U.S. Fish & Wildlife Service

Currents

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REGION 2 – SOUTHWEST REGION

Fisheries Program Highlights

(October – December 2009)

March 2010

Edited by Jeremy Voeltz, Arizona FWCO

Dexter NFHTC maintains an endangered razorback sucker brood stock for use in propagation for recovery stockings throughout its range

Read this, and other razorback sucker stories, on pages 1 & 2

Razorback Suckers Stocked in Lake Mohave

USFWS

Willow Beach NFH's barge stocks razorback suckers into Lake Mohave

In December, Willow Beach NFH stocked almost 7,000 endangered razorback suckers into Lake Mohave as part of the Service's commitment to the multi-agency Lower Colorado River Multi-Species Conservation Program. The fish were grown to over 300-mm in length, and were stocked into several coves and back waters, which should lower the risk of predation from striped bass on the newly stocked razorbacks.

The razorback sucker recovery program is part of the Lower Colorado River Multi-species Conservation Plan and includes the Service's Willow Beach, Dexter, and Uvalde National Fish Hatcheries; the Arizona Game and Fish Department's Bubbling Ponds State Fish Hatchery; and the U.S. Bureau of Reclamation's Boulder City Field Office.

Mark Olson, Willow Beach NFH

Genetic Evaluation of Razorback Sucker Broodstock

Dexter NFHTC maintains three stocks of razorback sucker that originated from the wild population in Lake Mohave. With the natural population dwindling, the captive stocks provide an essential link to the original wild fish from Lake Mohave and progeny that are needed for future recovery efforts in Lake Mohave and elsewhere. The three captive stocks held at Dexter NFHTC were assessed for genetic diversity at 17 microsatellite loci and compared to individuals from the wild Lake Mohave population. Preliminary results indicate the genetic diversity is similar between the captive stocks and the Lake Mohave population

Dr. Wade Wilson, Dexter NFHTC

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An endangered razorback sucker poses for a photo

Congressional Visit at Uvalde NFH

In October, Congressman Ciro Rodriguez (TX-23) and two of his staffers, along with Uvalde Mayor Cody Smith, President of the Board of Directors for the Chamber of Commerce Howard Hoermann, toured Uvalde NFH to observe infrastructure improvements that were funded under the American Recovery and Reinvestment Act of 2009.

In addition, the tour took a close look at the station's endangered species, which include the razorback sucker, bonytail chub, Comanche Springs pupfish, fountain darter, and Texas wild-rice; as well as an overall description of the station's operations and aquaculture activities. After the tour, Congressman Rodriguez expressed his appreciation for the Service's efforts to protect and enhance of our nation's natural resources.

Grant Webber, Uvalde NFH

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Congressman Rodriguez observes a razorback sucker

Reproductive Health Study of Razorback Suckers

USFWS

Researchers at DNFHTC draw blood from an adult razorback sucker as part of a reproductive health study

Following completion of a one-year study, Dexter NFHTC has provided resource managers with a new non-lethal method for assessing the reproductive health of razorback sucker populations in the Colorado River basin. Thirty-four sexually mature adult razorback suckers underwent monthly blood collections at Dexter NFHTC for the duration of a year. After the blood was collected and centrifuged, the plasma was then sent to two independent labs for analysis.

The research project, in cooperation with the Service's Arizona Ecological Services Field Office, characterized the annual cycle of hormones, specifically vitellogenin (VTG), which is a major component of developing eggs stimulated by natural estrogen in females. Certain contaminants can cause VTG production in male and juvenile fish, leading to concerns about endocrine disrupting chemicals in aquatic environments.

Jason Nachtmann, Dexter NFHTC

Bird Netting Increases Fish Survival at Dexter NFHTC

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Staff from Dexter NFHTC installs bird netting on their ponds.

