY 12: \$3,050,254 FY13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$200,600 FY 11: \$200,600 FY 12: \$200,600 FY13: unavailable	FY 07: \$2,278,500 FY 08: unavailable FY 09: unavailable FY 10: \$3,889,700 FY 11: \$2,255,000 FY 12: \$1,900,000 FY13: unavailable	FY 07: \$0 FY 08: \$0 FY 09: \$0 FY 10: \$8,356,591 FY 11: \$0 FY 12: \$0 FY 13: \$0
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State and local governments, tribes, institutes of higher education, nonprofits	State and local governments, tribes, institutes of higher education, nonprofits	State and local governments, tribes, institutes of higher education, nonprofits	Not Available
EXAMPLES	Improved the fish passage at the North Granlees Diversion Dam improving passage for adult Chinook and Steelhead.			
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Department of Interior (CONTINUED)

PROGRAM	Natural Resource Damage Assessment, Restoration, and Implementation	Coastal Impact Assistance Program	Hurricane Sandy Disaster Relief Activities-FWS
SUPPORT TYPE	Project Grants	Formula Grants	Project Grants
PURPOSE	To restore natural resources injured by oil spills or hazardous substance releases.	For the conservation, protection, or restoration of coastal areas including wetlands; mitigation of damage to fish, wildlife, or natural resources; and implementation of conservation, marine, or coastal management plans.	To provide technical and financial assistance to identify, protect, conserve, manage, enhance, or restore habitat and structures on both public and private lands that have been negatively impacted by Hurricane Sandy.
AUTHORITY	Federal Water Pollution Control Act; Oil Pollution Act of 1990	Outer Continental Shelf Lands Act	Disaster Relief Appropriations Act of 2013
AGENT	Fish and Wildlife Service	Fish and Wildlife Service	Fish and Wildlife Service
AVAILABLE FUNDING	FY 07: unavailable FY 08: \$5,200,000 FY 09: \$3,811,708 FY 10: \$7,169,352 FY 11: \$10,667,642 FY 12: \$5,033,327 FY13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: \$157,625,000 FY 10: \$156,000,000 FY 11: unavailable FY 12: \$479,426,165 FY 13: \$75,000,000	FY 12: \$0 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Over 60% of all awards has been allocated for restoration, percentage to coastal unknown	Unknown	Unknown
ELIGIBILITY	Not Available	States of Alabama, Alaska, California, Louisiana, Mississippi, and Texas	State and local governments, tribes, institutes of higher education, nonprofits
EXAMPLES		In Alaska, 40 projects have habitat restoration implications.	
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Department of Interior (CONTINUED)

PROGRAM	Invasive and Noxious Plant Management	Fish, Wildlife, and Plant Conservation Resource Management	Environmental Quality and Protection Resource Management	Challenge Cost Share
SUPPORT TYPE	Project Grants; Advisory Services and Counseling; Training	Project Grants; Advisory Services and Counseling; Training; Use of Property, Facilities, Equipment	Cooperative Agreements; Advisory Services and Counseling; Training; Dissemination of Technical Information	Cooperative Agreements; Advisory Services and Counseling; Training; Use of Property, Facilities, Equipment
PURPOSE	To encourage state, local, and federal governments to work together to inventory, manage, educate, reduce the spread of, and prevent the further invasion and establishment of noxious, invasive weeds, and other species.	To manage fish, wildlife, and plant conservation resources on public lands and to help restore and protect lands, wetland, and riparian areas critical for the management of significant species.	To reduce or remove pollutants in the environment for the protection of human health, water, and air resources; to restore damaged or degraded watersheds; and to respond to changing climate.	To promote partnerships to help accomplish high priority work to support habitat improvement, comprehensive travel management, recreation and cultural projects.
AUTHORITY	Federal Noxious Weed Act of 1974	American Recovery and Reinvestment Act of 2009	Federal Land Policy and Management Act of 1976	DOI and Related Agencies Appropriation Act for Fiscal Year 1991
AGENT	Bureau of Land Management	Bureau of Land Management	Bureau of Land Management	Bureau of Land Management
AVAILABLE FUNDING	FY 07: \$2,718,000 FY 08: unavailable FY 09: \$4,647,869 FY 10: \$3,924,000 FY 11: \$4,935,070 FY 12: \$3,500,000 FY 13: unavailable	FY 07: \$4,000,000 FY 08: \$25,753,000 FY 09: \$25,367,619 FY 10: \$26,167,000 FY 11: unavailable FY 12: unavailable FY 13: unavailable	FY 07: \$7,221,600 FY 08: \$5,762,000 FY 09: \$6,519,073 FY 10: \$5,403,000 FY 11: \$4,955,382 FY 12: unavailable FY 13: unavailable	FY 07: \$3,789,000 FY 08: unavailable FY 09: \$2,830,705 FY 10: \$3,398,000 FY 11: \$2,473,247 FY 12: \$2,500,000 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State and local governments	General Public	General Public	Not Available
EXAMPLES				
CONTACT	(202) 912-7226	(202) 912-7230	Nancy E. Dean (202) 912-7136	(202) 912-7203

