Desert Fish Habitat Partnership
2012 Annual Report

Bringing together people and organizations with a common interest in voluntary conservation of desert fishes and their habitats.

The Desert Fish Habitat Partnership (DFHP) was initiated in 2005 to conserve native desert fish by protecting, restoring, and enhancing their habitats in cooperation with state and tribal fish and wildlife agencies, federal resource agencies, research and private organizations, and engaged individuals. DFHP seeks to address critical fish and aquatic habitat conservation needs in the Great Basin and Mohave, Sonoran, and Chihuahuan deserts in southwestern United States. These lands support 179 non-salmonid native fish taxa prioritized for conservation by DFHP under the guidance of the western states' State Wildlife Action Plans and the National Fish Habitat Partnership (NFHP).

Milestones

- April 2012: "Waters to Watch"- Alamito Creek Restoration Project and Weber River Watershed Improvement Project
- November 2012: Steering Committee Meeting, Las Vegas, NV and via teleconference
- December 2012: NFHP 2013 Projects Proposed for Funding: Benton Pond Speckled Dace Habitat Restoration Project, Amargosa Canyon Salt Cedar Removal and Native Habitat Restoration Project, Rillito Spring Project, Phantom Lake Springs Ciénega Habitat Rehabilitation Project

Framework for Strategic Conservation of Desert Fish: Achievements and Goals

DFHP's Framework is used to guide daily and long-term activities. From the Framework, the principal goals of DFHP are:

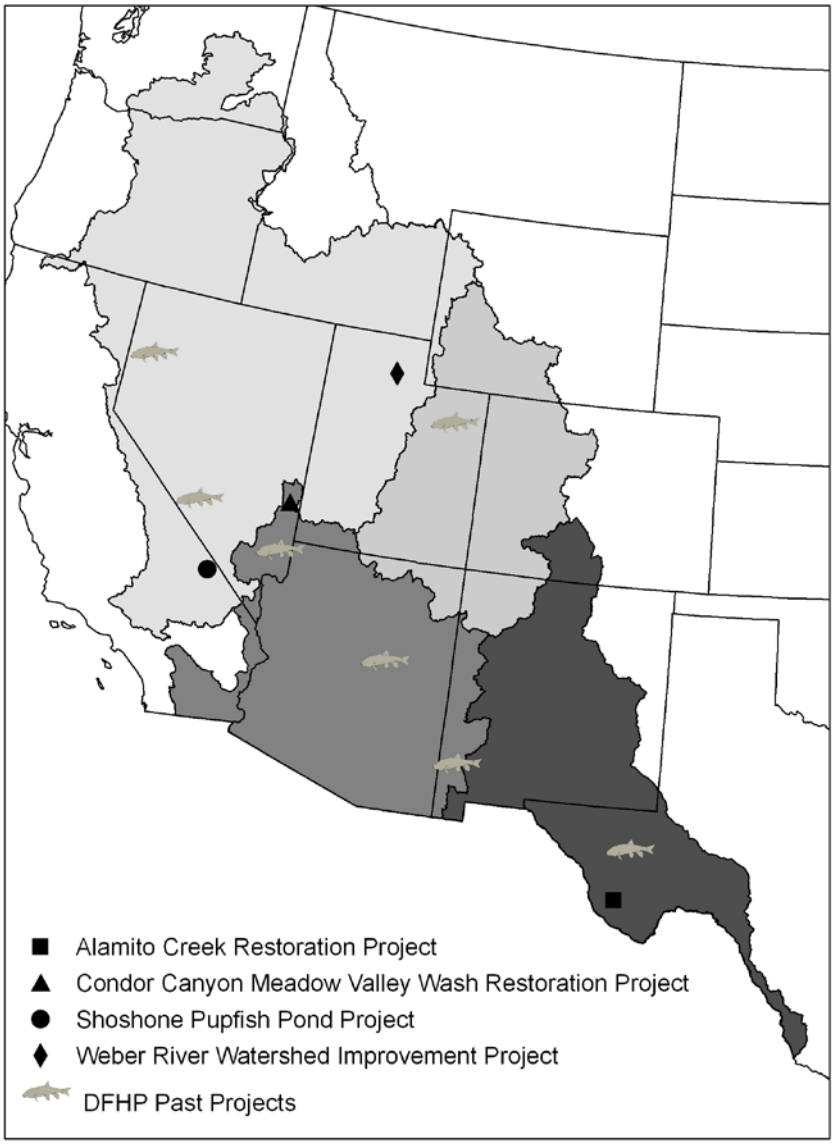
- Protect and maintain intact healthy aquatic ecosystems supporting desert fish habitats
- Prevent further degradation of desert fish habitats that have been impaired
- Reverse declines in the quality and quantity of desert fish habitats to improve the overall population status of desert fishes and other aquatic organisms

