

# Hatchery Highlights

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



July - September 2018

### Aquatic At-Risk Species Recovery:

#### Gopher Frogs

Warm Springs NFH works in partnership with the University of Georgia, Zoo Atlanta, Georgia Department of Natural Resources, The 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.



Juvenile Gopher Frog in orchard moss.  
Credit: USFWS

This rare species is currently under review for formal listing by USFWS, and Georgia documents the species as vulnerable. They are native to upland habitat, particularly longleaf pine ecosystems in Georgia and elsewhere in the southeast. They are limited to fewer than 10 sites in Georgia.

We transferred the last of our Gopher Frogs on July 11<sup>th</sup> to the University of Georgia for marking and eventual distribution. Warm Springs NFH distributed or transferred a total of 292 gopher frogs produced from the single egg mass received this year, representing a 65.3% survival rate from egg receipt to distribution.

We also began resupplying for FY 2019 culture activities, obtaining additional tank covers and supplies needed to hold juvenile frogs.

Date	Location	Number	Length	Wt. (lbs.)
July 11 <sup>th</sup> , 2018	University of Georgia	21	N/A	0.20

#### Gopher Tortoises

Warm Springs NFH continued 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; Georgia state lists the species as "threatened." Partners in this expanding effort currently include GADNR, The Georgia Conservancy, and Zoo Atlanta.

The four juvenile tortoises we received in June continue to grow on a diet of fresh greens and vitamin enriched prepared rations fed to them. However, none of the eggs received and held in incubators since June have hatched as of October 1<sup>st</sup>. Our conservation goal for the species is to head start juveniles, producing larger individuals with harder shells before their release within Georgia habitat.



Gopher Tortoise juvenile feeding.  
Credit: USFWS

## Indigo Snakes

Nothing to report

## Shortnose Sturgeon

WSNFH is holding 2005 and 2007-year class Shortnose Sturgeon for continued culture and possible future work with the species. We monitor the fish daily to maintain 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 joined our staff July 23<sup>rd</sup>, transferring from White Sulphur Springs NFH. Jessica brings boundless enthusiasm and valued experience working with mussels to Warm Springs.

She traveled to participate in a freshwater mussel workshop August 6<sup>th</sup> -9<sup>th</sup> at the Joseph W. Jones Ecological Research Center, gaining orientation to mussels of the Apalachicola, Chattahoochee, and Flint rivers (ACF watershed). The center is located near Newton, GA on the banks of the Flint River. The workshop covered conservation efforts, ecology, and identification of the watershed's imperiled mussels.

Jessica and Carlos returned Purple Bankclimber broodstock to the Flint River, near Albany, GA on July 27<sup>th</sup>.

Jessica began reorganizing and resupplying equipment and materials required for mussel culture during 2019.

## Pollinator Habitat Project

Various beneficial plant species are established in our pollinator habitat area. Butterfly Weed and other plant species are now attracting bees and butterflies that include monarchs. Monarch Caterpillars are feeding on the planted Butterfly Weeds. Alex Londono continues to care for the pollinator habitat area, greatly assisting the plants establishing themselves.



**Stands of the annual *Cosmos bipinnatus* blooming in late Fall (left). Monarch butterflies (middle) and caterpillar (right) on stands of butterfly weed.  
Credit: USFWS**

## Sicklefin Redhorse

Sicklefin Redhorse are currently listed by USFWS as a candidate species. We actively participate with partners of the Sicklefin Redhorse Conservation Committee to meet conservation goals established for the species.

Partners include fisheries programs at Warm Springs, the Eastern Band of Cherokee Indians, USFWS Ecological Services (ES) in Asheville, NC, Conservation Fisheries Inc. (CFI), North Carolina Wildlife Resource Commission (NCWRC), Tennessee Valley Authority (TVA), University of North Carolina (UNC) and others.

Sicklefin hatched in May at Warm Springs were cultured into the summer producing larger sized fingerlings for distribution. We are working on a plan in partnership with the Eastern Band of Cherokee Indian Tribe and members of Sicklefin Redhorse Conservation Committee to restore Sicklefin redhorse within the Oconaluftee River. To evaluate the survival of stocked fish in the river, we utilized oxytetracycline immersion as a marking technique for the hatchery-reared fingerling Sicklefin. This is the first time Sicklefin Redhorse have been marked using immersion. A treatment rate successfully used with Striped Bass was the first trial tested on a sample of Sicklefin before marking all the fish. The remaining fish were treated July 10<sup>th</sup> with oxytetracycline for six hours at 500 ppm.



**Carlos tempering Sicklefin Redhorse prior to release.  
Credit: USFWS**

A total of 6,670 Sicklefin Redhorse hatched at WSNFH were distributed August 1<sup>st</sup> into two tributaries of the Oconaluftee River at locations near Cherokee, NC by Carlos Echevarria. Approximately 2,100 Sicklefin were held back at Warm Springs for continued growth, coded wire tagging, and distribution at a larger size during 2019.