Department of Interior (CONTINUED)

PROGRAM	Central Valley Project Improvement Act, Title XXXIV	Fish and Wildlife Coordination Act	Indian Tribal Water Resources Development, Management, and Protection	San Gabriel Basin Restoration Project
SUPPORT TYPE	Cooperative Agreements	Cooperative Agreements	Cooperative Agreements	Project Grants
PURPOSE	To improve water conservation and achieve a balance in competing demands for water in the Central Valley and Trinity River basins and to protect, restore, and enhance fish, wildlife, and associated habitats.	To provide financial assistance for the improvement of fish and wildlife habitats associated with water systems or water supplies affected by Bureau of Reclamation projects.	To increase opportunities for Indian tribes to develop, manage, and protect their water resources.	To design, construct, operate, and maintain water quality projects within the San Gabriel Basin, Los Angeles County, California.
AUTHORITY	Reclamation Projects Authorization and Adjustment Act of 1992	Fish and Wildlife Coordination Act of 1934	Consolidated Appropriations Resolution, 2003	Energy and Water Development Appropriations Act
AGENT	Bureau of Reclamation	Bureau of Reclamation	Bureau of Reclamation	Bureau of Reclamation
AVAILABLE FUNDING	FY 07: \$5,500,000 FY 08: \$10,200,000 FY 09: \$31,586,536 FY 10: \$40,951,713 FY 11: \$33,309,356 FY 12: \$12,208,908 FY 13: unavailable	FY 07: \$12,323,628 FY 08: \$31,646,000 FY 09: \$31,303,047 FY 10: \$43,777,389 FY 11: \$37,217,716 FY 12: \$20,476,717 FY 13: unavailable	FY 07: \$3,829,061 FY 08: unavailable FY 09: \$1,119,141 FY 10: \$5,763,685 FY 11: \$2,904,654 FY 12: \$1,930,294 FY 13: unavailable	FY 07: \$753,313 FY 08: unavailable FY 09: \$3,410,000 FY 10: \$3,490,000 FY 11: \$270,000 FY 12: \$0 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State and local governments, water delivery authorities in California	States, tribes, local governments, nonprofit organizations, businesses, individuals	Tribes	San Gabriel Basin Water Quality Authority and/or the Central Basin Municipal Water District
EXAMPLES				
CONTACT		(202) 208-3100	(202) 513-0550	

Department of Interior (CONTINUED)

