



# Fisheries & Aquatic Resources Program

# *Fish Lines*

**A Siege of a  
Different Kind  
in Vicksburg, Mississippi**

**The Dollars  
and Sense Behind  
Sea Lamprey Control**

**Turkey River  
Fish Passage:  
Vernon Springs Dam  
– Iowa**

# Fish Lines

Fisheries & Aquatic Resources Program - Midwest Region

The Mission of the U.S. Fish & Wildlife Service: working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

The vision of the Service's Fisheries Program is working with partners to restore and maintain fish and other aquatic resources at self-sustaining levels and to support Federal mitigation programs for the benefit of the American public. Implementing this vision will help the Fisheries Program do more for aquatic resources and the people who value and depend on them through enhanced partnerships, scientific integrity, and a balanced approach to conservation.

## Features

### 4 The Dollars and Sense Behind Sea Lamprey Control

For decades, personnel from the United States and Canada have coordinated sea lamprey management in the Great Lakes basin.  
BY AARON JUBAR, LUDINGTON BIOLOGICAL STATION

### 6 A Siege of a Different Kind in Vicksburg, Mississippi

Federal agencies develop a scope of work to assess and manage the risks against a sustainable population of Asian carp invading the Great Lakes.  
BY TERRY OTT, LA CROSSE FHC

### 8 Turkey River Fish Passage: Vernon Springs Dam – Iowa

Vernon Springs was modified to rock-arch rapids, the first of its kind in northeast Iowa  
BY LOUISE MAULDIN, LA CROSSE FWCO



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**Ken Phillips (left), Nick Grueneis (back-center), Shawn Sanders (center), and Carey Edwards (right) work to process and inject coaster brook trout brood stock with florfenicol at the Iron River National Fish Hatchery.**

To view other issues of “Fish Lines,” visit our website at:  
<http://www.fws.gov/midwest/Fisheries/library/fishlines.htm>

# *Fish Lines*

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-SUNY-Brockport/Rinchar Jacques  
**Rinchar Jacques extracts the thiamin from a sample of lake trout eggs.**

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## Conservation Briefs ..... 9-18

- 9 La Crosse FHC Shares Baitfish Study Results  
BY COREY PUZACH, LA CROSSE FHC
- 9 Neosho Encourages "Youth in the Great Outdoors"  
BY KAY HIVELEY, NEOSHO NFH
- 10 Service Biologists Attend Hydroacoustics Workshop In Seattle  
BY JUSTIN CHIOTTI, ALPENA FWCO
- 10 Controlling a Disease Outbreak  
BY KEN PHILLIPS, LA CROSSE FHC
- 11 Spring has Sprung at Genoa NFH!  
BY CHRIS OLDS, GENOA NFH
- 12 Iron River NFH Provides Year-Round Recreation and Multiple Use of Property  
BY SHAWN SANDERS, IRON RIVER NFH
- 12 Learning and Loving the Outdoors at Genoa NFH  
BY JENNY BAILEY, GENOA NFH
- 13 Star Trekking at Iron River NFH  
BY CAREY EDWARDS, IRON RIVER NFH
- 14 New Parasiticide?  
BY JORGE BUENING, GENOA NFH
- 15 New Small Stream Trawl Designs Introduced at Missouri's Natural Resource Conference  
BY WYATT DOYLE, COLUMBIA FWCO
- 16 Enhancing Lake Sturgeon Passage at Hydroelectric Facilities in the Great Lakes  
BY PATRICK FORSYTHE, GREEN BAY FWCO
- 17 In Memory of John M. Whitney (December 4, 1954-February 18, 2011)  
BY BECKY LASEE, LA CROSSE FHC
- 17 Alpena FWCO Staff Complete Adult First Aid, CPR and AED Training  
BY ASHLEY HORNE, ALPENA FWCO
- 18 The Pursuit of Happiness  
BY MARK STEINGAEBER, LA CROSSE FWCO
- 18 New Administration at the La Crosse FHC  
BY SARAH BAUER, LACROSSE FHC

Congressional Actions .....	19
Midwest Region Fisheries Divisions .....	20
Fisheries Contacts .....	21
Fish Tails .....	22

# The Dollars and Sense Behind Sea Lamprey Control

BY AARON JUBAR, LUDINGTON BIOLOGICAL STATION

For decades, personnel from the Fish and Wildlife Service and the Department of Fisheries & Oceans, Canada (DFO) have coordinated sea lamprey management in the Great Lakes basin under the guidance of the Great Lakes Fisheries Commission (GLFC). Our primary weapon in the battle against sea lampreys is the use of a lamprey-specific pesticide known as lampricide. Sea lamprey larvae are found in stream bottoms where they construct burrows in silt or sand. When burrowed

we can survey individual streams and determine where to allocate time and resources in order to maximize the effectiveness of our control efforts. When it comes to sea lamprey management, we are essentially trying to get the greatest 'bang for our buck'. Over the years, a process of prioritizing streams for treatment has evolved into the development of what we call the "Rank List".

