



U.S. Fish & Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

# *fishlines*

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U.S. Fish & Wildlife Service

# Fisheries, Midwest Region

Conserving America's Fisheries



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### Freshwater Mussels for Toxicology Study

For the mussel program at Genoa National Fish Hatchery (NFH) the onset of fall means propagation of...[Read More](#)



Freshwater Mussels for Toxicology Study



Partners Improve Fish Passage



Brook Trout Population Status



Lake Trout Eggs for the Midwest Region



Restoration Project Initial Data Collected

## Fish Tails

"Fish Tails" refers to articles that are entered by field staff in the U.S. Fish and Wildlife Service's Field Notes website, but are not published in the current edition of Fish Lines. These articles provide examples of the diverse work that the Service's Midwest Fisheries Program and partners perform on behalf of our aquatic resources and for the benefit of the American public. To view these articles, click on the links below. Enjoy!

1. [Snowmobile Open House at Pendills Creek National Fish Hatchery February 2](#)

Last updated: January 16, 2013



## Genoa NFH Provides Freshwater Mussels for Toxicology Study

BY NATHAN ECKERT, GENOA NFH



Gravid female washboard mussels await propagation at Genoa NFH mussel lab.  
Credit: USFWS

For the mussel program at Genoa National Fish Hatchery (NFH) the onset of fall means propagation of the washboard mussel. The washboard is the largest and longest lived mussel in North America, with individuals aged up to 100 years. This species produces viable larvae in October and generally holds them a few weeks before release. Mussel larvae require a fish host to live on for a short period of time to complete their lifecycle; most mussels have a specific host fish. The washboard larvae transform on a variety of species, but catfish seem to work the best.

We produce washboard for restoration efforts with our partners in Iowa, Illinois and Minnesota. The cooperative program involves channel catfish supplied by the state hatcheries being infested with washboard larvae collected by divers at Genoa NFH. Over 50,000 juvenile mussels were stocked this year cooperatively with the Iowa and Illinois Department of Natural Resources.

This year we were able to use those efforts to also support research by the US Geological Survey (USGS). The USGS Columbia Environmental Resources Center in Columbia, Missouri contacted Genoa NFH about propagating mussel species native to the Great Lakes Region as part of a project testing 20 chemicals for toxicity to freshwater mussels. We were able to produce and ship them 33,986 juvenile washboard mussels. Approximately 2,000 individuals will be used for tests immediately while the remaining individuals will be cultured to larger sizes and used in future tests.

By partnering in these efforts Genoa NFH is putting mussels out into the wild and also helping to learn how they respond to pollution. This information may be used in the future to improve water quality for everyone.



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## Alpena FWCO and Partners Continue to Improve Fish Passage in the Lake Huron Watershed

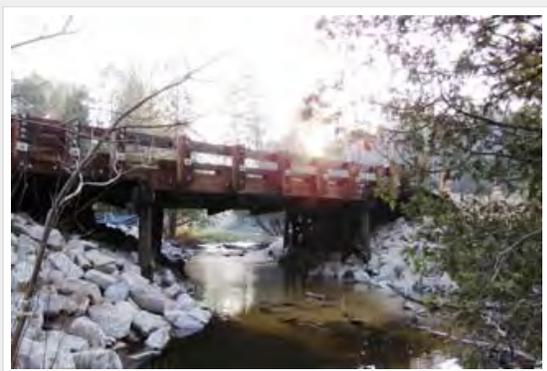
BY ANDREA ANIA, ALPENA FWCO

The Sucker Creek Road crossing on the Black River (Alcona County, Michigan) was completed this November (2012). The project involved removing the old culverts and replacing them with a timber bridge. The new bridge provides unrestricted passage of all aquatic organisms that reside within the system and migratory species that move seasonally upstream from Lake Huron. This small coastal system in northeast Michigan supports a variety of migratory fish species, including a run of sizeable brook trout.

