# Desert Fish Habitat Partnership

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## DFHP 2011 Report is Available

The Desert Fish Habitat Partnership's 2011 Annual Report is complete. The report highlights DFHP's milestones for 2011, funded projects, proposed projects for 2012, tools for habitat assessment and conservation, a 2010 National Fish Habitat Action Plan (NFHAP) 10 "Waters to Watch" update, the steering committee's involvement with NFHAP, outreach and communications, and coordination and administration. If you would like a copy (hardcopy or electronic copy) please email Kayla Barrett, DFHP coordinator. Her contact information is on the last page.

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

*Facebook Picture Contest Winner*
*Spawning Bluehead Suckers*
*Photo credit: Brian Healy, NPS*

Inside this issue:


| | |
|---|---|
| Strict Arizona Game and Fish Department procedures assure that rotenone is a safe, effective fisheries management tool | 2-3 |
| Rio Grande silvery minnow reintroduction efforts in the Big Bend region of the Rio Grande | 4 |
| 2011 Completed Projects | 5 |
| Partnership Activities | 6 |
| NFHAP News | 6 |
| Fun News | 7 |
| Upcoming Events | 7 |
| For more information | 8 |

# Strict Arizona Game and Fish Department procedures assure that rotenone is a safe, effective fisheries management tool

**Jeff Sorensen and Julie Carter, Arizona Game and Fish Department**

Rotenone is a piscicide (a pesticide used to kill undesired fish) that is used in limited applications in Arizona to assist native fish and aquatic species recovery or aquatic invasive species control.

Last year, the use of rotenone as a piscicide raised concerns by some local constituents over perceived impacts to the environment and human health from exposure. The concerns resulted in proposed state legislation—SB1294 and HB2114—that would have effectively eliminated the Arizona Game and Fish Department's ability to use rotenone in the future. Due to some negotiations with lawmakers, the proposed bills did not pass the 2011 legislative session.

To thoroughly study the issue and address constituent concerns, Department Director Larry Voyles temporarily halted the Department's use of rotenone in Arizona and early last summer authorized the formation of the Rotenone Review Advisory Committee to analyze and make recommendations on the use of rotenone and other piscicides for Arizona fisheries and aquatic wildlife management. This committee was formed from representatives of various constituent groups, state lawmakers, and state and federal agencies with responsibilities for fish and wildlife, water, health, and environmental quality. The committee was chaired by Herb Guenther, the former Director of the Arizona Department of Water Resources.

The committee and its composite subcommittees reviewed the best available scientific reports and research, gathered input from other experts, and provided technical expertise, opinion, and analysis regarding the use of rotenone and other piscicides, focusing on the following subject areas: (1) state/federal regulations, internal policy, public involvement, and best management practices; (2) human health and the environment; (3) alternate management strategies; and (4) recreational, economic and social impacts.

One of the concerns the committee examined was whether there was an association between rotenone exposure and Parkinson's disease, in light of some recent studies that received media coverage.

The committee found that, to date, there are no published studies that conclusively link exposure to rotenone and the development of clinically diagnosed Parkinson's disease. It found that the studies using animal models and pesticides to investigate the pathway of Parkinson's disease are limited in scope because they do not produce the actual disease state, and they model only the motor features of the disease. Further, they used very high doses of rotenone administered to rodents mostly through tissue injection over long time periods—methods not relevant to realistic human exposure.

Some epidemiological studies have found a higher incidence of Parkinson's disease with the occupational exposure to pesticides, including rotenone. However, these studies focused on agricultural workers, primarily farmers, and there are substantial differences between the methods of application, formulation, and

## *story continued...*

doses of rotenone used in agricultural and residential settings compared with piscicide use. Very small concentrations of rotenone are used in fish management in accordance with the Environmental Protection Agency-required protocols, and the occupational risk of the pesticide use of rotenone will be negligible if used according to product labels and following application and safety guidelines in the 2010 American Fisheries Society Rotenone Standard Operating Procedures (SOP) Manual.

Another concern by constituents was the potential for rotenone treated water to contaminate groundwater during treatments. The committee found that rotenone is highly insoluble in water and strongly absorbs to soil particles in bottom sediments and to suspended particles in the water column, limiting its mobility and availability to leach through soils and reach groundwater. Long-term monitoring of groundwater wells in California post-rotenone treatments has never detected rotenone or any formulation products following treatments.