Dexter NFHTC maintains approximately 50,000 fish in outdoor ponds during the winter months. On an annual basis, 12 of the ponds are covered with 2" x 2" nylon bird netting to protect fingerling sized bonytail, Colorado pikeminnow, Rio Grande silvery minnow, Chihuahua chub, and Virgin River chub from fish eating birds. Once the ponds are filled with water the fish are stocked and the netting is stretched tightly over the ponds. Since starting the new netting strategy, survival rates for fish overwintered in outdoor ponds has increased from < 25% to 95-100% over a six month period. The ability to maintain consistent numbers of native fish is crucial to the success of recovery programs in the southwest.

William Knight, Dexter NFHTC

Harvest Time at Achii Hanyo Native Fish Rearing Facility

In November, staff from Willow Beach NFH, Arizona FWCO, and the U.S. Bureau of Reclamation partnered in the annual harvest of razorback sucker and bonytail in the three ponds at the Achii Hanyo Native Fish Rearing Facility. The staff sorted the fish by species and size, then tagged and stocked the fish into designated areas on the lower Colorado River.

A total of 4,579 bonytail over 300mm were released into the Colorado River; 3,702 bonytail over 250mm were released into Lake Mohave; and 27,589 young of the year bonytail were released into Beal Lake; and 412 razorback suckers over 400mm were PIT tagged and released into Lake Mohave.

Angela Baran, Willow Beach NFH

USFWS

Bonytail are harvested from the ponds at Achii Hanyo for stocking into the lower Colorado River

Temperature Tolerance Studies at Tishomingo NFH

Tishomingo NFH and the Tulsa Ecological Field Office office conducted a study this fall to identify the thermal tolerance of banded darters and fatmucket mussels using two environmental chambers for control and experimental groups. Darters and mussels were acclimated to 20°C in the control group and 24°C in the experimental group followed by a temperature increase of 1°C per day. Water quality and animal behavior were observed and recorded daily. The final results will be determined once the study has been replicated. This study should provide data to depict the thermal tolerance of these two aquatic species and their ability to withstand possible increasing temperatures associated with climate change.

Rebecca Fillmore, Tishomingo NFH

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Tagged fatmucket mussels are used for temperature experiments

Volunteers Make a Difference at Inks Dam NFH

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Volunteers from Inks NFH repair damaged fishing nets.

Everyone has a talent to give. Tapping into a person's skills and knowledge can create a more meaningful experience for the volunteer and those he or she serves. Inks Dam National Fish Hatchery, with the help of the Balcones and Bosque National Wildlife Refuges, is developing a volunteer program that will bring together skills and knowledge aimed at serving the specific needs of the hatchery. Two new volunteers have stepped into the part-time roles of Office and Maintenance assistants, and an additional 19 volunteers have signed up to assist with maintaining the hatchery grounds. Inks Dam also has many additional opportunities for volunteers to aid with events, education, and outreach.

Marc Jackson, Inks Dam NFH

Fish Health Assessment Conducted on the San Juan River

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Fish are collected from the San Juan River for fish health tests.

The Service participated in the National Wild Fish Health Survey (NWFHS) to detect and track fish diseases. In October, the San Juan River, near Farmington, New Mexico was surveyed. Partners from the New Mexico FWCO, Utah Division of Wildlife Resources, and Navajo Nation's Department of Fish and Wildlife Department were conducting a non-native fish removal project on the San Juan River, and submitted 100 fish (consisting of six species) to the Dexter FHU for fish health testing. Tests were conducted per NWFHS procedures for viruses, bacteria, and parasites.

This partnership has provided an opportunity to repeatedly sample reference sites in New Mexico, contributing towards an initiative to test more intensely for the Spring Viremia of Carp Virus. In fiscal year 2009, the Dexter FHU completed 23 NWFHS in Region 2.

Jason Woodland and Dave Hampton, Dexter NFHTC

Arizona FWCO Hosts a Youth Fishing Derby

In October, staff from the Arizona FWCO and Alchesay-Williams Creek NFH participated in the 4th Annual Woodland Wildlife Festival in Pinetop, Arizona. Numerous other natural resource agencies and non-governmental groups were also part of the festival. To kick-off the weekend long festival, the Arizona FWCO, co-sponsored a first annual youth fishing derby with the Pinetop-Lakeside Chamber of Commerce at Woodland Lake.

