

Southwestern Native Aquatic Resources and Recovery Center

July 2016

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STAFF

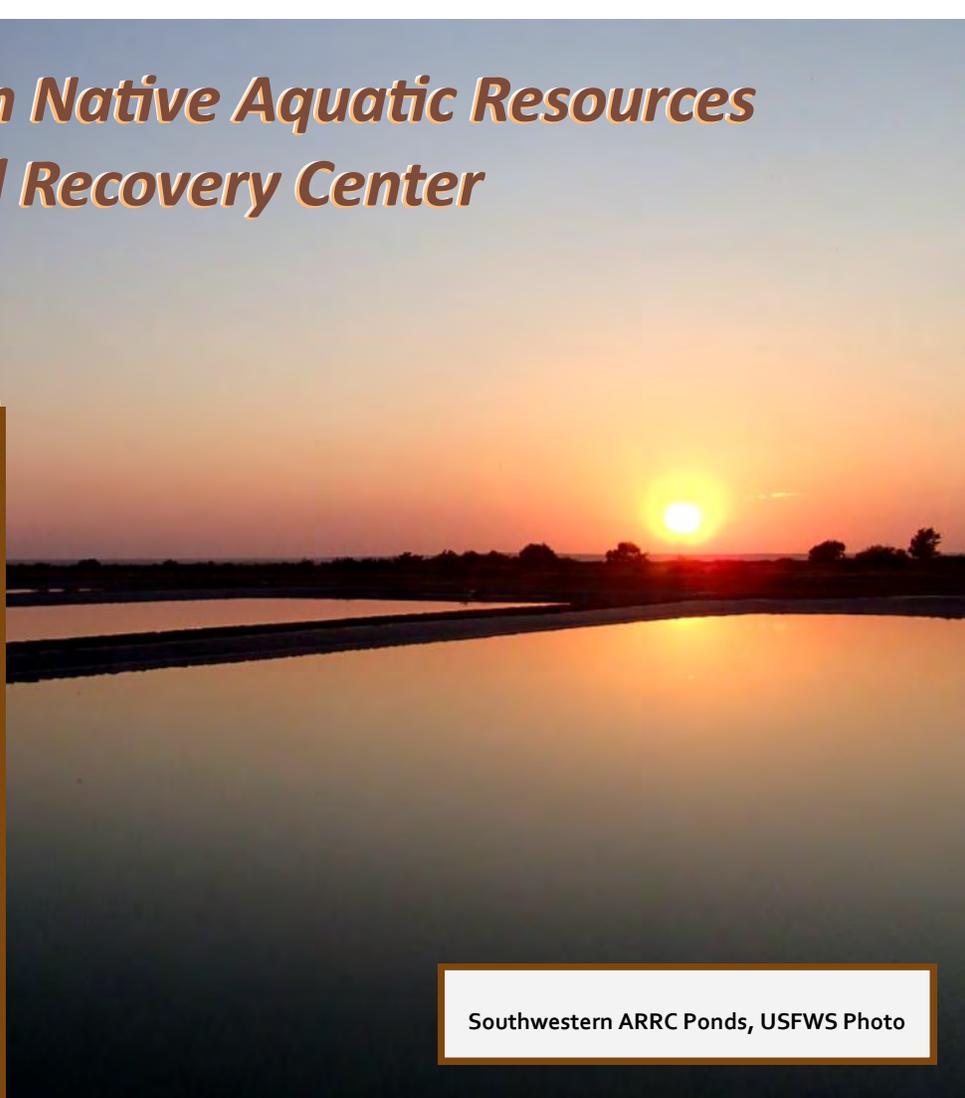
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Fish Biologist.....	Ian Paige
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Fish Biologist (Genetics)	Sandra Bohn
Fish Biologist (Genetics)	Vacant
Fish Biologist FONS.....	Hannah Mello

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Fish Health Leader.....	Martha Keller
Fish Health Biologist.....	Marlene Rodarte
Fish Health Biologist.....	Jason Woodland
Fish Health Biologist.....	David Hampton
Fish Biologist	Ashlie Peterson



Southwestern ARRC Ponds, USFWS Photo

Conserving Aquatic Species

Fish rearing season is in full swing at the Southwestern Native Aquatic Resources and Recovery Center. Seventy two ponds have been filled and stocked to meet the Centers' annual commitments. Young-of-year woundfin were seined from the broodstock ponds and stocked into new grow out ponds.

No fish were distributed during the month of July.



Woundfin, Photo Credit: Joe Sartore

Conserving Aquatic Species cont.

Fish Health staff conducted the Mora and Inks Dam National Fish Hatcheries (NFH) annual aquatic animal health inspections this month. A total of 5 lots of Gila trout comprised of 300 fish were sampled at Mora and 11 lots, 908 fish, including channel catfish, paddlefish, clear creek gambusia and fathead minnow were sampled at Inks Dam. Tracy Diver completed the molecular confirmation process for three Fish Health cases including Aquareovirus, Bacterial Kidney Disease (*R. salmoninarum*) and *Aeromonas salmonicida*.