So how do we gather the information we need to generate the Rank List? The first step involves extensive survey work conducted by sea lamprey larval assessment crews. Through the use of backpack

electrofishers, we collect sea lamprey larvae from streams throughout the Great Lakes. All specimens collected are counted and measured for length, and these data are used to determine which streams the sea lampreys call home, where they live within each stream, and how many inhabit each stream. We then use this information to determine when and where to apply the lampricide. To develop the Rank List, we include all streams that contain large sea lamprey larvae that are at least 100 mm or about 4" in length.

These are larvae that are likely to go through a metamorphosis or transformation and change to the parasitic phase the following year. The timing of sea lamprey transformation depends on a range of environmental and physiological variables, but animals >100mm in length will typically begin the process within one or two years. Therefore, streams with a high incidence of sea lamprey larvae >100mm (or soon expected to be that large) will often rank higher than streams with a population dominated by smaller lampreys. Treating streams before the larvae transform into the parasitic phase and migrate into the Great Lakes is critical, because these are the



-USFWS  
Danya Sanders of the Ludington Biological Station uses a backpack electrofisher to search for larval invasive sea lampreys.

into the substrate, they are highly susceptible to lampricide, which is lethal to 90-99% of larval lampreys. Despite the effectiveness of lampricide, the Sea Lamprey Management Program (SLMP) is constantly faced with a daunting challenge. We have documented 482 Great Lakes tributaries that have, at one time or another, produced sea lampreys. That amounts to roughly 6,000 miles of sea lamprey infected streams- nearly the distance from the equator to the North Pole!

The SLMP lacks the funding to treat every stream that harbors sea lampreys in a single year. However,

ones that attach to fish and feed off their blood and body fluids!

The cost to treat each stream with lampricide is then calculated. As you might expect, these costs vary



-USFWS

**Pictured are scap nets containing invasive sea lamprey larvae collected with backpack electrofishing. Sea lamprey larvae burrow in the stream bottom and filter feed until they are large enough to transform into the parasitic life-stage.**

based on stream flow and length, with the most costly streams to treat being those with high stream flow and many miles of infestation. The cost to treat each stream is then divided by the number of sea lamprey larvae >100mm that are expected to be killed during that treatment. For example, if a stream contains an estimated 10,000 larvae >100mm in length that are susceptible to the pesticide, and the treatment costs \$5,000, then the cost/kill ratio is \$0.50/sea lamprey larva killed. This cost/kill ratio is the criteria used for ranking streams, with the most cost-effective stream ranking the highest on the list and the least cost effective stream being at the bottom of the list.

The annual treatment budget is then used to determine how many streams will be treated. This process identifies where we can control sea lampreys and get

the most out of every dollar spent. The Sea Lamprey Management Program continues to work closely with partners to control populations of sea lampreys in tributaries of the Great Lakes to protect the fishery and related economic activities in the basin (an estimated annual benefit of more than \$7 billion/year to the region). The Fish and Wildlife Service delivers a program of integrated sea lamprey control in United States waters of the Great Lakes in partnership with the GLFC.

Here are some interesting sea lamprey facts: From 2008 – 2009, over 3,500 miles (194 streams) were treated with lampricide to remove sea lamprey larvae. Some streams produce sea lamprey larvae so predictably that they are treated on a regular 3 – 5 year cycle. Such tributaries are called “Expert Judgment” streams, and are considered

separate from the Rank List. In their native waters, sea lampreys are anadromous, meaning they migrate up freshwater rivers to spawn. However, unlike salmon, they often do not return to their natal streams, but will instead migrate up virtually any flowing water in search of a mate and spawning habitat. In the Great Lakes, where sea lampreys are an invasive species, they are considered to be potamodromous, meaning they migrate within freshwater only. When sea lamprey eggs hatch, the larvae drift downstream until they find suitable substrate to burrow into. Larvae filter feed on detritus and organic matter for 3-7 years until they transform into the parasitic life-stage. It is estimated that nearly half of sea lamprey attacks result in the death of their prey and an estimated 40 lbs. of fish are killed by every sea lamprey that reaches adulthood.