Approximately 20 children participated and all had a great time. We look forward to next year's event.

Jennifer Johnson, Arizona FWCO

USFWS

Arizona FWCO hosted a fishing derby in October

Snapping Turtles Head South for the Winter

In November, Tishomingo NFH transferred 112 alligator snapping turtle hatchlings to Natchitoches NFH for overwintering. Last year's hatchlings responded from the heated water and insulated building at Natchitoches NFH by growing nearly twice the size as turtles that overwinter at Tishomingo. The turtles left Tishomingo weighing an average of 18.3g each and should return in the spring with growth results similar to the previous year, nearly tripling in weight. The Tishomingo NFH values Natchitoches NFH's contribution to the turtle program, which allows for the release of larger turtles into the wild to maximize survival.

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Alligator snapping turtles are weighed and measured before their transfer to Natchitoches NFH.

Brian Fillmore, Tishomingo NFH

Gila Trout Return to Arizona

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Gila trout are airlifted to remote Frye Creek

Gila trout are swimming in two new streams in Arizona thanks to the efforts of the Arizona Game and Fish Department, Arizona FWCO, Mora NFHTC, U.S. Forest Service, and volunteers from Trout Unlimited.

In November, 500 Gila trout were stocked into Frye Creek on the Coronado National Forest and 250 were stocked into Grapevine Creek on the Prescott National Forest. The fish were grown and transported by staff from the Mora NFHTC. The Frye Creek project was phase one of a three phase project to establish three populations of Gila trout on Mount Graham in southeastern Arizona. Phases two and three will be funded through the 2009 American Recovery and Reinvestment Act.

Jeremy Voeltz, Arizona FWCO

New Species of Beetle Described

USFWS

A new species of blind diving beetle found in the Edwards Aquifer.

The Edwards Aquifer of central and west Texas is one of the most diverse groundwater ecosystems in the world with over 100 endemic species in the limestone springs, caves, and rivers. Biologists at the San Marcos NFHTC have discovered many new species of invertebrates over the last few years of sampling. One has recently been described - a blind predacious diving beetle only found from one spring that is protected by The Nature Conservancy; hence the name *Ereboporus naturaconservatus*. The hatchery also is working with scientists at universities, agencies, and in the private sector to collect these rare invertebrates for molecular analysis. This information could be helpful in making decisions about the risk of extinction as well as adding to the knowledge of the underground organization of this important aquifer.

Randy Gibson, San Marcos NFHTC

Dexter NFHTC Benefits from the Recovery Act

Two American Recovery and Reinvestment Act (ARRA) construction projects were completed this winter at Dexter NFHTC, and two additional projects will start in February 2010. The life blood to the facility is water and the ability to efficiently utilize it to maintain and culture 16 threatened and endangered aquatic species. The work being completed addresses major water resource management needs for the station, including replacement of underground pond valves, pond liners, and concrete catch basins. The vast majority of the work was completed by contractors out of Corrales, New Mexico, thus benefitting the local economy as well at the hatchery.

Bill Williams, Dexter NFHTC

USFWS

Workers replace water valves at Dexter NFHTC

Pupfish Out – Razorbacks in at Willow Beach NFH

The last of the hybrid Devil's Hole Pupfish were moved from Willow Beach NFH to the University of Arizona for ongoing research. The vacant room was renovated to house razorback sucker larvae that are collected from Lake Mohave. The larvae spend the first 2-4 weeks on station in these 10-gallon aquaria. The renovation has also freed up another inside raceway for razorback production. This will also allow the fish to be kept inside longer before we transfer them to an outside re-circulating raceway. The 2010 razorback sucker larvae have started arriving on station and Willow Beach now has over 3000 fry on station.

