Where the River Once Met the Sea

The Colorado River, the greatest desert river in the Western Hemisphere, 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 habitat and freshwater and tidal wetlands, supporting diverse populations of plant, bird and marine life, as well as human communities that called the delta region home.

A Resource Worth Saving

The Colorado River once formed a lush delta teeming with birds and aquatic species as it flowed into the Gulf of California. Historically, it covered more than 3,000 square miles of freshwater, tidal, and brackish wetlands. Due to dams and diversions, the Colorado River Delta is now a remnant of its former self, and the mighty Colorado no longer reaches the sea. But we believe the Delta is a vital resource that must be saved.

The Delta is a globally recognized wetland and a key stopover along the Pacific Flyway, a major north-south route for migratory birds. Hundreds of thousands of birds spend the winter in the Delta, and more than 380 bird species depend on the Delta’s wetlands. The Delta feeds the Gulf of California, one of the most productive marine ecosystems in the world.

Mexico has stated that restoring the Delta is national conservation priority. As a transboundary river with cross-border environmental implications, any basin-wide agreement must address Delta restoration. Minute 323, the nine-year US-Mexico agreement signed in 2017, supports expanding Delta restoration and ensures a more secure water future for Colorado River water users through drought and surplus sharing. We played a key role in the agreement negotiations by providing scientific information and local knowledge as a Mexico-based stakeholder.

Reviving the Delta demonstrates the feasibility of large-scale restoration in response to climate impacts on ecosystems. It provides a blueprint for resuscitating shared water resources and a model that may be replicated in other similarly stressed binational watersheds.
A Track-Record of Success

For over 20 years, Sonoran Institute and partners have been working in the Colorado River Delta to renew, restore, and reconnect its diverse ecosystems for the benefit of wildlife and people. We know that it is not feasible to restore the entire Delta. But after years of study and as a result of the progress we have already made, we developed a long-term goal to restore and protect 30,000 acres of habitat.

Today, through our collective efforts, over 1,200 acres of restored riparian habitat now supports increased bird abundance and diversity; over 160,000 acre-feet (52.1 billion gallons) of water were delivered to the Delta in the past five years; the river and the sea were reconnected for more than half of the year and, nearly 18,000 people have reconnected to their environment through outreach and education activities.

The challenge we face now is scaling up our efforts. Fortunately, we have received a tremendous vote of confidence from water users across the Colorado River Basin with the signing of Minute 323. With this new agreement, Sonoran Institute and partners have set ambitious goals for the 9-year term to triple the amount of restored habitat in the Colorado River Delta, bringing us closer to our long-term goal. Minute 323 represents a time-sensitive opportunity to leverage funds raised for restoration with the financial and water resources committed by the US and Mexico to expand restoration along the riparian corridor as well as the estuary and surrounding wetlands. Therefore, so too must our efforts triple, as Sonoran Institute will expand its leadership role in reviving the Delta.
Ambitious Five-Year Goals

Riparian Restoration—We are creating a network of riparian restoration sites along the main channel that will sustain biodiversity and facilitate connectivity of river flows to the estuary. By the end of 2018, Sonoran Institute and our partners will have restored a total of 1,100 acres of riparian habitat, 700 of which were restored by Sonoran Institute. Over the next five years, we will collectively restore an additional 1,300 acres of riparian habitat, with Sonoran Institute contributing 433 acres of new habitat.

Estuarine Restoration—Lack of flows and increased sedimentation have contributed to the loss of connectivity between the river and its estuary. Sonoran Institute is re-establishing hydrological connectivity, having dredged 10.4 kilometers of the river-tidal channel, resulting in 172 days of freshwater-seawater connectivity in 2018, up from just 12 days in 2012. In the next five years, we will dredge an additional 20.4 kilometers of channel with the goal of connecting the river and sea for an average 220 days a year. Our efforts will result in improved tidal-freshwater exchange, improved water quality, increased habitat for water birds, and more spawning and nursing habitat for marine species, which could result in benefits to local fishermen.

Community Outreach—More than one million people live in the Colorado River Delta. Sonoran Institute and our partners ensure that communities have a strong role in, and benefit from, restoration. To date, we have engaged nearly 18,000 people through volunteer opportunities, environmental education, and direct employment.

Five years from now, we will have engaged an additional 50,000 people, providing local school children and families, as well as volunteers from around the world, with a chance to reconnect with the Delta. Additionally, we will assess community development opportunities around tourism and visitation and complete a state-level management plan to establish a community nature park.

“They’ve accomplished things in the Delta that I would never have thought could be accomplished.”

Steve Nelson
U.S. Bureau of Land Management and U.S. Forest Service (Retired)
Timeline of Delta Restoration in the Past, Present & Future

Key species that returned to the Delta between 2013-17:
- Beaver
- Clapper rail
- Palmer's salt grass
- Bottlenose dolphin
- Caspian tern

105,000 acre-feet of water was delivered to the Delta during the 2014 pulse flow, which reconnected the river to the sea and local communities to the river.
Measuring Success

To date, we have focused on demonstrating the feasibility of restoration with clear goals measuring our progress primarily around acres restored and water delivered. Assessing the longer-term value of our work depends on measuring its ecological and social impact. Over the past five years, with the help of scientists in the US and Mexico, we have been developing and testing monitoring protocols to track improvements in vegetation cover, bird diversity and abundance, and hydrological conditions. We also are developing a set of indicators to measure social and economic benefits.

Over the next five years, we will institute a comprehensive monitoring program to track all of these indicators. With the help of scientists from both countries, we will continue to assess the impact of our work, systematically review our progress, and make necessary adjustments. Five years from now, we will conduct a significant assessment of our work in order to inform new restoration and water delivery goals for the remainder of the Minute.

Your continued support is critical to achieving our goals.

A Model for Collaborative Water Management

Our work extends along the main channel of the river, from the US-Mexico border to the upper estuary of the Gulf of California, and includes a key tributary (Rio Hardy).

The impact of our work extends far beyond the Delta, affecting overall water security for those who rely on Colorado River water. Additionally, our work has implications for other shared river basins and watersheds across the globe. As water scarcity becomes a global issue, countries will have to learn how to share limited water resources and do so in a way that meets the needs of communities and the environment. There are important lessons learned in the process by which the US-Mexico agreements were reached, and its key components, that may guide these efforts.
Support the Sonoran Institute

Your support preserves the environment for future generations and makes a lasting impact in communities across North America. Learn more about how you can help at SonoranInstitute.org/donate.

The Mission of the Sonoran Institute

The Sonoran Institute’s mission is to connect people and communities with the natural resources that nourish and sustain them. We work at the nexus of commerce, community, and conservation to help people in the North American West build the communities they want to live in while preserving the values which brought them here. We envision a West where civil dialogue and collaboration are hallmarks of decision making, where people and wildlife live in harmony, and where clean water, air, and energy are assured.

Connect With Us

Go to SonoranInstitute.org to learn about our programs, history and recent news.

Or find us on Social Media:

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Please consider making a contribution in support of the Colorado River Delta!

Investing in the Future

Your continued support is critical to achieving our goals. Over the next five years, we will need to raise $7.8 million to continue to scale up our restoration efforts. This includes:

- $5.3 million to restore new areas along the river and maintain existing sites
- $1.2 million to restore estuarine habitat and connect the river to the sea.
- $570,000 to deliver water critical to restoring the river and estuary
- $745,000 to expand our environmental education and community outreach programs

Shaping the Future of the West