

# Hatchery Highlights

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



January-March 2015

### Lake Sturgeon Reintroduction Program

The Southeastern Lake Sturgeon Working Group held their annual meeting on March 4<sup>th</sup> and 5<sup>th</sup> in Knoxville, TN this year. Carlos Echevarria participated, providing input on 2014 hatchery data and production goals for 2015. Also discussed were reviews of fish handling and data collection protocols. Prior to the meeting Josh Simmons and Carlos updated and finalized sample data of the working group submitted from 2014.

Additional topics involved updates from GA, KY, AL and TN state programs, recapture and monitoring work, habitat assessments, angler reports, student presentations and a review of the Tennessee Lake Sturgeon Management Plan. Ashantye Williams, Warm Springs Fish Technology Center, presented genetics information obtained from tissue samples of recaptures and collected wild broodstock lake sturgeon from WI.

Hydrolab sondes from Warm Springs NFH are being utilized to sample water quality data in habitat where lake sturgeon have been collected by trotlines or identified from telemetry information.

Preparation of equipment and supplies for production of lake sturgeon fry at Warm Springs this year got under way in March. Preparations included filling a ½ acre pond dedicated to providing pond water to the lake sturgeon building. Culture tanks, bio-filters, chilling equipment were also de-winterized, disinfected and powered up in anticipation of culture work in April. Feed purchases were made for lake sturgeon culture work projected through the rest of the year.

### Gulf Striped Bass Restoration

Josh and Carlos participated in the annual Morone meeting at Eufaula, AL on February 10<sup>th</sup> and 11<sup>th</sup>. Josh gave a PowerPoint presentation of Warm Spring's fertilization and zooplankton monitoring through recent years of production. Additional topics included a review of 2014 restoration efforts by the participants and setting goals for the 2015 production cycle.

Ponds scheduled to produce fingerling striped bass were made ready in preparation for filling with water in early April. While the ponds were empty, they were seeded with rye grass. Air-stones, utilized to provide supplementary aeration during the culture season, were cleaned, pressure washed and reinstalled. Sediment was removed from in and around harvesting basins of the 12 ponds typically used for producing striped bass. Organic fertilizer utilized to produce zooplankton for the young striped bass was purchased during the Quarter.

### Sicklefin Redhorse Restoration Program in NC

Our work with sicklefin redhorse represents a cooperative effort by Warm Springs NFH, the Eastern Band of Cherokee Indians, FWS Ecological Services, Asheville, NC, USGS, Conservation Fisheries Inc.,

Duke Power, Western Carolina University and others addressing research goals developed by the Sicklefim Redhorse Research Partnership. Our efforts are currently focused on rearing sicklefim redhorse for tagging, assessment and other studies. By March the two lots of sicklefim on station totaled 500 fish and averaged 3 inches in length.

Carlos and Haile Macurdy participated in a conference call on March 19<sup>th</sup> to coordinate sicklefim broodstock sampling and gamete collection work this spring with members of the research partnership. Mark Cantrell, ES Asheville, NC office hosted the call.

We purchased commercial rations for culture of fingerling sicklefim again this year at Warm Springs and also obtained a custom formulated diet in larger particle sizes from Manuel Ulibarri, Director of the Dexter National Fish Hatchery and Fish Technology Center, for culturing sicklefim once they are larger than one inch in length. The custom diet was originally produced for culture of razorback suckers.

Sicklefim redhorse are currently confined to the Hiwassee and Little Tennessee rivers of the upper Tennessee River basin as reported in: Propagation and Reintroduction of Sicklefim Redhorse (*Moxostoma* sp.) to the Tuckaseegee and Oconaluftee Rivers, North Carolina: Final Report for 2013 by: M.A. Petty, P.L. Rakes, C.L. Ruble, and J.R. Shute, Conservation Fisheries, Inc. February 25, 2014. Larger fish cultured for future tagging and telemetry studies will help evaluate habitat use and movements within these basins.

