

SOUTHWESTERN NATIVE AQUATIC RESOURCES AND RECOVERY CENTER

April 2016 Monthly Activity Report

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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..... | Vacant |
| 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..... | Vacant |

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 |



Martha Keller processing samples at Williams Creek NFH, USFWS Photo

Conserving Aquatic Species

Fish Health staff conducted a National Wild Fish Health Survey on fish submitted by the Oklahoma Department of Wildlife Conservation. These fish were collected from the Grand Lake O' the Cherokees in Oklahoma. This is the second consecutive year that fish were received from this location. A total of 180 fish were sampled (60 paddle fish, 60 gizzard shad, and 60 white bass). Several annual inspections also took place during the month of April. Dave Hampton, Jason Woodland, Marlene Rodarte, and Martha Keller traveled to Williams Creek National Fish Hatchery (NFH) and Alchesay NFH to conduct aquatic animal health inspections on April 5 and 6 respectively; fourteen lots, comprised of apache, brown, and brook trout were sampled. Fish Health staff also traveled to Byron State Fish Hatchery in Oklahoma on April 26 for their annual inspection; seven lots of fish comprised of walleye, bluegill, hybrid bluegill, redear sunfish, and saugeye were sampled. On April 5, staff received their last shipment of ovarian fluid from Mora NFH, bringing the season to a close with a grand total of 423 fish sampled. Results

Conserving Aquatic Species Cont.

from the ovarian fluid testing will be combined with the station's annual aquatic animal health inspection report. Tracy Diver completed several Fish Health molecular confirmation cases for bacterial kidney disease (BKD) and cutthroat trout virus (CTV); results were provided to Martha Keller for review and dissemination.



Cecilia Lamb and Ian Paige sorting bonytail, USFWS Photo

Fish spawning and culture activities hit full stride this month. Razorback sucker, humpback and pahrnagat roundtail chub, bonytail, and Rio Grande silvery minnow were spawned to meet partner fish requests, research activities and Southwestern ARRC's annual commitments. Larger razorback sucker were stocked into the Navajo Agricultural Products Industry (NAPI) ponds near Farmington, NM for growout and eventual release into the San Juan River. Razorback sucker larvae were provided to the Arizona Game and Fish Department's Bubbling Ponds SFH and Aquatic Research and Conservation Center in Cornville, AZ. A total of 650 bonytail (>300mm in total length) were sorted in preparation for stocking into Reach 2 of the Lower Colorado River (LCR) on behalf of the Bureau of Reclamation, and the LCR Multi-Species Conservation Program. Fish culture staff also Passive Integrated Transponder (PIT) tagged 305 humpback chub from the 2015 year class in preparation for translocation into Havasu Creek, Grand Canyon in May. In addition, several resident species were inventoried and moved to their summer holding ponds.

Five day old razorback sucker larvae were oxytetracycline marked by Howard Brandenburg from American Southwest Ichthyological Researchers (ASIR) in Albuquerque, NM to be used in a field study to determine the utility of the newly built Hogback Diversion weir on the San Juan River. In addition age-2 Colorado pikeminnow were provided for the same study. Fin clips were collected from the 2011-2012 year classes of wild caught Rio Grande Silvery Minnow (*Hybognathus amarus*) prior to release back into the Rio Grande, Albuquerque, NM reach. This 5 year old group of fish was retired from the captive refuge program at Southwestern ARRC.

