

COLORADO RIVER DELTA RESTORATION PROJECT



The Colorado River Delta

Where the River Meets the Sea

The greatest desert river in the Western Hemisphere, the Colorado, once formed a lush delta as it flowed into the Gulf of California. A hundred years ago, the Colorado River Delta covered more than 3,000 square miles of riparian, freshwater and tidal wetlands, supporting a large population of plant, bird and marine life. Today, the Delta has been reduced to less than 10 percent of its original size due to dams and diversions upstream.

VITAL RESOURCE

Why the Delta Is Important

Although greatly diminished in size, the Colorado River Delta remains a vital stopover for birds migrating along the Pacific Flyway. It is a fact that more than 380 species of birds nest and feed in the Delta, including the bald eagle and the largest known population of the endangered Yuma clapper rail.

The Delta is also crucial to the cultural survival of indigenous communities on both sides of the border, particularly the Kwapa, known as the Cocopah in the U.S. and the Cucupá in Mexico. These tribes lived in the Delta for hundreds of years before the arrival of the Spanish in 1540. Their way of life has been seriously impacted by the diminished river flows and the disappearance of the region's riparian habitats.

As the most important source of freshwater into the Upper Gulf of California, the Colorado River remains essential to the health of nurseries, on which a highly productive fishing industry depends.

Conservation efforts hold special promise for the Delta. It has been shown that even modest flows of fresh and brackish water can stimulate ecological recovery. This potential spurred the Sonoran Institute and its partners in Mexico and the U.S. to set an ambitious goal to double the Delta's existing wetlands by protecting and restoring more than 160,000 acres.

"The Sonoran Institute's conservation vision in the Delta includes the human element and is therefore effective in inspiring partnerships and real action."

- Enrique Villegas, Director of the Mexicali Department of Ecology; former Secretary of Environmental Protection for Baja California



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Successes and Accomplishments

A Solid Plan for Restoration - The U.S. and Mexican governments have adopted the Institute's Conservation Priorities in the Colorado River Delta as a guide to conservation and restoration activities in the Delta. Eighteen projects have been identified to meet recommendations presented in the report, and many of those projects are underway.

A Roadmap for More Water - The Institute has helped to develop and is actively pursuing efforts to establish the mechanisms to secure additional water for instream flows. In this way, water needed for base and pulse flows can be released when needed the most to enhance riparian and estuarine habitat in the Delta.

Increased International Political Support - The Institute and its partners have been hard at work securing political support at municipal, state and federal levels in Mexico for the restoration of the Delta. These and other efforts have led Mexico's president to nominate decision-makers supportive of restoration in key water and environmental agencies.

Hundreds of Acres Restored - The Sonoran Institute has been directly involved in ten restoration sites along the Colorado River and its tributary the Hardy River in the Delta. More than 190 acres of riparian habitat and 500 acres of marsh wetlands habitat have been enhanced and 15,000 acre-feet of water dedicated to in-stream flows (12,000 from treated effluent) have been secured.

Intensive Re-vegetation Efforts - More than 5,000 native trees have been planted, involving more than 1,500 volunteers in restoration areas along the Rio Hardy and the Colorado River. These impressive results have inspired numerous schools and community groups to participate actively.

Inspired Community Involvement - The Institute's outreach efforts have reached more than 4,000 people, 25% of whom directly participated in restoration actions, including our Adopt-The-River Program. The Institute has also organized a brigade of volunteers, school groups and scientists from the United States, Canada and Mexico who have donated hundreds of hours to help with restoration plans, recreation site designs, tree plantings, and clean up.



"The Sonoran Institute puts theory into practice by implementing on-the-ground restoration in the Delta."

- Eduardo Peters, National Institute of Ecology-SEMARNAT, Mexico

Mexico's First Water Trust - Fideicomiso del Agua

In collaboration with Pronatura, the Sonoran Institute has established Mexico's first water trust, Fideicomiso del Agua, to secure water for Delta restoration. The Trust has been in operation for two years and thanks to support from our partners, it has moved from having 1,500 acre-feet (af) of water in 2008 to 3,000 af today. Efforts are underway to secure the rights in perpetuity to thousands of additional acre-feet for restoration purposes.