In conclusion, the committee recognized the need for rotenone as a tool to manage fish populations, and that there are a limited number of alternatives available to accomplish fisheries management goals and objectives when full eradication of undesirable fish species from a water body is necessary. They recommended that the Department should have the ability to use rotenone because it can be applied in a safe manner that minimizes impacts to the environment, and avoids impacts to human health and drinking water supplies when it is applied according to product labels, EPA standards, and the 2010 AFS SOP for rotenone use.

The committee also recommended revising the Department's process for piscicide treatments to include new reporting requirements under Arizona's Pesticide General Permit, administered by the Arizona Department of Environmental Quality, and increasing the number of opportunities for public notification, comment, and the option to petition the Arizona Game and Fish Commission for an appeal on a treatment decision.

The report and recommendations by the Rotenone Review Advisory Committee were accepted and approved on December 31, 2011 by Director Voyles, and on January 13, 2012 the Arizona Game and Fish Commission approved a new rotenone policy that formally adopts the AFS 2010 SOP for rotenone applications. The Department is currently finalizing an internal procedures manual for planning and implementing piscicide treatments.

# Rio Grande silvery minnow reintroduction efforts in the Big Bend region of the Rio Grande

**Megan Bean and Gary Garrett, Texas Parks and Wildlife Department**

Rio Grande silvery minnow, *Hybognathus amarus*, is an endemic species to the Rio Grande drainage. The species was historically very abundant and widely distributed throughout the Rio Grande, but became extirpated from Texas by the 1960's. The remaining wild population occupies approximately seven percent of its historical range and is located near Albuquerque, New Mexico. Population declines and subsequent extirpation may have been caused by several contributing factors including dam construction, poor water quality, decreased water quantity from withdrawals and a drought of record, and changes in channel geomorphology. Rio Grande silvery minnow was listed as federally endangered in 1994. Five decades after Rio Grande silvery minnow disappeared from Texas, a multi-agency collaborative effort was initiated to reintroduce the species in the Big Bend. In 2008, yearly releases of approximately 500,000 fish began at several sites in the region. A monitoring program was established to collect fish assemblage information, check persistence of the species in the region, evaluate fish health, and monitor for signs of recruitment. Rio Grande silvery minnow eggs and young of the year were collected for the first time in 2010 indicating successful reproduction and recruitment had occurred in the population. Reintroduction efforts have not been limited to fish releases in the region. Numerous partners and landowners in the region have formed bi-national and region-wide conservation networks to implement watershed conservation practices and projects to restore habitat. One of these projects is the Alamito Creek Restoration, a DFHP project for 2012. Protecting and restoring habitats within the watershed will be a vital component to the continued survival of Rio Grande silvery minnow in the Big Bend region.

# 2011 Completed Projects

**Phantom Lake Spring Ciénega Habitat Restoration, TX.**
Phantom Lake Springs Ciénega, located in western Texas, supports an assemblage of five aquatic species of concern: two endangered fishes (Comanche Springs pupfish and Pecos gambusia), 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.

A new ciénega was created away from the porous cave wall. The new lined pool created a larger, more reliable habitat that acts as a refuge, maintaining water levels for longer periods of time in the event of a system failure.

The new refuge pool was excavated and lined with pond liner to minimize water loss from the pool. The liner was covered with natural substrate, gravel, and boulders. The liner from the new pool was secured to the existing concrete of the old pool. A hidden water supply line was installed to resemble a natural spring from the side of the cliff. The pool was filled and "seeded" with native aquatic vegetation, invertebrates and fish. The pump system supplies water to the new pool which returns back to the mouth of the cave through the old pool.

With the new pool functioning as a refuge, rehabilitation of the old pool commenced. The first step of the rehabilitation was to "reseal" the old pool to reduce the amount of water loss from the system. The whole water delivery system was redesigned to include a backup generator, a backup pump and an alarm system. The pump system was redesigned to function with only one of the two pumps running and supply more water out to the ciénega than both pumps had previously supplied. The second pump acts as a backup system, and comes on automatically in the event of a failure of the main pump. The alarm system sends out emails to notify biologists to any pump failure or power outage.