<b>Date</b>	<b>Location</b>	<b>Number</b>	<b>Length</b>	<b>Wt. (lbs.)</b>
Aug. 1 <sup>st</sup> , 2018	Soco Creek, NC	3,484	1.42"	2.71
Aug. 1 <sup>st</sup> , 2018	Raven Fork, NC	3,186	1.42	2.48

We are also rearing a few 2014 and 2015-year class sub-adult Sicklefin Redhorse for evaluation of formulated rations, telemetry and tagging studies.

**Aquatic Species Restoration Programs:**

**Alligator Gar Restoration Program**

Nothing to report

**Gulf Coast Striped Bass Restoration**

Production ponds utilized for Striped Bass were refilled to prevent erosion; some ponds were stocked with goldfish in order to produce forage for use with other station programs.

## Lake Sturgeon Restoration

Warm Springs NFH began distribution of our 2018-year class Lake Sturgeon in September. Lake Sturgeon stocked this year in TN were marked by the removal of the 3<sup>rd</sup> and 4<sup>th</sup> left side right lateral scutes. Josh Simmons distributed Lake Sturgeon to the Seven Islands Landing and Boat Ramp adjacent to Seven Islands State Birding Park on the Lower French Broad River, TN September 22<sup>nd</sup>. The release is held in conjunction with SturgeonFest 2018, an annual event cosponsored by partners working together to conserve Lake Sturgeon. Tennessee's Clean Water Network link below provides outreach on the event. <https://www.tcwn.org/sturgeonfest>



**New employee Ian Paige working with Josh sampling lake sturgeon (left). SturgeonFest encourages and empowers youth to become involved in lake sturgeon conservation (right).**

**Credit: USFWS**

Rachael Hicks, a student at the University of West Georgia, completed data collection for her study involving Lake Sturgeon physiology this summer. We also provided twelve 2017-year class Lake Sturgeon to Dr. John Robertson of Westminster College, PA for physiology studies on gill, rostrum, and pyloric cecum structure.

Date	Location	Number	Length	Wt. (lbs.)
Aug. 7 <sup>th</sup> , 2018	Westminster College, PA	12	8.0	1.1
Sept. 22 <sup>nd</sup> , 2018	Seven Islands, Lower French Broad River, TN	1,142	6.36	39.6

An additional 3,000 plus 2018-year class Lake Sturgeon at Warm Springs are scheduled for distribution to the Coosa River in October. Staff continues relocating culture equipment for use in the new holding house now delayed for completion in FY 2019.

## Smallmouth Bass Restoration Program in Georgia



We are into the third year of a cooperative effort with Georgia and Tennessee augmenting smallmouth bass populations in Blue Ridge and Chatuge reservoirs. Native populations of smallmouth bass are affected by the introduction of spotted bass throughout the region. According to GADNR biologists, Blue Ridge Reservoir is the last stronghold for smallmouth bass in Georgia.

Warm Springs NFH distributed all the 2018 fingerling smallmouth we produced this year to Blue Ridge Reservoir, an impoundment of the Toccoa River in northern Georgia. We are holding and feeding the smallmouth bass broodstock used this year in a secure temperature controlled environment, conditioning them for spawning next year. The 2016-year class smallmouth bass held at Warm Springs are also growing on their regular diet of goldfish. They are scheduled for transfer to Georgia's Go Fish Center in October.

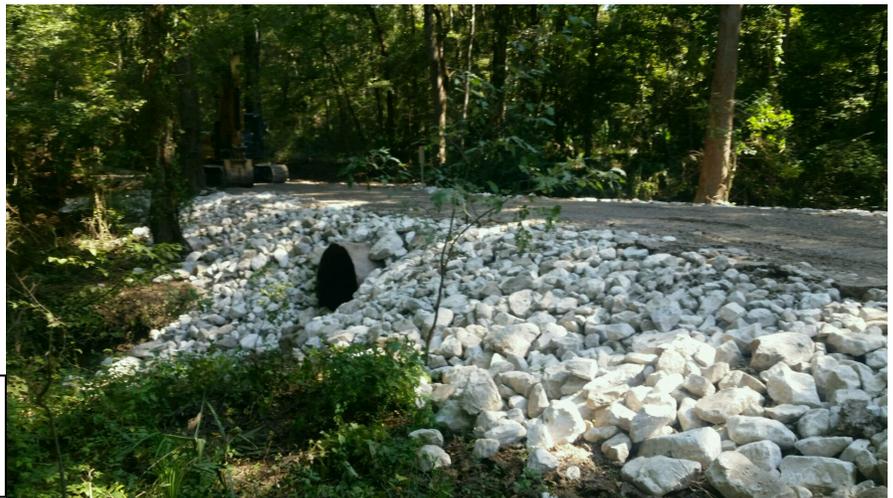
Date	Location	Number	Length	Wt. (lbs.)
July 11 <sup>th</sup> , 2018	Blue Ridge Reservoir	10,060	1.11"	6.90
July 31 <sup>st</sup> , 2018	Blue Ridge Reservoir	7,908	1.68"	19.80
Sept. 6 <sup>th</sup> , 2018	Blue Ridge Reservoir	7,013	2.13"	30.30
<b>Totals:</b>		<b>24,981</b>		<b>57.0</b>



