



Fiscal Year 2008
Vol. 4 No. 2

U.S. Fish & Wildlife Service

Currents

REGION 2 – SOUTHWEST REGION

Fisheries Program Highlights

(January – March 2008)

June 2008

Edited by Jeremy B. Voeltz, Arizona FWCO



Endangered Comal Springs riffle beetles are studied at San Marcos NFHTC.

Read the complete story on page 6

Southwest Region Fisheries Division

National Fish Hatcheries

The National Fish Hatcheries (Willow Beach, Alchesay-Williams Creek, Uvalde, Tishomingo, and Inks Dam) develop and maintain brood stocks of important fish species, both sport fishes and critically imperiled non-game fishes. The hatcheries are the source of fish and eggs distributed to partners with similar aquatic conservation missions, such as native fish restoration or fulfilling federal mitigation responsibilities. Hatcheries are often called upon to provide a place of refuge for imperiled aquatic organisms, such as aquatic plants and amphibians.

Fish and Wildlife Conservation Offices

The Fish and Wildlife Conservation Offices (Arizona, New Mexico, and Oklahoma) evaluate wild native fish stocks and their habitats, and work with partners and other Service programs to restore habitats and fish populations.

These offices provide technical fish and wildlife management assistance to tribes and other partners with a primary focus on native aquatic species.

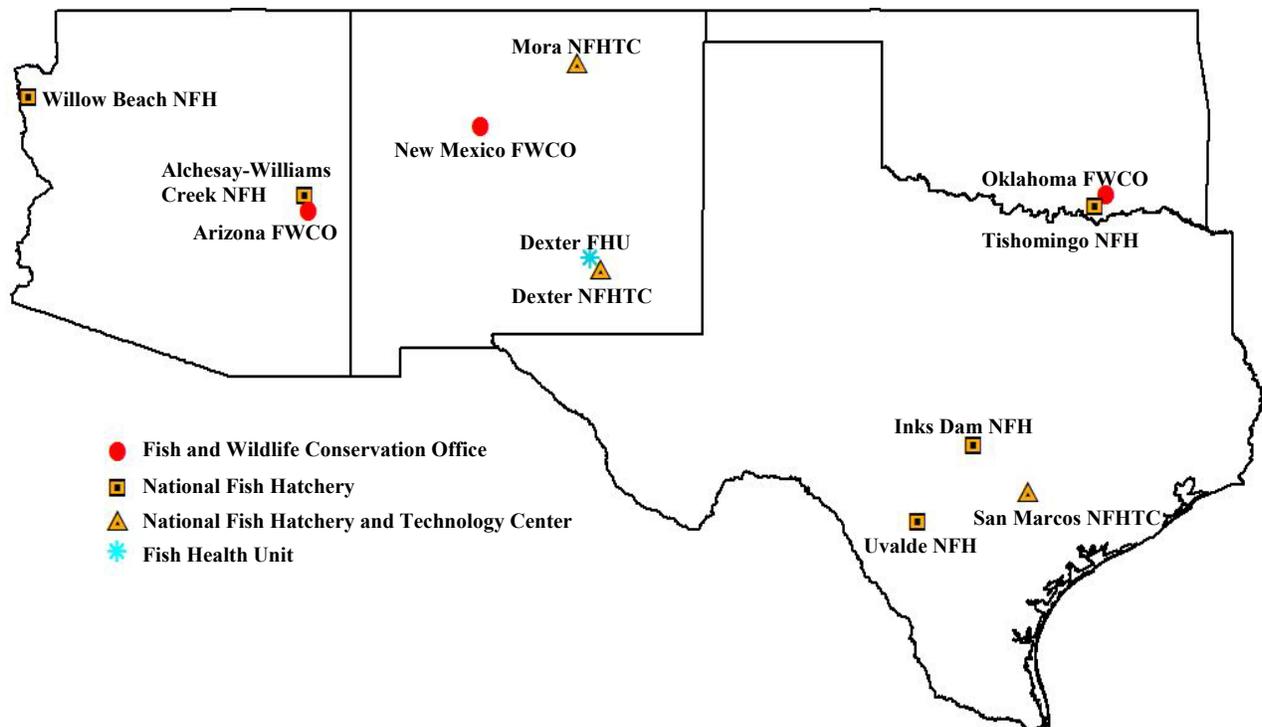
Fish Technology Centers

The Fish Technology Centers (Dexter, Mora, and San Marcos) develop leading-edge technology for use by tribal, state, and federal fish hatcheries and fishery biologists to make fish culture more productive, cost-effective, and scientifically sound.

