



U.S. Fish & Wildlife Service

Currents

Fiscal Year 2008
Vol. 4 No. 4

REGION 2 – SOUTHWEST REGION *Fisheries Program Highlights* (July – September 2008) December 2008

Edited by Jeremy B. Voeltz, Arizona FWCO



Paddlefish are raised by Tishomingo NFH for stocking into Oklahoma and Kansas lakes

Read the complete story on page 4

Southwest Region Fisheries Division

National Fish Hatcheries

The National Fish Hatcheries (NFH), at Willow Beach, Alchey-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 (FWCO) in Arizona, New Mexico, Oklahoma, and Texas 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.

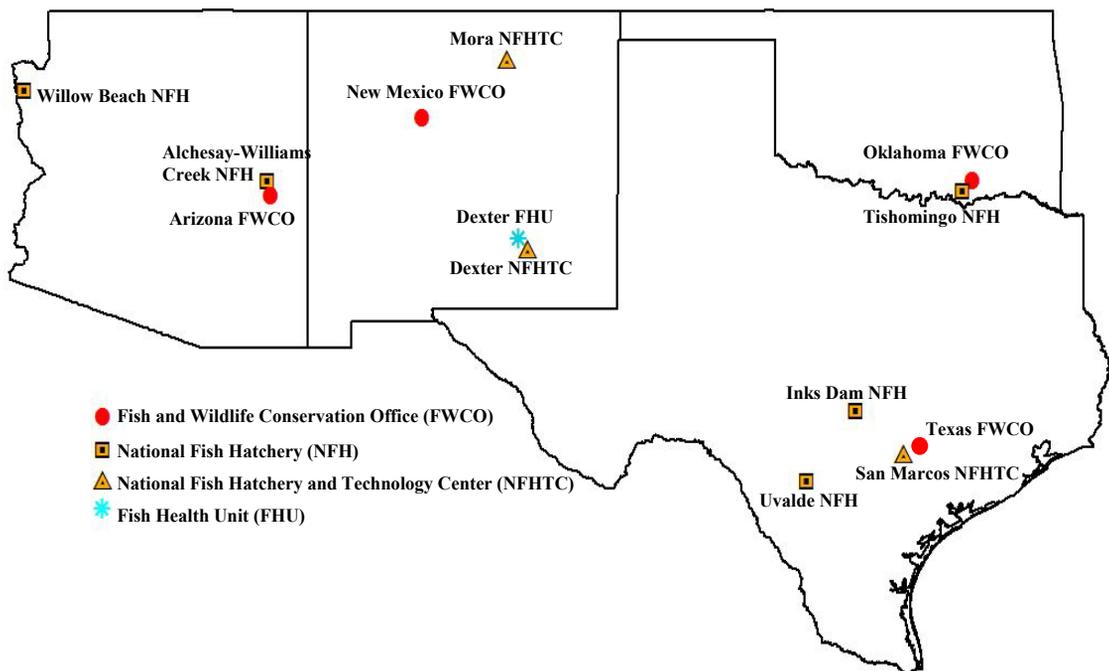
Fish Technology Centers

The Fish Technology Centers (NFHTC), at 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 Fish Health Unit (FHU) 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.



Hatching Success Improves at Tishomingo NFH



Alligator snapping turtle eggs in an incubation tray

This fall, the Tishomingo NFH hatched 207 alligator snapping turtles, with a hatch success rate at 60% (double the success of last year). Now, a total of 628 turtles (up to four years old) are on station at the hatchery. The majority of the turtles will be tagged and released into native habitats in Oklahoma when they are three years old; with the remaining turtles held for growth studies and other research. All of the turtles hatched are the progeny of 48 alligator snapping turtles that are maintained by the hatchery. The Tishomingo NFH propagates alligator snapping turtles as part of a plan to reestablish the species into native habitat in Oklahoma and other states.

Rebecca Fillmore, Tishomingo NFH

Gila Trout Displayed at the Albuquerque Aquarium

The Mora NFHTC sent 15 Gila trout from the 2008 year class to Albuquerque's BioPark Aquarium to replace fish that have outgrown the current display. The aquarium display focuses on native fish of New Mexico, particularly rare species, with the goal to educate visitors on New Mexico's natural heritage and how sometimes humans have had devastating impacts in spite of well-meaning intentions.

In addition, the Dallas Aquarium has requested Gila trout for a new "Native Fishes of the Southwest" display opening in the Fall of 2009.

Zoos and aquariums often partner with the Service to conduct research and culture for rare species.

