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Currents

REGION 2 – SOUTHWEST REGION

Fisheries Program Highlights

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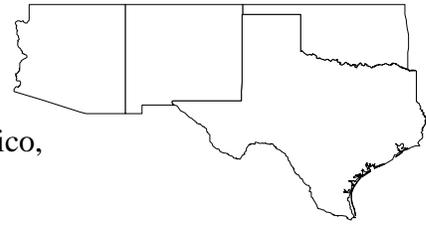


San Marcos NFH&TC studies the effects of military “smokes” on the endangered fountain darter and its habitat

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REGION 2 – SOUTHWEST REGION

The Southwest Regional Office, located in Albuquerque, New Mexico, administers 12 fisheries field stations in Arizona, New Mexico, Oklahoma, and Texas.



The Division of Fishery Resources in the Southwest encompasses 3 Fishery Resources Offices, 5 National Fish Hatcheries, 3 Fish Technology Centers, and 1 Fish Health Center. The Division of Fishery Resources also has responsibility to control aquatic invasive species.

Fishery Resources Offices

The 3 Fishery Resources Offices (Arizona Fishery Resources Office, New Mexico Fishery Resources Office, and Oklahoma Fishery Resources Office) evaluate wild native fish stocks and their habitats, and where feasible, work with partners to restore habitats and fish populations.

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

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 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.

Private aquaculture industry also benefits from scientific information generated by the Fish Technology Centers.

Fish Health Center

Fish Health Center biologists assess 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.

The National Wild Fish Health Survey allows biologists to assess wild stocks and to share scientific findings with other scientists or the public through a national database.

Fish health assessments at state and federal hatcheries promote good fish culture and ultimately better, healthier fish stocks.

The U.S. Fish & Wildlife Service's fish health program takes a proactive and cooperative approach, networking with other health professionals to ensure healthy fisheries.





Aquaria used to raise fountain darter for toxicity experiments.

San Marcos NFH&TC Determines the Toxicity of Military Smokes on Endangered Fish

The San Marcos NFHTC is producing fountain darter fry, fingerlings, and adults that will be shipped to the U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC), Champaign, IL, where half the shipped fish will be exposed to various military smokes. The ERDC has recently constructed a special chamber to expose various animals and plants to the military smokes. After exposure, both the exposed and unexposed fish will be returned to San Marcos. Mortality of the fish will be monitored from the time the fish leave San Marcos. Upon returning to San Marcos, male and female adult fish will be paired and allowed to spawn. Data on the numbers of eggs and fry produced by the treated and untreated fish will be recorded. The growth rates of the fry and juveniles also will be determined as well as the numbers of eggs and fry produced once the fry and juveniles become adults.

Tom Ryan, ERDC, and Tom Brandt, San Marcos NFH&TC



Oklahoma FRO biologists sample for paddlefish in several eastern OK rivers.

Paddlefish Restoration Efforts Continue in Oklahoma

Oklahoma FRO, with help from the Oklahoma Department of Wildlife Conservation, completed a paddlefish status survey of the North and South Canadian rivers and the Deep Fork River of eastern Oklahoma. Historically, paddlefish occupied the entire eastern 2/3 of Oklahoma and were found in all of the larger rivers. Their present range in Oklahoma has been reduced to the eastern third of the state due mainly to the construction of large mainstem dams which block spawning migration.

While stock restoration activities in the northeastern part of the state and the Red River in the south have produced good results, the central portion of the state has not been adequately addressed. The status survey of the central rivers is the first step in the paddlefish restoration process for central Oklahoma.

Brent Bristow, Oklahoma FRO



Paddlefish broodstock collected from Natchitochis, LA.

