Hatchery Highlights

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

October – December 2017

Aquatic At-Risk Species Recovery:

Gopher Frogs

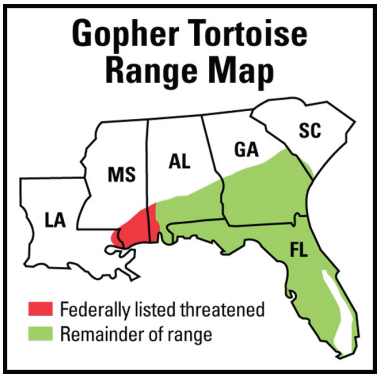
Warm Springs NFH is entering into its second year of expanding gopher frog conservation efforts within its historical native range. They are native to upland habitat, particularly longleaf pine ecosystems in Georgia and elsewhere in the southeast. Loss of longleaf pine habitat is the primary threat for this species. They are currently limited to fewer than ten sites in Georgia. This rare species is currently under review for formal listing by USFWS, and Georgia documents the species as vulnerable. We are engaged with our partners in a multi-year project to establish a self-sustaining breeding population on protected land of gopher frogs at the Nature Conservancy's Williams Bluff Preserve in Early County, GA.

Following a successful production effort last year we purchased five additional culture tanks for use this year. The additional tanks will provide an opportunity to evaluate survival and sizes of transformed juvenile gopher frogs at different stocking densities. Supplies needed for culture work this spring, such as orchard moss and plastic containers were also purchased. Josh Simmons and Trent Mitchell collected stems of dry madiencane *Panicum hemitomon* from an empty pond at Fall Line Sand Hills WMA located near Butler, GA. This plant material provides the detritus needed to establish a food chain in the culture tanks that will be used for the developing gopher frog tadpoles.

Josh and Carlos met at Zoo Atlanta on November 30th with (***no information provided)*** to review 2017 accomplishments and plan for 2018 activities. We work in partnership with the University of Georgia, Zoo Atlanta, Georgia Department of Natural Resources, The Amphibian Foundation, Inc**.,** and others on this project.

Gopher Tortoise

WSNFH initiated planning to rear juvenile gopher tortoise *Gopherus Polyphemus* in support of conservation efforts for the species. "The gopher tortoise is listed as a threatened species by Georgia and is federally listed as a Candidate species for populations east of Mobile and Tombigbee Rivers under provisions of the Endangered Species Act of 1973. Gopher tortoises typically inhabit relatively well-drained, sandy soils associated with longleaf pine-dry oak sandhills, but also occur in the scrub, dry hammock, pine flatwoods, dry prairie, coastal grasslands and dunes, mixed hardwood-pine communities, and a variety of disturbed habitats. Threats to the gopher tortoise include habitat loss, fragmentation and degradation, predation, the inadequacy of regulatory mechanisms, and incompatible use of herbicides in forest management."

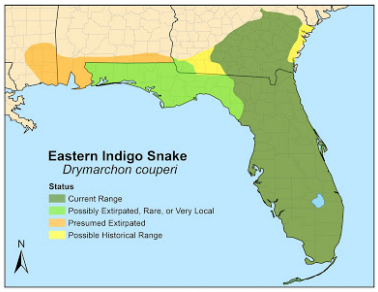


Carlos and Josh participated in a November 29th head start meeting held at Camp Shelby Joint Forces Training Center, located near Hattiesburg, MS. They met with James Lee, Nature Conservancy biologist, Eglin AFB staff, and others viewing facilities and going over culture protocols from several sources. Included were those outlined by Aaron Holbrook, Univ. of Southern MS in his paper; Maternal Effects and Offspring Behavior: Potential Contributors to the Lack of Recruitment of Mississippi Gopher Tortoises (Gopherus polyphemus).

Egg incubation and juvenile tortoise culture systems may be set up at our lake sturgeon building pending a scheduled 2018 reconstruction project to replace the existing holding house.

Indigo Snakes

Staff began gathering information on the possible production of Indigo Snakes in 2018. The eastern indigo snake, *Drymarchon couperi*, is a federally threatened species in Georgia and Florida and like the gopher tortoise has been affected by habitat loss.