Angela Baran, Willow Beach NFH

USFWS

Aquaria are used at Willow Beach NFH for the first few weeks of razorback sucker production

Genetic Analysis of Big Bend Gambusia at Dexter NFHTC

USFWS

Big Bend gambusia are maintained at Dexter NFHTC

Dexter NFHTC recently completed a genetic analysis of captive and wild Big Bend gambusia from Big Bend National Park, Texas that were salvaged due to a flood that threatened the only remaining wild population. Results indicate that all 90 Big Bend gambusia sampled were classified as pure with no evidence of hybridization. An additional objective of the study was to determine if the wild population was genetically synonymous with the captive refuge population, since the two have been separated for 34 years. Based on the results of microsatellite analysis, individuals salvaged in 2008 will be combined with the existing Dexter NFHTC refuge stock and managed as one refuge population.

Sherri Baker, Dexter NFHTC

Canal Project Competed at Tishomingo NFH

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The newly lined canal delivers water to Tishomingo NFH

Completion of a project to repair and line the upper water canal at Tishomingo NFH occurred in November. The affected portion of the water supply canal had traditionally leaked under the canal levy creating a substantial loss of water that the hatchery was unable to reclaim. The canal liner should minimize leaks, bank erosion, and prevent vegetation overgrowth within the system. Water was slowly restored to the canal from Pennington Creek slowly to test for problems with the liner. All water supply from the canal to ponds and buildings returned to normal by month's end.

Mary Davis, Tishomingo NFH

Conserving Water in the Arid Southwest

Dexter NFHTC recently completed the rehabilitation of an earthen pond. The pond seeped excessively, requiring 50-70 gallons per minute of flow to maintain an adequate water level. The pond bottom was excavated approximately six inches and the soil removed. The pond was roto-tilled to a depth of approximately six inches, some of the material was then distributed up onto the banks, and the bottom was graded to proper slope and compacted. Clean soil was brought in bringing the pond and its sides up to the proper grade, and creating a sacrificial layer to protect the new and improved pond base. The pond was sealed with sodium bentonite clay and currently is requiring approximately 5-7 gallons per minute water flow to maintain its level, saving the hatchery valuable amounts of water.

Bill Williams, Dexter NFHTC

USFWS

An earthen pond is re-graded at Dexter NFHTC as part of a project to save water

Culturing Cold-Water Fish at a Warm-Water Hatchery

Inks Dam NFH, known as a traditional warmwater fish hatchery, has now transformed into a hatchery with the capability to culture almost any aquatic species. Recent improvements have provided personnel with a new set of tools to assist the Region 2 Fisheries program with high priority projects. This winter Inks Dam NFH relieved some pressure at the Alchesay-Williams Creek NFH complex by culturing rainbow trout destined for stocking in tribal waters in New Mexico. The hatchery biologists are growing the trout in four new 20-foot circular tanks, raceways, and ponds with plans of harvesting the fish in March for distribution. The cold weather this winter created ideal trout culture conditions, and our primary concern of producing trout that look like catfish is thus far unsubstantiated.

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Covered circular raceways grew trout this winter at Inks Dam NFH

Marc Jackson, Inks Dam NFH

Developing New Protocols to Deal With Invasive Mussels

USFWS

Dexter NFHTC is experimenting with techniques to kill quagga mussel veligers

Dexter NFHTC tested the efficacy of the published standard protocol for removal of quagga mussel veligers under the water conditions found at Willow Beach NFH. No mortality was observed in veligers exposed to the treatment without aeration and only 12% mortality occurred in the treatment with aeration. Additional chemical concentrations were tested with 100% recovery observed after veligers were placed in fresh water. The results from this study show that potassium chloride and formalin are not an effective treatment for quagga mussel veligers under the water conditions at Willow Beach NFH.