For further info about the Ludington Biological Station: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/ludington.pdf>

# A Siege of a Different Kind in Vicksburg, Mississippi

BY TERRY OTT, LA CROSSE FHC

**D**id you know that during the Civil War there was a prolonged siege of Vicksburg, Mississippi, by Major General Ulysses S. Grant and his Union Army of the Tennessee? President Abraham Lincoln understood the Mississippi River was the single most important economic feature of the continent – the very lifeblood of America. Upon the secession of the southern states, Confederate forces closed the river to navigation at Vicksburg, which threatened to strangle commercial interests to the north. After 47 days, the siege of Vicksburg was over and the Confederate General Pemberton surrendered to General Grant.

bighead) are threatening to invade the Great Lakes and destroy a multimillion dollar sport fishery and change forever the biodiversity of the Great Lakes as we know them today. Staff members Becky Lasee, Sarah Bauer and Terry Ott of the La Crosse Fish Health Center (FHC) attended a two day meeting held among Federal agencies at the ERDC to develop a scope of work to assess and manage the risks against a sustainable population of Asian carp invading the Great Lakes.

The key tasks identified at the meeting were to proceed with environmental DNA (eDNA) calibration

at ERDC, develop new genetic markers for quantity Polymerase Chain Reaction (QPCR), discuss the transition of eDNA monitoring of the CAWS to the La Crosse FHC in Onalaska, Wisconsin, and perform inter-laboratory validation tests involving four Federal laboratories. The agencies which agreed upon these tasks at Vicksburg were the U.S. Army Corps of Engineers,



-USFWS/Sarah Bauer

**A swim chamber at the U. S. Army Engineer Research and Development Center will be used to develop Asian carp swim movement models through the Chicago Area Waterway System (CAWS) in Illinois.**

Today, there is a different kind of siege happening in Vicksburg at the U. S. Army Engineer Research and Development Center (ERDC). The siege is not against the Confederate Army, but against Asian carp advancing their way up the Chicago Area Waterway System (CAWS) in Illinois. Asian carp (silver and

U.S. Geological Survey, Fish and Wildlife Service, and U.S. Environmental Protection Agency. Other agenda items discussed by these agencies were; the many plausible vectors Asian carp could take to potentially arrive in the Great Lakes; development at ERDC of Asian carp swimming movement models through the CAWS; evaluation of eDNA as a hydrodynamic

transport constituent, combined with fish movement models to assess risk assessment and invasion of the Great Lakes; and the impact of commercial navigation vessels (barges) transporting Asian carp through the electrical grids at the barrier sites near Romeoville, IL.

agencies, states, and stakeholders to outline the actions that will be implemented to control Asian carp migration. Some actions have been continued from last year and other new actions were developed for this year.

The following are some of these actions taken up by the agencies:



-USFWS/Sarah Bauer

**U. S. Army Corps of Engineers Colonel Quarles observes the demonstration of Polymerase Chain Reaction techniques at the U. S. Army Engineer Research and Development Center.**

This meeting was a “snap shot” of a much bigger picture of agencies involved in stopping the advancement of Asian carp. The Asian Carp Control Strategy Framework has been prepared by the Asian Carp Regional Coordinating Committee’s participating

will be funded through the Great Lakes Restoration Initiative (GLRI). Beyond 2012, it is expected that much of the ongoing Asian carp actions will shift out of the GLRI and into agencies’ base programs and budgets.

- Targeted Monitoring Assessment Activities Above and Below the Electrical Barriers
- Commercial Harvesting and Removal Action Below the Electrical Barrier
  - Barrier Action and Waterway Separation Measures
  - Great Lakes Mississippi River Inter-Basin Study and Connecting Channel Activities Research and Technology Development
  - Environmental Deoxyribonucleic Acid Analysis and Refinement
  - Funding Opportunities and Agency Preparation Activities for aquatic invasive species
  - Other Asian Carp Support Activities

Many of these actions

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

# Turkey River Fish Passage: Vernon Springs Dam – Iowa

BY LOUISE MAULDIN, LA CROSSE FWCO

Vernon Springs Dam was a popular topic of conversation this past summer in the town of Cresco, Iowa. In August 2010, the near 265-foot long by 6-foot high dam was modified to rock-arch rapids, the first of its kind in northeast Iowa. Vernon Springs Dam was the uppermost dam on the Turkey River, a tributary to the Mississippi River. The Turkey River was previously fragmented by three low-head dams: the lowermost dam at Elkader; the middle dam at Clermont; and the uppermost dam at Cresco. These dams have impeded the migration of channel catfish, northern pike, walleye and other fish species commonly found in the Turkey River for decades. The Vernon Springs Dam was owned by the Howard County Conservation Board and located in Vernon Springs County Park. It was an aging dam that had undergone many repairs, the most recent due to flooding in 2008. The dam also posed a potential drowning hazard, with a popular swimming area immediately above the dam.