Challenges and Opportunities

Leadership and Vision Required

The Sonoran Institute and other partners developed guidelines and recommendations for conservation and restoration in the Delta, publishing the Conservation Priorities for the Colorado River Delta report in 2005. The U.S. and Mexican governments, through an international working group, adopted the report in 2006 as the official "game plan" for protecting the Delta.

Increased Water Flows - The riparian areas in the Delta and the wildlife that depends on them have been greatly stressed due to the lack of water. Any successful restoration plan for the Delta will require a minimum base flow of fresh water and periodic pulse flows to mimic spring flooding. The window of opportunity to acquire water for environmental purposes will close if we don't act soon as water supplies are likely to get much tighter because of climate change and growing demand from urban areas in the southwestern U.S.

Managing Invasive Vegetation - Invasive salt cedar, a salt-tolerant shrub brought over from Asia in the 19th century, has prospered along the river corridor in the Delta, while vegetation cover of native willow, cottonwood, and mesquite trees has been greatly reduced. Pilot restoration efforts are underway on demonstration sites along the Colorado River mainstem and its primary tributary, the Rio Hardy. These successful efforts can now be scaled up in order to create ecologically functional areas along the corridor by increasing coverage of a native tree forest.

Community Involvement and Ownership - Restoring priority areas in the Colorado River Delta will not only improve habitat for birds, fish, and other wildlife, it will also improve the quality of life in nearby communities by creating recreation areas and providing cleaner water and additional economic opportunities in terms of ecotourism, hunting and fishing. Inspired by these possibilities, community groups, schools and land owners in the region have initiated restoration efforts of their own, including building two check dams on the Rio Hardy to increase water retention while still allowing connectivity with downstream areas.

International Political Support - A key component of our work in the Delta is to help promote positive, collaborative relationships between government agencies in the U.S. and Mexico responsible for water management and the environment. Political support on both sides is key to any water policy agreement and to securing additional funds for restoration.



before

after



The Path Ahead

The Sonoran Institute intends to build on its successes and is prepared to implement large-scale restoration activities to protect the Delta's priority conservation areas. The ultimate restoration goal is to develop an 80,000-acre functional riparian corridor from Morelos Dam on the border with the United States to the Río Hardy. To accomplish this, we will work closely with our partners, AEURHYC and Pronatura in Mexico, to scale-up our community-based restoration efforts along both the Colorado River and the Río Hardy.

In the last two years, the Sonoran Institute and its partners have been developing a restoration strategy for the Colorado River Delta estuary. This strategy seeks to reconnect the river with the ocean to enhance spawning and nursery habitat for marine species, including curvina fish, native shrimp and the endangered Totoaba fish. This plan is vital for the survival of two important commercial fisheries in the Upper Gulf of California.

In the next few years, this effort by the Sonoran Institute and its partners seeks to:

- remove physical barriers to facilitate passage of marine species to upstream areas
- restore upstream areas as nursery and spawning sites for target species
- monitor and evaluate ecological benefits and develop a strategy for scaling up restoration efforts

A key to the success of our strategy in the Delta is the acquisition of water for environmental purposes. Pronatura and the Institute and other partners are working to secure 50,000 acre-feet for instream flows and 260,000 acre-feet for pulse flows every four years. These amounts will likely come from water acquisitions through the Water Trust, partnerships with the agricultural sector in the Mexicali Valley, and with the U.S. and Mexican governments.

The Institute's partnerships with local, state, federal and bi-national agencies create common ground for the necessary reform of land and water policies, ensuring that conservation results are long-lasting. Also, no restoration strategy will be successful in the long run if it ignores the relationship between nature and culture. The Institute will continue to work with the Cucapá indigenous community in Mexico to promote its cultural recognition and access to natural resources.

A final component of our restoration strategy is the link between healthy habitat for key bird and fish species and the local economic development. Planting native trees and creating safe and inspiring recreational and ecotourism sites for the region's more than 1 million inhabitants is also important to our success.

Why Your Support Is Important

The next decade offers the opportunity to greatly expand on current achievements and to realize the ambitious vision of a renewed Delta with healthy ecosystems and vibrant communities.

We are grateful to our generous partners, funders, and friends who have enabled us to help restore and support this important ecological area. A full listing can be found on our website at www.sonoraninstitute.org.

Please join us in our efforts to restore this ecological treasure.

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