The existing perched and undersized culverts at the road-stream crossing were blocking fish and aquatic organism passage. The culverts were also having some negative impacts on natural stream processes and causing stream bank erosion downstream of the road-stream crossing. Additionally, this site had been identified as the number one source of sediment entering the watershed due to long, steep road approaches that continuously washed into the stream and created a maintenance issue for the Alcona County Road Commission.



View from downstream of the twin, undersized and perched culverts.  
Credit: Andrea Ania, USFWS



After – View from downstream of the newly constructed bridge, which provides unimpeded aquatic organism passage. Credit: Andrea Ania, USFWS

Migratory fish now have access to an additional 28 river miles of spawning, nursery, and feeding habitat. The road and ditch improvements will prevent 63 tons of sediment from entering the river each year. The new 30-foot spanning bridge and approach work improves the river's ability to transport sediment, reduces sediment input, and improves fish habitat, which may provide better fishing opportunities.

Partners that made this project a reality include: U.S. Forest Service, Huron Pines, Great Lakes Fishery Trust, and U.S. Fish & Wildlife Service's National Fish Passage Program.



Map of project location in northeastern Michigan.  
Credit: Google Earth © 2012 Cnes/Spot Image,  
Image © 2012 Terra Metrics, Image NOAA.  
Credit: Andrea Ania, USFWS



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## Fisheries, Midwest Region

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### Brook Trout Population Status in the Lake Superior Basin

BY ANNA VARIAN, ASHLAND FWCO

It's clear that numbers of brook trout are down in many tributaries to Lake Superior, but where are they doing well? What is the current status of brook trout populations and what factors are now limiting them from rebounding? How can we best focus efforts to bring them back? These are the questions that led to Ashland Fish and Wildlife Conservation Office (FWCO) Status and Distribution of Brook Trout project, initiated in 2011.

Modeled on efforts of the Eastern Brook Trout Joint Venture, a 17-State partnership formed to assess the status of brook trout in the eastern US, the first step was to rally all available fisheries data from state, federal and tribal agencies and university partners throughout the Lake Superior basin. Over 2,000 records from fishery surveys dating back to 2002 began to fill in the picture, but information was still lacking on many streams. Focusing on streams identified in the Brook Trout Rehabilitation Plan for Lake Superior, USFWS field crews spent the past two summers trekking throughout Michigan (in 2011), Wisconsin and Minnesota (in 2012) to fill in some of the blanks.



Working up fish on North Fish Creek in Wisconsin. Foreground left to right: Trout Unlimited volunteer Bill Heart, Intern Angelena Koosmann, and fish biologist Michele Wheeler. Background: Trout Unlimited volunteer Joel Austin.  
Credit: Anna Varian, USFWS

Led by Anna Varian, Fish Biologist with the Ashland FWCO, summer field crews have used backpack, barge and boat electrofishing gears to sample nearly 500 stations over two summers. Partners from the 1854 Treaty Authority, an inter-tribal resource management agency in Minnesota, and Trout Unlimited volunteers in Wisconsin and Michigan provided field sampling assistance during the two field seasons (over 100 hours of volunteer support from TU volunteers!). Survey crews followed fish sampling and biological collection procedures developed to address aspects of Minnesota Pollution Control Agency, Wisconsin Department of Natural Resources, and Michigan Department of Natural Resources protocols to ensure the data had value for our partner agencies as well as for this project. All fish were collected and identified. Salmonids were measured for total length, brook trout were also weighed and a small piece of fin tissue was collected for genetic analysis.

Varian will use the fishery data to classify segments of streams known as catchments and sub watersheds, according to their brook trout population status. Status is dependent on whether brook trout are present and the life stages of fish in the waters sampled. Preliminary results were presented by Varian at the national American Fisheries Society conference in St. Paul in August.

Results are analyzed and presented in GIS as color coded maps that show categories of population status across the Lake Superior basin. Using GIS and regression modeling tools, Varian will then examine landscape parameters to model why brook trout populations are distributed the way they are and in what areas they are able to complete their life cycle. The final product will be a tool to determine what actions will promote recovery of brook trout, and prioritize which areas to focus restoration activities. The data will be shared with fishery and land managers from state, tribal, and federal agencies, along with local units of government, university researchers, and NGOs.



