



Restoring Habitats for Resilient Coastal Economies

A Series of County Initiatives

Restoring Habitats for Resilient Coastal Economies

This document provides coastal county leaders and coastal managers with an overview of how environmental restoration initiatives can help strengthen the ongoing vitality of coastal economies. The issue brief is divided into four sections that provide examples from counties that are pursuing coastal restoration projects to:

- Promote storm and flood resiliency
- Support coastal tourism
- Protect healthy fisheries, and
- Create coastal jobs.

■ Promoting Storm and Flood Resiliency

Storms and flooding pose major risks to the economic health of coastal counties nationwide. Such risks make the pursuit of wetland restoration initiatives more than just an effort in environmental stewardship and preservation, but also an important long-term economic investment. A healthy coastal habitat provides the first line of defense to combat the effects of flooding, storms and wind. As a result, restoring and strengthening coastal habitats and wetlands presents a key investment to increase a county's resilience to storms and other extreme weather events.

Wetlands present a truly efficient means to increase an area's resiliency, as an acre of wetland can absorb 1–1.5 million gallons of flood water.¹ Knowing this, coastal county leaders and their partners are targeting wetland restoration efforts as a way to increase their overall resiliency to storm and flood events. Both Lee County, Florida and Jefferson Parish, Louisiana provide examples of how coastal counties can pursue wetland restoration efforts in an effort to mitigate storm and flood risks and promote overall coastal resilience.

Lee County staff and school groups help with shell bagging for oyster reef construction.

Source: Sanibel-Captiva Conservation Foundation





The Bayou Segnette Waterway in the Jean Lafitte National Historic Park.

Source: Wikimedia Commons

THE SANIBEL ISLAND CLAM BAYOU RESTORATION PROJECT

The Sanibel-Captiva Conservation Foundation, the City of Sanibel and Lee County pursued a restoration effort to promote storm and flood resiliency in the Clam Bayou, a 400-acre mangrove-lined area on Sanibel Island in southwest Florida. Due to recent dam impairments, Clam Bayou experienced the die-off of multiple fish, bird and vegetation habitats; seasonal flooding; and water quality issues. As a way to address these issues, project organizers constructed a new channel to carry water to mitigate future flooding events and restore habitats for fish and native plants. Overall, the restoration effort helped to restore 1.26 acres of mangrove, sea grass and shellfish habitats and 0.037 acres of oyster reef. Additionally, project organizers believe that the restoration project increased community awareness of the importance and ecological value of marine habitats.

BAYOU SEGNETTE CYPRESS PLANTING PROJECT

In 2009, Jefferson Parish, Louisiana (in partnership with the Coalition to Restore Coastal Louisiana and the Entergy Corporation) received a \$23,800 Five Star and Urban Waters Restoration Grant from the U.S. Environmental Protection Agency (EPA) via the National Association of Counties to re-establish the native cypress trees along the Bayou Segnette Waterway south of New Orleans in the Jean Lafitte National Historic Park. With support from over 150 local and national volunteers, the project involved the strategic planting of more than 3,400 bald cypress trees along 32,000 feet of riparian buffer area. The cypress forest now provides habitat for migratory birds and increased shelter for blue crabs, fish, amphibians and reptiles. The new cypress plantings have also improved water quality by decreasing erosion along the banks and helping to capture sediment and organic material to build new soil. To this end, this restoration project provided Jefferson Parish with a much-needed, stronger and more resilient barrier to floods and storms for the future.

■ Supporting Coastal Tourism

The tourism industry is a major local industry for many coastal counties. In addition to the millions of recreational fishers, more than 77 million Americans participate annually in recreational boating, and 80 million Americans participate in non-pool outdoor swimming in the United States annually.² A vibrant local tourism industry requires clean coastal waters, beaches and a healthy coastal ecosystem that produces abundant fish and wildlife.