Technology improves hatchery efficiency; helps assure the genetic integrity of fishes, at the same time minimizing the effects of hatchery fish on wild fish stocks.

Fish Health Unit at Dexter

The Regional Fish Health Unit at Dexter assesses the well-being of fish that live in the wild or are raised at hatcheries. Fish health biologists are highly trained in various scientific disciplines, like immunology, epidemiology, toxicology, and genetics. They apply that knowledge in fish health assessments that might lead to early detection of potentially devastating diseases, prescribing preemptive measures.



Pipeline Repair Increases Flows at Alchesay NFH



Workers repair the pipeline to Alchesay NFH in Arizona

The Alchesay NFH has seen increased water flows this spring, not only from above average snow-pack runoff, but due to the repair of the hatchery inflow pipeline. The main pipeline to the hatchery has been exposed to the elements for years, where it crosses the North Fork of the White River, which has resulted in excessive rusting and leakage, compromising the integrity of the pipe and possibly the supply of water to the hatchery. An attempt was made to repair the leaks in the fall of 2007, but flooding caused irreparable damage to the pipe.

This spring, an 80-foot section of the steel pipeline was replaced with more durable and protected PVC pipe covered with concrete and riverbed material placed strategically on and around the pipe to prevent future scouring. With replacement of the leaking

section of pipe, water flow to the hatchery immediately increased by approximately 500 gallons per minute, a significant amount that is expected to decrease the chance of summer mortality at the hatchery during lower water conditions.

Sherry White, Alchesay-Williams Creek NFH

Broodstock at Tishomingo NFH Yields 250,000 New Paddlefish

Tishomingo NFH and Oklahoma FWCO staff collected 10 sexually mature paddlefish pairs from Fort Gibson Reservoir and Grand Lake Reservoir in Oklahoma. These fish are broodstock for future progeny that will later be stocked into Lake Eufaula, Oklahoma, where paddlefish have been considered to be extirpated for many years. To date, approximately 250,000 eggs have been collected and the hatchlings will grow to an average size of 16 inches by late July, when they will be stocked into Lake Eufaula. This project is part of an ongoing effort to restore paddlefish to their native range in Oklahoma.



Rebecca Fillmore, Tishomingo NFH

A large female paddlefish added to the broodstock at Tishomingo NFH

AZ/NM American Fisheries Society Chapter Award Goes To Arizona Landowner

In March 2008, Arizona FWCO staff presented Joe and Valer Austin with the Arizona/New Mexico Chapter of the American Fisheries Society “Conservationist of the Year” Award at their El Coronado Ranch, located in Cochise County, Arizona. Over the past 10 years the Austin’s have aided in conservation efforts for native fishes in Southeast Arizona, including three federally listed fishes: Yaqui chub, Yaqui catfish, and Yaqui topminnow. The Austin’s have voluntarily conducted stream and watershed improvements on their land and allowed species reestablishments on their properties. They have developed excellent relationships with the natural resource agencies and are currently enrolled in a Habitat Conservation Plan and a soon-to-be completed Safe Harbor Agreement, allowing for continued use of their properties, while still improving the conditions for these imperiled desert fishes.



Biologists from the Arizona FWCO, San Bernardino NWR, Arizona Game and Fish Department, and US Forest Service present the AZ/NM AFS “Conservationist of the Year” award to Joe and Valer Austin of the El Coronado Ranch

Marty Underwood, Arizona FWCO

Three New Paddlefish Studies at Tishomingo NFH Underway



Research facility tests effects of water temperature changes on paddlefish fry

Tishomingo NFH will initiate three studies during the 2008 paddlefish season. The first study is an investigation of effective dosages of an INAD (Investigational New Animal Drug) regulated hormone that induces paddlefish gamete maturation. The second will investigate the effects of decreasing water temperatures on newly hatched paddlefish fry. The third study will investigate effects of paddlefish fry density on training to accept an artificial feed. Stay tuned to future issues of “Currents” to follow the progress on these three new studies.

