



ARIZONA

Introduction and General Description

Arizona is defined by its diverse climate and geography. Annual precipitation ranges from less than 5 inches to 30 inches a year and elevations extend from 70 feet above sea level along the Colorado River to 12,633 feet on its highest peak. This variation creates the biological diversity found in habitats that range from alpine tundra to Sonoran and other desert types.

Stream systems connect these ecosystems, and lands along streams and springs were often the first settled and patented as private lands.

The Partners Program works to create alliances with willing landowners to improve these habitats. The Partners Program also strives to work with the seven National Wildlife Refuges in Arizona developing projects on private lands that also benefit Refuge objectives. The Partners for Fish and Wildlife program has been helping private landowners in Arizona since 1992 to improve habitats in this ecologically rich State.

Arizona Activities

- T Fencing sensitive areas
- T Revegetating with native plants
- T Restoring habitat for threatened and endangered



Planting native species at Pantano Jungle near Tucson.
Photo: Julia Fonseca

- species
- T Educating the public
- T Closing unauthorized roads
- T Creating wetlands
- T Controlling invasive species

Habitats of Special Concern

A major focus of the Partners Program is riparian and wetland habitats. In the arid West, these relatively moist, lush habitats are among the most valuable plant and animal areas with an estimated 90 percent of desert wildlife relying on riparian areas for at least some part of their life cycles. Riparian corridors have been described as the “lifeblood” of the region, forming vital linkages between streams and their surrounding uplands. Federally threatened and endangered species are another major focus of the Partners Program. Arizona habitats support 59 federally listed

species, placing the State as 10th in the nation for listed species. This high number of federally listed species provides many project opportunities.

Threats

Habitats in Arizona face many of the threats of those across the nation such as fragmentation and destruction, invasion of exotic species, overgrazing, recreational impacts, and others. However, Arizona with its dry climate, has a special need to protect riparian and wetland habitats which face threats from competition for scarce water resources. Many of the State’s federally threatened and endangered species are found in these areas including all of its native fish. A major threat to riparian and wetland areas in Arizona is over use by livestock. Additionally, these habitats are threatened by heavy recreational use such as off-road vehicles. Non-native invasive plants and animals constitute a major and growing threat to the State’s wildlife.

Conservation Strategies

Stream, Riparian & Wetland Habitat

Fencing is an important and effective way to protect stream, riparian and wetland habitats, especially in an “open range” State like Arizona, where landowners must fence cattle off their lands.

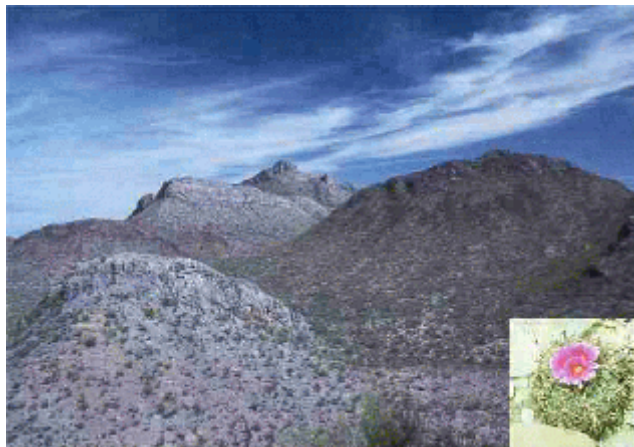
With rest from heavy grazing or recreational use, habitats reestablish rapidly. Fencing costs \$5,000-\$10,000 per mile depending on terrain and accessibility. Revegetation of riparian habitats is sometimes necessary if the habitat has been cleared or severely damaged. For example, abandoned agricultural fields were often former riparian areas which can be restored. Restoration of the native vegetation can be accomplished by planting bare poles (cuttings) for species such as cottonwoods or willows, using containerized plants, or seeding.



Gila topminnow, a federally endangered species.