John Seals, Mora NFHTC



A Gila trout explores its new surroundings at the Albuquerque BioPark Aquarium

Paddlefish Raised for Restoration Efforts in Oklahoma and Kansas

The Tishomingo NFH, Inks Dam NFH, Oklahoma FWCO, and Oklahoma Department of Wildlife Conservation work together to bolster current paddlefish populations in Oklahoma and reestablish the species throughout its native range. This year, the Tishomingo NFH reared and stocked 9,300 12-inch paddlefish. The majority of these paddlefish were stocked into Lake Eufaula in eastern Oklahoma to contribute to the ongoing management of the species in the lake. Two thousand paddlefish were stocked into Grand Lake in northern Oklahoma as part of a study to investigate paddlefish age, growth, and reproductive success. In addition, several thousand fish were also provided to the Kansas Department of Wildlife and Parks and released into John Redmond Reservoir located on the Neosho River.



Paddlefish are reared in large circular tanks (pictured above) and outdoor ponds at Tishomingo NFH

Rebecca Fillmore, Tishomingo NFH

Two New Volunteers at Alchesay NFH



“Joey” and “Daisy” keep the weeds in check around the grow-out ponds at Alchesay NFH

The Alchesay NFH recently initiated a trial to control weeds around the hatchery ponds while also reducing the carbon footprint at the hatchery. A hatchery employee located two free goats and they were placed inside the fencing that surrounds the culture ponds. They have already reduced the amount of weeds present and have been able to consume weeds that would normally be difficult or unsafe for hatchery staff to remove. The use of goats reduces the use of power equipment, improves employee safety at the hatchery, as well as allows employees to conduct other mission critical work.

Phil Hines, Alchesay-Williams Creek NFH

Bumper Crop of Endangered Woundfin Produced



USFWS

Endangered woundfin are tagged for later identification prior to release in the wild

The Dexter NFHTC staff produced a record number of endangered woundfin in 2008. Currently there are 40,600 woundfin at the hatchery, which is the most that Dexter NFHTC has produced since the species was brought on-station in 1979. Over 26,000 tagged fish are to be transported and stocked into the Virgin River near Hurricane, Utah. The remaining fish will be over-wintered indoors as part of a growth study to determine optimal intensive culture rearing densities. Rearing of these fish helps meet augmentation requirements for the species as outlined by the Virgin River Resource Management and Recovery Program in the effort to maintain, manage, and enhance the wild population in the Virgin River.

William Knight, Dexter NFHTC

Smith Canyon Creek Fish Passage Project

The Arizona FWCO used National Fish Passage Program funds to repair a road crossing over Smith Canyon Creek, located on the Double Circle Ranch (DCR) in the Eagle Creek watershed of eastern Arizona. Damaged culverts were restricting flow and fish movement between Eagle Creek and upper Smith Canyon Creek on the Apache-Sitgreaves National Forest. In a cooperative effort, Arizona FWCO, DCR, and Natural Channel Design Inc. constructed a new crossing designed to sustain a 25-year flood event while also allowing fish passage during all flows.

Marty Underwood, Arizona FWCO



Double Circle Ranch

Crews remove damaged culverts from Smith Canyon

Tishomingo NFH Outreach and Education in Oklahoma

The Tishomingo NFH staff set up outreach and educational booths at the Johnston County, Oklahoma Fair and at the annual Oklahoma Wildlife EXPO. Adults and children were able to see juvenile alligator snapping turtles held in glass aquaria, as well as eight alligator snapping turtle eggs. Three other turtle species native to Oklahoma were also on display. The kids were eager to point out which turtles they have seen in the wild. The hatchery staff also provided the public with information about the hatchery and the important role fish hatcheries play in conservation.

Rebecca Fillmore, Tishomingo NFH



Tishomingo NFH staff answer questions from the public at the Oklahoma EXPO

Dexter NFHTC Aides in Genetic Management for Rare Fish



The endangered Clear Creek gambusia is held at Inks Dam NFH

Texas Parks and Wildlife Department

The Dexter NFHTC staff assisted the Inks Dam NFH and Ecological Services Program with developing a Clear Creek *Gambusia* Genetic Reserve Population and Stock Management Plan. The goal of this program is to preserve the genetic identity, diversity, and viability of the soon to be established refuge for the species at Inks Dam NFH. Dexter will provide support to Inks Dam NFH with genetic analysis of the founding stock and monitoring for the refuge

population. This is a joint project involving Dexter NFHTC, Inks Dam NFH, private landowners, Texas Parks and Wildlife Department and the Rio Grande Fishes Recovery Team. The Clear Creek gambusia is listed as endangered by both the Service and the state of Texas. Establishing and maintaining a captive population is recommended in the *Clear Creek Gambusia Recovery Plan*.