## Lake Trout Eggs for the Midwest Region

BY CRYSTAL LEGAULT-ANDERSON, PENDILLS CREEK NFH



Eggs being gently squeezed from an anesthetized female lake trout.  
Credit: Crystal LeGault-Anderson, USFWS

Sullivan Creek National Fish Hatchery (NFH) ships eyed lake trout eggs to other federal, state, tribal, and research facilities every November and December. This year Sullivan Creek has shipped over 5.6 million eggs in total with eggs transferred to: Jordan River NFH, Iron River NFH, Pendills Creek NFH, Dale Hollow NFH, Marquette State Fish Hatchery (Michigan Department of Natural Resources), Les Voigt State Fish Hatchery (Wisconsin Department of Natural Resources), and the Upper Midwest Environmental Science Center (UMESC) for the purposes of lake trout restoration of the Great Lakes, recreational fisheries in reservoirs, and research. Sullivan Creek NFH is one of very few lake trout brood fish stations in the U.S. Fish and Wildlife Service for the entire country.

The whole egg process begins with spawning season, which usually starts by the middle of September and runs until the middle of November each year. The adult lake trout are anesthetized so the eggs and milt can be collected and mixed

together for fertilization. This allows the staff to handle the adults without harming them, and the fish will come out of the anesthetic and "wake up" in about twenty minutes after the process is complete.

Once the eggs are fertilized, disinfected with iodine, and water hardened, which means to pull enough water inside their shells for the eggs to become "hard," they are measured and counted into vertical stack incubators. The eggs will slowly develop inside the incubators for one to two months depending on how cold the water temperatures are, and will become "eyed eggs" where you can see the little fish eyes through the outer shells of the eggs. At this point, the eggs are "shocked" or bounced fairly hard to get the "bad" eggs – ones that did not fertilize – to turn opaque white when the yolk is broken inside the egg. This process does not harm the good eggs at all.



Mechanical egg picker sorting "good" and "bad" eyed lake trout eggs.  
Credit: USFWS



Eyed lake trout eggs being carefully packed for shipment.  
Credit: James Anderson, USFWS

The next step is to run all the eyed eggs through mechanical egg pickers which have a light sensitive photo-eye. The pickers shoot a ray of light through each egg, and if the light goes through the egg, it is a good egg and goes in one bucket. If the light cannot go through the egg, it is a bad egg and goes into a different bucket. We run all our eggs through two mechanical pickers and hand pick them with tweezers or suction bulbs at least once. The good eyed eggs are again measured and put back in their incubators until shipments can be set up.

shipped via FedEx, UPS, or transferred between facilities by hatchery staff. The little fish inside the eggs are looking at you the entire time. That is a lot of eyes!

Eyed eggs are carefully packed into Styrofoam coolers and either



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### Initial Data Collected for a Restoration Project on Michigan's Shiawassee National Wildlife Refuge

BY JOSEPH GERBYSHAK, ALPENA FWCO

In early December, Alpena Fish and Wildlife Conservation Office (FWCO) biologist Joseph Gerbyshak assisted Shiawassee National Wildlife Refuge (NWR) biologists Eric Dunton and Michelle Vander Haar with collecting preliminary data needed for a restoration project on Shiawassee NWR in Saginaw County, Michigan. Gerbyshak operated Alpena FWCO's River Surveyor, an acoustic Doppler profiler (ADP). The ADP unit is mounted on a small boat and pulled across the river perpendicular to the flow. Along the transect, the ADP measures velocities throughout the water column, collects bathymetry data, and calculates discharge. The data will be used by engineers to design water control structures for the restoration project.

