Warm Springs Fish Technology Center

November/December 2008 Activity Report

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Chester Figiel, Bill Bouthillier, and Chad Shirey stocking phase II striped bass into West Point Lake in Georgia. Credit: USFWS Photo.

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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, Gulf sturgeon, 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 and mussels.
- 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. In the near future, the FTC will expand cryopreservation research to include other aquatic species (e.g., freshwater mussels, amphibians) for conservation efforts.

Piedmont Blue Burrower, *Cambarus harti*.
Credit: Chester Figiel, USFWS.

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 is an internet-based program that assembles performance information on over 1100 strains of wild populations and domestic broodstock. These strains are managed by state and federal agencies and cultured by private growers. The database enables fishery leaders and producers to make sound decisions regarding management and culture of species. The goals of the NFSR are: 1) to protect the nation's aquatic resources through information management, 2) to promote responsible use of fish strains for recreational opportunities, 3) to advance scientific knowledge, and 4) to be accountable, functionally integrated, and result-oriented.

Partnerships and Accountability

Assist Hatchery in Stocking Striped Bass

FTC staff assisted the Warm Springs National Fish Hatchery with stocking phase II striped bass, *Morone saxatilis*, on November 4 and 6, 2008. Over 15,000 striped bass were harvested, marked with oxytetracycline (OTC), and stocked into West Point Lake in GA. Chester Figiel, Bill Bouthillier, and Nicole Rankin helped hatchery staff drive distribution vehicles and stock fish.

FTC staff releasing striped bass into West Point lake.

Phase II striped bass in holding tanks.

Credit: USFWS Photos.

Chad Shirey attaching water pump hose to distribution truck.

Alabama Department of Conservation and Natural Resources Coordination

Greg Moyer, Regional Geneticist, attended a coordination meeting between the U.S. Fish and Wildlife Service (USFWS) and the Alabama Division of Wildlife and Freshwater Fisheries on December 9-10, 2008 in Montgomery, Alabama. The purpose of the meeting was to provide better communication between USFWS and State natural resource managers. A major topic of discussion for the meeting was the future of fish and wildlife conservation agencies and conservation challenges, such as declining angling licenses that state agencies are facing. Break out sessions included, Sustaining Our Outdoor Heritage, Law Enforcement, Aquatic Resources, and Wildlife Management of State/Federal Lands.

Aquatic Species Conservation and Management

ACF River Basin Mussel Meeting: Take Two

The Apalachicola-Chattahoochee-Flint River Basin (ACF) Mussel Working Group met for the second time on December 1, 2008 in Warm Springs, GA. Participants, from USFWS Ecological Services and Fisheries offices, met to further discuss mussel conservation projects and coordination of Quick Response and Deferred Allocation studies. The FTC updated partners on development of microsatellite markers for purple bankclimber, oval pigtoe, and fat threeridge, mussel stress response indicators, and development of glochidia cryopreservation techniques projects. The ACF Mussel Working Group invited other researchers working in the ACF river basin to participate in the meeting. Mike Gangloff from Appalachian State University, Brett Albanese from Georgia Department of Natural Resources, and Carson Stringfellow from Columbus State University were present and updated the group on mussel conservation efforts conducted at respective locations. This meeting helped increase communication and coordination on mussel conservation research in the ACF among USFWS offices and their partners.

Aquatic Species Conservation and Management

Refuge and Fisheries Partner to Conserve Aquatic Resources

Bill Bouthillier, Fish Biologist, conducted a one and one-half day training session on fish passage and survey techniques for Mountain Leaf National Wildlife Refuge (NWR) personnel on December 17 and 18, 2008. Steve Miller, Eva Kristofik, and Greg Scull received hands-on training in conducting fish passage surveys using the National Inventory and Assessment Procedure developed by the U.S. Forest Service. All staff learned to use equipment needed to conduct surveys, such as viewing through a transit level or holding a leveling rod. They also learned about stream morphology and ecology. The team requested training before they start surveying the Cahaba River NWR and adjacent waterways to identify barriers to fish passage.

Refuge personnel becoming familiar with the engineering equipment. Credit: USFWS Photo.

Eva Kristofik, Greg Scull, and Bill Bouthillier assessing the culvert outlet. Credit: USFWS Photo.

Conservation Genetics Seminar

Greg Moyer, Regional Geneticist, provided a short seminar in conservation genetics at the annual Fisheries Project Leaders meeting held in Atlanta, GA on November 18, 2008. The seminar was designed to effectively communicate to natural resource managers the importance of conservation genetic principles in management and conservation biology. Topics included basic genetic terminology, genetic drift, effective population size, demography and extinction, units of conservation, and conservation breeding and restoration.

