

# Southwestern Native Aquatic Resources and Recovery Center

June 2016

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## STAFF

Center Director.....	Manuel Ulibarri
Deputy Center Director.....	Vacant
Administrative Officer.....	Maria Bullard
Administrative Technician.....	Michelle Bell
Office Assistant.....	Casey Booth
Fish Biologist.....	William Knight
Fish Biologist.....	Ian Paige
Fish Biologist.....	Jesse Trujillo
Fish Biologist.....	Aaron Schmidt
Fish Biologist FONS .....	Vacant
Animal Caretaker.....	Cecilia Lamb
Maintenance Mechanic.....	Vacant
Maintenance Worker.....	Ty Terry
Maintenance Worker.....	Vacant

## RESEARCH

Research Unit Leader.....	Wade Wilson
Research Fish Biologist... ..	Michael Schwemm
Fish and Wildlife Biologist.....	Tracy Diver
Fish Biologist (Genetics) .....	Sandra Bohn
Fish Biologist (Genetics) .....	Vacant
Fish Biologist FONS.....	Hannah Mello

## FISH HEALTH

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



Manantial Roundnose Minnow (*Dionda argentosa*)  
USFWS Photo, See Page 2

## Conserving Aquatic Species

Spawning season at Southwestern Native Aquatic Resources and Recovery Center (Southwestern ARRC) came to a close this month following the spawning of Colorado pikeminnow (CPM). Once hatched the larval fish were moved to their growout ponds and any remaining broodstock held indoors were placed into their summer holding ponds. The Chihuahua chub (CCH) collected from the Mimbres river drainage in April completed their quarantine period, were Passive Integrated Transponder (PIT) tagged and incorporated into the captive broodstock. Center staff assisted the USFWS New Mexico Fish and Wildlife Conservation Office with the collection and transport of young of year Rio Grande silvery minnow (RGSM) from the Middle Rio Grande New Mexico reach. Due to the shortage of eggs collected from the river this year, three separate batches (approximately 6,000 individuals) were collected and transported to Southwestern ARRC to add to the captive refuge /broodstock population.

## Conserving Aquatic Species cont.

One June 7, 8 and 13, Fish Health staff conducted the annual aquatic animal health inspections at the Tishomingo National Fish Hatchery (NFH), Oklahoma; Durant State Fish Hatchery, Oklahoma; and the San Marcos Aquatic Resource Center (ARC), Texas. Five lots of fish, including paddlefish, alligator gar and channel catfish were sampled at Tishomingo. In addition, Martha Keller worked with the hatchery staff to investigate methods of increasing the health database for alligator snapping turtles. Seven lots consisting of bluegill, koi, goldfish, channel catfish, hybrid sunfish, largemouth bass, and fathead minnow were sampled at the Durant facility. At San Marcos green sunfish, devil's river minnow, fountain darters, and blacktail shiners were sampled and three lots consisting of three species of salamanders were swabbed for Bsal (*Batrachochytrium salamandrivorans*) and Bd (*B. dendrobatidis*) testing. The swab samples were processed and DNA was extracted from the epithelial swabs for molecular detection of both Bsal and Bd. Molecular confirmation was also completed on four pending fish health cases.



Ashlie Peterson and Marlene Rodarte, Tishomingo NFH Annual Aquatic Animal Health Inspection, USFWS Photo

The Fish Health lab received Apache trout from William's Creek NFH, Arizona, and salamanders from the San Marcos ARC, Texas for health diagnostics due to ongoing health issues. Samples were taken for complete virology, bacteriology, histopathology, and PCR testing.

No fish were distributed during the month of June.

## Scientific Capacity

Center staff completed the four year project "Rearing and Preserving Early Life Stage Developmental Series for Pecos River Cyprinids". This work will be used to develop an illustrated guide for the cypriniform (minnows and suckers) fish larvae of the Pecos River, New Mexico and Texas. Accurate field and lab identification of larval fishes is needed to facilitate effective management of the species. Nine native species were identified and prioritized for culture, spawning and collection from 2012-2016. In 2012-2013 Southwestern ARRC staff completed series collections for roundnose minnow (*Dionda episcopa*), speckled chub (*Macrhybopsis aestivalis*), Arkansas River shiner (*Notropis girardi*), Rio Grande shiner (*Notropis jemezianus*), and Pecos bluntnose shiner (*Notropis simus pecosensis*). In 2014-2016 the remaining series were completed which include the Tamaulipas shiner (*Notropis braytoni*), Chihuahua shiner, (*Notropis Chihuahua*), Texas shiner (*Notropis amabilis*) and Manantail roundnose minnow (*Dionda argentosa*). The series consist of approximately 36 collections of 8 to 10 larval fish at designated timeframes over a 4-5 month period. Project partners included the Bureau of Reclamation, Museum of Southwestern Biology - University of New Mexico, American Southwest Ichthyological Researchers and USFWS Texas and New Mexico Fish & Wildlife Conservation Office's.

