

# Warm Springs Fish Health Center

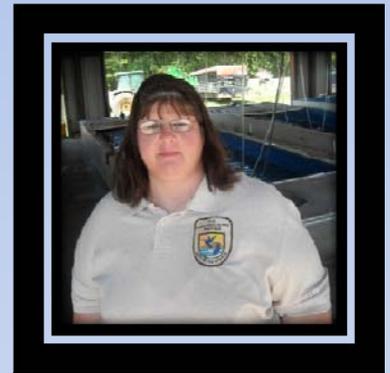
September-November 2011 Activity Report



Norm Heil, Project Leader  
Brian Hickson, Fish Biologist  
Devin Chappell, Fish Biologist  
Allison Hernandez, Fish Biologist  
Nikki Persons, Fish Biologist (below)



The Fish Health Center (FHC) is a component of the Warm Springs Regional Fisheries Center (RFC) and was developed to improve and enhance fisheries management. More specifically, the FHC provides a wide range of services from disease diagnostics to ploidy inspections.



Images are all courtesy of the US Fish and Wildlife Service unless noted otherwise.

## Goals:

- Provide service, expertise and information that contributes to the health, survival, enhancement, restoration, and recovery of fish and other aquatic species in support of national and regional priorities.
- Supports hatchery operations to provide quality fish that contribute to Strategic Habitat Conservation (SHC) and landscape objectives.
- Assists in the development of management strategies through assessment and applied research to support the protection of wild stocks and recovery of threatened and endangered species.
- Educates key audiences about the elements of comprehensive fish health and its critical significance to healthy aquatic ecosystems.



5308 Spring Street, Warm Springs, GA 31830, Phone: 706-655-3382

<http://www.fws.gov/warmsprings/FishHealth/index.html>

# Fish Health Diagnostics



Nikki met Devin at Greers Ferry National Fish Hatchery in Heber Springs, Arkansas in September to perform their annual inspection.



## Fish Health Diagnostics



In September, Brian conducted a wild fish health survey at Beaver Dam Creek, TN. He collaborated on this collection with several other agencies including: Tennessee Wildlife Resources Agency (TWRA), the National Parks Service (NPS), Trout Unlimited, and the U.S. Forest Service (USFS).

# Fish Health Diagnostics



In September, Devin went to Flintville, Tennessee to perform an annual inspection at the state hatchery run by the TN Wildlife Resources Agency (WRA). Images courtesy of TN WRA website.

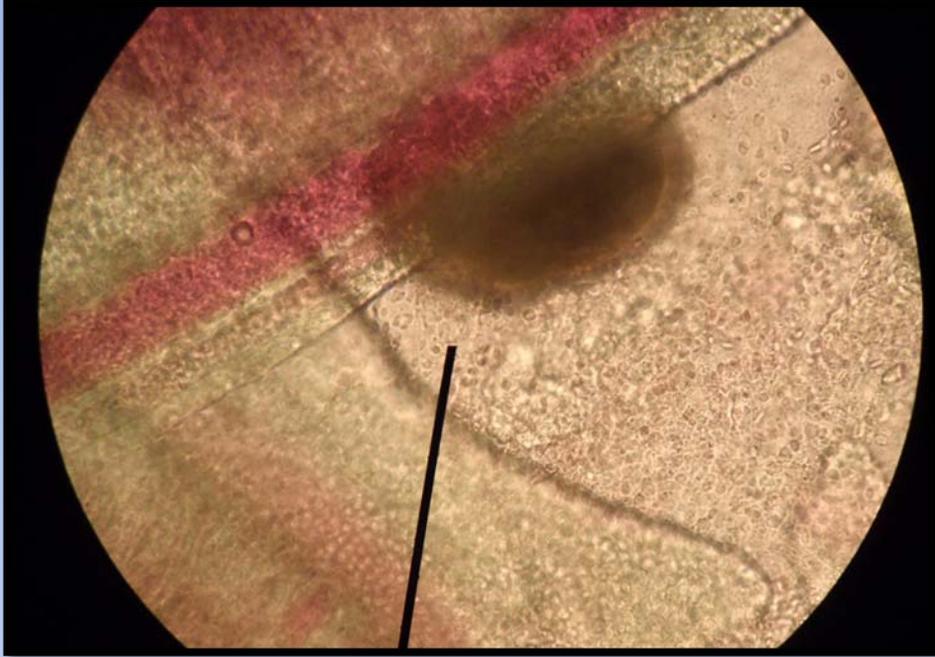
# Fish Health Diagnostics



Brian and Chester Figiel of the Fish Technology Center went to Tallulah, GA to team up with the Archbold Biological Station and the Orrienne Society to identify wild amphibian species that may carry chitrid fungus in the Tallulah River. Samples were collected and animals were returned to their collection site. Below left: water filtration apparatus