- Increase the quality and quantity of fish habitats that support a broad natural diversity of desert fishes and other native aquatic species

To accomplish these goals, DFHP supports on-the-ground projects that protect the most under-served, imperiled desert fish species and conserve and restore their habitats. DFHP's first projects were implemented in 2012 with funding from NFHP and USFWS. DFHP selected projects that focused on species and habitats that were (1) unique to the deserts of North America; (2) highly imperiled; and (3) that lacked adequate management and resources to ensure effective conservation. Fishes were ranked from 0.9 to 2.8, with highest priority species receiving scores greater than 2.0.

DFHP Projects for 2012

Projects funded in 2012 were:



Map of Desert Fish Habitat Partnership 2012 projects.

Shoshone Pupfish Pond Construction, CA. Fish Species Addressed (Rank): Shoshone pupfish (*Cyprinodon nevadensis shoshone*) (2.67). Total Project Cost: $30,000. Shoshone Spring and wetlands have been owned by one family for over 50 years. Endemic Shoshone pupfish were considered extinct by 1969, but were rediscovered in a ditch near the springs in 1986. A pond built for these fish now hosts 500 to1500 of their descendants, believed the last of their kind. This project will construct two additional habitats; one secluded in a mesquite bosque and one in a landscaped tourist area, and will ensure persistence of Shoshone pupfish in their native range and educate the public about their importance. The area has been cleared where the ponds will be placed and construction began in the fall 2012. The implementing agency is the Shoshone Development Corporation; partnering agencies are California Department of Fish and Game and the U.S. Fish and Wildlife Service.

Shoshone Pupfish Refugium

Shoshone habitat prior to construction.

Condor Canyon Meadow Valley Wash Restoration, NV. Fish Species Addressed (Rank): Big Spring spinedace (*Lepidomeda mollispinis pratensis*) (1.89), Meadow Valley Wash speckled dace (*Rhinichthys osculus ssp.*) (2.11), and Meadow Valley Wash desert sucker (*Catostomus clarkii ssp.*) (2.22). Total Project Cost: $100,000. The known range of Big Spring spinedace, a threatened species, lies within an 8-kilometer section of Meadow Valley Wash (MVW), mostly within Condor Canyon, Nevada. Construction of a railroad grade in the late 1800's resulted in widespread channelization and stream instability within Condor Canyon. Cattails have expanded throughout the canyon, choking the channel and trapping sediments. These alterations to the aquatic ecosystem have adversely affected Big Spring spinedace. The U.S. Bureau of Land Management will reconstruct sections of the stream channel to a more stable form, reconnect an isolated spring disconnected by the railroad grade, remove invasive cattail, and plant native riparian vegetation. Restoration of hydrologic function to these areas and enhancement of native riparian vegetation will restore habitat for Big Spring spinedace, as well as MVW speckled dace and MVW desert sucker. Restored areas will also provide habitat for birds and other wildlife that frequent the canyon. The first phase of dirt work has been completed for this project and floodplain and channel restoration are progressing well. Fire crews started cutting and planting willows in October 2012

and an educational kiosk is being designed. The implementing agency is the U.S. Bureau of Land Management; partnering agencies are Nevada Department of Wildlife, U.S. Fish and Wildlife Service, and the U.S. Forest Service.

Lower Condor Canyon restoration site channel restoration.

Perched spring that was reconnected to the main channel in upper Condor Canyon.