Paddlefish Rearing Season has Begun at Tishomingo NFH

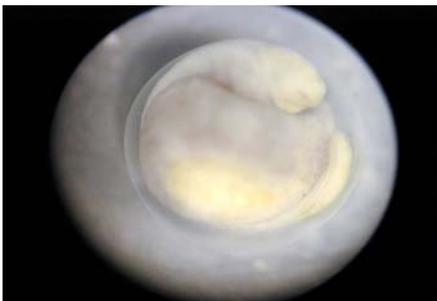
Paddlefish season has begun and it appears to be the beginning of another successful rearing season. Over 100,000 Red River paddlefish fry are now feeding and well on their way to growing to a stocking size of 14+ inches by early fall. Collection and spawning of wild brood stock from the Red River was a cooperative effort among hatchery staff, the Oklahoma FRO, the Arkansas Game and Fish Commission, and the Natchitoches NFH in Louisiana. Low flows in the upper Red River necessitated collecting brood stock farther down the river in Arkansas and Louisiana. Fish captured in Arkansas were transported back to Tishomingo NFH for spawning and those captured in Louisiana were spawned at the Natchitoches NFH and the fry were transferred back to the Tishomingo NFH for rearing. The fry will be reared for

a stocking commitment in Lake Texoma, an impoundment on the Red River, as a part of an effort to re-establish a self-sustaining population in that reservoir. Paddlefish were considered to be extirpated from waters above the impoundment in the 1950s.

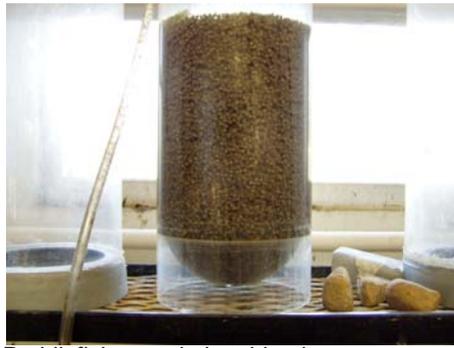


Paddlefish fry are reared at Tishomingo NFH before being released into the wild.

Arkansas River paddlefish brood stock were also collected from an impoundment in the Arkansas River drainage by the Oklahoma FRO and the Oklahoma Department of Wildlife Conservation. These fish were transported to the Tishomingo NFH for spawning. Currently, over 50,000 paddlefish eggs are in the final stages of incubation. Arkansas River paddlefish will be reared to meet a stocking commitment in John Redmann Reservoir, Kansas. **Kerry Graves, Tishomingo NFH**



Paddlefish egg at 96 hours.



Paddlefish eggs in hatching jar.

Willow Beach NFH Uses Innovative Techniques for Propagation of Endangered Razorback Sucker

The razorback sucker was once widely distributed and abundant in the mainstream and major tributary rivers of the Colorado River basin. Numbers of individuals have severely declined during the last 50 years because of major changes in its riverine ecosystem. This decline has been so extensive that razorbacks now occupy only a small fraction of their historic range. Annually, a multi-agency effort is made to estimate population size of these endangered fish in Lake Mohave. This year, the “razorback round-up” was held at the Willow Beach National Fish Hatchery the week of March 20, 2006. Personnel from the USFWS Ecological Services Las Vegas office (Region 1), the Bureau of Reclamation, the Arizona Game and Fish Department, the U.S. Forest Service, and hatchery personnel captured 83 adult razorbacks and brought these fish to the hatchery for propagation studies. Innovative approaches to solve hatchery-related problems

of noncoincident maturation were examined. For example, biologists from Louisiana State University (Amy Gitreau and Terry Tiersch) scanned female razorback suckers with a laptop digital ultrasound to examine oocyte maturation and ovary development. Additionally, these biologists, working in partnership with hatchery staff, examined ways to cryopreserve sperm of razorback suckers using procedures refined by the cattle industry. These tools offer flexibility in spawning, provide efficient transfer of genes from wild populations to captive populations, and permit the storage of sperm for extended periods, which in turn create opportunities for recovery and genetic conservation.

Chester Figiel, Willow Beach NFH



Biologists examine egg maturation and ovary development in female razorback sucker.

Inks Dam NFH Continues to Meet the Fish Needs of Tribes and Others

Fish production and distribution for Tribal fishery management programs and other federal waters continued during the 2nd quarter of FY-06. Channel catfish were distributed throughout the southwest to the

Alabama-Coushatta, Sandia, Zia, San Juan, and Zuni Indian Reservations, and the Marble Falls Kid Day and U.S. Forest Service. The Regional Distribution Unit also assisted the Alchesay-Williams Creek NFH by transporting 50,500 rainbow trout to the Jicarilla Apache Indian Reservation.