## Fish Health Diagnostics



Water quality in the fall often diminishes below big dams resulting in higher parasite loads in water being used in hatcheries. These parasites were found during annual inspections this year. Images are taken through a microscope. Pictured above: ich, or *Ichthyophthirius multifiliis*- a ciliated protozoan found on a gill; Pictured below: *Gyrodactylus*, a gill fluke (or a Monogenetic trematode)--on left, numerous flukes on a gill and on right, a single fluke- notice the hooks on one end used to attach to host.



# Fish Health Diagnostics



In September, Brian performed an annual inspection for Chattahoochee National Fish Hatchery near Suches, GA. He was assisted by Sam Finney, Fish Biologist and grass carp inspector from Region 3, pictured below. Following the inspection, Sam returned to Warm Springs with Brian to go over some fish health and Triploid Grass Carp protocols.



# Fish Health Diagnostics

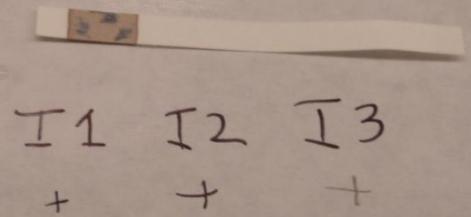
Tryptic Soy Agar (TSA): a general purpose media – 1<sup>st</sup> stage



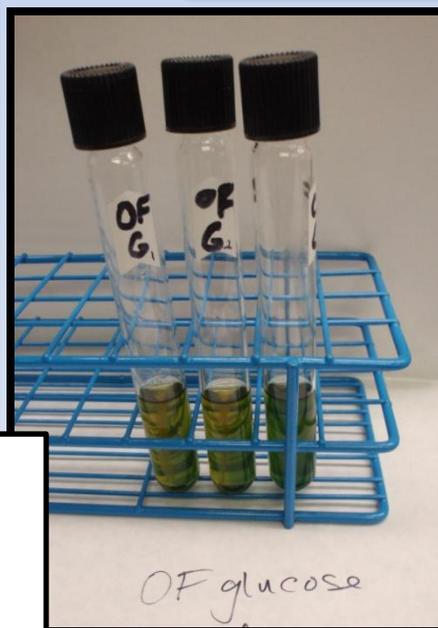
Triple Sugar Iron Agar: differentiates gram negative bacteria



Cytochrome oxidase test: a color change on strip shows positive



OF basal mediums: for fermentation (above) or oxidation (right) tests for gram negative bacteria- yellow = positive, green = no reaction/negative

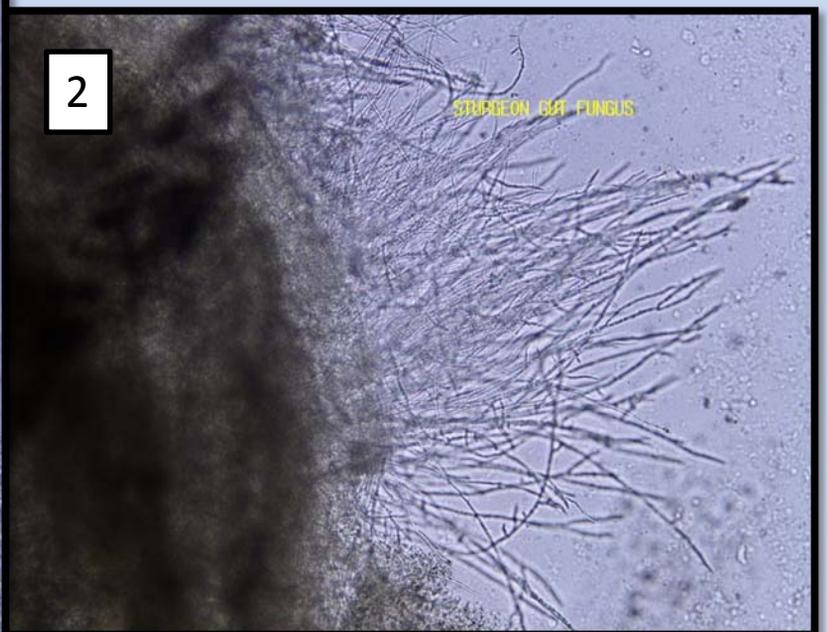


There was a positive case of *Aeromonas salmonicida*, the bacteria that causes Furunculosis, found during the annual inspections. Several assays shown in these images are used to make the confirmation. Usually in bacterial assays, a color change denotes a positive case.