Rebecca Fillmore, Tishomingo NFH

Colorado Plateau Grasslands Restored In Northern Arizona

Over 14,000 acres of grasslands on the Colorado Plateau in Northern Arizona have been restored thanks to efforts from the Arizona FWCO and its partners through a long-term collaborative effort. These valuable grasslands within the southern portion of the Great Basin, used by pronghorn antelope, raptors, and other birds, have been transformed by juniper encroachment as a result of past grazing practices, drought, and lack of a natural fire regime. A large drum grinder mounted to a rubber-tired tractor obliterates shaggy bark juniper found in deep soils that historically supported grassland ecosystems.



Juniper trees removed to restore grasslands in Arizona

This year, the Arizona FWCO funded treatment of over 1,300 acres through the Service's Partners for Fish and Wildlife Program; while the Arizona Game and Fish Department, Natural Resources Conservation Service, Rocky Mountain Elk Foundation, Arizona Antelope Foundation, Arizona Elk Society, Audubon Society, Ohaco Ranch, and Hopi Tribe - Hopi Three Canyon Ranches have aided in the previous restoration work. But, the work is not done. Planning is in progress to reclaim another 7,000 acres with future potential opportunities to reestablish Gunnison's prairie dog, black-footed ferret, and burrowing owl.

Marty Underwood, Arizona FWCO

Successful Culture of Endangered Woundfin at Dexter NFHTC



Woundfin rearing tanks at Dexter NFHTC

Dexter NFHTC raises endangered woundfin, a unique fish found only in the Virgin River of the southwestern United States, as part of a captive propagation program to aid in the conservation and recovery of the species. In 2007, the Virgin River Fishes Recovery Program requested sub-adult fish for a spring stocking, rather than the traditional fall stocking, which required Dexter to hold the fish for an additional six months. This allowed Dexter to improve their culture practices for this endangered fish. Starting in September 2007, 5,500 woundfin were held in five circular tanks in the fish culture building for 177 days. By March 2008, the fish had grown from 47mm to 59mm each, their weight doubled, and survival was over 98%!

William Knight, Dexter NFHTC

Aquatic Beetle Genetics Project at San Marcos NFHTC

The endangered Comal Springs riffle beetle exists in spring outlets throughout Comal Springs and is also known to occur in San Marcos Springs which is 11 miles away. The San Marcos NFHTC and geneticists at Texas State University have found that the beetle population at the San Marcos Springs system has unique genetic traits, showing that they have been isolated for some time from the Comal Springs system. Surprisingly, beetle populations in different areas of the Comal Springs system also show a similar degree of genetic isolation from each other.

The different species in this group of beetles are very difficult to identify. Analysis of the nearest relatives to the Comal Springs riffle beetle showed a similar tendency for isolation in individual springs, and possibly new species were discovered. Results from this work are important for refuge efforts to maintain diversity, and should help in determination of population size, future conservation efforts, and the evolutionary history of this, and other rare and endangered, species of the Edwards Aquifer.



Endangered Comal Springs riffle beetles from San Marcos NFHTC

Randy Gibson, San Marcos NFHTC

The “Jewel of the Mohave Desert” Gets Protected



Date Creek meanders through the Mohave Desert in Arizona

Date Creek is a perennial stream that flows west through the Mohave Desert to the Colorado River supporting many aquatic and terrestrial species dependent upon these rare lush riparian areas in desert environments. The Date Creek Ranch, through which a portion of Date Creek flows, was awarded a Livestock and Crop Conservation Grant from the State of Arizona and leveraged their own labor to obtain additional funding from the Service’s Partners for Fish and Wildlife Program and Arizona Game and Fish Heritage Program for a combined project budget of \$150,000. The project will fence 3.5 linear miles of stream to limit access by cattle and other ungulates, and will protect at least 180 acres of in-stream and riparian habitat.