Because golden algae blooms have been a recurring problem at several Texas Parks and Wildlife Department hatcheries, the state's ability to produce striped bass has been severely limited. To assist TPWD with their striped bass program, a cooperative agreement was developed between Inks Dam, the Lower Colorado River Authority, and Burnet County to produce striped bass for stocking.



Paul Dorman welds a platform for the new incoming water valve and packed column at one of the Inks Dam ponds.

In order to continue to meet the many fish demands throughout the Region, upkeep and maintenance of the facility is ongoing. Hatchery staff continued to work on replacing water supply line and drain valves, plumbing and fish screens in the hatchery building, and rehabilitating the concrete tanks. Incoming water valves and drain valves were also replaced in six ponds.

Regional Fish Health Unit is Back in Full Operation

In late 2005 the Pinetop Fish Health Center was relocated to the Dexter NFHTC. In mid-January 2006, all lab and office equipment arrived at Dexter. Since that time we have been unpacking, setting up the lab equipment and ordering supplies and reagents. In a major partnership effort, other FWS Fish Health Centers across the country examined samples from several Region 2 fish health cases. We collected the samples but were unable to complete pathogen testing at our lab because of our relocation. Our thanks go out to the staff at Lamar FHC, PA, Warm Springs FHC, Georgia, and the California/Nevada FHC, CA. All three labs helped examine samples from the New Mexico Department of Game and Fish, the Mescalero Tribal Fish Hatchery, NM, and the Arizona Game and Fish Department.
John Thoesen, Fish Health Unit @ Dexter NFH&TC

Early Stocking by the Williams Creek NFH

Despite the arrival of 4.5 inches of precipitation during the month of March, including 44 inches of snow, Williams Creek NFH was forced to stock rainbow trout one month ahead of schedule due to low spring flows. All of Williams Creek's water is supplied by natural springs that depend on snow pack and the subsequent snow melt to recharge the springs. During years of average snow

pack the springs flow at nearly 2,000 gpm during March. This year during March, spring flows averaged 1400gpm, only 100gpm higher than the minimum average since 1971.

Because of the drought in the southwest, it is necessary for hatchery staff to adjust rearing and stocking practices according to declining water flows. Low head oxygen systems throughout the hatchery have maintained the trout at the Williams Creek facility that would otherwise have experienced higher incidences of disease and mortality. Hatchery staff have worked closely with other Fish and Wildlife Service biologists and Tribal partners in arranging for stocking of trout one month earlier than planned.
Sherry White, Williams Creek NFH



Rainbow trout are stocked into Sunrise Lake, and others, on the Fort Apache Indian Reservation.

Alchesay-Williams Creek's Volunteers are Cum Laude

We all know and appreciate the special role volunteers play at many USFWS field stations throughout the United States. At the Alchesay-Williams Creek NFH Complex, we would

not be able to operate at our current production level without the services of our volunteers. For the past four years, the Complex has operated 1-4 positions below our minimum staffing level, yet maintained full production through the recruitment and use of part-time and full-time volunteers to mitigate the effects of vacant positions. Volunteers at the A-WC NFH Complex play an active and integral role in the production and distribution of trout to our Tribal partners, and provide indispensable assistance in facility and grounds maintenance.

At the forefront of this program is Joe White with 10,720 hours of volunteer service at our Williams Creek Unit and along with his wife Betty, winners of the 2004 President's Volunteer Award.



Volunteers Joe White and Joanne Thompson remove dead eggs from egg incubators at Williams Creek NFH.

Another outstanding volunteer is Anderson Quay with 3,732 hours, accumulated in only a little over 2 years. Andy retired in 2002 from the USFWS after 30 years service at both the Alchesay and Williams Creek Hatcheries. In 2003, Andy requested to return to work as a volunteer and currently donates over 150 hours a month

in his former and very experienced role as a fish culturist.



Volunteer Anderson Quay plays a leading role in the daily care of trout at the Alchesay NFH.

Think this is unusual? Not really. Assisting Andy at the Alchesay Unit is volunteer Wesley Alchesay, also retired from USFWS, and a descendent of the last White Mountain Apache Chief, for whom this hatchery is named. Wesley retired from the A-WC NFH Complex in 2004 and returned to work as a volunteer in 2005. In his six-month tenure, Wesley has contributed 813 hours of volunteer service and continues to donate about 120 hours each month.

