

WORKING WITH NATURE

Corps Restoration Projects Benefit People, Communities, and Wildlife

The U.S. Army Corps of Engineers (Corps) is the principal federal agency that manages the nation's water resources. While many Corps water projects are wasteful and destructive, in recent years the agency has spent increasingly more money on ecosystem restoration. As a result, the Corps possesses some of the best restoration expertise in the country. Restoring the natural functions of rivers, wetlands, and other ecosystems provides a multitude of benefits including: natural flood protection, clean water, erosion control, recreation, and habitat for fish and wildlife.

UPPER MISSISSIPPI EMP



The Mississippi River is the only river in the nation to be formally recognized by Congress as a nationally significant ecosystem and a commercial navigation system. Over time, urban and industrial waste, engineering the river for navigation, floodplain development and drainage, fertilizer, raw sewage, and sedimentation have so degraded water quality that the river's mouth at the Gulf of Mexico is known as "the Dead Zone."

Authorized in 1986, the Mississippi Environmental Management Program (EMP) is a pioneering attempt to coordinate restoration efforts within the upper watershed. There are two components to the program. Habitat Restoration and Enhancement Projects focus on constructing restoration projects, such as dredging backwater areas and channels, creating and stabilizing islands, and controlling side channel flows and water levels. The purpose of the Long Term Resource Monitoring Program is to gather system-wide ecological data.

EMP supporters boast that since its creation, the program has had a profound effect on the Upper Mississippi basin. The Corps has completed more than 40 projects impacting about 67,000 acres of fish. Projects currently in the design phase would improve 75,000 more acres of habitat, for a total of 142,000 acres benefited.

KISSIMMEE RIVER RESTORATION, FL



Historically, the Kissimmee River meandered for about 100 miles from Lake Kissimmee to Lake Okeechobee through at times a 2 mile-wide floodplain. During the 1960s, the Corps channelized the Kissimmee River and created a 30 foot deep, 300 foot wide, 56 mile long canal that converted 44% of the floodplain to pasture and drained some 30,000 acres of wetlands. As a result, populations of wintering waterfowl and wading bird and game fish populations plummeted. It was estimated that utilization of the river by ducks decreased by 93%.

Authorized in 1992, the Kissimmee River Restoration Project (part of the Everglades Restoration plan) will restore 43 miles of meandering river channel and 27,000 acres of wetlands. In the upper basin, the restoration plan includes improving two canals, changing managing water levels in several lakes, and acquiring land. In the river's lower basin, part of the canal will be filled and water control structures will be removed.

As the restoration effort continues, positive changes have already been noted: sandbars indicate that the river's hydrology is improving; oxbows are flowing again; emergent and shoreline vegetation has reappeared and is thriving; waterfowl appear to be returning; and water quality is improving.

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CITY OF NAPA FLOOD PROTECTION, CA



Voters twice rejected the Corps' initial proposals for levee-based flood protection before the community demanded a plan that works with nature rather than against it. Working with a coalition of citizens and other stakeholders, the Corps designed a system that maintains the river's natural channel, reconnects portions of the river to its historic floodplain, restores more than 650 acres of tidal wetlands, and creates a bypass area so that the river can follow its traditional high-water path harmlessly, along with some structural protections. The design was so popular that county voters approved a half-cent sales tax increase to help fund the project.

EMBREY DAM REMOVAL, VA



Constructed in 1910 by the Spotsylvania Power Company, Embrey Dam was originally designed for hydropower production. The project had stopped producing power and, due to excessive cracking and leakage, had become a liability to the community. Embrey Dam also blocked migratory fish from over 170 miles of historical spawning habitat in the Rappahannock and its tributaries. The dam's 2004 removal, the largest since the 1999 removal of Edwards Dam on the Kennebec River in Maine, restored more than 70 miles of mainstem and hundreds of miles of tributary habitat for migratory fish, including American shad, blueback herring, alewife, and striped bass.

EL DORADO FISH HABITAT RESTORATION, KS



Unlike the Everglades or the Upper Mississippi, most Corps restoration projects are smaller in scale, narrower in scope and cost less than \$5 million. The \$265,000 El Dorado Fish Habitat Restoration project, for example, restored spawning and nursery fishery habitat by establishing aquatic plants in the El Dorado reservoir. The planting plan was based on research conducted at the Lewisville Aquatic Ecosystem Research Facility. Plantings were scattered in eight locations totaling approximately 125 acres. Game fish harvests were expected to increase from 12 pounds per acre to 45 pounds per acre because of these plantings.

CITY OF BOSTON FLOOD STORAGE, MA



The Corps was poised to build a \$100 million levee and dam project on the Charles River in the late 1960s. But the Corps chose instead to preserve over 8,000 acres as a natural storage area when a 1972 study showed that upstream wetlands were playing a critical role in reducing flooding in the middle and upper reaches of the river. Those wetlands were storing millions of gallons of water in addition to reducing erosion, providing recreational opportunities, and providing vital wildlife habitat. The Corps study concluded that the loss of the wetlands would cost the region \$17 million annually in flood damage. Land and easement acquisitions for the Natural Valley Storage project totaled less than \$10 millions, a fraction of the \$100 million levee and dam plan.

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