

# noaa restoration



## Restoring *Injured Habitats and Natural Resources*

NOAA restores coastal habitats and resources degraded by oil, hazardous substances or physical impacts by...

- ☞ *Assessing and quantifying injuries;*
- ☞ *Collaborating with government agencies and the public;*
- ☞ *Seeking compensation from those responsible for injuries;*
- ☞ *Planning and implementing restoration projects; and*
- ☞ *Monitoring restoration progress.*



<http://restoration.noaa.gov>

BOTH NATURE AND HUMAN ACTIVITIES DEGRADE COASTAL AREAS—EROSION DESTROYS COASTAL WETLANDS, HAZARDOUS SUBSTANCES INJURE FISH AND WILDLIFE, DEVELOPMENT ACTIVITIES ELIMINATE COASTAL HABITAT, AND VESSELS DESTROY SEAGRASS AND CORAL. WITH OVER THREE DECADES OF COASTAL AND MARINE RESOURCE EXPERTISE, NOAA IMPLEMENTS INNOVATIVE RESTORATION STRATEGIES TO REVERSE THE TIDE OF DEGRADATION. COLLABORATING WITH OTHER FEDERAL, TRIBAL, STATE AND LOCAL AGENCIES, NOAA ASSESSES THE INJURIES—BY COLLECTING DATA, REVIEWING EXISTING KNOWLEDGE, AND CONDUCTING NEW STUDIES—AND IDENTIFIES, CONDUCTS, AND MONITORS PROJECTS TO RESTORE INJURED RESOURCES. WHETHER IT IS SALMON IN THE PACIFIC NORTHWEST, CORAL AND MANGROVES IN THE FLORIDA KEYS, SEA TURTLES IN THE GULF OF MEXICO, OR LOBSTERS AND STRIPED BASS IN THE NORTHEAST, NOAA IS RE-ESTABLISHING FISH AND WILDLIFE AND SUPPORTING HABITATS ACROSS THE COUNTRY.

### **CASE STUDY**

#### *Salmon Restoration in Washington*

Since the early 1990s, NOAA has been working to prevent injury to salmon and other natural resources in Washington's Commencement Bay. A major trans-Pacific port, the bay is home to chemical and concrete production and aluminum smelting plants, lumber mills, and oil storage facilities. Pollutants such as arsenic, copper, lead, mercury, chlorinated solvents, and PCBs have contaminated the bay's eight waterways. In the past century, tidal areas were filled and meandering streams channelized to pave the way for industrial uses.

Even though the area is highly urbanized, Commencement Bay still provides habitat for salmon and other fish. As a result, almost all restoration in the area is designed to reclaim critical

pieces of habitat for wildlife that depend on the bay for food and shelter. NOAA has been working with other agencies, local conservation groups, tribal leaders, and the public to assess the risks, quantify the injury that has occurred, evaluate and propose ways to clean up the contamination, and develop, implement, and monitor restoration efforts. NOAA's activities in Commencement Bay include:

- *Restoring and enhancing refuge and foraging habitat for juvenile salmon and providing more habitat for wetland-dependent species, to re-establish stocks.*
- *Improving the habitat value of beaches by demolishing and disposing of two derelict barges on the shoreline and removing a former drydock and sunken concrete float.*

- 
- *Re-establishing and creating intertidal, salt marsh, and riparian habitat along remaining mudflats.*
  - *Excavating and contouring formerly filled land to create a natural shoreline with hummocks and other natural marsh features, increasing the habitat value for shore birds, salmon, river otters, and other fish and wildlife.*
  - *Restoring intertidal habitat by excavating material, grading, and planting vegetation, as well as re-routing hillside runoff to aid re-establishment of brackish marshes.*

#### **CASE STUDY**

##### ***Reversing Wetland Loss in Louisiana***

Louisiana is plagued by the highest rate of coastal wetland loss in the nation. Since the 1930s, one million acres of coastal wetlands have disappeared. If no action is taken, Louisiana is projected to lose another million acres over the next 40 years. The construction of levees and canals and the deepening of navigation channels have starved these wetlands of their lifeblood—freshwater and sediment. Natural rates of subsidence and erosion are no longer balanced by sediment deposition from the Mississippi and other coastal rivers. The resulting increased salinity is killing wetlands.

To halt this destruction, Congress enacted the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) in 1990. Through CWPPRA, NOAA, other federal agencies and the state of Louisiana develop and implement large-scale, multi-million dollar restoration projects. NOAA has administered nearly \$100 million

- *Evaluating existing and recommended fish passage improvements in a stream channel upstream of railroad tracks, and planting native vegetation within and adjacent to newly created wetlands and on nearby hillsides.*

Commencement Bay is just one example of NOAA's work to reverse habitat degradation and loss, so that fish and wildlife populations can thrive once more.

in CWPPRA funds, benefiting over 100,000 acres of threatened wetlands. Typical NOAA projects involve creating and protecting marshes, stabilizing barrier islands, trapping sediment, and restoring hydrology. NOAA uses innovative techniques and technologies and then monitors the projects to learn how to improve future restoration efforts.

In conjunction with Louisiana Sea Grant and other state agencies, NOAA is also conducting research to aid this region-wide wetland restoration effort. By analyzing sediment transport, nutrient levels, marsh accretion rates, hydrologic changes and other habitat characteristics, NOAA is collecting valuable data for improving the performance of restoration projects—with the goal of preventing the loss of another million wetland acres.



## CASE STUDY

### *Restoring Spartina Wetlands in Long Island*

Many valuable wetlands in Long Island Sound have been degraded by contamination and lost to filling, dredging, and “marsh drowning” from sea level rise and coastal subsidence processes, significantly impacting native wildlife populations and quality of life for local residents.

In 1992, a comprehensive settlement was reached for cleanup and natural resource damages at the Applied Environmental Services/Shore Realty Superfund Site in Glenwood Landing, NY. As part of this settlement, a degraded salt marsh in nearby Bar Beach Lagoon, across the harbor from the Superfund Site, was restored in the spring of 2003. The restoration, led by NOAA, was the product of collaboration among many project partners, including the New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Town of North Hempstead, and the industries responsible for damages at the Superfund Site. The project succeeded in excavating more than 3,000 cubic yards of rubble, rock, tires, timber debris, and gravel from the 400-foot-long shoreline. Local volunteers planted 2,000 marsh plants, and installed stakes, line and plastic tape to keep geese and other plant grazers from entering the site while the marsh grasses were re-established. The project site will be monitored for five years to assess plant survival and wildlife use in the restored marsh.

This project benefited from a remarkable degree of cooperation and leveraging of resources by several public agencies, industry, and the local community. The trustees provided support for project planning, design, and field work. The industries fully funded the design and contributed to the construction, above and beyond the requirements of their original Superfund settlement. The town contributed funds and in-kind services, and helped to organize volunteer participants. In addition, NOAA's Community-based Restoration Program awarded a grant to the Town of Hempstead to assist with the project. Ongoing communication and cooperation amongst the trustees and stakeholders, and the active participation of the local community, were key to the selection and implementation of a successful project.