## **Alligator Gar Restoration Program in TN**

Staff developed a 2014 production summary for alligator gar work at Warm Springs. Carlos participated in the annual SDAFS Technical Committee meeting in Savannah, Georgia, January 28<sup>th</sup> – 30<sup>th</sup> to review accomplishments and goals for the coming year. He presented a summary of our 2014 work at Warm Springs. Alex Edwards, a 2014 summer intern at Warm Springs, conducted a study and presented his research findings titled “Effects of Feeding Frequency on Alligator Gar Mortality”.

Staff managed forage production ponds and purchased commercial feeds needed for culture of alligator gar in 2015.

For additional information on related alligator gar projects see the Gulf Coastal Plains LCC Projects weblink below:



### [Alligator Gar Priority Tool](#)

A model is being developed to identify areas within the Mississippi Alluvial Valley that are suitable for alligator gar. St. Catherine [Read More](#)

## Habitat Initiatives and Watershed Restoration:

Haile Macurdy and Bill Bouthillier participated in a WebEx presentation February 11<sup>th</sup> by Emily Granstaff (FWS), titled: "SARP Tennessee Cumberland Assessment and Southeast Aquatic Connectivity Assessment Project Tool". Staff also completed an online survey concerning Strategic Habitat Conservation in Feb.

Chad Shirey participated with the Burks Creek Stream Restoration and Stabilization Project February 9<sup>th</sup> – 13<sup>th</sup>, 2015 in the Paint Rock Watershed in Alabama. Heavy equipment operators from both Refuges and Fisheries helped to install in-stream structures such as cross vanes, j hook vanes and root wads. Staff from Pvt. John Allen NFH and Warm Springs NFH worked with the Partners for Fish and Wildlife Program (Wheeler NWR), the Regional HEO Safety Coordinator and the Daphne ES Field Office to complete the project.

In addition to in-stream work they also assisted with bank stabilization work. The work included smoothing out bank slopes and laying out textile matting. According to folks working on the project: "The weather, although cold, cooperated with no significant precipitation, what did fall, fell in the form of frozen sleet and snow, that didn't accumulate nor cause any project delays."



**Burks Creek (Before Picture)**



**Burks Creek (After Picture)**

"The work accomplished by our USFWS heavy equipment operators on this project was a huge cost savings to the Partners for Fish and Wildlife Program funding received for the Paint Rock River Habitat Enhancement Project. There is definitely POWER in Partnerships!"





**Installing a root wad**



**Cross vane installed**

Warm Springs National Fish Hatchery in conjunction with Friends of Warm Springs National Fish Hatchery created a Monarch butterfly habitat project plan on February 25<sup>th</sup>. This work plan is in support of the Memorandum of Understanding announced in February between the Service, National Wildlife Federation and the National Fish and Wildlife Foundation to help engage the public in supporting and protecting Monarch Butterflies.

Our working plan will utilize an unused pond on station for Monarch Butterfly and other pollinator habitat. Preliminary work completed this Quarter included herbicide treatment to remove unwanted vegetation. This is a necessary first step prior to seeding the area with several species of milkweed and other plants beneficial to pollinators.

An article in the Manchester Star Mercury, Vol. 102- No. 8, highlights this Service initiative and our effort to support monarch and other pollinators. Cooperators to date with this project include Piedmont National Wildlife Refuge are providing guidance with planting seeds. Our Friends group are also supporting this project, providing funding to purchase seeds of native milkweed species found in and around Meriwether County, GA. For information on the article visit: [news@star-mercury.com](mailto:news@star-mercury.com).

## **Freshwater Mussels & Small Stream Fish**

Work is underway evaluating an alternative juvenile mussel production technique at Warm Springs. Host largemouth bass will be infected with purple bankclimber glochidia and then held in submerged wire cages in our freshwater mussel pond and in dedicated culture systems. This work is required in order to evaluate a potential augmentation technique for producing transformed juvenile mussels. Juveniles also produced through cell culture will be similarly placed into cages and culture systems.

Working in cooperation with Panama City ES staff, gravid purple bankclimbers were collected in March, for conditioning and later infection of largemouth bass at Warm Springs. Collection of gravid mussels is typically ideal in May with lower water level and flows, but bankclimbers are already spent in May. They become gravid in late March and release glochidia early April when temperatures reach 15-16C. Water flows are high in March which make difficult to accomplish this time of year. Once infected with glochidia the fish will be held in culture systems and in submerged cages in a pond at Warm Springs for comparative purposes. The goal is to evaluate relative percent success across the different sites.