**Josh Simmons and Jessica Radich sampling smallmouth bass fingerling prior to distribution (left). 2016 year class juvenile smallmouth bass (right). Credit: USFWS**

### **Aquatic Habitats:**

Chad Shirey participated with other heavy equipment operators conducting infrastructure maintenance at Tensas NWR in Northeast Louisiana in August. Some of this work included maintenance on culverts.



**View of reconditioned culvert, with riprap added to prevent erosion around the structure. Credit: USFWS**

### **Aquatic Invasive Species:**

Nothing to report.

### **Recreational Fishing and Public Use:**

Nothing to report.

## Educate and Engage Public & Partners:

We upgraded our information kiosks at the display pools, installing three new ones to replace a single obsolete sign. We also replaced the pavilion's enclosed bulletin boards in July.

Carlos provided a station and program tour September 30<sup>th</sup> to Dan Elbert, a Stepping Up To Leadership participant visiting the region.

Alex worked on updates to the Station's online fact sheets.

Alex set up a station profile and added species observations for WSNFH as part of the iNaturalist BioBlitz Challenge.



**Three information panels installed at display pools.  
Credit: USFWS**



**Diversity Training Workshop participants visiting WSNFH Sept. 18<sup>th</sup>. Credit: USFWS**

Haile facilitated a station tour on September 18<sup>th</sup> for staff from across the nation participating in a Diversity Training Workshop. The tour used the hatchery as a training opportunity for the participants. They were going over guidelines of the American Disabilities Act for program facilities inspections they will be conducting in the future.

Staff provided information to area landowners on sources for pond management information. We also provided local teachers with online resources available for lesson plans related to species facts, watersheds, and uses of water quality testing equipment. Staff also provided information for groups wishing to schedule tours.

## Volunteers:

Staff coordinated with members of WSNFH Friends Group on planning items ahead of the next group meeting in October. Friends Group member Vince Mudrak participated in a TN-NWR Friends Workshop held at Paris, TN July 26<sup>th</sup> -30<sup>th</sup>, 2018.

We prepared our RV pad for upcoming new volunteers Benny and Marsha Maynard who are arriving in October.

## General Maintenance and Operations:

We welcome two new employees joining us this Quarter! Jameson Ian Paige (Ian Paige) and Jessica Radich bring welcomed and varied experience to our station. Ian has worked at Dexter NFH while Jessica arrives from White Sulphur Springs NFH. Jessica participated in an NCTC Freshwater Fish Culture course Aug 27<sup>th</sup> through the 31<sup>st</sup>.

Reconstruction activities with the new holding house project continued through the summer months. Progress is slow as the scheduled completion approaches in early FY 2019. Once the project is completed, hatchery staff will begin the long process of moving equipment and installing culture systems in the new building.

Chad Shirey participated in the Maintenance Professionals Workshop July 23-27 at Auburn, AL.

Staff completed FY 2018 year-end purchasing, budgets and accomplishment reporting to online databases. WSNFH facilitated a Safety Inspection, and Environmental Compliance Audit on August 7<sup>th</sup> then responded to the findings.



**Building construction at the end of September.  
Credit: USFWS**

Staff prepared for and began inputting data for FY 2019 project data into the new FIS3 database.

Several upgrades and repairs were required to telephone and digital networks during the quarter.

Several worn pieces of equipment were removed from service and put up for transfer or surplus sales. They are scheduled to be replaced with newer equipment. ATVs, carts, and equipment were serviced during the quarter.

A metal roof was installed over Quarters 38, public use bathroom fixtures were upgraded, and station grounds and equipment were maintained.



**Contracted crane operator assisted in the removal of the worn out tower.  
Credit: USFWS**

The empty tower once used for storage of sodium hydroxide was removed from service and put up for sale. We are planning to replace this leaking fiberglass containment tank with smaller heavy-duty plastic storage tanks designed specifically for use with sodium hydroxide during 2019.

Staff worked on a variety of administrative projects, training classes, evaluations, budgeting and purchasing activities during the quarter. Carlos participated in several Project Leaders conference calls.



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