Alamito Creek Restoration, TX. Fish Species Addressed (Rank): Conchos pupfish (*Cyprinodon eximius*) (2.56), Chihuahuan shiner (*Notropis chihuahua*) (2.56), Mexican stoneroller (*Campostoma ornatum*) (2.33), Roundnose minnow (*Dionda episcopa*) (1.56), and Mexican tetra (*Astyanax mexicanus*) (1.67). Total Project Cost: $118,000. The Alamito Creek Preserve Team seeks to restore the grassland in Alamito Creek watershed by removing approximately 200 acres of mesquite and other non-natives and reseeding with native grasses. Invasive vegetation is thought to be lowering the water table and reducing creek flows. The Preserve hopes to showcase a healthy West Texas stream environment and inspire other protection and restoration efforts by encouraging the public, adjoining landowners, and regional decision-makers to participate in a watershed cooperative with conservation as its goal. In August 2012, Texas Fish and Wildlife Conservation Office (TXFWCO) and its partners conducted a site visit to set up permanent monitoring stations to track changes in ground water levels. Six shallow water wells were installed above, within, and below the mesquite removal area to quantify effects of the removal. Isolated perennial pools were sampled for aquatic invertebrates and fish. Although no fish were found within the study area, fish populations in the creek downstream have historically repopulated this section of Alamito Creek during large storm and runoff events. After TXFWCO purchases shears for a track-hoe needed for the work, the Team will move forward with this project and begin mesquite removal. The implementing organization is the Trans Pecos Water and Land Trust; partnering agencies are the U.S. Fish and Wildlife Service (Texas Fish and Wildlife Conservation Office and the Partners for Fish and Wildlife Program) and Texas Parks and Wildlife Department.

Alamito creek.

Shallow well installed.

Weber River Watershed Improvement Project, UT. Fish Species Addressed (Rank): Bluehead sucker (*Catostomus discobolus*) (1.89), Utah sucker (*Catostomus ardens*) (1.56), Colorado cutthroat (*Oncorhyncus clarkii pleuriticus*), speckled dace (*Rhinichthys osculus*) (2.11), Longnose dace (*Rhinichthys cataractae*) (1.22), Redside shiner (*Richardsonius balteatus*) (0.89). Total Project Cost: $515,000. This project combines diversion reconstruction and fish passage improvement on the lower Weber River with barrier removal and culvert modifications in two upper tributaries. Because these improvements will benefit trout as well as desert fishes, funding will be contributed by both WNTI and DFHP. An engineer provided a scope of work for designing screen brushes and a fish ladder in November 2012. Other partners include Trout Unlimited, Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service, South Weber Irrigation Company, Uintah Central Irrigation Company, and Weber Basin Water Conservancy District.

An aerial view of the Lower Weber River Diversion.

Lower Weber River Diversion.

Proposed DFHP Projects for 2013

For 2013, DFHP selected four projects (listed here) to be funded by NFHP ($90,000):

Benton Pond Speckled Dace Habitat Restoration Project, CA. Fish Species Addressed (Rank): Owens speckled dace (*Rhinichthys osculus ssp.)* (2.11). Total Project Cost: $71,800.

Owens speckled dace historically occupied springs and streams throughout the Owens Valley and Benton Valley. It is the only native fish known from Benton Valley. The extirpation of speckled dace from these habitats can be attributed to the introduction of deleterious non-native fishes and habitat alteration by impoundment and disruption of valley-floor spring discharge by groundwater pumping. The primary objective of the project is to reestablish speckled dace in a habitat that was historically occupied by the species and to manage the site to promote natural ecological processes. The project will eradicate an aggressive plant hardstem bulrush (*Schoenoplectus acutus*), which has significantly encroached on the ponds and will eventually choke out open water habitats. Hardstem bulrush will be removed on the pond through a combination of hand and mechanical cutting, and the application of prescribed fire in partnership with the California Department of Forestry and Fire Protection. The introduced fish, Sacramento perch, a predatory species, will be removed and relocated by DFG to appropriate locations in the region. Following successful vegetation management activities, and removal of the perch, speckled dace will be re-introduced to the ponds by DFG. The implementing organization is Eastern Sierra Land Trust; partnering agencies are Bill Bramlette (landowner), California Department of Fish and Game, California Department of Forestry and Fire Protection, and U.S. Fish and Wildlife Service.