PROGRAM	San Luis Unit, Central Valley Project	Central Valley Project, Trinity River Fish and Wildlife Management	California Water Security and Environmental Enhancement	Lower Colorado River Multi-Species Conservation Program
SUPPORT TYPE	Cooperative Agreements	Cooperative Agreements	Cooperative Agreements	Cooperative Agreements
PURPOSE	Construction and operation of facilities to provide drainage service to lands within the San Luis Unit of central California.	To address impacts of the Central Valley Project on fish, wildlife, and associated habitats in the Trinity River basin of California by protecting, restoring, and enhancing such habitats.	To improve public understanding of water issues in the Sacramento –San Joaquin River Delta; expand water supplies; improve water quality; improve the health of the system through restoring and protecting habitats and native species.	To protect the lower Colorado River while ensuring the certainty of existing river water and power operations; address the needs of threatened and endangered wildlife; reduce the likelihood of listing additional species.
AUTHORITY	San Luis Unit, Central Valley Project Act of June 3, 1960	Central Valley Project Improvement Act 1992	Water Supply, Reliability, and Environmental Improvement Act	Omnibus Public Land Management Act of 2009
AGENT	Bureau of Reclamation	Bureau of Reclamation	Bureau of Reclamation	Bureau of Reclamation
AVAILABLE FUNDING	FY 07: \$3,500,000 FY 08: unavailable FY 09: \$6,900,000 FY 10: \$4,269,500 FY 11: \$270,170 FY 12: \$81,000 FY 13: unavailable	FY 07: \$1,705,038 FY 08: \$1,357,000 FY 09: \$1,460,542 FY 10: \$3,964,204 FY 11: \$6,700,972 FY 12: \$5,264,761 FY 13: unavailable	FY 07: \$1,000,000 FY 08: \$27,000 FY 09: \$6,524,363 FY 10: \$259,906 FY 11: \$2,492,790 FY 12: \$17,741,645 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: \$3,254,445 FY 10: \$2,279,523 FY 11: \$1,984,643 FY 12: \$2,031,337 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	States, tribes, local governments, water districts, profit and nonprofit organizations	States, tribes, local governments, water districts, profit and nonprofit organizations	The State of California and water districts in the CALFED Bay-Delta area	States, tribes, local governments, water districts, profit and nonprofit organizations
EXAMPLES				
CONTACT				John Swett (702) 293-8555

Department of Interior (CONTINUED)

PROGRAM	Youth Conservation Program	Cooperative Watershed Management Program	Suisun Marsh Preservation Agreement
SUPPORT TYPE	Cooperative Agreements	Project Grants; Cooperative Agreements	Cooperative Agreements
PURPOSE	Involve local youth and young adults in the care of public resources to promote development of responsible citizenship, productive community involvement, and understanding and appreciation of natural and cultural resources.	Enhance water conservation; improve water quality; improve ecological resiliency of a river or stream; and reduce conflicts over water at the watershed level by supporting the formation of local watershed groups.	To ensure a dependable water supply of adequate quantity and quality for the protection and preservation of Suisun Marsh fish and wildlife habitat.
AUTHORITY	Public Lands Corps Act of 1993; Youth Conservation Corps Act of 1970	Omnibus Public Land Management Act of 2009	Small Reclamation Project Act; Suisun Marsh Preservation Agreement, P.L. 99-546
AGENT	Bureau of Reclamation	Bureau of Reclamation	Bureau of Reclamation
AVAILABLE FUNDING	FY 07: unavailable FY 08: unavailable FY 09: \$0 FY 10: \$1,037,515 FY 11: \$498,449 FY 12: \$567,232 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: \$0 FY 12: \$310,480 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: \$1,425,000 FY 12: \$1,150,000 FY 13: \$1,235,000
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	The Suisun Marsh Plan's target is 5,000 - 7,000 acres of tidal wetland restoration and protection and enhancement of 40,000 - 50,000 acres of managed wetlands.
ELIGIBILITY	Youth, veteran, and conservation corps in the 17 Western United States that involve ages 15-25	States, tribes, local governments, nonprofit organizations	California Dept of Water Resources, California Department of Fish and Wildlife, and Suisun Resource Conservation District
EXAMPLES			None funded to date
CONTACT	Amy Sjerven asjerven@usbr.gov (303) 445-2849	Avra Morgan aomorgan@usbr.gov (303) 445-2906	Greg Krzys gkrzys@usbr.gov (916) 414-2429

Department of Interior (CONTINUED)

