Hatchery Highlights

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

July - September 2013

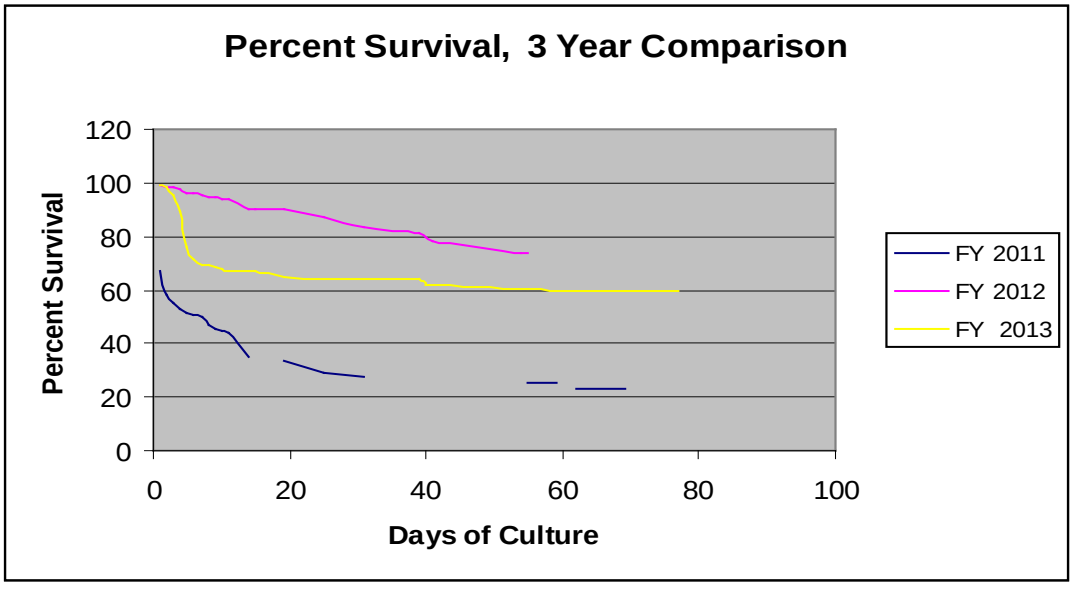
Alligator Gar Program Updates

Warm Springs NFH Alligator Gar Program is part of a restoration program covering both the Mobile and Mississippi River drainage basins and is currently in its 7th year of production. On May 9th, we obtained 5,033 fry (8-9 days post-hatch) from Private John Allan NFH. These fry, 15-20 mm long, were counted and transferred into rearing tanks at the hatchery, after a period of water tempering. The fry started consuming high quality commercial feed and live brine shrimp very quickly. After two or three days of culture, most fry were weaned off brine shrimp completely and were fed dry feed only. Survival through the reminder of the culture period remained high, except for a fungus outbreak that was responsible for most of the mortalities observed (35%). This outbreak was attributed to a late spring cold snap.

On July 25th, at 77 days of culture, all gar were marked with coded wire tags and distributed to the Hatchie River (tributary of the Mississippi River) in west Tennessee. A total of 2,996 alligator gar (averaging 8.44 inches long) and a total weight of 310 lbs. were stocked. The overall survival rate for this production season was 60%.

Additionally, 71 tagged 2012 year-class fish were also distributed to the Hatchie River. These fish averaged 13.6 inches and weighed a total of 37 lbs. These fish were initially held back in 2012 for a gonad development research project in cooperation with the Genetic Lab and Auburn University.

For further information on alligator gar, visit the website: http://www.sdafs.org/alligar/index.html



Alligator gar survival rates for the last three production years.

Coded wire tagging of alligator gar on July 24th, 2013.

Tank-reared alligator gar.

Lake Sturgeon Production News

Warm Springs NFH is one of many partners working to restore lake sturgeon in the Upper Tennessee and Cumberland Rivers of Tennessee.

In our 13th production year, Warm Springs NFH cultured 2013 year-class lake sturgeon for distribution to the upper Tennessee River system. Hatchery staff fed combinations of a commercial sturgeon diet along with natural forage, frozen krill, and bloodworms (midge larvae) to produce healthy fish. Holding tanks were provided with supplemental oxygen and water temperatures were optimized for rapid growth. Also, lake sturgeon fingerlings were continually graded to reduce competition and maintain uniform growth.

On September 10th, staff and volunteers tagged 1,367 lake sturgeon by removal of the 7th and 8th scutes on the right side of the fish. On September 11th, Chad Shirey distributed these fish to Nances Ferry access ramp on the Holston River in Tennessee. The fish weighed a total of 108 pounds and averaged 8.28 inches (ranging 6.8 - 10.0 inches). In addition, 2,900 fish remain at Warm Springs for distribution in October. In the photo below, a recaptured lake sturgeon shows that scute removal can be used to identify fish originating from hatcheries.