Fish Distribution during the Month of April

| Species | Number | Size | Agency | Site |
|---------------------------|---------|------------|----------|--|
| Colorado pikeminnow | 383 | 229 mm | BOR | Hogback Diversion Weir, San Juan River, Farmington, NM |
| razorback sucker | 149,702 | Larval | BOR/ASIR | Hogback Diversion Weir, San Juan River, Farmington, NM |
| razorback sucker | 60,000 | Larval | STG | Bubbling Ponds SFH, AZ Game and Fish Dept., Cornville, AZ, |
| razorback sucker | 5,000 | Larval | STG | Aquatic Research & Conservation Center, AZ Game and Fish Dept. Cornville, AZ, |
| razorback sucker | 7,000 | 194-220 mm | Tribal | Navajo Agricultural Products Industry (NAPI), West Avocet and Hidden Pond on the Navajo Nation, Farmington, NM |
| Rio Grande silvery minnow | 3,122 | 165 mm | USFWS | Middle Rio Grande, Albuquerque Reach, NM |

Scientific Capacity



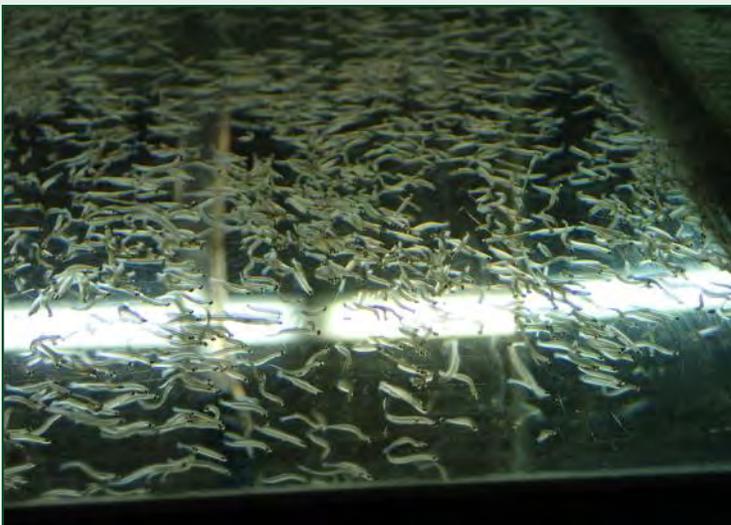
Laura Sprague and Tracy Diver collecting samples for the Humpback Chub Fecundity Study, USFWS Photo

Humpback chub (*Gila cypha*) were spawned for the study “Quantifying reproductive potential of various age-classes of Humpback chub (*Gila cypha*) to aid management efforts”. The Research Unit has been working closely with Fish Culture assessing the reproductive ecology of the endangered Humpback chub (*Gila cypha*). Tissues and gamete collection of six year classes has been completed. All tissue samples have been fixed in zinc buffered formalin and will go through ethanol washing at the Museum of Southwestern Biology. Data collection will commence mid-fall of 2016.

Michael Schwemm and Sandra Bohn completed the QAQC and finalized the Neosho Smallmouth Bass (*Micropterus dolomieu velo*) data for collaborators at the Oklahoma Cooperative Fish and Wildlife Research Unit. Michael also submitted a Leopard Darter (*Percina pantherina*) translocation plan to Daniel Fenner from the Oklahoma Ecological Services, Tulsa, OK.

Sandra extracted DNA from swabs collected from 55 Texas salamanders to test for the amphibian chytrid fungi *Batrachochytrium dendrobatidis* and *B. salamandrivorans* using a recently developed qPCR assay. She also began sequencing a mitochondrial marker that will be used along with 18 microsatellite loci to look at genetic diversity and population structure of humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and roundtail chub (*Gila robusta*) in the Upper Colorado River Basin. Tracy Diver completed the QAQC on the microsatellite data; she also continued work on a *Gila elegans* recruitment manuscript for submission to *Aquaculture* Journal.

Sandra Bohn developed a plan for sampling plankton communities in Rio Grande Silvery Minnow (*Hybognathus amarus*) habitats along the Rio Grande. Sampling supplies were provided to the Texas FWCO office for their sampling trip.