Range map courtesy Javan Bauder; Indigo snake. photo FWS

Freshwater Mussels Research

Trent Mitchell began summarizing fish host trial data collected in work with purple bankclimbers, *Elliptoideus sloatianus.* New host fish are maintained ahead of work in 2018. Several hundred FY 2017 lake sturgeon were held back from distribution for possible use in 2018 host fish trials, as were some blackbanded darters. Both species proved to be successful host fish during our 2017 inoculation trials. The culture and research facilities were also prepped and winterized ahead of the approaching winter months.

Pollinator Habitat Project

Butterfly weed planted in our pollinator habitat area last year was replanted in October to produce faster growth. They were replanted in proximity to the overlook following soil reconditioning and mulching. Establishing native plants beneficial to monarch butterflies and other pollinators is a continuing goal of Warm Springs NFH. New volunteer in residence Marilyn Kircus is contributing her varied experiences with pollinator habitat projects at other FWS refugees and hatcheries to develop a work plan and outreach materials for the habitat area this year. We are also working with Meriwether Co. Soil Conservation Service agent to improve our program.

Gulf fritillary and monarch butterflies on stands of butterfly bush in the pollinator habitat. Credit: USFWS

Sicklefin Redhorse

We work in cooperation with conservation goals established within the Sicklefin Redhorse Conservation Committee. Sicklefin Redhorse is a Moxostoma species currently listed by USFWS as a Candidate species.

Sicklefin held on station for future field studies were sampled, pit tagged and consolidated into a single tank. Haile and Carlos participated in a November 8th conference call led by Jason Mays to discuss sicklefin conservation topics with committee members. Carlos met with Mike LaVoe, Fisheries biologist of the Eastern Band of Cherokee Indians, to discuss conservation task items, and hatchery renovations and improvements on November 16th.

Aquatic Species Restoration Programs:

Alligator Gar Restoration Program

Three goldfish forage ponds were restocked in preparation for spring production. Forage goldfish are reared in part to feed to young of year alligator gar before their distribution.

Gulf Coast Striped Bass Restoration

Production ponds utilized for striped bass were refilled and managed to prevent erosion. Air stones were removed from the ponds for cleaning and storage overwinter. The empty ponds were seeded with ryegrass in December to provide a source of organic fertilizer during spring 2018 striped bass production.

Lake Sturgeon Restoration

WSNFH staff helped host a lake sturgeon workshop focused on hatchery techniques, December 12th at the Atlanta Regional Office. Carlos prepared detailed yearly hatchery production summaries for individual hatcheries and provided an a 18 years overview of the history of this successful collaborative restoration program. Hatchery personnel from southeastern FWS hatcheries participated in this workshop covering topics such as culture, marking and assessment techniques.

Upper TN River basin lake sturgeon stock assessment was undertaken by boat crews December 4th -8th. All trotlines used are constructed to provide a standardized sampling effort and boat crews set and checked multiple lines daily at designated sample sites. All captured sturgeons are assumed to be hatchery-reared fish. Information on their age and growth is made possible by identifying locations on the sturgeon of removed scutes, the position designating a mark specific to a given production year. Recaptured fish were also scanned for or marked with internal pit tags. All fish were weighed and measured and tissue sampled before their release. Habitat information was also collected at collection sites.

The cold weather during the sampling effort has become an expected event and while making baiting hooks and running lines difficult the crews captured 38 lake sturgeon over a range of river miles demonstrating continued survival and growth of stocked lake sturgeon over the 17 years of the program.

Smallmouth Bass Restoration Program in Georgia

We are entering our second year working in cooperation with Georgia and Tennessee to produce fish for Blue Ridge and Chatuge reservoirs. Blue Ridge is located at the border of Georgia and Tennessee, and Chatuge is located at the border with North Carolina. Native populations of smallmouth bass have been affected by introduced spotted bass though-out the region.

Adult and subadult smallmouth bass were fed goldfish to promote growth and good egg formation ahead of the spring spawning season.

Juvenile smallmouth bass being reared for future broodfish. Credit: USFWS

Aquatic Habitats:

Nothing to Report

Aquatic Invasive Species:

Nothing to report.

Recreational Fishing and Public Use:

Nothing to report.