We are intending to infect largemouth bass but will utilize glochidia incubated in cell cultures by Warm Springs Tech Center staff to produce larger number of juveniles for placement into the cages and culture systems developed for this purpose at Warm Springs. Any juveniles produced will be utilized for research at Warm Springs, and for evaluating our culture facilities and techniques.

Chad Shirey, Carlos Echevarria traveled to the Flint River and met Andy Hartzog, Panama City ES, March 18<sup>th</sup> to collect gravid mussels and several mature individuals for host fish work at Warm Springs. Potential specimens were placed in underwater cages onsite while culture systems at Warm Springs were adjusted to the current river conditions.

Chad and Andy then returned on March 25 to retrieve the three purple bankclimbers and two washboard mussels placed in the cages. Chad returned these mussels to the mussel isolation /culture facilities at Warm Springs.

In preparation for this work several ponds were harvested in January and February to obtain juvenile largemouth bass for upcoming host fish work.

Two new culture systems were also created to expand juvenile mussel production capabilities. The Barnhart bucket system, designed by Dr. Chris Barnhart of Missouri State University and rearing pans developed at Virginia Department of Game and Inland Fisheries, AWCC (Aquatic Wildlife Conservation Center).

The Barnhart bucket system is a modified down-weller modelled after a marine shellfish system. They are used for juveniles one day old up to 5 mm in lengths or until they slow in growth.

The rearing pan system was originally designed as a flow through system for rearing newly transformed juvenile mussels and can be used to grow out either day old or older juveniles.



**Rearing pans**



**Barnhart Buckets**

In addition to new systems, new technology is coming to the freshwater mussel program. An acquisition for a digital camera for microscopy has been approved. This new equipment will consist of a stand-alone control unit and a camera head that attaches to our dissecting microscope. The equipment allows easier image analysis to be conducted with larval mussels.

We're also working with Rachel Mair, Harrison Lake National Fish Hatchery, VA to review mussel feeding protocols. Rachel will be visiting Warm Springs NFH in April to evaluate our culture program methodologies and facilities.

## **Training, Safety and Administrative**

Hatchery personnel participated in “brown bag” presentations by Jaci Zelko and Ashantye Williams, Warm Springs Fish Technology Center staff, on January 26<sup>th</sup> ahead of the Southern Division AFS Spring Meeting.

Bill Bouthillier assisted the Fish Health Center with a triploid grass carp inspection trip on March 18<sup>th</sup>.

Staff reviewed and discussed the Service’s Diversity and Inclusion Plan and implementation this January.

The 2014 4<sup>th</sup> Quarter and 2014 Annual Reports were completed.

Staff time required to administer FBMS requirements remains significant. Staff developed time sheets to overlay new WBS coding with all work undertaken at Warm Springs. Carlos took several training courses related to FBMS record keeping and safety.

Staff completed an extensive clean-up of old records from years of storage in the administrative building, a professional shredding company was brought in to destroy records that required destroying. Due to our efforts we recycled over 750 pounds of shredded paper. Another 400 pounds of non-sensitive material was recycled.

Personal Property Inventory and Reconciliation updates and certifications were completed in March. Additionally several property items were removed from inventory through GSA surplus procedures. A lot of time was required answering inquires on these items from potential bidders.

Pesticide use proposals and 2015 annual pesticide use data was prepared and submitted. An updated Section 7 permit for pesticide use at Warm Springs was submitted to the ES Office, Fort Benning. It was approved and attached to all pesticide use proposals.

Josh Simmons and Bill Bouthillier attended the Introduction to Fish Health class at NCTC January 12 – 16, 2015.

All EMS and safety plans were reviewed and updated during the Quarter. Staff cleaned all buildings and inspected equipment to ensure it is in good working condition. Annual station wide fire extinguisher inspections, service and updates were conducted in February. Staff also reviewed safety and environmental compliance requirements along with self-audit findings with Haile prior to a formal EMS and Safety audit on March 24<sup>th</sup> and 25<sup>th</sup>. Haile and Chad Shirey met with Tyler Henderson and Theresa Nallett, Regional Safety staff, during the two day inspection. Additionally, Both Chad and Haile completed several online safety courses during the Quarter.