Waikiki Beach in Honolulu exemplifies the impact the tourism industry has on coastal economies. No single industry dominates Hawaii as much as tourism, which serves as the largest employer, revenue producer and growth sector for the state. Waikiki Beach tourism-related activities account for eight percent of Hawaii's gross state product, provide 11 percent of all civilian jobs and amount to 12 percent of state and local tax revenue.³



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(Left) Waikiki Beach, located in Honolulu County, Hawaii, is a popular tourist destination. (Right) Volunteers take part in a clean-up event on Waikiki Beach.

Source: Wikimedia Commons

These statistics suggest that environmental protection of Hawaii's coastlines and ocean resources must be an important priority for maintaining a thriving economy in Hawaii.

COMMUNITY-BASED RESTORATION OF THE WAIKIKI MARINE LIFE CONSERVATION DISTRICT

Hawaii was spurred into action to address Waikiki Beach erosion when a study showed that if its coastline continued eroding away, there would be an annual loss in tourism revenues of \$2 billion and tax revenues of \$150 million.⁴ The University of Hawaii, with support from various local, state and federal partners, developed a community engagement program to inspire and facilitate community stewardship in the Waikiki Marine Life Conservation District, a 76-acre protected area at the Diamond Head end of Waikiki Beach. Program activities have focused on restoring the health of Waikiki's vulnerable coral reefs by establishing "Reef Watch Waikiki," a community-based coastal monitoring program and "Ocean Awareness Training," an ocean literacy certification program.

These programs have successfully established a network of dedicated community supporters who have actively participated in trainings, workshops and educational events to promote ocean stewardship among stakeholders in the Waikiki community. Considering the economic importance of tourism in Waikiki Beach, these restoration and educational programs represent an important investment in the ongoing health of Hawaii's natural assets, which provide the basis of its most lucrative industry.

The Indian River Lagoon in Brevard County, Florida.

Source: Wikimedia Commons



PINE ISLAND CONSERVATION AREA: NORTH BORROW LAKE RESTORATION PROJECT

Brevard County, Florida pursued an environmental restoration initiative to restore 9.3 acres of wetland in its Pine Island Conservation Area (PICA), a 950-acre conservation area that provides a number of tourism activities, including hiking, biking, horseback riding, paddling and fishing. As a result of soil and water erosion, PICA's Indian River Lagoon has experienced a 90 percent loss of its salt marshes overtime. In an effort to address the environmental degradation of this popular recreational and tourist area, Brevard County sought to reintroduce native wildlife and plant habitats in the area.

Environmental restoration activities included:

- * Clearing the site of exotic and invasive vegetation
- * Planting native salt marsh vegetation
- * Re-grading the area to its historic elevations, and
- * Installing culverts to restore hydrology flow.

Brevard County's restoration initiative has benefited local tourism by enhancing the hiking trails and recreational areas around the project site to provide more opportunities for recreational fishing and access to local wetlands on the hiking trails.

■ Protecting Healthy Fisheries

In many coastal counties, fisheries play an important role in the local economy, with both commercial and recreational fisheries serving as revenue sources as well as job creators. For example, much of the Louisiana coast relies on the commercial fish economy, as more than 1.1 billion pounds of fish and shellfish are harvested annually in the region.⁵ This annual haul translates into more than \$300 million in revenue for Louisiana fishermen. Likewise, 2011 fishing hauls in California, Maine and Florida were valued at more than \$201 million, \$424 million and \$224 million, respectively.⁶



Community volunteers of all ages helped with the planting of native plants around Dutch Bill Creek.

Stream flow of Dutch Bill Creek was increased as a result of new construction of rock weirs below the Market St. Culvert.

Source: Gold Ridge Resource Conservation District



Recreational fishing also represents an important economic industry for coastal counties. In 2010 alone, there were more than 71 million fishing trips nationwide.⁷ In 2011, angler sport fishermen spent 3.2 million days fishing in the southeast region of the United States, generating \$239 million in economic output and supporting 3,100 jobs.⁸ Understanding the economic impacts of commercial and recreational fishing, coastal county leaders and their partners are investing in restoration efforts to support their local economies. Restoration projects in Clallam County, Washington and Sonoma County, California provide examples of how communities can pursue environmental restoration to protect and preserve their local fisheries.