Educate and Engage Public & Partners:

Our Annual Open House was held Saturday, October 14th. Staff from the hatchery, Tech Center and Fish Health Center along with volunteers and members of the hatchery Warm Springs Friends Group setup exhibits for our visitors. Our friend's group provided refreshments and staff provided information on our restoration and recovery programs, and demonstrations of field equipment.

Fish distribution equipment exhibits; Alex Londono greeting visitors. Credit USFWS

Alex submitted E-Grits and FAC Highlight articles on our Open House. He also prepared an article for our collaborative environmental project with Benning Bass Club members. Alex submitted information for the production of web-based national species profiles for lake sturgeon, alligator gar, and sicklefin redhorse. He also produced a poster board for conservation work with gopher frogs and smallmouth bass and worked on setting up a Facebook account for the hatchery.

Haile participated in a Meriwether County Schools Advisory Council meeting in Woodbury on November 7th. Teacher and student resource information was compiled and sent to teachers in four area counties. Information included our open house event along with websites providing additional conservation-related information. He met with Meriwether and Troop county high school teachers in November, providing station tours and discussed their school's science and agriculture studies programs.

Wildlife waiting to be seen at Warm Springs NFH, Photos by Trent Mitchell

Volunteers:

Working together with members of the Benning Bass Club and hatchery staff worked cooperatively to tackle replacing wooden walkways in the wetland demonstration exhibit area October 28th. The hatchery friends group provided refreshments and hot coffee for the pre-dawn start of the project.

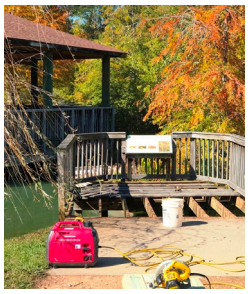
Staff and Benning Bass Club participants at days end. Credit USFWS

Volunteer Marilyn Kircus has seemingly unlimited enthusiasm and energy for any and all hatchery tasks. Credit USFWS

Marilyn Kircus, a well-traveled volunteer with previous work experiences at multiple FWS refugees and hatcheries, began volunteering with us November 7th. She is putting in at least 32 hours per week and contributing a wealth of knowledge to our programs. She is assisting with the development of outreach materials and putting together a work plan to expand our pollinator habitat area.

Hatchery staff met with Friends of WSNFH on October 14th and again on December 14th. The Friend's Group is updating the formal work agreement between the group and the hatchery.

General Maintenance and Operations:



Hatchery staff and Benning Bass Club members re-decking project Saturday, October 28th. Credit USFWS

Hatchery staff continued re-decking walkways of the wetland enclosure area through the first week in November. The top section of the handrail around the walkway was also replaced as was decking at the carnivorous plant display.

Repairs to our sodium hydroxide tower this fall were not successful, so an alternative delivery system was initiated in October. The product is now being dispensed from secure 330 gallon portable totes. Use of the storage tower has been discontinued. An electric vehicle lift was installed in the shop to facilitate servicing station vehicles and work carts. A new John Deere Ztrac riding mower and replacement pesticide tank sprayer equipped with boom and wand were purchased. A Road Boss grader was also obtained which will provide better road maintenance capabilities. Several older pieces of equipment were removed from inventory during the Quarter.

Culture systems were winterized to prevent frozen and broken pipes during freezing weather.

Carlos participated in a November 14th meeting at Athens, GA regarding future tasks associated with holding shortnose sturgeon on the station.

Carlos responded to a request to assist with the assessment of Puerto Rico's Maricao State Fish Hatchery following its destruction during the passing of Hurricane Maria. Carlos and Allan Brown traveled to Puerto Rico, participating in meetings and evaluations December 18th through the 22nd. Meetings included those with AFS Southern Division participants, visits to hatchery sites and meetings with FEMA personnel.

Planning for reconstruction of the holding house approached the 95% design completion phase. Outstanding items were being addressed through the Quarter.

Staff worked on administrative tasks at year's end that included various reports, budget, safety and performance items.

U.S. Fish & Wildlife Service
Warm Springs National Fish Hatchery
5308 Spring Street
Warm Springs, GA 31830
706-655-3382 Fax 706-655-9034
http://www.fws.gov/warmsprings/FishHatchery