All staff completed annual required training for Federal Information System Security Awareness Plus Privacy and Records Management and took online ATV and UTV training courses.

Chad Shirey (WSNFH) and Wayne Smith of Piedmont Wildlife Refuge conducted an ATV training class for three hatchery staff members, two refuge interns and one Ecological Services employee on January 21<sup>st</sup>. Staff utilize these small carts and in lieu of full sized vehicles for most station work, while maintaining vehicles for highway and specialized uses, thus reducing fuel consumption and extending the life of fleet vehicles.



Staff are required to complete 8 hours of formal ATV and UTV training prior to using the equipment

## Maintenance and Operations

Staff conducted preventative maintenance, repairs and construction activities during the Quarter. Work included landscaping and leaf removal around public use areas and service buildings.

The three above ground fuel tanks were cleaned; repainted and faded signs were replaced in March.

Buildings and culture systems were de-winterized in January in preparation for use this spring. Such activities included putting recirculation systems back into production, cleaning and disinfecting culture systems, and conditioning water supplies for culture work. This work was undertaken in the Wet Lab, Holding House, Lake Sturgeon and Mussel buildings.

Staff planted three Thuja Green Giant trees to shield the propane tank adjacent to the Alkalinity building and prevent vehicles from using pathway around the Alkalinity Building.



Newly Planted Thuja trees



Service & maintenance of microscopes

Annual cleaning and maintenance was completed by service representative on all microscopes belong to the hatchery.



**West and East Views of the Pole Shed showing replacement fiberglass grating.**

Staff finished replacing sections of corroded galvanized walkways in a pole shed with a composite decking.

The City of Warm Springs is now required to modify their water treatment process to address slightly elevated radium levels in the water supply. Carlos met with Warm Springs Mayor Robert Prater in March receiving an update on the City's new radium treatment process and implementation schedule.

A 25 ton shipment of high calcium carbonate limestone was received for treating cold springs water supply ahead of the 2015 production season on March 18<sup>th</sup>. Specialized feeds for use with alligator gar and lake sturgeon were purchased as was organic fertilizer for use with the striped bass program.

## **Outreach and volunteers**

Bill Bouthillier was a judge at the Annual Columbus Regional Science and Engineering Fair (CRSEF) at Columbus State University on February 3rd. This is an annual science fair for Sr. and Jr High School students. Bill interviewed and graded 20 student entries in the Animal and Environmental Sciences section.



On February 21<sup>st</sup>, two groups visited the station. These were the Home Schooling Association, 2 adults / 5 children and a Seniors Group Home with 15 adults. These groups toured the aquarium and hatchery ponds.

On March 14<sup>th</sup> Bill attended and gave a lecture at the Annual GA Adopt-A-Stream Conference about basic ecology, life history and reproduction, conservation status, and management of freshwater mussels found in Georgia and the southeast. His session covered characteristics of invasive and protected species including a hands-on component in identifying relic shells and learning about the importance of mussels in our freshwater ecosystems.



WSNFH assisted Oxbow Meadows Environmental Education Center, Columbus, GA in February, providing them several fish species for their displays.

Forage broodfish were provided to Georgia DNR to assist with a shortage of broodfish experienced due to a hatchery renovation project.

Carlos coordinated with the Benning Bass Club for upcoming project opportunities this spring. The group has provided valuable assistance with our annual kids fishing rodeo in June and construction / renovation projects at other times of the year.

Noreen Clough, former ARD for the Southeast Region, ardent supporter of Fisheries Friends Groups nationwide and founding member of Friends of Warm Springs National Fish Hatchery passed away this January. Our Friends group and the hatchery are currently researching ways to honor her in memorial at Warm Springs NFH.

Friends of Warm Spring National Fish Hatchery provided funding and purchased several pounds of native milkweed seeds found in and around Meriwether County, GA for use with the monarch butterfly habitat project getting underway this year at Warm Springs.

Staff provided recommendations on many occasions to our visiting public, area youth leaders and groups about visiting Warm Springs NFH. Staff also frequently provided sources of information on pond management to area landowners looking for advice.



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>