

20 YEARS | ECOSYSTEM RESTORATION

For more than two decades, Pima County has been restoring riparian ecosystems that have been depleted by groundwater pumping and floodplain development.

Only a century ago, the Santa Cruz River flowed year-round at San Xavier del Bac and near downtown Tucson. Rillito and portions of Tanque Verde Creek, Sabino Creek, and even Pantano Wash were also perennial at that time. High water tables along parts of the Santa Cruz

River, Tanque Verde Creek, and Agua Caliente Wash supported extensive forests of mesquite, cottonwood, and willow.

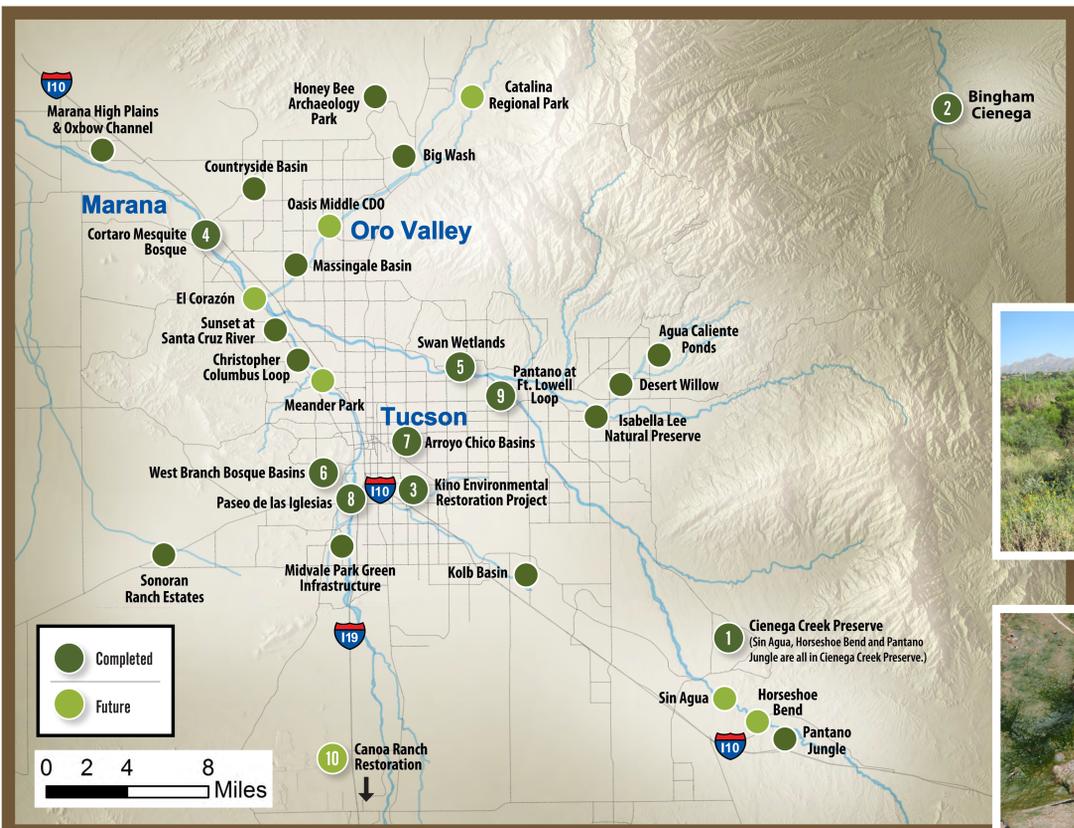
Stream flow disappearance and habitat loss significantly altered the biologically rich and diverse riparian corridors of eastern Pima County.

Pima County Regional Flood Control District (District) has been working to re-establish our watercourses as gathering places for people and wildlife by acquiring floodprone land to

prevent future development and by restoring ecosystem functions for local wildlife species. Restoration efforts also include retirement of wells, use of various renewable water sources and construction of water-harvesting infrastructure.

The development of The Loop and the Pima County Trail System provide access to restored habitat and has created important community use areas along the major washes.

Ecosystem Restoration Projects	Completed
Cienega Creek Preserve – Pantano Jungle P1	1997
Bingham Cienega Restoration	2001
Kino Environmental Restoration Project (KERP)	2002
Marana High Plains	2003
Cortaro Mesquite Bosque	2005
Swan Wetlands	2006
Massingale Basin	2006
Countryside Basin	2006
Cienega Creek Preserve – Horseshoe Bend	2007
Big Wash	2008
Kolb Basin	2012
Bosque Basins West Branch	2013
Arroyo Chico Basins	2013
Cienega Creek Preserve – Pantano Jungle P2	2014
Paseo de las Iglesias	2015
Sonoran Ranch Estates Mitigation	2016
Honey Bee Village Archeological Preserve	2017
Isabella Lee Preserve Restoration	2017
Midvale Park Loop	2017
Christopher Columbus Loop	2017
Swan Wetlands – Sparrow Patch	2017
Agua Caliente Ponds	2017
Sunset at Loop	2017
Desert Willow	2018
Pantano at Fort Lowell Loop	2018
Canoa Ranch Pond	2018



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Swan Wetlands & Sparrow Patch

In partnership with the District, the U.S. Army Corps of Engineers modified an existing flood control project to restore habitat for native wildlife in this 60-acre project. Mesquite bosque and open woodland vegetation communities were established, and the original flood control functionality was preserved. The project is sustained by creation of longer, meandering flow paths and water harvesting basins. Reclaimed water irrigation supports shade trees and wildlife habitat adjacent to The Loop. The District collaborated with Tucson Audubon in 2016 and 2017 on the addition of the Sparrow Patch, which was associated with a Rillito River flood safety project.