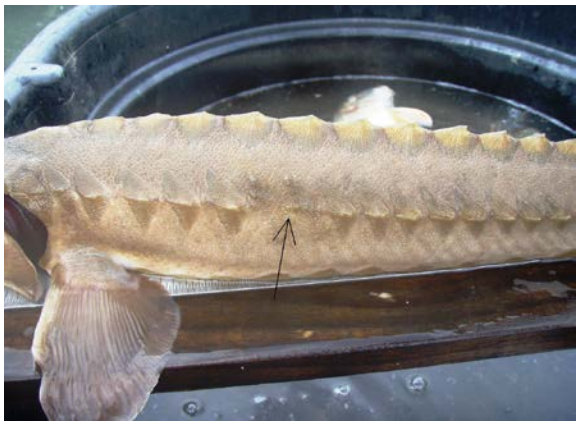
The Upper Tennessee River Lake Sturgeon Technical Committee has described needed assessment tasks in the Management Plan for Restoration of the Upper Tennessee River Lake Sturgeon Population. This assessment work was undertaken this quarter.

In recent years, multiple year-classes of stocked lake sturgeon have been collected in the upper Tennessee River through standardized trot line sampling efforts. Work is planned for November 2013 to tag collected lake sturgeon with Vemco V-16 acoustic tags, to track movement of these fish and identify habitat. These tagged fish will hopefully provide valuable information such as refinement of trotline sampling protocols and lead to a better understanding of the distribution and seasonal patterns of lake sturgeon and habitat use. This work is part of the study plan developed at WSNFH that incorporates field techniques for sex identification and staging, evaluation of stomach contents, and placement of telemetry tags. On July 25th, Carlos Echevarria, and Brian Hickson (Fish Health Lab) tested these techniques using surrogate species to prepare for field trials in the fall.

Deployment of submerged Vemco VR2W acoustic receivers was undertaken August 5th - 9th, 2013. These receivers will track any lake sturgeon tagged during the November collection efforts. Carlos Echevarria and

Chad Shirey, Kayla Kimmel - FWCO Baton Rouge, Mark Cantrell - Ashville ES, and Jason Henegar - TWRA deployed nineteen Vemco VR2W acoustic receivers over a 210 mile stretch of the upper Tennessee River and in several large tributaries between Knoxville and Chattanooga. The receivers were range tested during deployment.

Hatchery staff are also involved with restoration of lake sturgeon in the Coosa River in Georgia and Alabama. Lake sturgeon have been stocked in the Coosa River in cooperation with Georgia Department of Natural Resources in recent years. Some field techniques developed for use on the upper Tennessee River will also be implemented on the Coosa River in November 2014. This will compliment work conducted in the Coosa River basin in November 2012. Warm Springs has applied for collecting permits from the Alabama Department of Conservation and Natural Resources - Wildlife and Freshwater Fisheries Division (AWFF), to assist with the assessment work for this basin.



Recaptured lake sturgeon showing removed scutes.

Young-of-year lake sturgeon at Warm Springs.

Warm Springs NFH staff and volunteers tagging lake sturgeon by scute removal Sept. 10th, 2013.

Testing and deploying acoustic receivers on the Upper Tennessee River August 2013.

Maintenance and Operations

A variety of maintenance and construction projects were undertaken at Warm Springs in the fourth quarter.

A cyclical 5-year inspection of property assets, valued over $45,000, was conducted August 28th - 30th by Region 4 inspectors. The inspection helped fine tune asset values and remove old documentation from the Real Property Inventory by consolidating asset descriptions where needed. Through the course of the inspection, a list of proposed corrective actions or recommendations was also developed. For any safety related issues, the hatchery staff responded with prompt corrective actions. Staff replaced safety decals, installed ground fault circuit breakers, improved access barriers, and installed egress ladders as noted in the report.

A boat used for lake sturgeon assessment work was serviced and wired with a new 150HP outboard motor. Other assessment related projects involved rebuilding trotlines, building anchors and rebar-cages, and purchasing cable and supplies needed to deploy the Vemco receivers in August.

Interior lighting and wiring issues were dealt with in several buildings. Heavy equipment, carts and service vehicles were all serviced. Buildings and grounds were also maintained by staff. Grounds maintenance including mowing, trimming and spraying to control vegetation at the hatchery along with general site cleanup, and disinfection of equipment and buildings were conducted.

Work also includes maintaining water treatment equipment for the entire complex. The bulk limestone storage tower was refilled with 25 tons of limestone. Liquid chemical storage tanks located at the wetlab were recharged periodically. Water transfer pumps and equipment was maintained on a regular schedule.