Lost River Sucker newly hatched larvae, USFWS Photo

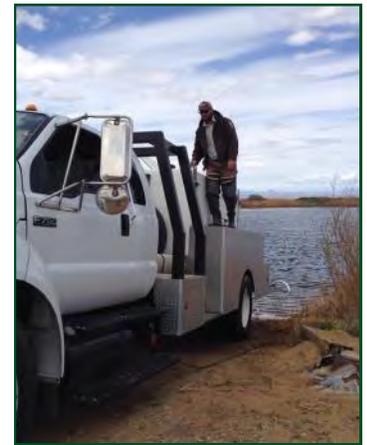
The life stage developmental series for the Lost River Sucker (*Deltistes luxatus*) was initiated this month. Fertilized eggs were received from the USFWS, Klamath Falls Fish and Wildlife Office, Pacific Southwest Region, Klamath Falls, OR on April 20. Fish culture staff successfully incubated the eggs and began collecting the various life stages. The series consist of 30+ collections of 10 to 25 fish at designated time frames over a 3 month period. The project is a collaborative effort with the USFWS, Klamath Falls Fish and Wildlife Office. Results from this project will be used to describe larval and juvenile life stage development and refine culture methods to aide in effective management of the species. The % fertilization was recorded, egg and larvae imaged, and diameter/length recorded. The Lost River sucker was federally listed as endangered in 1988. The species is native to the upper Klamath Basin of Oregon and California and is a

long lived sucker that can reach 43 years of age. Factors placing the species at risk include over harvesting, pollution, construction of dam and agriculture development and associated water and land us practices leading to loss of wetland habitat.

Fulfilling Tribal Trust Responsibilities

Southwestern ARRC staff hauled 7,000 PIT tagged razorback sucker to the Navajo Nation in Northern NM. The fish were stocked into two of the Navajo Agricultural Products Industry (NAPI) ponds near Farmington, NM. They averaged 200mm in total length and will be growout at NAPI to the target size of >300mm and released into the San Juan River this fall.

Martha Keller took part in a conference call on April 13, regarding the topic of BKD finding at Williams Creek and Alchesay NFHs. The call was specifically aimed towards all of the tribal partners impacted by the finding at the NFHs as well as those impacted by the finding of BKD at the Mescalero Tribal Fish Hatchery. The call allowed the tribal partners to discuss any questions or concerns regarding the disease and its implications for future stocking.



Razorback being released into NAPI Pond, USFWS Photo

Workforce Management and Training

Martha Keller participated in several conference calls as part of a national fish health subcommittee evaluating the feasibility of moving all Regional Fish Health Centers towards more unified standards, such as the ISO 17025 standards. Recommendations have been developed and will be presented to the Deputy Director in May. She took part in a conference call working on developing the curriculum for the upcoming NCTC course “Field and Laboratory Techniques”. She also hosted a visit on April 7 by Karl Hochstein from the Veterinary Services Department at the USDA. In addition to enjoying touring the facility, his visit was necessary to complete Martha Keller’s State of NM veterinary accreditation credentials.

Sandra Bohn traveled to the Center for Advanced Research Computing (CARC) at University of New Mexico. She toured the facility and was given an account with their supercomputing facility so the Research Unit can expand their data analysis capabilities.

Fish health and molecular staff participated in a webinar presentation on monitoring amphibians using environmental DNA on April 21st. This webinar series was presented by Dr. Katherine Strickler with the Department of Defense Natural Resources Division.

Laura Sprague, Fish Biologist from the USFWS, Idaho Fish Health Center, Orofino, ID completed a 2 week detail at the Center. She assumed duties identified for the vacant Assistant Center Director position and shadowed and worked in each department while here. Thank you for the help Laura!

Maria Bullard attended Excel Database Functions and Pivot Tables during the week of April 18. She also provided a class on PD Express for supervisors explaining the recruiting process and forms needed for recruitment packages.



Jesse Trujillo, USFWS

Center staff attended the FPPS Webinar on April 26; the Phased Retirement Conference call on April 27; the Region 2 Fisheries & Aquatic Conservation (FAC) Monthly Conference call on April 12; the FAC Budget Conference call on April 13; and the National Wild Fish Health Survey & Database Committee Conference call on April 20.

