

SOUTHWESTERN NATIVE AQUATIC RESOURCES AND RECOVERY CENTER



January 2014 Monthly Activity Report

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Desert Pupfish (*Cyprinodon macularius*)
Photo Credit: Tom Kennedy

In the upcoming months, the Southwestern Native Aquatic Resources and Recovery Center (Southwestern Native ARRC) will feature species that are held at the facility, starting with the desert pupfish. The species is threatened with extinction throughout its native range primarily due to habitat loss and modification, water pollution and introduction and competition with non-native fish species. Naturally occurring populations of desert pupfish are now restricted to a handful of isolated areas in Arizona and California.

Desert pupfish have been cultured as a refugium species at Southwestern Native ARRC since 1983. The refuge population continues to thrive after 30+ years of being maintained on station. The primary goal is to maintain a genetically diverse population to supplement extant populations in case of emergency and/or catastrophic loss. Over the years individuals have been provided to Recovery partners for reintroductions into historic range and for research related activities.

PARTNERSHIPS AND ACCOUNTABILITY

Horticulture supplies were provided to the Hagerman NM High School FFA program as part of the Center's outreach to engage local science classes and students in conservation biology.

The annual fish health inspection schedule for Region 2 hatcheries was distributed this month. The schedule follows the same timing as last year with the only exception being the sampling of lots at Williams Creek and Alchesay National Fish Hatchery. In the past few years sample collection for both fish health inspections was accomplished during the same trip. This year the sample collection trips are scheduled separately to allow sufficient time to complete all lot testing per established protocol timelines.

AQUATIC SPECIES AND CONSERVATION MANAGEMENT



Sampling a young alligator snapping turtle, the red appendage on the turtle's tongue is used to lure fish closer to the turtle.
USFWS Photo

Fish Health staff traveled to the Tishomingo National Fish Hatchery (NFH) to conduct a turtle health assessment January 21-23. Ten alligator snapping turtles were sampled to test for

Batrachochytrium dendrobatidis (Bd) and to establish a health baseline for specific pathogens. In addition to collecting tissue samples, swab samples were collected to determine whether non-lethal sampling might be sufficient for some periodic monitoring. This work will help inform Tishomingo NFH staff and partners working on a Collaborative alligator snapping turtle restoration project.

The Fish Health unit also processed and analyzed ovarian fluid from Apache trout spawning at Williams Creek National Fish Hatchery. In total, 150 samples were submitted over the course of 2 months for virology and *Renibacterium salmoninarum* screening. Working with these samples, Jason Woodland provided training to Dave Hampton in the standard operating protocols for the direct fluorescent antibody test for *R. salmoninarum*. This bacterium is the causative agent of Bacterial Kidney Disease in salmonids and is a nationally reportable pathogen. The lab also received Rio Grande silvery minnow samples for diagnostic testing from the USGS Columbia Environmental Research Center in Yankton, South Dakota. The fish are a sub-sample from a research population maintained at the facility for the past 10 years.



Southwestern Native ARRC in January
USFWS Photo

Cold weather during the month of January lowered water temperatures in the ponds to an average of 6°C. All fish populations on station are stable and staff continues to daily monitor water quality parameters to ensure fish survival.

Zero fish were distributed during the month of January.

LEADERSHIP IN SCIENCE AND TECHNOLOGY

Based on a new detection of *Haplorchis pumilio* metacercaria in fountain darters (*Etheostoma fonticola*) by Daniel Huston and Tom Brandt of the San Marcos ARC, the Fish Health Unit was requested to validate a protocol for enumeration of this emerging parasite of concern in the Edwards Aquifer. Very little is known about the effects of infection in small fishes such as the fountain darter, and the Unit will add monitoring for this trematode to the existing study plan of our collaborative fountain darter parasite monitoring project.

Molecular Ecology Laboratory (MEL) staff completed genotyping 106 Devils River minnow (*Dionda diaboli*) samples representing the San Felipe population held at San Marcos Aquatic Resources Center (ARC). The samples were



Beautiful Shiner
Photo Credit: Tom Kennedy

genotyped utilizing 10 microsatellite loci multiplexed in two primer sets and will be analyzed for stock characterization and compared to previously analyzed data. In addition, MEL staff began genotyping 50 Yaqui beautiful shiner (*Cyprinella formosa mearnsi*) samples from the San Bernardino National Wildlife Refuge utilizing 11 microsatellite markers and sequencing at the mitochondrial cytochrome *b* gene. These samples are part of a research project examining the genetic diversity of the refuge populations to assist in answering management related questions. Humpback chub samples collected in 2013 from the Black Rocks Reach of the upper Colorado

River were sent to the MEL for archiving and future genetic analysis.

Renee Martin began helping Linda Vannest with the Research Unit's quantitative PCR (QPCR) protocols and Wade Wilson reviewed a manuscript for peer-review publication in *Conservation Genetics*.

WORKFORCE MANAGEMENT

Teresa Lewis attended the Rocky Plains Fish Pathologists meeting in Tucson, AZ, January 13-15. This meeting is held annually as an informal forum for fish health professionals to discuss fish pathogens and health concerns as they affect State and Federal (Region 1, 2, and 6) fish culture and health monitoring programs.

Annual progress reports were completed for cost recovery projects related to the Virgin River Program, San Juan River Implementation Program, Lower Colorado River Multi-Species Conservation Program and the Rio Grande Silvery Minnow Endangered Species Act Collaborative Program. Staff also completed the Fish and Aquatic Conservation National Motor Vehicle Fleet Survey and updated and submitted the Sustainable Energy Practices Database to the regional coordinator for review.

Staff participated in the monthly Project Leaders, Fisheries Administrative, National Wild Fish Health Survey Users Acceptance Team, Aquatic Animal Health Policy Committee and Desert Landscape Conservation Cooperative Science Working Group calls in January. Training for the month included the Utilization Clerks teleconference training; Martin Luther King, Jr. Day Observance webinar and VEVRAA Regulations webinar and the VERA/VSIP Special Regional All Employee Meeting webinar.

On January 28-30, all staff attended the retirement training hosted at the Bureau of Land Management – Roswell Office in either the 15+ years federal service (2-day) or the <15 years federal service (1-day) training sessions. The retirement training was highly informative and greatly appreciated.

ADDITIONAL ACTIVITIES

The yearly Pesticide Use Proposals usage report and chemical inventory was completed for the 2013 year.

Renee Martin completed the annual maintenance for the Research Unit's centrifuges and autoclaves as well as made reagent aliquots for general use. During this period the Research Unit's uninterruptable power supply battery backup for the ABI 3130xl genetic analyzer stopped working. Attempts to repair the battery backup with new fuses and batteries failed so a new one will be purchased. Additionally, the Research Unit's laboratory centrifuge used for deep-well plates began giving an error message and solutions for the problem are currently being researched.

Fish culture staff mowed the station grounds and cleaned up the well and generator enclosures. Fluid levels and batteries were checked and routine maintenance completed on all back up power generators and passenger and fish transport vehicles. New tires were installed on the Ford F-350; a leaking lower transmission cooler line was replaced on the Chevy dually; the battery was replaced on the Chevy 2500 crew cab and flats repaired and air filters cleaned on 2 Kubota UTV's. The Kubota riding mowers were also taken in for tune-ups and service on the acceleration throttles.

Staff began cleaning up the scrap yard. Unusable items were hauled to the recycling center in Roswell and weeds were trimmed.

Johnson's Septic Tank from Roswell pumped out all the septic tanks on the facility.

The Southwestern Native ARRC received 8 visitors for the month of January.