Warm Springs Fish Technology Center

May/June 2011 Activity Report

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***Alasmidonta triangulata* and *Elliptoideus sloatianus* were found during the freshwater mussel surveys in the mainstem Flint River. Credit: USFWS Photos.**

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Warm Springs Fish Technology Center

The Fish Technology Center (FTC) is a component of the Warm Springs Regional Fisheries Center (RFC) and was developed to improve and enhance fisheries management. We provide consolidated technical operational support to regional fisheries operations and technical assistance to the public. The Fish Technology Center is comprised of a cryopreservation laboratory, conservation genetics laboratory, and the National Fish Strain Registry at Warm Springs, Georgia, and a field station in Wadmalaw Island, South Carolina.

Goals:

- Provide management support of interjurisdictional coastal and riverine fishes such as robust redhorse, shortnose sturgeon, Atlantic sturgeon, Gulf sturgeon, American shad, and Gulf striped bass.
- Provide conservation genetics support for regional fishery programs.
- Maintain the National Fish Strain Registry for dissemination of information and support of private, state and federal broodstocks.
- Develop cryopreservation techniques for imperiled fish, freshwater mussels, and amphibians.
- Develop hatchery product evaluation techniques.

Cryopreservation

Cryopreservation is a process in which a living cell is frozen, stored, and thawed and remains viable. Cryopreserved sperm assists reproductive efforts by allowing spawning to take place whenever females are ready, reduces the need to hold males, and can increase flexibility and genetic diversity in spawning protocols.

Currently, the Warm Springs FTC is working on numerous species of fish, including threatened or endangered species. The program has expanded to include other aquatic species such as freshwater mussels and amphibians for conservation efforts.

Mike Hassett assisted with striped bass research at the FTC including the tank spawning study. Credit: USFWS Photos.

Conservation Genetics

The Conservation Genetics lab primarily works with biologists and managers of the region to design and implement genetic research on imperiled aquatic organisms.

Current Projects include estimating genetic diversity from: alligator gar, Gulf Coast striped bass, robust redhorse, freshwater mussels, and threatened and endangered species such as spotfin chub.

National Fish Strain Registry

The National Fish Strain Registry (NFSR) is an internet -based program that assembles information on life history, genetics, reproduction, and behavior of wild populations and domestic fish strains throughout the United States. The NFSR database is available for use by public and private producers as well as resource managers of federal, state, and tribal governments through a registration process. Once registered, users are able to search, create new records, edit records, and request information. The NFSR's vision is to provide a broad collaborative program that provides access to data and information on our Nation's aquatic resources. You must be a registered user to access the NFSR website; please contact chester_figiel@fws.gov to become a registered user.

Partnerships and Accountability

Surveying the Mainstem Flint River for Freshwater Mussels

Nicole Rankin and Chester Figiel, Jr. partnered with GA Department of Natural Resources (Jason Wisniewski, Deb Weiler, Brad Strickland, and Houston Chandler) to conduct freshwater mussel surveys on the mainstem Flint River. They surveyed 24 study sites in the lower Flint River from Bainbridge to Newton, GA by SCUBA diving and snorkeling during May 23 - 27 and June 6 - 9, 2011. Study sites were selected to incorporate different river habitats e.g., riffles, runs, glides, pools, and edgewater. Occupancy models will be performed to estimate detection, abundance, and distribution of freshwater mussels, specifically the federally threatened and endangered species. The group is planning another sampling week for September 2011.

Using a hookah system to sample deep transects. Credit: USFWS Photo.

Sampling protocol. Credit: USFWS Photo.

Jason collecting water flow along each transect. Credit: USFWS Photo.

Leadership in Science and Technology

Pallid Sturgeon Sperm Cryopreservation

Due to record flooding on the Yellowstone and Missouri Rivers during June 2011, only one male and one female pallid sturgeon were collected for recovery spawning efforts. Sperm from the male was shipped to Warm Springs FTC for cryopreservation and included in the repository. In order to meet spawning protocol guidelines, which call for spawning a female with at least three males, cryopreserved sperm were used from four males to produce additional family lots. Sperm for these crosses were cryopreserved in 2002, 2004, and 2010. Each male cross was successful, with fertilization rates ranging from 5% – 66%.

Mixing sperm with cryoprotectants and filling straws with sperm. Credit: USFWS Photo.

Leadership in Science and Technology

Collecting Freshwater Mussels for Upcoming Studies

Jaci Zelko and Andy Hartzog (National Fish Hatchery STEP student) collected 14 mussels from the Flint River in June 2011. The mussels were transported back to the hatchery and placed in the Freshwater Mussel Quarantine Building. The mussels will be used in studies for both the FTC and NFH. Jaci will be collecting sperm and viable glochidia from the mussels to use in cryopreservation studies. The species collected were *Villlosa lienosa*, *Villosa vibex*, *Elliptio fumata*, and *Elliptio pullata*.

Villosa lienosa. Credit: USFWS Photo.

Chester Figiel, Jr. completed FY11 Memorandum of Agreement (MOA) between the Systems Development Team and the Warm Springs FTC for Operations and Maintenance of the National Fish Strain Registry in May 2011. Thanks to Lawrence Ford for helping get the MOA finalized!

Workforce Management

Good Luck Mike!