Aaron Frater-Schmidt and Dave Hampton Collecting Tissues From Gila Trout, USFWS Photo

Scientific Capacity

The Molecular Ecology Lab received Gila Trout fin clips from the Museum of Southwestern Biology, Albuquerque, New Mexico, samples were originally collected at Mora National Fish Hatchery from individuals collected in Iron Creek and transferred to the facility. Center staff genotyped and sequenced all samples provided and Hannah Mello completed the QAQC portion of the project. Tracy Diver produced a haplotype network showing the relationship of the Iron Creek fish to other Gila Trout and Rainbow Trout. Wade Wilson conducted additional diversity analyses and will present the results at the Gila Trout Recovery Meeting in early August.

Sandra Bohn received and extracted DNA from 92 White Sands Pupfish (*Cyprinodon tularosa*) fin clips provided by New Mexico State University, and continued working on the Upper Basin Chub report. She analyzed the data and created a series of figures and tables including: a haplotype network, Structure analysis, Discriminant Analysis of Principal Components and a map showing the range of Humpback Chub (*Gila cypha*) and Roundtail Chub (*G. robusta*) within the study area and corresponding sampling sites. Data analyses have included estimates of effective population size, genetic diversity, pairwise F_{ST} , and number of private alleles. In addition, she began comparing models of Humpback Chub speciation using Approximate Bayesian Computation in DIY-ABC.



Water Sampling, Albuquerque BioPark Fish Culture Tanks, USFWS Photo

Water samples were collected from the Albuquerque BioPark this month for a project monitoring the potential presence of microcystis in Rio Grande silvery minnow (RGSM) captive populations. Sandra Bohn and Hannah Mello developed the extraction methods for the study and have validated the qPCR assay for detecting a gene that produces the microcystin toxin. Hannah has processed all water samples and has screened them for the microcystin toxin that may cause mortality of RGSM held at the BioPark.

Hannah Mello and Tracy Diver developed a study plan examining the diet and resource availability for Rio Grande silvery minnow (*Hybognathus amarus*) in the Big Bend reach of the Rio Grande.

Scientific Capacity cont.

They collected water samples on station to validate the methods proposed for the study prior to data collection. Hannah also assisted Sandra Bohn with genotyping Pahrnagat Roundtail Chub (*Gila robusta jordani*) from the Southwestern ARRC and Key Pitman, Nevada populations. Sandra sequenced an additional subset to add for comparison in the Upper Basin Chubs report.

The San Juan River Recovery Implementation Program announced the 2017 annual work plan. A project submitted to the Program by the Molecular Ecology Lab was funded and Tracy Diver worked to address reviewer comments pertaining to the original scope of work. She also completed the first draft of an internal report evaluating the reproductive maturity of Woundfin and addressed comments provided on the internal report evaluating the effects of size sorting on sex ratios for production Bonytail.

The fish health team started preparations for a study examining euthanasia protocols in various species of fish cultured at Southwestern ARRC. Comparisons of the effectiveness of Aqui-S and MS-222 will be performed. Preliminary preparations will take place in early August for planned trials beginning in mid-August. The Aqui-S usage will also be part of an INAD study and will be reported back to the Aquatic Animal Drug Approval Partnership Program (AADAP).

Fulfilling Tribal Trust Responsibilities

One lot of rainbow trout was collected from Lake Wheatfield, Arizona by the Arizona Fish and Wildlife Conservation Office staff and provided to the Fish Health lab for processing and analysis as part of a wild fish health survey for the Navajo Nation.



Sara and Ashlie sampling RBS From Wheatfield Lake, USFWS Photo

Workforce Management & Training

Hannah Mello completed introductory Service training including: credit cards, safety, payroll systems, and other center activities. In addition, she has been working with Research Staff and has received training on use of the FastDNA Spin kit and GeneMapper and Sequencher Software.

The week of July 10, Ashlie Peterson and Cecilia Lamb attended the “Conservation Medicine and Diseases of Amphibians and Reptiles” course. The course was held at the Southwestern Research Station in Portal, Arizona. Topics covered included: field collection techniques, health assessment and major diseases of amphibians and reptiles and procedures for pit tagging and implanting of radio transmitters. The course provided a solid foundation in reptile and amphibian necropsy techniques.

Aaron Frater-Schmidt, Fish Biologist in the Fish Culture Unit started a 6-week detail in Fish Health. He will take part in several annual inspections and receive training in virology, bacteriology and parasitology.

Center staff participated in the Region 2 Fisheries & Aquatic Conservation (FAC) Monthly Conference call

Workforce Management & Training Cont.

and in a Rio Grande silvery minnow (RGSM) propagation facilities monthly conference call. Administrative Staff attended the Fleet Management Webinar and the Quicktime FMLA Webinar Trainings. Michelle Bell trained other administrative staff on creating, posting and closing fleet work orders. They also attended the Monthly Budget Meeting with FAC on July 28. Budget Fiscal Year 2017 Budget Needs Requests were turned into Fisheries along with the Quarterly Budget Status Reports.