The list goes on. Will and Joanne Thompson, resident volunteers at the Williams Creek Unit for over two years have contributed 3,194 hours, filling a very important niche in the care of millions of trout eggs and fry each year, providing essential support for the Apache Trout Culture Program. Last fiscal year, volunteers contributed 4,396 hours of assistance in the operation and maintenance of both hatcheries. Heartfelt thanks go out to these volunteers and many others who

have unselfishly contributed their time and efforts in support of our program.

Bob David, Alchesay-Williams Creek NFH Complex

Mora NFH&TC Refines Hatching of Endangered Gila Trout Eggs

As part of the recovery effort for Gila trout, the "Gila Trout-Genetic Broodstock Management Plan" is rigorously followed. At Mora, small lots (200 – 300) of eggs are produced to maintain the maximum genetic variability of the broodstocks. These small lots of eggs must be hatched and maintained separately to ensure equal numbers of fish are produced and kept from each 2 male x 2 female mating.

These small lots of eggs have been hatched in Heath trays in the past with varying degrees of success. Water flow over the eggs can vary by tray and by location in the tray requiring daily attention. Prophylactic treatment with formalin has been the norm to suppress fungus outbreaks that occasionally will occur.

Gently rolling eggs in a jar reduces the incidence of fungus by ensuring developing eggs are adequately supplied with oxygen and through the mechanical action of rolling. However, most commercially available jars are sized so large lots of up to 100,000 eggs can be hatched efficiently. We are experimenting with homemade jars appropriate to the lot size. Full

implementation should take place next year with banks of small jars. *John Seals, Mora NFH&TC*



A modified beer glass serves as a hatching jar for threatened Gila trout eggs.

HACCP Planning Expands its Range into Mexico

In order to fight unwanted invasive species introductions, Region 2 has adopted HACCP planning, one of the most practical tools for fighting unintentional spread. HACCP, an acronym for “Hazard Analysis and Critical Control Points,” promotes best management practices and is taught in workshops in all Regions and at the National Conservation Training Center. Although Region 2 Fisheries leads the nation in HACCP planning efforts, other Fish & Wildlife Service regions are becoming increasingly more aware and involved.

Recently, “HACCP Planning for Natural Resource Management” has achieved international recognition. Concerned biologists in Mexico have acknowledged the benefit of careful planning and were interested and enthusiastic about promoting HACCP planning on the south side of our border. Dr. Roberto Mendoza of the Universidad Autónoma de Nuevo Leon invited representatives from the U.S. Fish & Wildlife Service to conduct a 2-day HACCP Planning workshop in Mexico City. This unprecedented training session was led in February by Bob Pitman, Region 2 ANS Coordinator, and a team of 5 additional biologists, including Dr. David Britton (R2 Fisheries), Ernesto Reyes (R2 Ecological Services), Dr. John Galvez (R4 Fisheries), Stewart Jacks (R2 Fisheries) and Dr. Pablo Gonzalez (University of Arizona).

The workshop was cosponsored by the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad [National Commission for the Knowledge and Use of Biodiversity (CONABIO)], and Universidad Nacional Autónoma de México (National Autonomous University of Mexico). Approximately 40 Mexican biologists holding prominent positions in academia, government, aquaculture, and other areas related to biological natural resources completed the hands-on training and produced their own original HACCP plans as teams.

Stewart Jacks, Arizona FRO & Dave Britton, Regional Office

Arizona FRO Conducts Spring Roundup Efforts of Endangered “Big-river” Fishes

Biologists from the Arizona FRO surveyed lakes Mohave and Havasu for endangered bonytail and razorback sucker. These annual, multi-agency efforts are focused on determining the current status of these endangered populations, measuring survival of stocked fish, and collecting “wild” larvae for rearing at Willow Beach NFH before being returned at a larger size. This year marks the first that a large aggregate of razorback sucker was observed spawning in the riverine reach of the Colorado River above Lake Havasu.

Mark Brouder, Arizona FRO



Biologists from the Arizona FRO remove an endangered razorback sucker from a trammel net during this year's round-up efforts.

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