These restored areas provide high quality habitat for wildlife as well as improved water quality and infiltration to the aquifer, and reduce erosion. The Partners Program helped fence Cottonwood Spring, a 20-acre spring-fed riparian system in southern Arizona which is home to many species, including three threatened and endangered species.

Partners is also helping the Hualapai Tribe to establish their own native tree nursery on Tribal land to restore riparian habitats, including those found along the Colorado River in the Grand Canyon. Revegetation can run from \$100-\$6,000 per acre depending on the site.



Waterman Mountains on the Tohono O'odham Reservation where the Nichol's Turk's head cactus (inset) is found. Photo: Robert Schmalzel

Cactus

The Partners Program helped the Tohono O'odham Tribe in southern Arizona protect the endangered Nichol's Turk's head cactus. This species is found in only three places in the nation, two of these locations are on the Tribe's lands.

The Tribe built fences around the two patches of these cacti to keep native desert bighorn sheep and javelina from eating them.

School Projects

The Douglas High School science class received funding from the Partners Program to build refugia on the campuses of four schools in



Douglas High School student building a frog refugium.

Photo: Hans Bodenhamer

their District for the Chiricahua leopard frog, a Federal proposed threatened species.

Fisheries

The Partners Program also funded the construction of a fish barrier on Aravaipa Creek to keep non-native fish out of stream segments where federally threatened and endangered native fish are found.

Invasive Species

Invasive species are a serious problem which continues to expand. A major invasive plant in Arizona is saltcedar which invades riparian habitats, crowding out native cottonwood and willows. The Partners Program worked with the Imperial National Wildlife Refuge and a private landowner to remove saltcedar from 5 acres of land adjacent to the refuge and revegetate the area with native trees.

Another invasive species, the green sunfish, is native to the Mississippi River basin, but not the waters of Arizona.

The Partners Program is working with The Nature Conservancy to remove the invasive green sunfish from O'Donnell Creek, a stream in southern Arizona which is home to the Gila chub, a Federal candidate species.

The Arizona State Land Department and the Partners Program have joined forces near Flagstaff to control two recent invaders, the Scotch thistle and yellow starthistle.

The control of invasive species varies greatly depending on the invasive species and situation. Costs can range from \$100 to \$5,000 per acre or greater.

Partners

U.S. Forest Service
Natural Resource Conservation Service
National Parks Service
Arizona Game and Fish Department
Arizona State Land Department
Arizona Department of Transportation
Colorado River Indian Tribes
Navajo Tribe
San Carlos Apache Tribe
White Mountain Apache Tribe
Hualapai Tribe
Tohono O'odham Tribe
Hopi Tribe
Zuni Tribe
The City of Nogales
Pima County Flood Control District
Douglas High School District
The City of Prescott
The Nature Conservancy
YMCA
Friends of the Santa Cruz River
The Tucson Audubon Society
Prescott Creek Preservation Association
Sonoran Rincon Institute
Desert Foothill Land Trust
Cosanti Foundation
The Arboretum at Flagstaff
The National Audubon Soc. Research Ranch

Accomplishments

T 112 miles of riparian habitat have been restored or enhanced.

T 10,807 total acres of habitat have been restored or enhanced.

T Worked with 8 of the 20 Native American Tribes in Arizona.

T Implemented projects targeted directly to benefit 18 of the State's 59 federally threatened and endangered species.

T The Partners Program has worked with over 30 partners including Federal and State agencies, local governments, and private individuals.



Cottonwood Spring before Partners livestock fencing project.



Cottonwood Spring after fence construction.

Future Needs

T Restore habitat on an estimated 100,000 acres of retired agricultural lands in the State.

T Assist private landowners to restore habitat for 59 federally threatened and endangered species in the State.

T Restore springs and seeps in the State.

T Control invasive species, noxious weeds and aquatic plants on 3,000 miles of stream corridor and over 2 million acres of land.

T Restore 17,500 miles of perennial, intermittent, and ephemeral streams in Arizona, especially riparian habitat occurring below 4,500 feet elevation.

T Assist schools to restore riparian habitats, using reclaimed water, for use as outdoor classrooms.

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