

Hatchery Highlights

U.S. Fish & Wildlife Service Warm Springs NFH News and Updates



October – December 2018

Aquatic At-Risk Species Recovery:

Gopher Frogs

Warm Springs NFH works in partnership with the University of Georgia (UGA), Zoo Atlanta, Georgia Department of Natural Resources (GADNR), Amphibian Foundation Inc., and others to expand conservation efforts for gopher frogs within their historical native range. The main goal of this multi-year project is to establish a self-sustaining breeding population on protected land at the Nature Conservancy's Williams Bluff Preserve in Early County, GA. They are native to upland longleaf pine ecosystems and are currently limited to fewer than 10 sites in Georgia. The loss of longleaf pine habitat is a primary threat for this rare species. They are under review for formal listing by USFWS, and Georgia documents the species as vulnerable.



Josh Simmons and Jessica Radich traveled to Fall Line WMR, GA with GADNR and UGA to harvest maidencane stems and leaves for 2019 culture operations. We also purchased additional replacement tank covers for use with culture of the gopher frog tadpoles.

Jessica and Carlos participated in an annual planning meeting with members from each of the partnership program affiliates on Dec. 11th.

Gopher Tortoise

Warm Springs NFH initiated work supporting conservation efforts for Georgia's gopher tortoises. Gopher tortoises *Gopherus polyphemus* are a federally listed "candidate species" for populations east of the Mobile and Tombigbee Rivers; they are also state listed by Georgia as "threatened." Gopher tortoises are an indicator of longleaf pine ecosystem health; their burrows provide vital habitat and shelter to other imperiled species such as gopher frogs and indigo snakes.

Our conservation strategy utilizes a head-starting program to raise larger juveniles through their first two years before marking and releasing them within known Georgia habitats. Partners in this expanding effort currently include GADNR, The Georgia Conservancy, and Zoo Atlanta. Head-starting the tortoises should produce larger individuals with harder shells before releasing within Georgia habitat.

None of the 33 eggs received and transferred to our incubators earlier in the year hatched. Examination of the eggs well past the documented last possible successful hatch date showed some development in a portion of the eggs while others showed none. We are examining transport, handling, and early incubation protocols to improve results during 2019.

We accepted a transfer of 57 juvenile Gopher Tortoises November 6th, 2018 from Georgia DNR. Of these, 21 tortoises were 2017 year class and identified as originating from Mission Mine and Penholoway sites. An additional 36 tortoises were 2018 year class from three sites, Mission North (15 tortoises), Mission South (15 tortoises), and HA3 (6 tortoises). Each tortoise was weighed, measured, and provided an identification number in order to monitor and document growth. These additional 57 tortoises join the 4 tortoises we received earlier in June.



Tortoises are provided fresh grasses, leafy vegetables mixed with commercial rations, vitamins, and minerals.

Staff and volunteers pampered juvenile tortoises with weekly baths and a daily replenishment of spring water and rations. The food consists of prepared fresh greens mixed with enriched commercial pellet rations. We also supplement their diet with planted rye grass in each container, so they can graze freely. Techniques documented in part by DeSha J., Paden L., Andrews K. in their PowerPoint presentation Headstarting Gopher Tortoises from a Heavy Mineral Mine Site in Southeast Georgia, Odum School of Ecology, University of Georgia Marine Extension, Brunswick, GA are widely used in our program.

Shortnose sturgeon

The fish received during 2018 were monitored daily to maintain continued good health and growth. Shortnose sturgeon are an endangered species with a historical range along Atlantic Basin Rivers southward from Saint Johns River in FL north into Canada.

Freshwater Mussels Research

Jessica Radich picked up the reins overseeing mussel propagation efforts at WSNFH. She is organizing and resupplying propagation facilities at Warm Springs ahead of work in 2019. Jessica also traveled to Dale Hollow NFH Oct. 15th – 18th to assist with harvesting of cage reared Plain Pocketbook, Round Hickory Nut, and Pink Mucket mussels to be stocked for the PADEP.

Pollinator and Native Plants Habitat Project

Heavy blooms of *Cosmos bipinnatus* in our pollinator habitat demonstration area continued providing foraging opportunities for pollinators through the first frosts in November. Volunteers Marilyn Kircus, Marsha and Benny Maynard tended plantings on the wetlands habitat islands, carnivorous plant display, and landscaped portions of the pollinator habitat area. Marilyn began compiling a photo page of Georgia's pollinators. The document is intended for use at Warm Springs as our habitat project begins attracting more species. The document is a work in progress that includes photos of butterflies, moths, their caterpillars, and conservation status.