Tracy Diver worked with staff at the Museum of Southwestern Biology, located at the University of New Mexico, to properly preserve recent tissue collections from the humpback chub (*Gila cypha*) fecundity study. She also completed a draft report assessing the effects of size grading on sex ratios in bonytail (*Gila elegans*) and continued working on a report examining the reproductive status of woundfin (*Plagopterus argentissimus*) at various sizes.

Sandra Bohn completed sequencing over 600 humpback chub (*Gila cypha*), roundtail chub (*G. robusta*), and bonytail (*G. elegans*) for an 897 bp segment of the mitochondrial genome. She also processed 17 water samples

collected from the Aquatic Conservation Facility at the Albuquerque BioPark. She centrifuged a 50 mL subsample from each sample and filtered the remaining water sample. Both centrifuged pellets and filters will be extracted and screened for *Microcystis*, a cyanobacteria that can create toxic blooms. Sandra also optimized a quantitative PCR (qPCR) assay for Bsal that can be duplexed with a qPCR assay for Bd. Southwestern ARRC is currently using the technique to screen southwestern amphibian and created a standard curve of synthetic genes for both assays and tested them on samples known to be positive for Bsal or Bd.



Pahranagat Roundtail Chub Fin Clipping, USFWS Photo

Research and Fish Culture staff collected 495 fin clips from the Pahranagat roundtail chub (*Gila robusta jordani*) broodstock maintained at Southwestern ARRC. Sandra and Hannah Mello extracted DNA from the fin clips and previously collected samples from the Southwestern ARRC stock and the refuge population at Key Pittman National Wildlife Refuge, Nevada.

### Fulfilling Tribal Trust Responsibilities

Ashlie Peterson and Cecilia Lamb traveled to nearby Lake Coulee on the Mescalero Apache tribal land to sample fish for a wild fish health survey. Staff from the New Mexico FWCO collected the fish and youth employed at the Mescalero Fish Hatchery took the opportunity to observe and assist the Fish Health staff as they performed their testing. Concerns about the finding of the bacterial kidney disease pathogen at the nearby hatchery may lead to further testing requests in the future.

### Workforce Management & Training



Hannah Mello, USFWS Photo

Southwestern ARRC would like to welcome Hannah Mello who started working in the Research Unit on June 13th as a Fish Biologist. Hannah previously worked for the U.S. Geological Survey in La Crosse, Wisconsin, and just finished her Master of Science degree. Her previous research focused on invasive species management in the Great Lakes and Mississippi River, including the diversity of bryozoans in the Upper Mississippi River watershed in relation to habitat, latitude, and environmental conditions (M.S. thesis). Hannah received both her Bachelor of Science and Master of Science in Aquatic Biology from the University of Wisconsin-La Crosse. Hannah is originally from Milwaukee, Wisconsin and, in her spare time enjoys camping, cycling, and playing music.

Martha Keller took part in several conference calls during the month concerning the new FDA regulations regarding veterinary feed directives (VFD). These regulations will significantly change the manner in which hatchery managers can use certain classes of drugs on their fish. Martha also attended the American College of Animal Welfare short course in Raleigh, North Carolina, from June 1-3. and took part in a conference call regarding the development of the NCTC course “Fish and Wildlife Field Laboratory Techniques”, which will be held in September. Sandra Bohn completed the Landscape Genetics online course. Maria Bullard completed the

## Workforce Management & Training Cont.

Contracting Officers Representative Level I online course (FCR100). Michelle Bell attended the Microsoft Office Publication and Excel Courses from June 21-24. Casey Booth attended the FAPO Basic Financial Assistance Course from June 6 –9. Cecilia Lamb completed her two month detail with Fish Health on July 1. During her time with the unit, she took part in several hatchery inspections, assisted with a wild fish health survey and spent time in bacteriology, parasitology, and virology. Hannah Mello was trained on laboratory safety, performing DNeasy 96 plate extractions, BKD extractions, PCR, running gels, sequencing, processing eDNA samples, DNA quantitation with the Nanodrop and Qubit, and maintaining and using the lab equipment.

Michael Schwemm, Fish Biologist (Research), resigned from his position on June 10. We wish him well.

### Engaging and Educating the Public and Our Partners



Milkman Triathlon Flyer  
Credit: Milkman Triathlon

The Center participated in the 32<sup>nd</sup> Annual Milkman Triathlon hosted in Dexter on June 4. There were 140 athletes that competed in the event that included a swim through Lake Van, biking to and from Bottomless Lakes State Park, and the run portion through the Center on a marked route. The Center provided ice and set up a water station for the event.

reservoir in south central New Mexico. Plans were made to sample representative fish for a thorough diagnostic workup.