Leadership in Science and Technology

Mussel Sectioning and Aging

Nicole Rankin, Fish Biologist, visited the USFWS Panama City Fisheries Resource Office (FRO) and learned to section and age freshwater mussels on December 16 and 17, 2008. Karen Herrington and Laura Jenkins, Fisheries Biologists at Panama City FRO, trained her to section mussel valves using an Isomet low speed saw and age mussels using thin sections. She learned to section and age three species of freshwater mussels from the Apalachicola-Chattahoochee-Flint (ACF) river basin: *Elliptio crassidens* (Elephantear), *Amblema neislerii* (fat three-ridge), and *Elliptoideus sloatianus* (purple bankclimber). In 2009, the FTC plans to estimate age and growth and evaluate annual deposition of growth rings for *E. crassidens* and *A. neislerii* collected from the ACF river basin. Nicole will be leading the mussel aging project and refining the aging technique for the Warm Springs FTC.

Public Use

Candlelight Festival and Holiday Ornaments for Wildlife

Warm Springs RFC staff and Friends of the Warm Springs National Fish Hatchery (Friends') participated in the Warm Springs Candlelight Festival Township Parade on November 22, 2008. Staff and volunteers walked, rode on a decorated trailer, or drove the hatchery truck. A crowd favorite was the two fish costumes donned by Friends' members during the parade. Following the parade at the aquarium, staff and volunteers taught children and adults how to create holiday ornaments for wildlife. Participants covered pine cones with peanut butter, rolled them in birdseed, and either took them home or hung them from a tree at the hatchery. The Friends' group also provided free hot chocolate and cookies to the public. This event was a great opportunity for the public to interact and meet staff.

Friends' members, Tim Coates and Billy Miller, carrying the banner. Credit: USFWS Photo.

Nicole Rankin and Friends' member, Anastasia Olkhovoaya. Credit: USFWS Photo.

Haile Macurdy driving the hatchery truck. Credit: USFWS Photo.

Tree Planting at Hatchery

Bill Bouthillier and Nicole Rankin, along with other RFC staff and the Friends' group, helped plant over 30 native trees on hatchery property on December 3, 2008. The trees were part of a grant secured from the Apache Foundation by the USFWS. Staff, family, interns, and volunteers helped in numerous ways by digging holes with a backhoe and other heavy equipment, transporting trees to designated locations, and planting trees in the ground. Maples, river birch, bald cypress, savannah holly, dog woods, mulberry and oaks were among the trees planted on hatchery grounds. A special thanks to Cheri Heil for helping locate and transport the trees from the Rocky Branch Garden Center in Pine Mountain Georgia.

Brian Hickson, Bill Bouthillier, and Rosla Plant prepping a hole. Credit: USFWS Photo.

Learning about Outdoor Education Programs

Nicole Rankin, Fish Biologist, participated in the 12th Annual Outdoor Classroom Symposium (OCS) on November 14, 2008 at the Rock Eagle 4-H Center in Eatonton, GA. The OCS was hosted by the Environmental Education Alliance of Georgia, a non-profit organization promoting communication and environmental education among professionals. This year's theme was "My Space is Outside: Connecting Kids to the World Wide Wonders of the Outdoors" and programs included hands-on sessions, presentations, and workshops. Over 200 environmental educators representing governmental and non-governmental agencies, organizations, and schools were in attendance.

Workforce Management

Welcome Ashantye'

Ashantye' Williams. Credit: USFWS Photo.

Ashantye' S. Williams recently joined the FTC as a geneticist and lab manager in the Conservation Genetics Laboratory on December 8, 2008. She is currently finishing her doctoral degree in plant science with a concentration in molecular genetics from Alabama A&M University with Dr. Khairy Soliman. Her research focuses on assessing the genetic diversity of red oak species of the Cumberland Plateau. Ashantye' received a Master of Science in Plant Biotechnology from Tuskegee University in 2004. While at Tuskegee University, she gained valuable experience in tissue culture, plant breeding and vast techniques in the Plant Biotechnology Laboratory directed by Drs. Marceline Egnin and Channaptna S. Prakash. Ashantye' completed a Bachelor of Science degree from Fort Valley State University in 2002. As an undergraduate, she participated in several summer internships in cellular biology, plant biotechnology, and plant genetics at different universities including the University of Georgia and Michigan State University.

Good Luck Sandra

Sandra Dietz, a Student Conservation Association intern, completed her internship at the Warm Springs FTC on January 7, 2009. Sandra's responsibilities ranged from fish husbandry to assisting in cryopreservation experiments to extracting and analyzing DNA. Performing water quality analysis and maintaining recirculation systems were among her daily tasks, but Sandra also learned to collect, prepare, and cryogenically store sperm from a number of sturgeon species. She traveled to Wisconsin, North Dakota, and South Carolina to assist in cryopreservation experiments. Sandra also participated in numerous outreach events to help educate children and adults about the importance of aquatic species and habitat conservation. Prior to starting her internship, she graduated from the University of Georgia with a Bachelor of Science. Sandra's future plan is to apply for positions in the wildlife field. Good Luck Sandra! You will be missed by the Warm Springs FTC staff.

Sandra Dietz educated boy scouts and troop leaders about the importance of pollinators. Credit: USFWS Photo.

Sandra Dietz (right) teaching children about the aquatic animals found at the hatchery. Credit: USFWS Photo.

Training

Bill Wayman attended Project Leaders Academy training at NCTC from December 8-19, 2008.