

Hatchery Highlights

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



October – December 2016

Lake Sturgeon Restoration

Warm Springs NFH works collectively with numerous NGO's, universities, state and federal agencies cooperating within the Southeastern Lake Sturgeon Working Group to meet restoration goals for this species. WSNFH is working to restore lake sturgeon in the southern portions of their historical range.

Annually, hatchery personnel undertake tasks ranging from spawning, rearing and marking fish prior to distribution by scute removal, to assisting in post stocking assessments and evaluation of habitat used by stocked lake sturgeon. We produce lake sturgeon for distribution into headwaters of the Tennessee River, typically near the confluence of the Lower French Broad River and Holston River in Tennessee. Assessment work continued for a fifth year on these waterways as well as in sections of the Coosa River, assisting with surveys for lake sturgeon stocked by Georgia Department of Natural Resources (GDNR).



The last of our FY 2016 year class lake sturgeon were distributed during two October, 2016 trips. Prior to distributing the lake sturgeon, all fish were marked at Warm Springs by removal of the left side, first and second lateral scutes. Chad Shirey distributed 1,320 sturgeon, weighing 66.15 lbs. and averaging 7.24 inches in length to the Holston River, TN at the Nances Ferry access on October 6th 2016.

The second distribution was conducted on October 22nd, 2016 at the Seven Islands State Birding Park, providing access on the Lower French Broad River in Knox County, TN, concurrent with the annual Lake Sturgeon Festival taking place at the access area. “The Sturgeon Fest is a partnership between the Tennessee Valley Authority, The Tennessee Clean Water Network, US Fish and Wildlife Service, natural resource agencies, government, industry, scientists, and anglers in order to highlight the ecosystem approach to managing native fish and wildlife populations in Tennessee and to increase interest in restoring the sturgeon to higher levels of abundance”. Chad Shirey distributed a total of 2,071 marked sturgeon, weighing 114.23 lbs. and averaging 7.74 inches in length.



Chad Shirey WSNFH, explaining the tempering process as lake sturgeon are prepared for release.

Lake sturgeon distributions at other sites on the French Broad River are also receiving publicity. The Smoky Mountain News located in Waynesville, NC published a November 9th, 2016 article of a lake sturgeon distribution from Edenton NFH, which were hatched at Warm Springs earlier in the year.

<http://www.smokymountainnews.com/outdoors/item/18794-welcome-home>

Chad Shirey and Carlos Echevarria worked with other boat crews during annual sampling efforts undertaken along the Upper Tennessee River, November 14th through the 18th. Boat crews on the TN River consisted of staff and volunteers from Tennessee Wildlife Resource Agency (TWRA), Tennessee Valley Authority (TVA), University of Tennessee (UT), Tennessee Technological University, and FWS personnel from Warm Springs NFH, Panama City FWCO, Erwin NFH and Warm Springs Fish Health Center. Limited numbers of lake sturgeon were collected this year. A total of 24 lake sturgeon were collected by the boat crews sampling.



Carlos Echevarria and Byron Hamilton, preparing to deploy trotlines

Other lake sturgeon work underway during the Quarter included data analysis for work on the upper TN River and work on the annual production report.

Alabama scientific collecting permits were completed but not required as Alabama fisheries biologists worked alongside WSNFH staff this year.

Chad Shirey and Josh Simmons sampled on sections of the Coosa River in Alabama, December 5th through the 9th. Sampling was conducted on Weiss, Neely Henry and Logan Martin reservoirs. They worked in cooperation with Georgia and Alabama Natural Resource Agency biologists conducting annual sampling efforts for lake sturgeon. This year one lake sturgeon was collected from Lake Weiss.

Sicklefin Redhorse Restoration



Photo credit: Steve Fraley, North Carolina Wildlife Resources Commission

Our work with Sicklefin redhorse represents a cooperative effort by the fisheries program at Warm Springs NFH, the Eastern Band of Cherokee Indians, USFWS Ecological Services (ES), Asheville, NC, Conservation Fisheries Inc. (CFI), North Carolina Wildlife Resource Commission (NCWRC), and others.

Sicklefin redhorse are currently listed by USFWS as a candidate species (for elevated listing) throughout its entire range. Our primary involvement is to rear fingerling Sicklefin redhorse, addressing research and production tasks developed by members of the Sicklefin Redhorse Conservation Committee.

WSNFH continues culture of 2014 and 2015 year class sicklefin for future telemetry, tagging and assessment work. Haile consolidated production summaries from previous production reports and supplied photos for planning use and genetic database updates.

We continue our cooperative work with Alabama Cooperative Fish & Wildlife Research stationed at Auburn University. Staff are trying to induce spawning of river redhorse held in captivity with hormone injections. We will be assisting with data collection efforts under a new River Redhorse INAD proposal put together by staff at Auburn.