# Fish Health Diagnostics



Brian and Allison inspected several young Atlantic sturgeon and found some interesting issues including: 1. *Flexibacter columnaris* (bacteria seen here on fungal hyphae), 2. gut fungus and 3. an unidentified crustacean on gill tissue. These microscopic images are courtesy of the US Fish and Wildlife Service.



# Fish Health Diagnostics



Brian and Devin went to Arkansas for Norfolk National Fish Hatchery's annual inspection. Nikki met them there to assist with the inspection.





## Triploid Grass Carp Program



Allison and Nikki collected data for a project looking at diploid versus triploid grass carp spatial preferences in tanks. The project was conducted using video monitoring at a private producers farm where there were plenty of grass carp to use. Sample sizes mimicked those found during a triploid grass carp inspection. Devin, Nikki and the farm crew were invaluable during the project, especially in the month of October for getting the data collection apparatus set-up, collecting data, and retrieving the apparatus. In the image above, you may be able to see some of the pink tags attached to the fish.

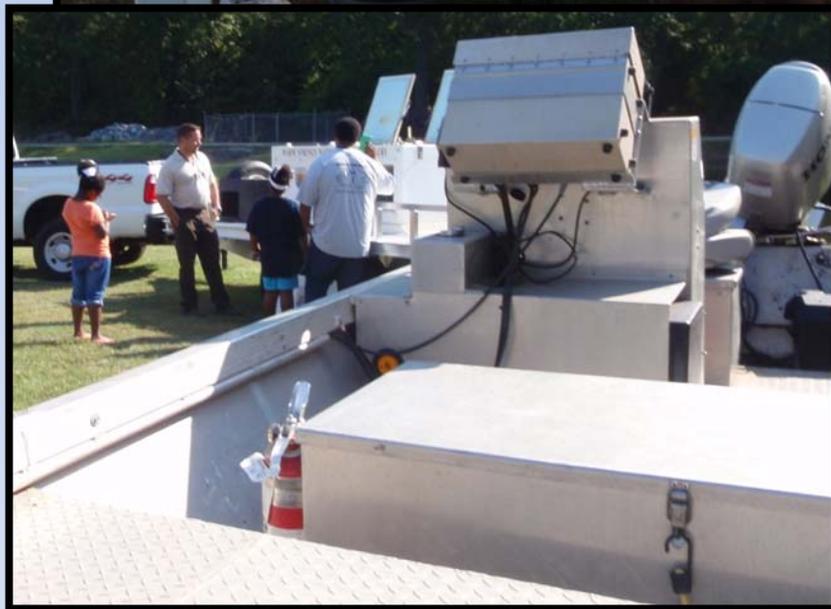
# Wild Fish Health Survey



We continued to receive samples from the state of Kentucky Department of Natural Resources (KY DNR) from various site locations to look for Viral Hemorrhagic Septicemia. This is a collaborative project with KY DNR, US Department of Agriculture APHIS program and the US Fish and Wildlife Service.



## Other FHC Activities



### **2011 Warm Springs Regional Fisheries Center Open House**

The Warm Springs RFC and Friends Group hosted an Open House in September. The Fish Health Center had their booth alongside the other groups from the RFC to educate the public about why and what they do as fish health biologists. Brian and Allison were stationed at the FHC booth, while Devin was displaying the electroshocking boat and heavy machinery. The FHC booth featured fin clips, skin scrapes and gill clippings of fish, as well as pond water creatures to view under a microscope. There was also a whole dissection presented to the public to show the internal organs of the fish (image bottom right). The passport books, which helped people find their way to visit all 5 of the booths to get them stamped, were a big hit!

## Other FHC Activities



### **Carnivorous Plants display clean-up**

Allison and Jaci Zelko (Fish Technology Center-FTC) removed invasive plant species out of the display in the public-use area and replanted the carnivorous pitcher plants with assistance from Chester Figiel (FTC) and Rosla Plant (Regional Fisheries Center). The plant ends are cut off to come back next season and landscape cloth was used to prevent regrowth of the invasives.

## FHC volunteer work



Two high school senior volunteers gave up their fall breaks to assist with whirling disease assays. One of the students, Sarah Edgar pictured top right, was the selected student for the Youth Ambassador Program this year. They were both able to get some practical laboratory experience over the two-day process.

Left: removing flesh from fish heads to prepare skulls for chemical digestion process.