Interviews were conducted for the Assistant Center Director and Lead Maintenance Mechanic positions.

Engaging and Educating the Public and Our Partners



Sara Lightfoot Dividing Gila Trout Heads, USFWS Photo

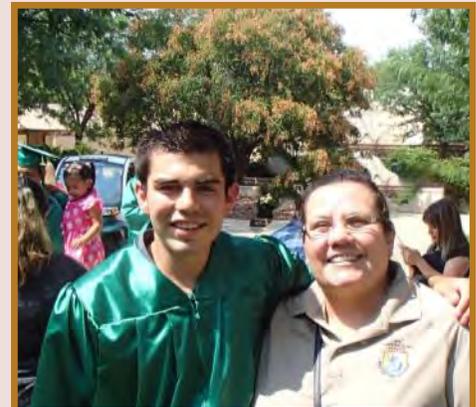
Sara Lightfoot, a high school student from nearby Goddard High School in Roswell, New Mexico joined fish health during the summer to assist with fish health duties. This month she assisted with processing trout heads for the detection of whirling disease.

Several fish specimens from Southwestern ARRC were preserved, labeled and shipped to the National Conservation Training Center (NCTC) for training and display purposes.

The annual Station Safety Assessment report for the Bitter Lake NWR in Roswell, New Mexico was completed and turned into the Regional Safety Office.

On June 30 the fish health lab received 37 blue catfish (*Ictalurus furcatus*) from New Mexico Game and Fish in relation to a fish kill at Elephant Butte Lake. All fish arrived live and were worked up by Ashlie Peterson, Cecilia Lamb, and Jason Woodland.

Since September 2016, Southwestern ARRC has participated in the Eastern New Mexico University – Roswell (ENMU-R) Special Services Certificate of Training Program. This program is designed for students who have disabilities to gain meaningful and appropriate training to prepare for positions in competitive employment. For the past 11 months Wil Romero has been volunteering at the Center and has contributed 288 hours of service while working in all areas of the Southwestern ARRC program. On July 28, Wil graduated from ENMUR with a Certificate of Training in Office Skills. Congratulations Wil.



Wil Romero and Maria Bullard, Graduation ENMU-Roswell, USFWS Photo

Additional Activities



3500xl Genetic Analyzer, USFWS Photo

Hannah Mello has been digitally archiving journal articles and supplementary information from the Genetics Lab Office; she also performed maintenance on the dissecting and compound microscopes in the PPL lab in preparation for upcoming use in the RGSM diet study. Tracy performed annual maintenance on all centrifuges within the lab and cleaned all freezer filters.

MEL received preliminary maintenance training on the 3500XL Genetic Analyzer; additional technical training will be provided to MEL staff by a ThermoFisher Field Applications Scientist in August. Fish health received a new freezer unit for use in the bacteriology laboratory.

General and preventative maintenance activities for the month included; repairing and replacing seven broken waterline valves, crucial to maintaining adequate water flow and conditions for pond culture. The storage area below the recently rehabbed Vehicle Storage Building loft was rebuilt. Shelving units were constructed and all tools, materials and equipment previously moved out of the loft during rehab were returned to their appropriate storage area. Landscaping in front of the Administrative Building was completed this month. New red yucca's were planted, the drip irrigation system repaired and new gravel placed in the beds. Staff also planted yuccas, Texas sage and a desert willow tree around the Fish Health building. Several pond liners were patched after valve repairs and areas previously torn. As time allowed, staff continued cleaning bird netting removed from winter ponds; trimmed trees at facilities entrance area and in front of the equipment and recycling storage sheds and mowed around facility buildings, grounds, wells, roads and ponds.

Cummins Rocky Mountain from Albuquerque, New Mexico diagnosed and repaired the Isolation/Quarantine Building generator and provided an estimate to repair the transfer switch/generator on well #2. Roswell Redi-Mix delivered base course material for road maintenance around the facility. Grimm's Farm and Auto of Dexter repaired an axle seal that was leaking on the Freightliner Dump Truck.



Asphalt Project, USFWS Photo

Landscaping Front Entrance, USFWS Photo

A pesticide use and storage inspection was conducted by the New Mexico Department of Agriculture.

There were 320 lbs. of cardboard, 60 lbs. plastic and 1 lb. of empty printer ink cartridges recycled in the month of July.

Southeastern New Mexico continues to experience severe drought conditions and above average ambient temperatures. Daily temperatures were above 100° F for 17 consecutive days, with the lowest temperature for the month at 93° F and the area only received .12" of rain for the month.

There were 5 visitors for the month of July.

Upcoming Activities:

August 3—Harvest Woundfin Broodstock Ponds

August 4—Gila Trout Recovery Meeting

August 9 – Wild Fish Health Survey in Pinetop, AZ

August 11—Defensive Driving Training (All Staff)

August 16 – Receiving Fountain Darters from San Marcos ARC

August 17-18—Harvest Razorback Sucker Study Fish From Ponds

August 22 – Partial Fish Health Inspection for Southwestern ARRC