Marty Underwood, Arizona FWCO

Dexter NFHTC Molecular Ecology Program



A biologist runs samples at Dexter NFHTC's molecular lab

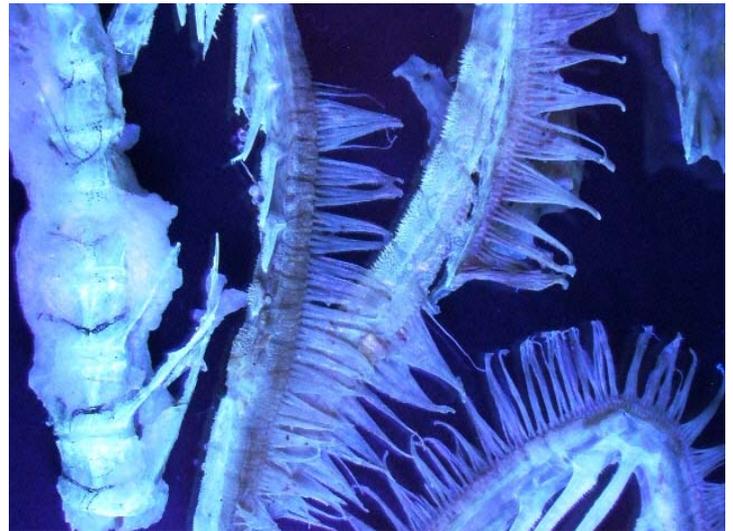
The Molecular Ecology Program at Dexter, launched in 1999, includes a fully equipped laboratory on par with many research universities and is capable of generating around 1,000 genotypes a day. The four main focal areas of the Molecular Ecology Program are ensuring captive stocks closely resemble wild stocks of endangered species, estimating the genetic purity of captive and wild stocks, maintaining genetic diversity, and minimizing genetic changes in captive stocks, and developing diagnostic services using molecular techniques.

The program focuses on *Molecular Ecology and Conservation Genetics* which applies conservation and ecological principles and theory to the management of aquatic species. To date, projects have benefited a variety of fishes, including Gulf-strain striped bass, Devils Hole Pupfish, Devils River minnow, Gila trout, Rio Grande cutthroat trout, woundfin, and Virgin River chub.

Connie Keeler-Foster, Dexter NFHTC

Inks Dam NFH Aids in State and Tribal Fisheries Programs

Inks Dam NFH staff completed a study to determine the efficacy of marking sub adult largemouth bass with oxytetracycline enriched feed for later identification as hatchery-stocked fish versus wild fish. All skeletal samples examined had clearly visible fluorescent marks that designates the test results as highly successful according to the study protocol. The results of this study will be used to assist the Arizona Game and Fish Department with their largemouth bass restoration efforts in Apache, Canyon, and Saguaro lakes in central Arizona.



Largemouth bass skeletons show fluorescent markings

In addition to the largemouth bass study, March was a busy month for fish distribution. The Alabama Coushatta Indian Reservation received 4,200 channel catfish, the Fort Apache Indian Reservation received 11,500 catfish, the Angelina National Forest received 4,000 catfish, and the Jicarilla Indian Reservation received 40,000 rainbow trout grown by Alchesay-Williams Creek NFH and distributed by Inks Dam NFH.

Marc Jackson, Inks Dam NFH

New Quarantine Facility in the Works at Dexter NFHTC



New quarantine building constructed at Dexter NFHTC

Dexter NFHTC maintains captive broodstocks of 17 threatened and endangered fishes from the Southwestern United States. The program's management strategy strives to maintain genetic variability in both the captive reared and wild populations, which requires bringing new fish to the facility. It is imperative to quarantine various life stages of fish received prior to release into Dexter's captive populations to reduce the possibility of contamination and catastrophic loss of any of the additional threatened and endangered species housed at the facility.

Construction of the new Isolation/Quarantine building began in January with the preparation of the site and acquisition of building materials and supplies. The new 3,000 ft² building began to take shape by March following the pouring of the steel reinforced concrete slab and erection of the steel building framework. Soon the exterior walls, roof, doors, windows, and trim will be installed.

Bill Williams, Dexter NFHTC

Dexter NFHTC Investigates Yaqui Catfish

The Yaqui catfish is the only species of catfish native to Arizona. Populations were extirpated from the United States, but through reestablishment efforts these fish now exist in three refuge populations in Arizona; two on the San Bernardino National Wildlife Refuge and one on the El Coronado Ranch in Cochise County, Arizona.