Amargosa Canyon Salt Cedar Removal and Native Habitat Restoration Project, CA. Fish Species Addressed (Rank): Amargosa pupfish (*Cyprinodon nevadensis*) (2.22), Amargosa Canyon speckled dace (*Rhinichthys osculus amargosae*) (2.11). Total Project Cost: $60,000. The project would remove dense stands of non-native salt cedar along the Amargosa River from Tecopa, California downstream to the Kingston Range Wilderness Area and establish native riparian vegetation to improve habitat for Amargosa pupfish and Amargosa Canyon speckled dace. While the current native fish population is doing fairly well outside of the salt cedar area, in this stretch of the Amargosa Canyon dense salt cedar growth has been increasing in size. This salt cedar forest also bisects two segments of native vegetation where native fish numbers are significantly higher and therefore could be reducing native fish movement and ultimately affecting gene flow and population size. Crayfish and mosquitofish are also known to compete with and prey upon native fish species. The implementing agency is U.S. Bureau of Land Management; partnering agencies/organizations are Amargosa Conservancy, The Nature Conservancy, and U.S. Fish and Wildlife Service.

Rillito Spring Project, TX. Fish Species Addressed (Rank): Pecos pupfish (*Cyprinodon pecosensis*) (2.56). Total Project Cost: $43,600. Rillito Spring is a privately owned spring in West Texas, that first appeared out of the ground in 2005, and has increased in magnitude ever since. The Pecos pupfish (*Cyprinodon pecosensis*) is in danger of extirpation from the State of Texas, and is known to exist in only one mile of Salt Creek, near Orla. The pupfish faces extirpation from Texas by hybridization with the introduced sheepshead minnow (*Cyprinodon variegatus*), and loss of habitat due to surface and ground water pumping. A natural refugia is needed to help insure its survival in Texas. The spring owners have created a creek and two ciénegas, which currently support several introduced species of fish and invertebrates. The owners wish to enhance the spring system and have agreed to make the spring a refuge for the Pecos pupfish listed as threatened by the State of Texas. The steep sides of one of the ciénegas are sloughing off into the pool, and the hand shoveled creek is filling in with cattails. Some habitat creation (meanders, addition of substrate, reshaping of the ciénegas, etc.) is needed to make the habitat suitable for Pecos pupfish and Pecos gambusia. The implementing agency is Texas Fish and Wildlife Conservation Office; partnering agencies are U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department.

Phantom Lake Springs Ciénega Habitat Rehabilitation Project, TX: Phase II-backup pump. Fish Species Addressed (Rank): Comanche Springs pupfish (*Cyprinodon elegans*) (1.89), Pecos gambusia (*Gambusia nobilis*) (1.89). Total Project Cost: $3,300. Phantom Lake Springs Ciénega, located in western Texas, supports an assemblage of five aquatic species of concern: two endangered fishes, and three candidate invertebrates. Spring flow from Phantom Lake Springs has declined since the 1940's, and habitat in the spring pool has been maintained by pumps since 2001. Due to deterioration of the short-term fixes, pumps need constant adjustment to maintain water level. Short term failures in the pumps have resulted in extreme conditions, threatening the aquatic species. The project stabilized the current cave pool and rebuilt a larger, more natural ciénega. This project was funded in 2011 but additional funding was needed for a backup pump. The implementing agency is the U.S. Fish and Wildlife Service; partnering agencies are the U.S. Bureau of Reclamation and the Texas Parks and Wildlife Department.