DUTCH BILL CREEK FISH BARRIER REMOVAL PROJECT

The Gold Ridge Resource Conservation District, with funding support from Sonoma County, established the Dutch Bill Creek Fish Barrier Removal Project in 2009 to eliminate all fish passage barriers in Dutch Bill Creek, a 6.5 mile stream in western Sonoma County. The project entailed



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three major components: the removal of a small (15' high) dam, the retrofitting of the Market Street culverts in the Camp Meeker community and the installation of rock weirs below the culvert. In all, the project opened 3.22 linear miles of habitat for steelhead and coho salmon spawning migration. As a result, the area has witnessed an increase of recreational fish and tourism opportunities. In addition, the project was able to galvanize the community through focused engagement efforts, which created community ownership of the project, as well as a base for future environmental restoration projects.

THE MORSE CREEK FLOODPLAIN RECONNECTION PROJECT

The North Olympic Salmon Coalition, in partnership with Clallam County and various federal, state and local partners, pursued the Morse Creek Floodplain Reconnection Project to improve stream conditions in the Morse Creek watershed. Due to impaired channel conditions, Morse Creek experienced population declines of its native salmon and cutthroat trout populations. The project restored Morse Creek to its pre-1930 conditions by removing a 1,100 foot dike, constructing 19 engineered log jams and adding 700 feet of side channels to provide a winter habitat for native salmon species. Overall, the restoration effort helped to restore 9.3 acres of floodplain and close to 7 acres of riparian zone. The Coalition also partnered with Clallam County and the Lower Elwha Tribe to train volunteers to perform data collection and help maintain native vegetation. Overall, the restoration project increased spawning of all salmon and trout populations in Morse Creek.

■ Creating Coastal Jobs

Restoration efforts not only promote storm and flood resiliency, protect healthy fisheries and support coastal tourism, but also support local economies by creating jobs. For example, restoration efforts in the Chesapeake Bay, Great Lakes and Everglades supported more than 3,200 jobs in 2010.⁹

Restoration activities provide a wide range of jobs for construction workers, planners, engineers, general contractors, landscapers and heavy equipment operators. Additionally, restoration projects support local businesses, such as plant nurseries, wood and rock suppliers and hardware stores.

Unlike other economic sectors, coastal and estuary restoration jobs are rarely outsourced, provide immediate employment opportunities and require skills and machinery already available in the local workforce. In this way, restoration jobs directly support local economic development and overall resilience.

- * It is projected that an average of 80 cents of every one dollar spent on a restoration project stays in the county where the project is located.¹⁰
- * Further, a 2010 University of Oregon study found that each \$1 million invested in forest or watershed restoration generates between 14.7 and 23.8 jobs and between \$2.1 and \$2.6 million dollars for the local economy.¹¹

Habitat restoration jobs also support fisheries, tourism and recreation opportunities that also serve as job creators. For example:

- * Our U.S. coastal regions provide \$214 billion annually in leisure and hospitality jobs.¹²
- * In 2009, tourism in Waikiki (Honolulu County, Hawaii) created more than 56,000 jobs and accounted for more than \$1 billion in wages in 2009.¹³
- * In 2009, marine-related business in Grand Traverse County, Mich. provided \$94 million in wages, and more than 11 percent of all county jobs, with tourism and recreation making up 92 percent of these jobs.¹⁴



Workers along the Connecticut River plant trees to restore an eroded riverbank.

Source: U.S. Environmental Protection Agency

Resources

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The National Association of Counties (NACo) developed this publication as part of the Coastal Counties Restoration Initiative (CCRI) (Award Number: NA07NMF4630177). CCRI was a partnership between NACo and the National Oceanic and Atmospheric Administration (NOAA) Community-Based Restoration Program (CRP) that provided financial assistance to county-led or supported habitat restoration projects from 2007–2013. Any opinions, findings, conclusions or recommendations expressed in this publication do not necessarily reflect the views of NOAA CRP.

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