Smallmouth Bass Restoration



FWS Photo

Josh Simmons picked up 16 adult smallmouth bass on November 18, 2016 from Eagle Bend State Fish Hatchery, TN. These fish were collected earlier by TN Wildlife Resources Agency biologists from Cherokee Reservoir, an impoundment of the Holston River in TN. The fish were obtained well ahead of the 2017 spring spawning season in order to condition the broodfish at Warm Springs NFH. The smallmouth bass were provided ample goldfish forage to ensure good egg development during the winter.

Gopher Frog Recovery

Warm Springs NFH is initiating recovery efforts for gopher frog, *Lithobates capito*, in cooperation with regional partners that include the University of Georgia, Zoo Atlanta, Georgia DNR, the Amphibian Foundation in Atlanta, and others. The species is currently listed as a candidate for Federal listing under the Endangered Species Act of 1973 and is listed by the state of Georgia as a species of special concern.



Planning meetings with our partners got under way with a meeting on November 8th, 2016. Mark Mandica (Executive Director of the Amphibian Foundation in Atlanta); Dr. John Maerz (Professor of Vertebrate Ecology) and Vanessa Kinney (Research Coordinator) with UGA; and John Jensen (Georgia DNR biologist); Dr. Joseph Mendelson (Director of Research Atlanta Zoo), Robert Hill (Assistant Curator of Herpetology Atlanta Zoo) provided excellent advice from their experiences. They have successfully raised and distributed juvenile, fully developed frogs, reared from eggs collected in the wild. We are planning on

using the culture protocols utilized by UGA for our initial effort. Following their recommendations, culture system design and component purchases were initiated for culture operations expected to begin as early as February 2017.

Josh Simmons met UGA staff at Fall Line Sand Hills WMA near Butler, GA on November 14th to collect plant stems of dry madiencane *Panicum hemitomon*. Collected from an empty pond on the WMA,

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.

Habitat Restoration

Chad Shirey participated in a multi-agency partnership to remove the Shuford Mill Dam impounding the Henry Fork River near Brookford, NC. Working with partners November 6th through the 13th, 2016, the dam's removal will facilitate future native mussels and other aquatic species restoration and fish passage in sections of the river that were impacted by the dam's presence. Several online links showing the dam removal in progress are available including the following American River's website and a YouTube video link. "American Rivers and Carolina Land and Lakes Resource Conservation and Development Council co-managed the project and FWS provided construction / demolition services." Design engineering was conducted by Stantec Consulting. Additional partners included, "North Carolina Wildlife Resources Commission, Appalachian State University, Catawba County Soil and Water conservation district, Western Piedmont Council of Governments, Jeffrey Rich and Freshwaters Illustrated."

<https://youtu.be/q4A2uLLwZRg> Link provided by Hal Jones, FWS.

<https://www.americanrivers.org/2016/08/shuford-dam-removal/>

Maintenance and Operations

Contracted work was undertaken during the quarter to add metal roofs to ten buildings at Warm Springs NFH. Victor Bowman, contracting officer, FWS coordinated a preconstruction conference call October 6th, 2016 with WSNFH staff and Larry Bruccoliere, FGM General Contractor and Construction, LLC and Mike Pittman, a roofing contractor. Several follow up calls were conducted to establish the correctly colored roofing panels ahead of the actual project.

Ten buildings were reroofed under project F16PX02825, beginning on October 20th, and ending on December 21st after the contractors took care of the final punch list items. The following buildings were reroofed: feed house, vehicle storage, wet lab, two pole sheds, welding shop, genetics / cryopreservation lab, fish health lab, old and new pump house buildings. Multiple return visits were required by the contractors in order to address punch list items identified during the project.



Section of newly installed metal roofing over the wet lab.

Planning continues on developing a cost effective scope of work for removing the existing holding house and replacing it with a metal building that will provide needed functionality and capacity to meet future program needs. The new Holding House project also includes building a set of covered raceways 80 foot long, and expanding existing storage capacity of an adjacent water supply pond.



Existing building with degraded concrete raceways, scheduled to be replaced.

Warm Springs NFH staff and Regional Office engineer Carville “Billy” Edwards conducted a teleconference call on November 21st with contractors from BlueScope Buildings. An onsite visit was also conducted on December 2nd to facilitate evaluations of the water supplies head pressure and flow rates for the proposed replacement building. A follow-up conference call on December 9th was conducted as part of the design kick-off, scope of work coordination currently underway on the project.

During the quarter staff also winterized culture systems, water supply lines and buildings to prevent below freezing temperatures from damaging equipment. Ponds utilized for striped bass production were drained as a means of removing unwanted aquatic vegetation over the winter and air stones were

removed for cleaning. Staff worked on leaf removal from landscaped areas and maintained roads and ditches ahead of fall and winter rains. Tree roots were removed from French drains tied into south spring; the water source for culture systems located in the pole shed and wet lab area.

A new aluminum trailer was ordered to replace an existing wooden decked, steel frame trailer on which a 500 gallon capacity circular fish hauling tank is mounted. The existing trailer's axle(s) and decking were becoming unsafe for highway use.