Tools for Habitat Assessment and Conservation

DFHP worked to communicate its science needs to the U.S. Fish and Wildlife Service's Landscape Conservation Cooperatives (LCCs). The Science and Data Committee drafted letters and gave presentations to all of the LCCs that overlap geographically with DFHP. The LCCs were given background of NFHP and DFHP, and were then informed of existing science tools available to DFHP (such as the Lower Colorado River basin assessment) as well as continuing science and data needs. The main message to the LCCs was that the National Assessment conducted by NFHP was an impressive first attempt to characterize fish habitats nation-wide, but it misrepresented desert fish habitats in two key ways. First, the assessment focused solely on riverine and coastal habitats, whereas springs and ciénegas were omitted from the assessment entirely. Second, the national assessment lacked the necessary data to accurately characterize

hydrological alteration in the arid western United States. While these concerns were recognized by NFHP, they could not be adequately represented in the assessment because there are no comprehensive spatial data describing spring and ciénega habitats and hydrological alteration at a high enough resolution to inform the assessment. Thus, desert fish habitats remained inaccurately characterized in that first nation-wide assessment of fish habitats. Thus, a major need of DFHP communicated to the LCCs was that a standardized spring and ciénega habitat assessment and monitoring protocol, and comprehensive spatial database to store the assessment information, would be highly valuable to DFHP. Detailed spatial data on hydrological alteration, such as stream dewatering or changing in timing of peak runoff or low summer flows, can help inform the next National Assessment of Fish Habitats (scheduled for 2015) and also help DFHP prioritize areas where habitat and streamflow restoration projects would benefit natural hydrologic process and native fish habitat. It was communicated that together these information sources will help DFHP and our cooperative partners prioritize habitat protection, restoration, and enhancement projects to benefit desert fishes in the future and allow DFHP to more effectively meet its goals by working strategically at the landscape scale. Hopefully the LCCs can help to fill DFHP's science and data gaps.

2012 NFHP 10 "Waters to Watch"- 2 DFHP Projects Selected

The Alamito Creek restoration project is one of Desert Fish Habitat Partnership's 2012 priorities and was selected as one of NFHP's 10 "Waters to Watch" for 2012. Alamito Creek Preserve (The Preserve) is part of the Rio Grande tributary watersheds and contains a 3.5 mile section of scenic Alamito Creek that historically flowed much of the year. Perennial pools in this reach support populations of endemic fishes, amphibians and aquatic invertebrates, and a healthy riparian habitat. The Preserve and its segment of Alamito Creek are recognized by Texas Parks and Wildlife Department as meeting the criteria as an Ecologically Unique River and Stream Segment. The Preserve will restore natural, perennial creek flow by removing large areas of invasive mesquite which is the dominant upland vegetation in the watershed and is partially responsible for lowering the water table in an already arid habitat. Native grasses will be replanted to slow the rate of mesquite reinvasion and provide increased water quality via runoff catchment and erosion control.

The Weber River fish passage project is one of Desert Fish Habitat Partnership's 2012 priorities and was selected as one of NFHP's 10 "Waters to Watch" for 2012. This project is intended to protect native fishes and improve water use efficiency for water companies in the Weber River drainage, UT. It will re-connect 17.5 total river miles and allow native trout and sucker species to pass one mainstem diversion and two culvert barriers in two tributaries. Well-connected and spatially distributed spawning habitats are critical to ensure resiliency, genetic diversity and long-term persistence of Bonneville cutthroat trout populations. This project is a significant step towards reconnecting and expanding Bonneville cutthroat trout and bluehead sucker habitat.

National Fish Habitat Partnership Involvement

DFHP has been actively involved in development and implementation of NFHP related efforts. Some highlights include:

- NFHP and LCC interaction survey, March 2012
- NFHP FHP Performance Measures and Evaluation teleconference, March 2012
- NFHP 10 Waters to Watch press release participation, April 2012
- NFHP Board Meeting participation, April, July 2012
- NFHP Fish Habitat Assessment for 2015 participation, June 2012
- NFHP River Network Survey, November 2012
- NFHP Communications Committee participation, 2012
- NFHP Partnership Committee participation, 2012
- NFHP FHP bimonthly teleconferences, 2012

Outreach and Communications

One of DFHP's primary goals is to increase awareness, not only of DFHP and NFHP, but also to educate professionals and private citizens about the importance and conservation of desert fishes. DFHP outreach and communication efforts include:

1. Presentations:
   - AZ/NM Chapter of the American Fisheries Society- The Wildlife Society Joint Annual Meeting, February 2012
   - DFHP/LCC webinar, June 2012

2. Teleconferences:
   - DFHP and overlapping LCCs teleconference, June 2012
   - DFHP, WNTI, and GPFHP MSCG teleconference, November 2012