PROGRAM	Chesapeake Bay Gateways Network	Conservation Activities by Youth Service Organizations	Natural Resource Stewardship	Ebey's Landing National Historical Reserve and Historical Reserve Trust Board
SUPPORT TYPE	Cooperative Agreements	Cooperative Agreements	Cooperative Agreements; Direct Payments for Specified Uses	Direct Payments for Specified Uses; Provisions of Specialized Services
PURPOSE	To aid in conserving, restoring, and interpreting important historic, cultural, recreational, and natural resources within the Chesapeake Bay watershed and increasing public access to the Bay.	To utilize qualified youth or conservation corps to carry out appropriate conservation projects.	To evaluate and improve the health of watersheds, landscapes, and marine and coastal resources; sustain biological communities on the lands and waters in parks, and improve the resiliency to the effects of climate change.	To protect, research, enhance, document, and interpret the natural resources of the Reserve.
AUTHORITY	Chesapeake Bay Initiative Act of 1993	Omnibus Consolidated Appropriations Act of 1997	Consolidated Natural Resources Act of 2008	The Outdoor Recreation Act
AGENT	National Park Service	National Park Service	National Park Service	National Park Service
AVAILABLE FUNDING	FY 07: \$480,350 FY 08: unavailable FY 09: unavailable FY 10: \$670,954 FY 11: \$0 FY 12: \$832,852 FY 13: unavailable	FY 07: \$12,000,000 FY 08: \$10,400,000 FY 09: unavailable FY 10: \$11,000,000 FY 11: \$11,609,595 FY 12: \$14,441,193 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$10,585,874 FY 11: \$8,089,163 FY 12: unavailable FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: unavailable FY 11: unavailable FY 12: unavailable FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown	Unknown
ELIGIBILITY	State and local governments, nonprofit organizations	State and local governments, nonprofit organizations	States, tribes, local governments, nonprofit organizations, institutions of higher education	Ebey's Landing National Historical Reserve Trust Board
EXAMPLES				
CONTACT	Bob Campbell bob_campbell@nps.gov	George McDonald george_mcdonald@nps.gov	Gary Mason gary_mason@nps.gov	Mark Preiss Mark_Preiss@partner.nps.gov

Department of Interior (CONTINUED)

PROGRAM	Hurricane Sandy Disaster Relief – Coastal Resiliency Grants	GoMESA	Marine Minerals Activities - Hurricane Sandy
SUPPORT TYPE	Project Grants	Direct Payments for Specified Use	Cooperative Agreements
PURPOSE	To issue grants for disaster assistance for Hurricane Sandy to restore and rebuild national parks, national wildlife refuges, and increase the resiliency and capacity of coastal habitat and infrastructure to withstand storms and reduce the amount of damage caused by such storms.	Projects for conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses; mitigation of damage to fish, wildlife, or natural resources; implementation of a marine, coastal, or conservation management plan; mitigation of the impact of Outer Continental Shelf activities.	To evaluate outer continental shelf (OCS) sand deposits for coastal restoration and beach nourishment needs, and to foster good working relationships regarding OCS mineral issues with coastal states due to effects from hurricanes and coastal erosion.
AUTHORITY	Disaster Relief Appropriations Act of 2013	Gulf of Mexico Energy Security Act of 2006	Outer Continental Shelf Lands Act
AGENT	Office of the Secretary	Office of the Secretary	The Bureau of Ocean Energy Management
AVAILABLE FUNDING	FY 07: \$0 FY 08: \$0 FY 09: \$0 FY 10: \$0 FY 11: \$0 FY 12: \$0 FY 13: unavailable	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$2,729,744 FY 11: unavailable FY 12: unavailable FY 13: \$313,999	FY 07: \$750,000 FY 08: \$0 FY 09: unavailable FY 10: unavailable FY 11: \$220,000 FY 12: \$0 FY 13: unavailable
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	Unknown	Unknown
ELIGIBILITY	General public	States of Louisiana, Texas, Alabama, and Mississippi	Coastal states
EXAMPLES			
CONTACT	Felicia Baker ftbaker@ios.doi.gov (202) 208-5183	(202) 513-0600	(703) 787-1215