Chemical towers at the wet lab were charged with baking soda and calcium chloride on several occasions.

Outreach: Connecting People with Nature and Volunteers

Warm Springs NFH works to uphold and demonstrate the Service's commitment to environmental leadership. To that end, the station provides facilities, kiosks, public access and scheduled events that increase the public's awareness of their natural resources, our goals and accomplishments. In addition to facilitating onsite professional tours, staff also provided (volunteered) time for occasional off-site programs as time permitted.

Tours included visits from area home schools such as the Walker School tour, October 5th consisting of 13 kids and 2 adults.

The **Annual Open House and Fisheries Complex** sponsored by WSNFH, was held for the community Saturday, October 8th. It featured exhibits and demonstrations from all WSNFH programs. Hatchery staff and Friends Group members cooked hotdogs and provided bottle water to the attendees. The food and water was donated by Friends of Warm Springs NFH. Visitors had an opportunity to view exhibits and to chat with staff members from the entire Warm Springs Fisheries Complex: Warm Springs NFH, Fish Health Lab and Fish Technology Center.



Warm Springs
National Fish Hatchery's
ANNUAL
OPEN HOUSE
9:30 AM - 1 PM
October 8th
Free Food!!!!

Prize Drawings Meet the Staff
Kids Activity Center Guided Aquarium Tours
See Cool Fisheries Equipment Open Aquarium

 Location: The Aquarium, 5264 Spring Street, Warm Springs
For More Information: Call Carlos at 706.655.3382 ext 1224 



Energetic young volunteers helped greet visitors



Devin Chappell, (Fish Health) Bill Wayman and Nathan Whelan, (Technology) and Josh Simmons, WSNFH

Haile Macurdy participated in Pike County's High School STEM science project evaluations on December 12th. Students developed aquaculture / hydroponics projects in grades 10-12. Working in teams approximately 100 projects were presented by the students for evaluation of their presentations and of the scientific methods they used. A follow-up visit to Warm Springs NFH in January was scheduled for an algebra class conducting stream flow and diversity index measurements.

WSNFH staff collected locally available display fish for transfer to the Mystic Aquarium, located in Mystic, CT. The aquarium wanted some warm water species, such as longnose and spotted gar, for their exhibits. Warm Springs NFH collected and transferred some of our display pool and aquarium fish to Mystic Aquarium staff on December 13th, 2016.

Volunteers: Great Partnerships

The Benning Bass Club, friends of the hatchery and staff came together to landscape pond slopes and constructed islands in the wetlands display area. The Benning Bass Club supplied the workers; the Friends Group supplied snacks, coffee and water to the volunteers. The Benning Bass Club has worked annually with the Hatchery on environmental projects for the last five years. These partnerships help leverage funds and workloads to benefit both fisheries and other wildlife.



Carlos thanking club members for their valued assistance.

Administrative

Lisa Kemper, with the Migratory Birds Program, Regional Office, provided excellent assistance at Warm Springs during a two week detail here in December.

Continuing efforts were applied towards meeting year end requirements for personnel actions, budgeting and annual reporting requirements ahead of staff taking time off from accumulated use or lose vacation time in December. Work included updating staff EPAP's and developing the station's PRS targeted goals for 2017 in FIS.

Annual fish distribution records were completed for FY 2016 in FIS. A negative response on invasive species data collection was submitted. Staff developed new work templates for major FY 2017 fisheries programs and their corresponding budgets for 2017. An equipment purchasing plan for computers, printers and similar items was submitted November 1st.

Pesticide use proposals (PUPS) were submitted for 2017 on December 20th. The proposals were updated to include background information on state and federal listed species. Pesticide usage information was also compiled and submitted for the 2016 use report.

Data was inputted into the iQMIS Quarters database for 2017 rate calculations.

Data was compiled for all programs at Warm Springs on solid waste management. The data is submitted online annually.

A technical paper on chemistry and operation of our water treatment process was submitted by Dr. Barnaby J. Watten on November 9th for publication to the Journal of Aquacultural Engineering. The manuscript is titled: **“Performance and Application of a Fluidized Bed Limestone Reactor Designed for Control of Alkalinity, Hardness and pH at the Warm Springs Regional Fisheries Center”**: Author: Barnaby J. Watten Co-Authors: Vincent A. Mudrak, Carlos Echevarria, Philip L. Sibrell, Steven T. Summerfelt, Claude E. Boyd.

Paper was accepted for publication and final version of the article with full bibliographic details is now available on line: <https://dx.doi.org/10.1016/j.aquaeng.2017.03.003>



Philip L. Sibrell (USGS), Dr. Barnaby Watten USGS, Vincent Mudrak (WSRFC) and Carlos Echevarria (WSNFH) working together in Leetown, PA.

Information on this treatment process was also forwarded to Steven Summerfelt, Director, Aquaculture Systems Research, The Conservation Fund Freshwater Institute, Shepherdstown, WV.



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