Sicklefin Redhorse

Our work continues in cooperation with partners meeting conservation goals established by the Sicklefins Redhorse Conservation Committee. The USFWS currently lists Sicklefins Redhorse as a Candidate Species throughout its entire range.



2018 Year Class Sicklefins Redhorse

We are currently rearing Sicklefins Redhorse for distribution during 2019. The fish are maintained at temperatures averaging 18 -19° F in order to mimic conditions at targeted distribution sites in North Carolina. Staff transferred the Sicklefins into two 6 ft. diameter tanks equipped with belt feeders and sampled the fish on a monthly basis. The larger diameter tanks provide the fish more swimming space.

At the end of December, we have 1,996 Sicklefins Redhorse on hand averaging 2.33 inches in length. The fish averaged about a 0.5-inch increase in length during the previous three months. We feed them a custom formulated Silvery Minnow diet that is top coated with Spirulina. The feed is manufactured for species cultured at the Southwestern Native Aquatic Resources and Recovery Center, Dexter NM. This is a transition diet until the fish reach sizes where they can take larger particle sizes of the Razorback Sucker ration, a feed formulated for use at Dexter.

Haile prepared a draft propagation plan for Sicklefins Redhorse culture at Warm Springs.

Aquatic Species Restoration Programs:

Alligator Gar Restoration Program

Culture equipment dedicated for Alligator Gar culture was moved into the new holding house. Reconnecting water supply and drain lines will get under way during 2019.

Gulf Coast Striped Bass Restoration

This past fall, we drained ponds scheduled for production of Striped Bass during 2019, allowing winter freezes to kill exposed aquatic vegetation. Staff and volunteers broadcasted rye grass seeds around the ponds'

perimeters in late November following the first few freezes. Sprouting rye grass stabilizes the exposed pond bottoms and serves as an organic fertilizer for zooplankton production once ponds are refilling with water. We disconnected and removed each of the six air stones per pond, cleaned and stored them through the winter months.

Lake Sturgeon Restoration

Carlos Echevarria and Jaci Zelko, Biologist at the Fish Technology Center, traveled to Orangeburg NFH October 3rd to assist with coded wire tagging Lake Sturgeon prior to their distribution.

WSNFH wrapped up the 2018 Lake Sturgeon production season this quarter ahead of pending reconstruction work that required disassembly and moving of culture equipment to the new holding house.

Dr. Janet Genz of University of West Georgia and a graduate student picked up the last lake sturgeon from Warm Springs that they needed for a research project on October 15th.

Josh Simmons delivered the remaining lake sturgeon for release in the Coosa River in cooperation with GADNR's Lake Sturgeon Reintroduction program for the Coosa River Basin. He distributed 3,146 Lake Sturgeon on October 18th. No external marking (scute removal) is required for Lake Sturgeon going to the Coosa River.

<https://georgiawildlife.com/lake-sturgeon-reintroduction-program>

GADNR staff coordinated the distribution with an outreach event to highlight these restoration efforts. The following photos are at the Hwy 140 boat ramp on the Coosa River, near Rome, GA.

Date	Location	Number	Length	Wt. (lbs.)
October 15 ^h , 2018	Univ. of West Georgia (transfer)	250	6.07"	7.70
October 18 th , 2018	Coosa River, Hwy 140 Boat Ramp	3,146	7.49"	178.16



Setting up to temper lake sturgeon prior to distribution



Parents and teachers guiding students as they help distribute lake sturgeon into the Coosa River.



Josh Simmons releasing Lake Sturgeon from the Hwy 140 Boat Ramp, Coosa River

Staff then disassembled and removed all culture equipment from the existing lake sturgeon building and began moving into the new holding house.

We did not participate in assessing lake sturgeon populations and habitat this year on the Coosa River due to high water flows in the Upper Tennessee River.

Smallmouth Bass Restoration Program in Georgia

We wrapped up our third year working in cooperation with Georgia and Tennessee to augment Smallmouth Bass populations in Blue Ridge and Chatuge reservoirs. Introduced nonnative Spotted Bass throughout the region have affected populations of Smallmouth Bass in Georgia.

To that end, we transferred our 2016-year class Smallmouth Bass broodfish to Georgia's DNR Go Fish Center for use in their program during October 2018.

Date	Location	Number	Length	Wt. (lbs.)
October 3 rd , 2018	GDNR Go Fish Center (transfer)	54	10.20"	27.41

Aquatic Habitats:

Nothing to Report

Aquatic Invasive Species:

Nothing to report.