Sherry Baker, Dexter NFHTC

Dexter NFHTC Provides Safe Haven for Rescued Fish



Lynn Starnes

A Big Bend gambusia poses for a photo

The Dexter NFHTC staff aided in rescue efforts for Big Bend gambusia at its namesake National Park in Texas. The populations at Big Bend National Park were threatened by extremely high river flows due to flooding of the Rio Conchos in Mexico. The multi-agency salvage effort was coordinated by the National Park Service, and Texas Parks and Wildlife Department, and the Service. Biologists transported 662 fish to the Dexter NFHTC where they were placed in quarantine. Some of the fish will return to their native habitat once the threat of flooding is over, while others may be used in the current captive propagation program. In the meantime, the FHU at Dexter is conducting disease testing on the fish and the Dexter NFHTC Molecular Ecology Lab took tissue samples for future genetic analysis.

Manuel Ulibarri, Dexter NFHTC

Preventing the Release of Non-Target Organisms from Hatcheries

The incidental release of non-target organisms in hatchery effluent is a major environmental concern as non-target species can alter existing habitats, out-compete or replace native species, introduce exotic diseases, or completely change the community composition of a watershed. These introductions are preventable through effective treatment of effluent, such as using chlorine or ozone. However, while LC_{50} (50% lethal concentration) data are available for some aquatic species, LC_{100} values (which represent 100% mortality), the level necessary for hatchery effluent, have not been established. A collaborative project among the U.S. Fish and Wildlife Service, U.S. Geological Survey, and Texas' A.E. Wood State Fish Hatchery is underway to determine LC_{100}

chlorine and ozone toxicity data for commonly-cultured aquatic organisms that can be applied to any facility working with organisms outside of the local watershed. Data collected on chlorine and ozone toxicity will be used to develop a method of treating effluent that can be adopted by private, state, and federal facilities to eliminate unintentional introductions into local watersheds. If any hatchery is interested in participating in this study or has an organism they would like treated please contact San Marcos NFHTC for more information.



USFWS

Hatchery effluent is a potential vector for non-target transport of aquatic species

Catherine Phillips, San Marcos NFHTC

Developing Techniques to Maintain Genetic Diversity of Rare Fish

The Dexter NFHTC has developed a battery of microsatellite markers to conduct a baseline survey of the nuclear genetic variation of endangered razorback sucker in Lake Mohave and at federal hatcheries. Based on previous studies of mitochondrial DNA, this reservoir contains the highest degree of genetic variability in the remaining range of the species. The recovery plan for the razorback sucker stresses the importance of maintaining a genetic refuge in Lake Mohave, which borders Arizona, California, and Nevada. Approximately 450 razorback sucker samples from Lake Mohave and the hatchery broodstock will be genotyped using the microsatellites markers. This information will ensure that hatchery production appropriately reflects the genetic diversity found in the wild.



Endangered razorback suckers are found in isolated populations in the Colorado River basin

Dr. Gerry Zegers, Dexter NFHTC

Inks Dam NFH Celebrates its 70th Birthday



A historic aerial photo of Inks Dam NFH

The Inks Dam NFH recently celebrated its 70th birthday. The hatchery, born in 1938, has had many makeovers. These changes, brought about by employees and world events, have served to shape the topography and the personality of Inks Dam NFH. Today, careful tending and technological advancements have groomed Inks Dam NFH into an innovatively progressive station. But it will never escape evidence of its early beginnings. The hatchery fulfilled roles that at times were not focused on the culture of fish. From 1948 to 1950, the Hatchery served as a state school

assisting displaced youths and helped the community by housing a hospital. During World War II, the government operated an internment camp at the hatchery. Although the 70th anniversary came and went without much fanfare, the history of this place still speaks volumes to all who experience its beauty.

Cindy Fronk, Inks Dam NFH

SOUTHWEST REGIONAL FISHERIES OFFICES

Regional Office, Division of Fisheries and Aquatic Resource Conservation

PO Box 1306, Albuquerque, NM 87103

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

Arizona

Alchey-Williams Creek National Fish Hatchery

PO Box 2430

Pinetop, AZ 85935

Phil Hines (Phil_Hines@fws.gov)

928-338-4901

Arizona Fish and Wildlife Conservation Office

PO Box 39

Pinetop, AZ 85935

Stewart Jacks (Stewart_Jacks@fws.gov)

928-338-4288

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

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

New Mexico Fish and Wildlife Conservation Office

3800 Commons NE

Albuquerque, NM 87109

Jim Brooks (Jim_Brooks@fws.gov)

505-342-9900

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

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

Texas Fish and Wildlife Conservation Office

500 E. McCarty Lane

San Marcos, TX 78666

Vacant

Uvalde National Fish Hatchery

754 Country Road 203

Uvalde, TX 78801

Grant Webber (Grant_Webber@fws.gov)

830-278-2419

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