Biological monitoring at the site will be conducted twice a year, for five years. In May of 2013, sampling will be conducted to examine the status of the listed species present at the ciénega following the habitat restoration. Densities of listed taxa will be compared against historical data and research that has been conducted in the old pool prior to the building of the new pool for both fish and invertebrates. *Update provided by Mike Montagne, USFWS*

## Partnership Activities

Kayla Barrett, DFHP Coordinator, gave a presentation on the Desert Fish Habitat Partnership at the AZ/NM Chapter of the American Fisheries Society–The Wildlife Society Joint Annual Meeting in Phoenix, AZ in February. The presentation showcased DFHP's background, RFP process, and past, current, and future projects.

Kayla Barrett, DFHP Coordinator, and Stewart Jacks, R2 representative for executive committee, submitted an interaction survey between DFHP and the Landscape Conservation Cooperatives (LCCs) to NFHAP.

The DFHP Steering Committee had a teleconference with NFHAP Board members and the NFHAP coordinator to discuss DFHP's outcome and review process of the FHP Performance Measures Evaluation.

Kayla Barrett submitted an abstract titled," Desert Fish Habitat Partnership: Working Together for the Benefit of Native Desert Fishes" to the 142 Annual Meeting of the American Fisheries Society. Kayla's abstract was selected and she will be giving her oral presentation as part of the National Fish Habitat Partnership - Building Relationships to Enhance Conservation of Aquatic Ecosystems Symposium.

Cynthia Tait, Jeff Sorensen, Megan Bean, Greg Gustina, and Kayla Barrett started updating DFHP's Request for Proposals (RFP) for 2013. The RFP will be available in early July 2012 and the deadline for submission will be early September 2012.

## NFHAP NEWS

NATIONAL FISH HABITAT ACTION PLAN

The Secretaries of the Interior (Ken Salazar), Agriculture (Tom Vilsack) and Commerce (John Bryson) on Friday March 2, committed to signing an agreement to promote collaborative, science-based conservation of the nation's waterways and fisheries through the National Fish Habitat Partnership. The agreement ensures that Federal resources are effectively focused on locally supported conservation strategies developed by fish habitat partnerships. The announcement was made at the White House Conference on Conservation, Growing America's Outdoor Heritage and Economy. The Memorandum of Understanding was signed in March 2012.

The National Fish Habitat Action Plan is currently under revision and will be unveiled in April 2012. The revised Plan will feature case studies and a vision for the future of nation's aquatic habitats and will be built on these objectives: 1) achieve measurable habitat conservation results through strategic actions of Fish Habitat Partnerships, 2) establish a consensus set of national conservation strategies as a framework 3) broaden the community of support for fish habitat conservation by increasing fishing opportunities, fostering the participation of local communities in conservation activities, and raising public awareness, 4) fill gaps in the National Fish Habitat Assessment and its associated database, and 5) communicate the conservation outcomes produced collectively by Fish Habitat Partnerships.

# FUN NEWS

**The Desert Fish Habitat Partnership has a Facebook page!** If you are not one of the 500 million users on Facebook, you should be. The DFHP Facebook page has public friendly information posted, pictures, DFHP Newsletters, RFPs, reports, and much more. In March the DFHP Facebook page was viewed 1,087 times and has reached over 13 countries. So check us out because it is something that everyone will "like." http://www.facebook.com/pages/Desert-Fish-Habitat Partnership/193053497376208

Congratulations to Cynthia Tait, DFHP's U.S. Forest Service representative, for being elected DFHP's new Federal Co-chair.

# Upcoming Events

National Fish Habitat Partnership Board Meeting

17-18 April 2012, Washington, DC

Native American Fish and Wildlife Society

Southwest Regional Conference

24-26 July 2012, Ignacio, Colorado

142nd Annual Meeting of the American Fisheries Society

19-23 August 2012, St. Paul, Minnesota

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www.nature.nps.gov/water/DFH_partnership.cfm
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To view DFHP photos, download documents, see latest news, and learn more, visit the DFHP Facebook page.

www.fishhabitat.org
To learn more about Fish Habitat Partnerships, please visit the National Fish Habitat Partnership website.

DFHP Purpose: *To conserve aquatic habitat in the arid West for desert fishes and the American people by protecting, restoring and enhancing these unique habitats in cooperation with and in support of, state fish and wildlife agencies, federal agencies, Native American tribes, conservation organizations, and individuals.*