Recreational Fishing and Public Use:

WSNFH received 2,050 channel catfish weighing 440 lbs total from GADNR's Cordele hatchery December 4th, 2018. We restocked these fish into a pond destined for kids fishing events during National Fishing Week activities.

Educate and Engage Public & Partners:

Staff provided a tour to a biology class from LaGrange College on October 4th. We provided overviews of the wide-ranging work undertaken by the Fisheries Programs collocated at Warm Springs.



Our volunteers Marsha, Benny and Marilyn took great care of our public access facilities, and station visitors this fall. They maintained public aquariums, restrooms, removed trash, kept the display fish well fed, and interacted with visitors to the station. They also helped keep the public use areas free of fallen leaves and limbs, maintained purple martin houses, pressure washed equipment, painted tables and a vast number of other tasks that kept the station ready to welcome visitors to our station. Benny helped repair one of the touch screen computer kiosks transferring our sounds of nature programs to a new computer.

We also provided support to the public, answering questions of area pond owners about fish and farm pond management.

Volunteers:

Friends of Warm Springs National Fish Hatchery, hatchery staff, and volunteers met at the hatchery on October 18th to discuss hatchery events, future opportunities, incorporation documents, and membership recruitment. Additionally, staff and members of the friends group compiled data for a financial audit that we submitted on Nov. 14th. Attending the board meeting in October were Benny and Marsha Maynard, seasoned volunteers just arriving from a stint at Quilcene National Fish Hatchery, Quilcene Washington. They joined us in early October.

Benny and Marsha submitted a grant proposal in December for funding from Georgia DNR titled Walking Trail - Wildlife Viewing Enhancement.

Marilyn is a returning volunteer from 2017-18 and rejoined us again Nov. 8th. Marilyn, Marsha, and Benny combined their efforts to keep fish in the ponds fed, the aquarium building and displays in good order among many other projects. We are grateful to the contributions our volunteers made through November and December as staff were on leave over the holidays. Marsha greatly assisted with our Gopher Tortoise program, and Benny helped with wide ranging construction projects related to moving programs into the new holding house. Marilyn worked on the habitat islands and landscaped areas of the pollinator habitat along with Marsha.



Benny and Marsha Maynard working with a Gopher Tortoise, Marilyn Kircus maintaining Purple Martin houses.

General Maintenance and Operations:



Our Office Administrator “Alex” Alexander Londono, who was here for what seems a really short time but accomplished so much, took a new position with D.O.D at the end of December. Alex’s good humor, perspectives, and knowledge will be missed! Good luck at your new position!

Hurricane Michaels passing through Georgia Oct. 10th, caused no damage at Warm Springs NFH aside from a brief power loss. Chad Shirey participated with other service employees working together as a fast response team following the hurricane’s destruction through Florida and southern Georgia. They helped restore utilities to Service office buildings and employees residences in the Panama City area after the storm passed. Chad returned to Warm Springs on Oct. 26th.

Fiscal year end work at WSNFH included solicitations for a new mowing contract, purchasing a replacement storage tank to hold sodium hydroxide, transferring equipment and moving

items off property inventory, charging of chemical towers in December, training and budget updates, review of NPDES permits, and various report submittals.



Chad Shirey WSNFH and Sheldon Hawkins, Bears Bluff NFH

Reconstruction of the new holding house, outside raceways and water supply pond renovation progressed significantly during the Quarter. However, setup of culture systems could not proceed until the work nears completion. There remains numerous punch list items to work around as this project moves forward into 2019.



Holding house, Raceways, and backup generator viewed from NW corner



Containment pond, bank stabilized with riprap, holding house and storage shed viewed from SE

Hatchery staff positioned riprap along the west bank of the containment pond to eliminate mowing. This area is no longer accessible to tractor mounted mowing equipment. We also filled the water supply pond to targeted capacity on several occasions in order to test flow rates and repair leaks found during testing. Oct. 16th was the first attempt at flow testing. Carville "Billy" Edwards, Civil Engineer in Region 4, made multiple trips to Warm Springs as the process of transitioning control of the new building to WSNFH continued.



Water supply intake structure in supply pond. Levees of the pond were raised to increase storage capacity



The raised north bank of the water supply pond stabilized with newly laid centipede sod

Staff also laid 5600 square feet of centipede grass sod along the raised external north bank of the water storage pond. The sod was laid following completion of most major construction onsite in order to prevent soil erosion.



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