Sandra Bohn discussed the genotyping of new samples of White Sands pupfish (*Cyprinodon tularosa*) with Dr. Colleen Caldwell, New Mexico Cooperative Fish and Wildlife Research Unit at New Mexico State University. Dr. Caldwell will be sharing tissue samples with Southwestern ARRC that will provide a more complete understanding of the present status of the White Sands pupfish across its range.

Tracy Diver volunteered on a crew with Jen Kennedy on one of the American Southwest Ichthyological Researchers (ASIR) monthly larval surveys on the San Juan River. Due to high flows, few larval fish were contacted; however, two one-year old Colorado pikeminnow (*Ptychocheilus lucius*) were collected in the lower canyon section of the San Juan River.

Center staff participated in the Region 2 Fisheries & Aquatic Conservation (FAC) Monthly Conference call; the Virgin River program TC meeting call; the NCTC “Fish and Wildlife Field and Laboratory Techniques” course development call; the Rio Grande silvery minnow propagation facilities monthly conference call; the cross programmatic Yaqui catfish propagation call, and a call to discuss the qPCR assay development and testing for Bsal with the Midwest Tech Center and Dworshak Fish Health Unit.

On June 24, Martha Keller met with Sara Lightfoot, a local high school student interested in volunteering at the facility. She was given a tour of the Center and is considering volunteering over the next month.

Joe Marcino from the Arizona Game and Fish Department requested BF2 and FHM cell lines in order to help him develop his own fish health testing cell lines. Cells were shipped to him and arrived in good shape.

Shawn Denny, area Biologist from the New Mexico Department of Game and Fish contacted fish health concerning a die-off of catfish in Elephant Butte

## Additional Activities

Desert Security installed a monitoring system in the front entrance of the administrative building. The safety upgrade included installation of a camera near the main entrance to the Administrative building and viewing monitors in the administrative staff offices to monitor incoming visitors and deliveries.



Ian Paige, CDSO, Quarterly Safety/Staff Meeting, USFWS Photo

On June 22, the annual Station Safety Assessment was conducted. Bill Snipes, Collateral Duty Safety Officer (CDSO) from the Bitter Lake National Wildlife Refuge (NWR), in Roswell inspected the Center. A few minor findings were reported and immediately rectified by the end of the month. On June 27, Ian Paige, Southwestern ARRC's CDSO, and William Knight completed Bitter Lake NWR's Station Safety Assessment.

The quarterly safety/staff meeting was held on June 29. Safety material covered included; heat related illnesses, UV light protection, insect and snake awareness, and active shooter response. Updates were provided by each Unit during the meeting.

Tony Castillo, Engineering Technician and Project COR, U.S. Fish and Wildlife Service, Region 2, Division of Engineering,

conducted the final inspection on the parking lot rehab project. Sedona Contracting Incorporated from Ruidoso, NM completed the work during the final week of May.

Maintenance activities for the month included; servicing all generators and Kubota RTVs on station; replacing all air filters on air handlers in cooling units in the Administrative, Fish Health, and Fish Culture buildings; installing a new hitch on the pull behind drum roller and weather sealing the wooden floor of the utility trailer. The chiller system used for the life stage developmental series research project in the west bay of the Fish Culture building was cleaned, in addition to the aquariums and filters in the east bay systems. As time allowed, staff continued cleaning bird netting removed from winter ponds; trimmed trees growing near the fish culture ponds; removed the landscaping at the entrance of the Administrative building and mowed and weed-eated around buildings and ponds. New lumber and materials were purchased to construct a storage area under the refurbished loft in the vehicle storage building. The sprinkler valves at the entrance area to the facility and the refrigerated air A/C window unit in the Molecular Ecology Lab (MEL) were replaced; a glove dispenser and eye wash station was installed in the eDNA lab; dense vegetation near and in the C series ponds was removed; new stop logs for pond preparation were cut and planed and aluminum pond draining screens were repaired .



Ty Terry Trimming Trees, USFWS Photo

Several new pieces of equipment were received this month. The MEL received a new 3500xl Genetic Analyzer; and two new ProFlex PCR systems. Fish health had all their biological hoods inspected and a new chainsaw was purchased for the maintenance program.

The Center recycled 170 lbs. of cardboard, 60 lbs. of plastic, 17 lbs. of aluminum cans, and 1 lb. of empty printer ink cartridges.

There were 27 visitors and .90" of rain for the month.

### Upcoming Activities:

July 19 – Mora NFH Annual Inspection

July 26 – Inks Dam NFH Annual inspection