Other Work in Progress

Our work with sicklefin redhorse represents a cooperative effort by Warm Springs NFH, the Eastern Band of Cherokee Indians, USFWS Ecological Services, Conservation Fisheries Inc. and others to rear fingerling sickefin redhorse for tagging, assessment and other studies developed by the Sicklefin Redhorse Research Partnership. Sicklefin redhorse are considered a candidate species for conservation listing purposes. Last summer, Warm Springs received fingerling sicklefin from Conservation Fisheries, Inc. Hatchery staff has

reared these captive-reared fish since then. These fish, measuring up to 4 inches in length, are being reared for future use in a tagging study using experimental micro-PIT tags.

The mussel program continues holding mussels and host fish for future studies. The hatchery currently holds Sculptured Pigtoe, Eastern Elliptio, Oval Pigtoe, Little Spectaclecase and several mussels from the Altamaha River Basin, along with several host fish species. The mussels are held in waters treated via the Alkalinity Enhancement building and are fed from algae cultures maintained on station.

Hatchery staff met with Will Duncan, Ecological Services, Athens, GA September 18th and 19th. Will deployed data loggers to help assess the dynamics of Cold Spring's water output (gpm) as affected by seasonal or other long-term external impacts which may affect output from the spring. Very little information is available to quantify natural range and variability of flows. Future collaborative efforts involving life history or propagation studies of native small stream fish species was also discussed.

Chad Shirey traveled to Eufaula NWR in Alabama, July 17th to evaluate a culvert removal project on the Refuge. However, due to heavy rain and equipment problems that project was postponed by the Refuge.

Outreach

Warm Springs NFH is a valued asset and venue to demonstrate the Service's commitment to environmental leadership. To that end, the station provides facilities, kiosks, public access and scheduled events that demonstration our accomplishments and communicate our goals to the general public. In addition to facilitating onsite professional tours, staff also volunteered time for occasional off-site programs.

Planning is underway for our Annual Open House to be held October 12th, 2013. Work includes preparing the station for public visitors, deploying signage and obtaining publicity for the event. There has been a steady increase in the number of visitors to this event over the past few years. This event allows the public a great opportunity to learn about the diverse programs at our Warm Springs complex.

Jeff Terhune, an Associate Professor of fish health with Auburn University's Department of Fisheries & Allied Aquaculture, brought a number of undergraduate students for a tour of the hatchery on July 16th. Staff provided an overview of facilities, equipment and protocols used with priority species at Warm Springs.

Students from East Georgia State College, Swainsboro were also provided a tour on July 19th. Staff provided an overview of culture techniques and ongoing research projects.

A presentation to Georgia educators was provided on Saturday, July 13th in cooperation with the Georgia Aquarium. Water quality and watershed issues were the focus of the week long "Creeks to Ocean Educator Tour" event. Presentations at the hatchery focused on the geology of Cold Spring, watershed facts, and the culture and research operations.

In 2013, the Warm Springs NFH and the Benning Bass Club in Columbus, Georgia signed a partnership agreement to work together, and to support environmental and conservation issues. The club is membership is open to all military personnel, retirees, honorably discharged service members, DOD civilians and family members of those groups. The club brings together bass fisherman and their families to improve angling knowledge and skills. The club provides the hatchery with volunteering support each year during National Fishing Day. In addition, the club members volunteer at the hatchery once a year to accomplish an environmental project. In September 2013, the club provided assistance to the hatchery staff to replaced two

worn and decrepit wooden bridges, originally constructed in the 1990's. The bridges were brought up to current safety standards by adding a rigid handrail on both bridges.

Administrative & Meetings

A reorganization of program supervision occurred in August following the retirement of Vincent Mudrak, director of the Warm Springs Regional Fisheries Center. Program supervision for Warm Springs NFH is now under Allan Brown, Fisheries Supervisor, while the Fish Technology Center and Fish Health Center remain under Cindy Williams' supervision.

Annual input required within the Fisheries Information System (FIS) such as accomplishment reporting, performance targets and distribution data was completed.

Work continued through the quarter on year-end purchasing, budget planning, annual updates to EMS and safety plans for FY13.

Staff from Warm Springs NFH and Regional Office Engineering division met with City of Warm Springs personnel and Engineering Management Incorporated (EMI) employees on July 11th to provide comments on a pending construction project by the City that will upgrade their drinking water treatment process and facilities. High levels of radium detected in the drinking water supply are slightly above EPA standards. Consequently, a design for an additional building and treatment equipment needed to remove the radium was developed by contractors for the City. As the project is adjacent to the hatchery's water supply infrastructure, the plans were reviewed to discuss possible impacts to hatchery property and operations.

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