Catherine Sykes, Dexter NFHTC

Volunteers Assist in all Aspects of Operations at Uvalde NFH

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Randy and Sharon Nador, volunteers at Uvalde NFH

Volunteer assistance is not new to Uvalde NFH; however, the recent efforts by Randy and Sharon Nador have provided an invaluable service to the hatchery since November 2009. Now retired, Randy and Sharon gained a vast amount of experience and knowledge while working at various Federal agencies and facilities, which include the Yellowstone National Park, Nature Conservancy, and Habitat for Humanity. They have been an integral part of planning the Uvalde NFH wildlife trail and organization activities throughout the facility. They have also digitally scanned and organized old photographs; completed plumbing, electrical and mechanical repairs; plumbed fish raceways; and fed fish. In March, Randy and Sharon will move on to their next great adventure but their presence and hard work will be sorely missed by the staff at the Uvalde NFH.

Grant Webber, Uvalde NFH

New Interpretive Signs and Kiosks at Willow Beach NFH

Willow Beach NFH received $10,000 from the Visitor Facility Enhancement funding to create an informational sign and construct a kiosk. The kiosk arrived on station as a kit in July 2009, but the extreme heat postponed construction until late September. The kiosk was assembled in October and the concrete pad and sidewalk repairs were completed in November. An informational sign about the fish on station was created by hatchery staff and produced by a sign company in Nevada. The full color, aluminum sign arrived in October 2009 and is now on display on the fencing surrounding the raceways.

Angela Baran, Willow Beach NFH

USFWS

New signs and kiosks at Willow Beach NFH describe the species grown at the station

Southwest Region Fisheries Division

National Fish Hatcheries

The National Fish Hatcheries (NFH), at 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 (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.

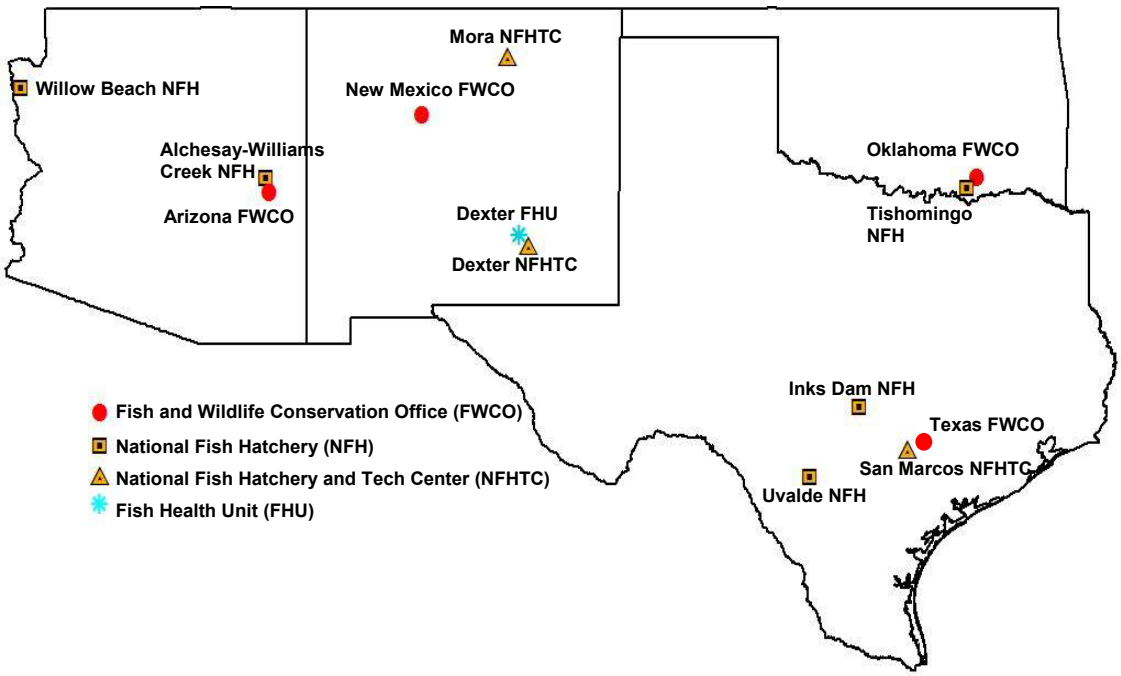
Fish Technology Centers

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.



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