Jesse Trujillo started work on April 4 as a fish biologist in fish culture. While a USFWS STEP and SCEP participant, Jesse worked at the Bitter Lake NWR in NM, Hagerman NWR in OK, Santa Ana NWR in TX and as a summer intern at Southwestern ARRC. Jesse also provided assistance to Southwestern ARRC during his winter breaks from Eastern New Mexico University (ENMU). Jesse is a 2016 Graduate from ENMU with a Bachelors Degree in Wildlife and Fisheries Science. His hobbies include raising registered goats, hunting and fishing. Welcome back Jesse.

Engaging and Educating the Public and our Partners

Michael Schwemm presented an invited seminar of the distinctiveness of the *Gila robusta* complex in Arizona and New Mexico titled, “Fine-scale genetic structure of populations of the *Gila robusta* species complex in the lower Colorado River.” American Society of Ichthyologists and Herpetologists-American Fisheries Society Naming Committee and research staff attended the webinar. On April 6, Michael participated on a graduate student committee meeting via video conferencing for Taylor Lee of Arkansas State University. Michael provided guidance with her research proposal for the study of eDNA of Leopard Darters in the Cossatot River, and assisted with primer design.

Representatives from the Bureau of Reclamation (BOR) offices in Nevada and Utah toured Southwestern ARRC to learn about facilities and techniques used for warm water fish production. BOR is examining the feasibility of adding capacity to rear razorback sucker and bonytail at the Planet Ranch property on the Bill Williams River, recently acquired by the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). In an attempt to meet future MSCP fish augmentation goals, this site has been identified as a potential location to build fish ponds; not a hatchery per se, but specifically designed to rear native fishes to stocking size in a logistical and natural sense. Center staff will be participating in future planning meetings for this BOR project .

Fish health begin reaching out to regional state partners for conducting National Wild Fish Health Surveys during the 2016 calendar year.

Additional Activities

The Molecular Ecology Laboratory received a new ProFlex thermal cycler and a proportion of labs pipettes were calibrated.

Powell Tire of Roswell, NM fixed two tires on the Champion road grader; Culligan of Roswell, NM replaced the carbon media on the de-chlorinator in the fish culture building and Fulkerson Plumbing of Roswell, NM fixed the air conditioning unit. Center staff repaired Pond 3A liner; purchased and installed new batteries on the forklift and attached and adjusted the bat wing mower to fit the new John Deere tractor. The “Milkman Triathlon” path was mowed in preparation for the running portion of the triathlon held in Dexter in June.



Ty Terry and Jesse Trujillo covering trailer prior to staining patio, USFWS

Ty Terry mowed and weed-eated around buildings, facility grounds and pond areas. He also serviced the gooseneck distribution trailer by replacing the wheel bearings, two bad tires and the side marker lights. Tires were replaced on the orange Kubota RTV and the hydraulic hoses on the batwing deck mower. A new cable stand for bird netting support was constructed and the hand rails on the volunteer quarters’ patio deck were reinforced and the deck stained and weather sealed. Ty also assisted with the removal of bird netting off the D and C series ponds; pond lining and cleaning; painted kettle/pond identification numbers and prepped stop logs for all D series ponds.

The Center recycled 490 lbs. of cardboard, 120 lbs. of paper, 40 lbs. of plastic, 64 lbs. of aluminum cans, 1 lb. of empty printer ink cartridges and 55 lbs. of burnt out fluorescent light bulbs .

Upcoming Events

May 2: Pahrangat roundtail chub spawning

May 9-13: Rio Grande silvery minnow spawning

May 10-12: San Juan River Basin Recovery Implementation Program Annual Meeting, Durango, Colorado

May 11-12: Outreach Dexter Middle School

May 16: Bonytail stocking to Reach #2 of the Lower Colorado River

May 20: Endangered Species Day Program

May 30: Colorado pikeminnow spawning