The objective of this on-going project is to genetically determine if the refuge populations of Yaqui catfish have hybridized with other catfish species that may have been released into the ponds. This information will prove valuable to the future management of these three populations. Cooperators on this project include San Bernardino National Wildlife Refuge, Arizona and New Mexico Fish and Wildlife Conservation Offices, Arizona Game and Fish Department, New Mexico Department of Game and Fish, Texas Natural History Collection, and the University of Sonora, Mexico.



Yaqui catfish: Arizona's only native catfish

Sherri Baker, Dexter NFHTC

Lake Mohave “Razorback Round-Up” – The 2008 Update

Every March since 1989, state, federal, and academic biologists, as well as a host of volunteers, descend on Lake Mohave in the tri-states area of Arizona, Nevada, and California, to search for the razorback sucker. The razorback sucker was historically found throughout the mighty Colorado River system, and had adapted to its rough conditions, prior to the calming of the river by a series of dams and large reservoirs (including Lake Mohave).

Any razorbacks that are caught are scanned for a unique identifying tag, implanted with one if they have not previously been tagged, measured, weighed and released. In addition, razorback sucker larvae are trapped at night and transported to hatcheries and grown out to a large enough size until they are restocked in the Colorado River system to augment the remaining population. During the March 2008 round-up, the Service collected 163 adult razorback suckers and over 4,000 razorback larvae. In addition, several backwaters were stocked with sub-adult razorback suckers as part of a larger effort to maintain and expand populations of this unique fish.



Biologists from the U.S. Fish and Wildlife Service and Arizona Game and Fish Department insert a unique tag into a razorback sucker on Lake Mohave

Pam Sponholtz and Mitch Thorson, Arizona FWCO

SOUTHWEST REGIONAL FISHERIES OFFICES

Regional Office, Division of Fisheries, PO Box 1306, Albuquerque, NM 87103

Mike Oetker, Assistant Regional Director (Mike_Oetker@fws.gov)

ARIZONA

Arizona Fish and Wildlife Conservation Office

PO Box 39

Pinetop, AZ 85935

Stewart Jacks (Stewart_Jacks@fws.gov)

928-338-4288

Alchesay-Williams Creek National Fish Hatchery

PO Box 2430

Pinetop, AZ 85935

Phil Hines (Phil_Hines@fws.gov)

928-338-4901

Willow Beach National Fish Hatchery

25804 N. Willow Beach Road

HC 37, Box 17

Willow Beach, AZ 86445

Mark Olson (Mark_Olson@fws.gov)

928-767-3456

NEW MEXICO

New Mexico Fish and Wildlife Conservation Office

3800 Commons NE

Albuquerque, NM 87109

Jim Brooks (Jim_Brooks@fws.gov)

505-342-9900

Dexter National Fish Hatchery and Tech Center

PO Box 219

Dexter, NM 88230

Manuel Ulibarri (Manuel_Ulibarri@fws.gov)

505-734-5910

Mora National Fish Hatchery and Tech Center

P.O. Box 689

Mora, NM 87732

John Seals (John_Seals@fws.gov)

505-387-6022

OKLAHOMA

Oklahoma Fish and Wildlife Conservation Office

5701 W. Highway 7

Tishomingo, OK 73460

Brent Bristow (Brent_Bristow@fws.gov)

580-384-5710

Tishomingo National Fish Hatchery

5503 W. Highway 7

Tishomingo, OK 73460

Kerry Graves (Kerry_Graves@fws.gov)

580-384-5463

TEXAS

Inks Dam National Fish Hatchery

Route 2, Box 32-B

Burnet, TX 78611

Marc Jackson (Marc_Jackson@fws.gov)

512-793-2474

Uvalde National Fish Hatchery

754 Country Road 203

Uvalde, TX 78801

Grant Webber (Grant_Webber@fws.gov)

830-278-2419

San Marcos National Fish Hatchery and Tech Center

500 E. McCarty Lane

San Marcos, TX 78666

Tom Brandt (Tom_Brandt@fws.gov)

512-353-0011

Questions or comments regarding *Currents* can be addressed to
Jeremy Voeltz, Arizona Fish and Wildlife Conservation Office;
PO Box 39 Pinetop, AZ 85935; 928-338-4288;
Jeremy_Voeltz@fws.gov