6

Bosque Basins at West Branch

The West Branch of the Santa Cruz River retains the best representation of historic plant and animal diversity along the Santa Cruz River in Tucson. The property was purchased as mitigation for soil-cement bank stabilization and must remain in a natural state. Over-bank flows and water-harvesting earthworks are helping to revegetate former farm fields, and support ephemeral (temporary) breeding pools for a wide diversity of native toads.



7

Arroyo Chico Basins

In partnership with the District, the U.S. Army Corps of Engineers constructed a multi-phase flood control, environmental restoration and recreation project called the Tucson Drainage Area/Arroyo Chico Multi-Use Project. Phase 2B of this project included the Park Avenue Arroyo Chico Basins, which provides environmental restoration, preservation of acceptable existing native habitats, and recreational improvements for the neighboring communities. The project supports ephemeral toad breeding ponds plus abundant grass and woodland vegetation. During a 100-year flood, storage within the basins now reduces the flood peak to a level that is nearly contained in the underground concrete box culverts, removing over a 1,000 properties in downtown and the 4th Avenue area from flood risks.



8

Paseo de las Iglesias

"The path between the churches" traditionally refers to the area between Tucson's historic Mission San Agustin site and Mission San Xavier. The Paseo de las Iglesias project is a multi-purpose flood control, ecosystem restoration and river park trail project funded through the 2004 bond election. It runs along both sides of the Santa Cruz River from Silverlake Road to Ajo Way. The project connected a 1.5-mile gap in the Loop, including connection from the Santa Cruz River to South Tucson and the Julian Wash Greenway. Soil-cement bank protection was limited to where necessary for erosion protection. Ecosystem restoration efforts included installation of large water harvesting basins and enhancements to Mesquite Circle Pond, which supports breeding of six different native toad species. The District planted more than 10,000 trees, shrubs and cacti for this large project.



9

Pantano at Fort Lowell Loop

The Pantano at Fort Lowell restoration project is the mitigation element of the larger Pantano Wash Bank Protection project between Ft. Lowell Park and Tanque Verde Road. Restoration features include extensive preservation of existing biological resources, selective invasive species management, water harvesting earthworks, and enhancement of open woodland vegetation communities.



10

Canoa Ranch Pond

Many areas along the Santa Cruz River at the historic Canoa Ranch were denuded of vegetation by past agricultural and ranching activities. Pima County is investigating measures to improve habitat for native riparian plants and animals and reduce potential erosion damage. Removal of livestock grazing allowed growth of more vegetation in the channel and overbanks. The District is rehabilitating a portion of the ranch pond; this pond will be used for irrigation supply for both the park operation, as well as a future ecosystem restoration project on the post-agricultural fields. (This site is south of this base map's extension.)



1

Cienega Creek Natural Preserve

Nearly 4,000 acres along a 12-mile reach of Cienega Creek were acquired to preserve one of the region's last remaining perennial streams. Establishment of the Preserve in 1986 marked Pima County's first major set of acquisitions to preserve riparian habitats. In response to eliminating grazing and off-road vehicle activity, the density of cottonwoods, willows and other trees and shrubs along the stream increased. The Pantano Jungle project, located in the Preserve, restored woodland habitat on retired pastureland. In addition to restoring native plant species diversity, volunteers installed check dams to reduce erosion; the Arizona Game and Fish Department U.S. and Fish and Wildlife funded the project. The Horseshoe Bend project addressed headcutting erosion that was dewatering of the floodplain.



2

Bingham Cienega Natural Preserve

In 1989, Pima County acquired lands along the San Pedro River to preserve a natural spring-fed marsh known as Bingham Cienega. Volunteers fenced off livestock, and the cienega marsh spread. The District installed a small check dam that successfully arrested erosion, and installed fencing to preclude grazing around the cienega. The District received grant funds to restore 50-acres of former farm fields to a mixed sacaton grassland and mesquite woodland to support local wildlife.



3

Kino Environmental Restoration Project

In cooperation with Pima County, the U.S. Army Corps of Engineers reconstructed and expanded the original 50-acre Ajo Detention Basin. "KERP" now covers 121 acres with a 50-foot deep, 5.6-acre stormwater harvesting pond; 21 acres of grassland, mesquite bosque, marsh and upland vegetation; and 92 acres that include flood control structures and a 2.2-mile multi-use path around the basin that has since been integrated in to the Loop. An extensive pumping and valve system circulates stormwater within the basin. Harvested stormwater is also used to irrigate turf at the Kino Sports Complex and landscaping at the Herbert Abrams Public Health Center, Public Defender, Juvenile Court and Adult Probation buildings, and in the medians along Ajo Way and Country Club Road.



4

Cortaro Mesquite Bosque

The Cortaro Mesquite Bosque established 80 acres of riparian vegetation on the Lower Santa Cruz River floodplain. This project was partially funded by the Arizona Water Protection Fund. Mesquite woodlands, cottonwood and willow, and a subsurface marsh were planted. The primary source of irrigation water is reclaimed water, supplemented by stormwater harvesting.