3. Informational booths at:
   - AZ/NM Chapter of the American Fisheries Society-The Wildlife Society Joint Annual Meeting, February 2012

4. Publications/Articles:
   - "Phantom Lake Springs Cienega wetter and better," Eddies, summer 2012

5. DFHP's website (hosted by the National Park Service) provides information about DFHP, the Framework, RFPs, updates, and contact information. www.nature.nps.gov/water/DFH_partnership.cfm

6. A quarterly newsletter. www.nature.nps.gov/water/DFH_partnership.cfm

7. DFHP's Facebook page was launched to reach out to the public and includes RFPs, newsletters, updates, links to partners, and photos. www.facebook.com/pages/Desert-Fish-Habitat-Partnership/193053497376208

Coordination and Administration

The Operating Structure, formally presented in the Framework in 2008, defines the roles and responsibilities of DFHP partners. The Operating Structure was updated in late 2010 to better reflect the organization and administration of the Partnership.

Steering Committee is a self-directed group of partner representatives, the decision-making body of DFHP, and has oversight responsibility for all DFHP activities.

Arizona Game and Fish Department
- Jeff Sorensen

U.S. Bureau of Land Management
- Greg Gustina

U.S. Bureau of Reclamation
- Rob Clarkson

California Department of Fish and Game
- Glenn Yoshioka

Colorado Division of Wildlife
- Harry Crockett

Desert Fishes Council
- Heidi Blasius

Idaho Department of Fish and Game
- Scott Grunder

National Park Service
- John Wullschleger

Native American Fish and Wildlife Society
- *rep not available*

Natural Resources Conservation Service
- Casey Burns

Nevada Department of Wildlife
- Jon Sjoberg

New Mexico Department of Game and Fish
- Andrew Monie

Oregon Department of Fish and Wildlife
- Paul Scheerer

Southwest Tribal Fisheries Commission
- Kevin Terry

Texas Parks and Wildlife Department
- Gary Garrett

The Nature Conservancy
- Tom Collazo

Trout Unlimited
- Dan Daulwalter

U.S. Fish and Wildlife Service
- Jennifer Fowler-Propst

U.S. Forest Service
- Cynthia Tait

U.S. Geological Survey
- Gary Scoppetone

Utah Division of Wildlife Resources
- Krissy Wilson

Wyoming Game and Fish Department
- David Zafft

Executive Committee serves as the daily governing arm of DFHP; it oversees the responsibilities of the coordinator, interacts with the National Fish Habitat Partnership Board and the Western Association of Fish and Wildlife Agencies, and responds to issues that require immediate attention. Membership, drawn from the Steering Committee and At-Large Council, is as follows:

Federal Agency Representative (Co-chair)
- Cynthia Tait

State Agency Representative (Co-chair)
- Jeff Sorensen

Basin and Range Representative
- Jon Sjoberg

Rio Grande Representative
- Megan Bean

U.S. Fish and Wildlife Service Liaison (R2)
- Stewart Jacks

Non-Governmental Representative
- Heidi Blasius

Upper Colorado River Representative
- Krissy Wilson

Lower Colorado River Representative
- Jeremy Voeltz

Tribal Organization Liaison
- Kai-T Bluesky

At-Large Council includes all individuals, groups, and agencies outside the Steering Committee who would like to participate in DFHP. Although the At-Large Council cannot vote, they can attend meetings, participate on the Executive, Science and Data, and ad hoc committees, and provide or receive technical and financial assistance. Currently, there are 31 members on the At-Large Council.

Science and Data Committees, Regional Workgroups, and ad hoc Committees are utilized by DFHP to address long- and short-term goals.

Coordinator provides primary staff support to DFHP Steering and Executive committees and is responsible for record keeping, disseminating information, and coordinating and facilitating overall implementation of actions and projects. The Coordinator position is currently provided by the U.S. Fish and Wildlife Service (Kayla Barrett).

DFHP holds a teleconference every two months to discuss issues, set priorities, and make decisions. Meetings are held annually; the 2012 DFHP meeting was held in Las Vegas, NV and via teleconference.