



Going With the Flow - Marsh Returns to Matagorda Island



Photo: Aransas NWR

A great blue heron balances a striped mullet on its beak in the wetlands around Matagorda Island.

Restoring 15,000 acres of marsh habitat on Matagorda Island is the goal of an ongoing effort by Coastal Bend Bays & Estuaries Program and Aransas National Wildlife Refuge.

The area known as the western marsh provides critical habitat for crabs, shrimp and fish and serves as feeding grounds for

whooping cranes and other wildlife.

The flow of tidal waters needed for the marsh to thrive was cut off when levees, barriers and ditches installed in the 1950s drained the marsh to make the land drier and more suitable for cattle grazing.

Over 2,500 acres of impacted wetland has been restored during the recently completed first phases of improvements.

Planning

The severely-altered circulation, the remote location, its connection to a national refuge, and the diversity of fish, marine and bird species made this a prime site for restoration work, said Dustin Cravey, a project manager with the bays and estuaries program.



Photo: CBBEP

This culvert, installed as part of a Coastal Bend Bays & Estuaries Program project, helps water flow through the wetland, which revives marsh habitat for fish, shrimp and crabs.

To help plan for this restoration effort, CBBEP contracted with HDR, a local engineering firm, to determine what needed to be done to reestablish natural tidal flow in the marsh. Engineers developed plans to install a series of culverts and remove levees to restore water circulation.

By looking at aerial photos dating back to the '30s and observing natural water flow pathways, engineers determined where and how water naturally flowed through the wetlands. They identified about 30 areas where modifications needed to be made to restore circulation.



Photo: Aransas NWR

Sandhill cranes are seen here flying in the area where marsh habitat was revived by improving water flow to the wetlands.

“The goal is to get as much water as possible circulating and mixing throughout the marsh,” Cravey said.

Wetlands rely on continual water exchange as tides and winds move water in and out. If water

flow is restricted, water in the wetlands stagnates, evaporates or suffers from low oxygen levels, all which can degrade the wetlands.

In the first phases, to encourage water flow through the area, project engineers created openings for circulation and installed culverts at seven locations. The area around culverts was stabilized to keep the surrounding soil from shifting to maintain effectiveness.

In areas already completed, preliminary results appear promising, indicating water flow has increased in several areas, as has water level and the number of birds seen feeding in the area.



Photo: Aransas NWR

A lack of water flow into the wetlands on Matagorda Island had decimated marshes, a prime feeding ground for cranes and a prime habitat for the crabs they eat. A whooping crane is seen here feasting on a blue crab.

Future Phases

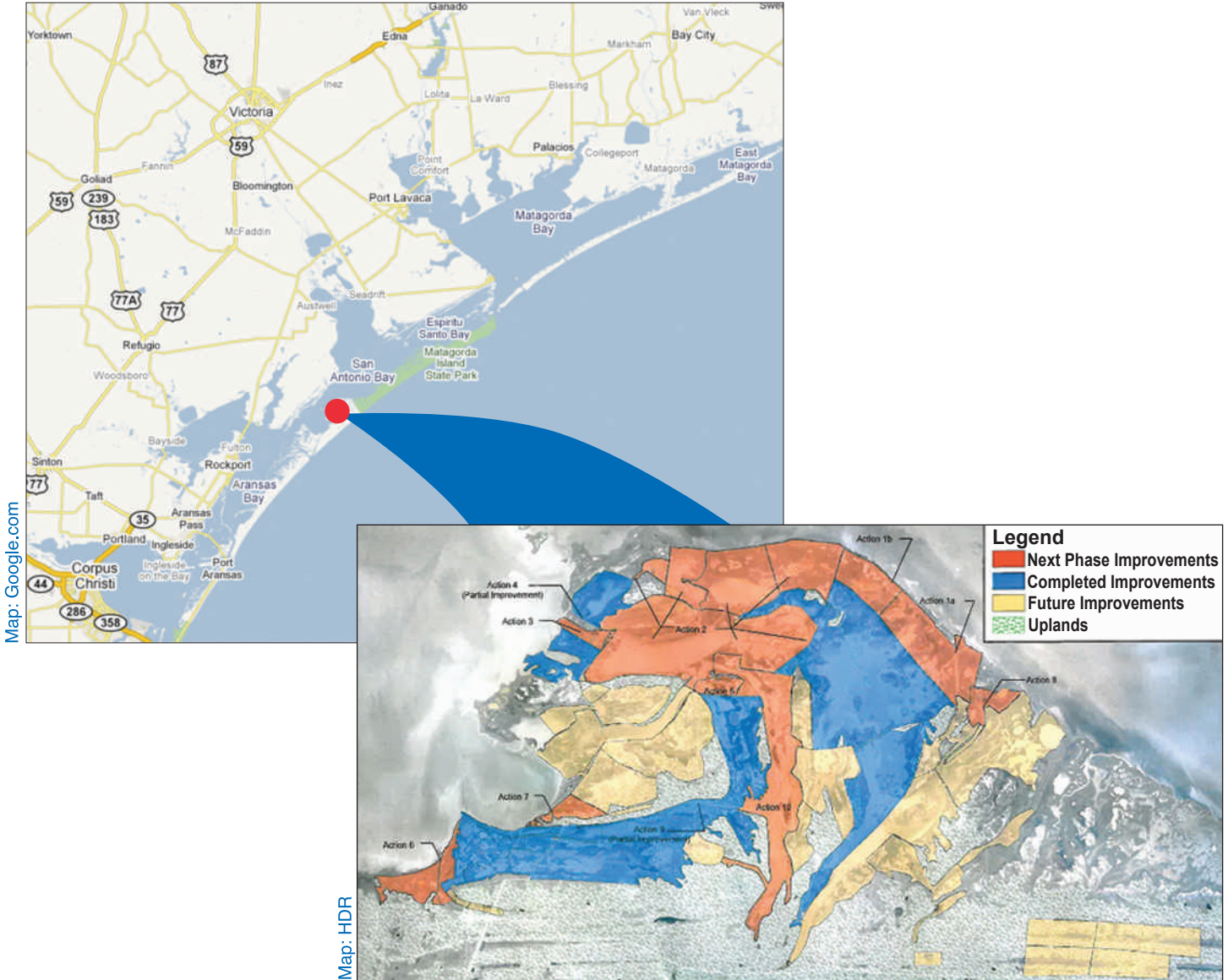
This project follows an adaptive management plan that allows

flexibility in the project's phases by taking into account the results of each step when considering what is needed in the next step.

"It's a continuous cycle," Cravey said. "Construct, monitor, assess, make recommendations and start again."

Each phase includes monitoring and re-assessment of water flow before determining if any adjustments are needed for the next phase.

Engineers are analyzing data, including water and salinity levels and sightings of fish and birds in the restored areas, to determine the project's next phase, expected to begin by summer 2009.



Matagorda Island Western Marsh



[Check out other Coastal Bend Bays & Estuaries Program projects at www.cbbep.org.](http://www.cbbep.org)

The Coastal Bend Bays & Estuaries Program is a non-profit organization dedicated to protecting and restoring bays and estuaries in the 12-county region of the Texas Coastal Bend. CBBEP is partially funded by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

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