

Mimbres River Spring Restoration * April 19-25, 2015 * Mimbres, New Mexico

Report prepared by Martha Cooper * The Nature Conservancy



The goal of this project was to benefit the recovery of Chihuahua chub and Chiricahua leopard frog, both Federally listed as threatened species. The objective was to restore and enhance wetland, riparian and upland habitat on The Nature Conservancy's Upper Mimbres River Preserve by removing sediments from the springs and invasive plants from the uplands. This project directly benefited the public by assisting the U.S. Fish & Wildlife Service (FWS) in recovery efforts of the frog and chub by maintaining and enhancing their populations.

Threats to the frog and chub are similar: predation by non-native organisms; fungal diseases; drought; floods; degradation and loss of habitat as a result of water diversions and groundwater pumping; livestock management that degrades frog and fish habitats; high intensity wildfire resulting from a long history of fire suppression; mining; development and other human activities; disruption of metapopulation dynamics; increased chance of extirpation or extinction resulting from small numbers of populations and individuals existing in dynamic environments; environmental contamination; and climate change. Similarly, recovery efforts for both species include habitat restoration and protection, species translocations, and monitoring throughout the species' range with the goal of both expanding existing populations and re-establishing those that have become locally extinct.

To maintain the diversity of aquatic habitats and endemic biota, management of small desert springs must include substantial disturbance (Kodric- Brown and Brown 2007). Since 1994 Moreno and Dead Otter Springs have experienced an increase in riparian vegetation and a reduction in open water which could lead to a decline or even possible extinction of the chub and frog populations on the preserve. The Archuleta/Moreno Spring is slowly filling-in with organic debris and fewer chubs inhabit it than were found during inventories as recently as 10 years ago (NMDGF, 1996). Essentially no open-water habitat pools occurred on the Conservancy's portion of Moreno Springs.



First pool that was created on site, before photo on left, after photo on right. Water is now clear.

With the completion of this project, the Conservancy and partners (see attached) designed and implemented habitat improvements on the Preserve that benefit the frog and chub. A trackhoe excavator removed silt and debris from Moreno Springs, creating 14 open-water pools (3 large, 9 medium, 2 small) and 2 small shallow pools and one lined pool at Dead Otter Spring. At Moreno Springs, the track-hoe removed some mature willows and deepened pools to a depth of 2-4 feet. Silt and debris material was spread in fields adjacent to the spring. Bare soil adjacent to the pools will be seeded and mulched prior to monsoon season. Monitoring of the site is planned.

A hands-on restoration workshop taught participants (16) how to use practical, low cost techniques to restore wetlands for rare species of wildlife. Attendees learned how to select locations for building wetlands, test for ground water and soil texture, choose appropriate construction techniques, work with heavy equipment operators, and establish native plants. People were inspired by the project, excited to see frogs and chubs, and appreciated the peer-learning opportunity as well.

The project was a success because of the significant contributions made by numerous partners prior to and during implementation. Tom Biebighauser's design and oversight of this project was critical; he worked closely and effectively with the equipment operator and the workshop he taught inspired conservation partners in New Mexico to create or restore wetlands.



PARTNERS

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