Department of Transportation

PROGRAM	Highway Planning and Construction	Recreational Trails Program	Ballast Water Treatment Technologies	Transportation Infrastructure Finance and Innovation Act Program
SUPPORT TYPE	Formula Grants; Project Grants	Formula Grants	Cooperative Agreements	Direct Loans, Guaranteed Loans
PURPOSE	To assist state agencies in the planning, design, and construction of an integrated, interconnected highway and public transportation system.	To provide funds to the states to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses.	To further the current efforts that address the curtailment of aquatic invasive species within the Chesapeake Bay and coastal waters throughout the United States as associated with ballast water operations of commercial shipping.	To finance projects of national or regional significance by filling market gaps and leveraging substantial nonfederal and private co-investment.
AUTHORITY	Moving Ahead for Progress in the 21st Century Act	Moving Ahead for Progress in the 21st Century Act	National Defense Authorization Act 2012	Moving Ahead for Progress in the 21st Century Act
AGENT	Federal Highway Administration	Federal Highway Administration	Maritime Administration	Federal Highway Administration
AVAILABLE FUNDING	FY 07: \$34,154,000,000 FY 08: \$40,068,000,000 FY 09: \$40,049,960,000 FY 10: \$42,087,457,079 FY 11: \$39,546,387,703 FY 12: \$37,574,223,257 FY 13: \$37,476,819,674 FY 14: \$37,798,000,000	FY 07: \$74,160,000 FY 08: \$79,160,000 FY 09: \$84,160,000 FY 10: \$84,160,000 FY 11: \$96,570,196 FY 12: \$78,569,033 FY 13: \$79,212,744	FY 07: unavailable FY 08: unavailable FY 09: unavailable FY 10: \$1,558,832 FY 11: \$1,279,778.86 FY 12: \$1,461,400 FY 13: \$857,876	FY 07: \$122,000,000 FY 08: \$122,000,000 FY 09: \$122,000,000 FY 10: \$122,000,000 FY 11: \$122,000,000 FY 12: \$122,000,000 FY 13: \$750,000,000
PROPORTION TO COASTAL HABITAT RESTORATION	Unknown	While no funds are set aside for coastal habitat restoration, a few projects include coastal habitat restoration.	Prevention of introductions of aquatic nuisance species.	While no funds are set aside, a few projects may include coastal habitat restoration.
ELIGIBILITY	State transportation departments	State agencies	State, nonprofit organizations, institutions of higher education	Public or private entities
EXAMPLES		Fencing was installed at Island Beach State Park to direct motor vehicle to the beach and limit damage to the dune ecosystem on the island.		Bridges, highways, passenger and freight rail, transit, freight intermodal and port access.
CONTACT	Harlan Miller Harlan.Miller@dot.gov (202) 366-0847	Christopher B. Douwes christopher.douwes@dot.gov	Judy Bowers judy.bowers@dot.gov (202) 366-1913	Duane Callender duane.callender@dot.gov (202) 366-9644

Department of the Treasury

PROGRAM	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States
SUPPORT TYPE	Formula Grants
PURPOSE	Restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, coastal wetlands, and economy of the Gulf Coast Region.
AUTHORITY	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012
AGENT	Department of the Treasury
AVAILABLE FUNDING	FY 07: \$0 FY 08: \$0 FY 09: \$0 FY 10: \$0 FY 11: \$0 FY 12: \$0 FY 13: \$0
PROPORTION TO COASTAL HABITAT RESTORATION	To be determined by eligible states. The Fund will receive 80% of any civil penalties paid under the Clean Water Act by the parties responsible for the Deepwater Horizon oil spill.
ELIGIBILITY	General Public
EXAMPLES	
CONTACT	Sheryl Morrow RESTOREruleQ@treasury.gov (202) 622-8951

Appendix II. Federal Agency Questionnaire

The questionnaire below was sent to federal agency staff with the intent of confirming and supplementing CFDA data with detailed information directly from program staff.

Program Questions

1. What are the grants awarded under this program title?
2. Do any of the grant programs award funding to coastal habitat restoration projects?
3. If known, what proportion of the total award funding goes to grants for coastal habitat restoration?
4. What is the mission or objective of the grant program(s) that fund coastal habitat restoration projects?
5. Do any of the(se) grant program(s) focus on funding a specific type of habitat restoration (for example restoration for the purpose of resiliency, fish recovery, threatened and endangered species, etc.)?
6. Can you think of a project that was funded by the(se) program(s) that has contributed to or enhanced tourism, recreation, community protection, human health, job creation, or fisheries? If so, can you provide details.
7. What is the source of funding for this program title?
8. Between 2007 and 2014 has award funding been stable, increased, or decreased?
9. How has funding during this time period affected the ability to deliver conservation and restoration on the ground?
10. Can you provide detailed information for each year between 2007 and 2014 on:
 - How much funding was awarded through the(se) grant program(s),
 - Where grant recipients are located geographically, and
 - The organizations that received funding along with a brief description of their project?
11. Please provide contact information for a point of contact on the program that can be included in the final report.

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