The restoration project will restore a more natural flow regime to refuge wetlands by installing water control structures in the banks of the Spaulding Drain. Currently water is managed in wetlands adjacent to the Spaulding Drain via spillways and pumps located on the banks of the drain. The restoration project will consist of installing water control structures, giving refuge staff increased management capabilities. The structures will allow peak flow from the Spaulding Drain into Ferguson Bayou (former Flint River) and managed wetlands. This, more natural option, is better than the alternative of using expensive, hydraulic pumps to manage the water in the wetlands. The increased control of water throughout refuge wetlands will improve habitat quality primarily for waterfowl, but other terrestrial and aquatic species should benefit as well. Refuge biologists are excited to get this project underway and hope to initiate construction during 2013.



Shiawassee National Wildlife Refuge Biologist Eric Dunton pulls the acoustic Doppler profiler across Spaulding Drain to collect preliminary data for a wetland restoration project on a sunny December day. Credit: Joseph Gerbyshak, USFWS



## Genoa National Fish Hatchery

BY DOUG ALOISI, GENOA NFH

### Genoa National Fish Hatchery



Genoa NFH has been a leader in improving Lake sturgeon culture techniques. Credit: USFWS

freshwater mussels, restoring depleted native fish populations such as the lake sturgeon and coaster brook trout, and supporting tribal fisheries management programs by raising fish for targeted stockings. The station also operates a critical fish quarantine facility, which allows captive brood stock lines to be augmented or replaced with fish from wild stocks without critically endangering Service Brood stock facilities by disease introduction from wild populations. Genoa NFH currently houses 15 species of freshwater fish and 15 species of freshwater mussels in support of ongoing conservation programs. It also serves as a valuable research partner to many different academic and scientific organizations, either by supplying research animals varying from lake sturgeon to freshwater mussels of all different life stages, or by actually sponsoring and hosting ongoing experiments and trials to further the Recover and Restoration of our nation's aquatic resources. Currently the station is working with patent holders, the US Geological Service and researchers of a new zebra mussel biocide to test its safety and efficacy in different environments and control strategies.



All Smiles: This young lady has joined the thousands of kids who have caught their first fish at a Genoa NFH fishing event. Credit USFWS

Genoa National Fish Hatchery (NFH) was established on the eastern banks of the Mississippi River in 1932 as a conservation tool of the Upper Mississippi River Wildlife and Fish Act. The Act also created the Upper Mississippi National Fish and Wildlife Refuge, which was and is today one of the most sweeping conservation laws ever enacted in the Midwest. The nation was in the throes of the Great Depression, and over 100 people were kept employed by constructing the hatchery during this time of national crisis. Hatchery construction was completed by 1937.

The hatchery currently supports the Service's mission of conservation by recovering 4 species of federally endangered



Students getting "Connected with Nature" on the grounds of Genoa NFH. Credit: USFWS

Genoa NFH also is recognized within the community and regionally as a recreational and educational resource through its Kids and Disabled Fisherpersons Events and its Outdoor Classroom and Wetlands and Native Prairie Discovery Area. Currently three local middle schools use seasonal curriculum in order to teach the next generation of conservation stewards the value of wetlands, and the dangers of invasive species introductions on native flora and fauna. The hatchery's Sturgeon in the Classroom program is also very popular, with five classrooms in three different school systems, participating in a learning program that teaches about lake sturgeon biology and the important ways to keep this ecological indicator species healthy in our aquatic systems.

The Upper Mississippi River is still very much an integral part of the operation of the station by supplying brood stock populations and egg sources through spring netting operations directly on the River. Fish are quarantined in a specially constructed quarantine trailer until they have been cleared for assimilation into hatchery populations.

The station also operates two streamside rearing units to further aquatic resource conservation. One trailer is deployed on the Kalamazoo River to further a river specific lake sturgeon population and one is deployed on the Mississippi River to use natural River water to propagate freshwater mussels by isolating natural predators from river water.



Working with others to provide amazingly diverse conservation education, outdoor recreation and public use opportunities. Credit USFWS



Hooked for Life: These two anglers wrestled this whopper through the ice at the Annual Genoa NFH Kids Ice Fishing Event. Credit: USFWS

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