Mike Hassett completed his Student Conservation Association internship at the FTC in late June 2011. His responsibilities included performing animal husbandry; assisting with striped bass spawning; assisting with rainbow trout, pallid sturgeon, and other cryopreservation projects; developing a project to detect triploid versus diploid grass carp; and helping with numerous outreach events. Mike had the unique opportunity to work at numerous USFWS facilities including the Fish Health Center, Warm Springs NFH, Warm Springs RFC, Bears Bluff NFH, Erwin NFH, and Private John Allen NFH. Mike gained valuable work experience during his time in Warm Springs, and recently, he was selected for a research assistantship at Loyola University Chicago while pursuing a Master of Science degree in Biology. Before coming to Warm Springs, Mike graduated from Michigan State University with a Bachelor of Science in Fisheries and Wildlife. Good Luck and Thanks Mike! We appreciate your hard work and wish you good luck in with your graduate work.

(Photo Captions Left to Right) Mike visited the Angel Oak on John's Island, SC while working at Bears Bluff NFH. He was not afraid of this rose-haired tarantula while working at an outreach event. Mike collected rainbow trout sperm to use in cryopreservation studies while working at Erwin NFH. Credit: USFWS Photo.

Public Use

2011 Scout Expo

Mike talks with scout troops.
Credit: USFWS Photo.

Nicole Rankin and Mike Hassett participated in the 2011 Scout Expo held at the Columbus Convention and Trade Center in Columbus, GA on May 14, 2011. Over 200 scouts and parents attended the event and learned about scouting activities across the southeast region. Nicole and Mike set up a booth highlighting scouting opportunities at the Warm Springs Regional Fisheries Center. Since the event, three scout groups have contacted the RFC and scheduled scout activities including group tours and Biologist-in-Training programs.

2011 Kids Fish for Fun Day

Credit: USFWS Photos.

The Warm Springs RFC and Friends Group hosted the 2011 Kids Fish for Fun Day to teach children the enjoyment of fishing. Six FTC employees and one SCA intern helped staff this event held on June 4, 2011. This year, over 150 children participated and had the opportunity to catch and take home five catfish. William Wayman, Nicole Rankin, Greg Moyer, and Chester Figiel, Jr. greeted and registered participants at the Pre-Registration and On-Site Registration tables. Jaci Zelko, Ashantye' Williams, and Mike Hassett manned the touch tanks housed with crayfish, small turtles, salamanders, and frogs. While children and parents waited to fish, they learned more about the aquatic wildlife found in local streams and ponds in Georgia. Thanks to the Friends Group for providing food, beverages, t-shirts, and prizes for this event.

Father and sons enjoyed fishing!

Mark Musaus, Deputy Regional Director, attended the event with his family and taught his grandchildren, Hannah and Isaac, how to fish. Following the Kids Fish for Fun event, Nicole Rankin, Vince Mudrak (RFC), Carlos Echevarria (NFH), and Lawrence Ford (RFC) gave a tour of the facilities to Mark's family. The group learned about the freshwater mussel and lake sturgeon programs at the NFH. Nicole lead the group through the wetlab and talked about American alligator biology, salamander cryopreservation studies, and Piedmont blue burrower research.

Mark Musaus and family learn about lake sturgeon.

JR RANGER

Junior Rangers tour the FDR Little White House.
Credit: JRC Camp, USFWS Photos.

Sailing boats at FDR State Park.

Collecting aquatic insects at NFH.

CAMP 2011

Public Use

Getting Hooked at Junior Ranger Camp

Nicole Rankin, Ashley Aultman (Roosevelt's Little White House Historic Site), and Stephanie Hunczak (FDR State Park) offered three-day Junior Ranger Camps on June 14 – 16 and June 21 – 23, 2011. Twelve children (five children in the first session, seven in the second session) participated in the camp sessions held in Warm Springs and Pine Mountain, GA. The children learned about Franklin D. Roosevelt and his hobbies at the Roosevelt's Little White House, aquatic biology at the Warm Springs RFC, and outdoor recreation at the FDR State Park. Junior Rangers learned about fish anatomy, aquatic food webs, and stream and pond habitats while at the Warm Springs RFC. This year, junior rangers also learned how to tie fishing knots, cast spinning rod/reel combos, and fish for blue gill! Other camp activities included a geology walk scavenger hunt, stream aquatic life sampling, nature hikes, nature crafts, and sailboat racing. Junior rangers received patches and certificates during a ceremony held at the FDR State Park on the last day.

Junior Ranger Camp Week One Group learns to fish.

Learning how to tie fishing knots. Credit: JRC Camp, USFWS Photos.

Junior Ranger Camp Week Two Group learns to fish.

Georgia On My Mind Day at West Point Visitor Center

Mike Hassett, Nicole Rankin, and Sarah Edgar (FTC volunteer) participated in the 2011 Georgia On My Mind Day at the West Point Visitor Center, West Point, GA on June 17, 2011. This one-day event increases awareness of the importance of travel and tourism in the state of Georgia. Over twenty vendors set up displays focusing on travel destinations, ecotourism, and upcoming events. Nicole, Sarah, and Mike provided information on upcoming events at the Warm Springs RFC and handed out brochures highlighting career and volunteer opportunities with the U.S. Fish and Wildlife Service. They also set up a touch tank with crayfish and turtles to emphasize the importance of aquatic species conservation.

Super Summer Camp Visits Warm Springs

The Warm Springs Regional Fisheries Center hosted a visit for 48 children and adults from the Faith Deliverance Super Summer Camp on June 27, 2011. Judy Toppins and Stacie Nesby from the Regional Office Fisheries Program along with Rosla Plant (RFC) and Nicole Rankin organized environmental education activities for the group. In the morning, children were separated into three groups and cycled through three activities: aquarium tour, fish and turtle biology, and "Design a Fish" craft bag activity. Following lunch, the children got in the stream and collected aquatic insects and salamanders and painted fish-print t-shirts. Even though the weather was a little dreary, the group enjoyed the visit and loved the chance to "Get Outside." Thank you to the Warm Springs Friends Group for providing lunch!