Over the course of several years, the Howard County Conservation Board worked with the Iowa Department of Natural Resources (DNR), County Secondary Road Department, Natural Resource Conservation Service, a river restoration consultant from Minnesota, Fish and Wildlife Service, and others to find a permanent solution that would eliminate dam maintenance costs and the drowning hazard associated with the dam, improve fish passage, maintain the millpond

impounded by the dam, and improve fishing and other recreation in the immediate area.

Construction of the rock-arch rapids at Vernon Springs began in July, 2010. This design has been used for over a decade and has proven successful throughout the state of Minnesota. At Vernon Springs, the rapids consist of a series (rows) of rock weirs spanning a 100-yard reach from the face of the dam to the bridge downstream. Approximately 12 series of rock weirs were carefully nudged into the designed configuration. The completed structure acts as a series of step pools that allow fish to move through the area easier.

Completion of the rock-arch rapids has reconnected an 83-mile continuous stretch of river. Fish species such as northern pike, walleye and smallmouth bass can now move past the dam to the millpond and access numerous upstream creeks and small streams. Monitoring conducted by the Iowa DNR fisheries division has shown that fish tagged downstream of the dam prior to construction have already moved upstream of the rock arch rapids structure.

The good news may not end in Cresco. There are initial discussions occurring downstream at the next dam (Clermont). The Vernon Springs rock-arch rapids can now serve as a possible option for other regional communities to explore when trying to make decisions that best fit their dam-related situation.



*-USFWS*  
The 265 foot long by 6 foot high Vernon Springs Dam on the Turkey River near Cresco, Iowa (left) was modified with rock-arch rapids (right), providing fish passage to the upper reaches of the Turkey River.

For further info about the La Crosse FWCO: <http://www.fws.gov/midwest/lacrossefisheries/>

## La Crosse FHC Shares Baitfish Study Results

BY COREY PUZACH, LA CROSSE FHC

In the fall of 2009, four baitfish companies were charged with violating the Lacey Act by importing baitfish from outside the State of Wisconsin without valid import permits and health certificates. The Lacey Act makes it unlawful “to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce any fish or wildlife taken, possessed, transported, or sold in violation of any law or regulation of any state or in violation of any foreign law.”

The investigation was a joint effort between the Fish and Wildlife Service and Wisconsin Department of Natural Resources (DNR) investigators. The companies pled guilty to violations of the Lacey Act and were sentenced to fines, probation, up to two random site visits per year, and testing of monthly imports for two years. The companies must submit a list of their anticipated imports for each month, and baitfish lots are selected to be tested.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

Partnerships are essential for effective fisheries conservation. Many agencies, organizations, and private individuals are involved in fisheries conservation and management, but no one can do it alone. Together, these stakeholders combine efforts and expertise to tackle challenges facing fisheries conservation. The success of these partnerships will depend on strong, two-way communications and accountability.

The first year of a two year baitfish disease study was completed in January. In February, biologists from the Fish and Wildlife Service traveled to Madison, Wisconsin, to share data from the baitfish pathogen survey with the Wisconsin DNR and the Department of Agriculture. Special Agent Gary Jagodzinski gave background information on the case and his involvement in it. Biologist Corey Puzach of the La Crosse Fish Health Center (FHC) gave a presentation on many of the findings including bacteriology, parasitology and virology results. Afterwards, participants discussed the significance of the results. There were about thirty people in attendance.

## Neosho Encourages “Youth in the Great Outdoors”

BY KAY HIVELY, NEOSHO NFH

At the Neosho National Fish Hatchery (NFH), conservation education and public outreach is taken very seriously. Manager Dave Hendrix and assistant manager Rod May accepted an invitation to set up an outreach booth in the Neosho and Joplin Wal-Mart stores. Wal-Mart is the largest retailer in the nation, and the hatchery saw an invitation to partner with them as a good thing. On Saturday, March 19th in Joplin, Missouri (MO) and Sunday, March 20th, in Neosho, MO the Wal-Mart stores held a fishing “derby” for children.

The adults and children in attendance had an opportunity to meet professional fisherman Mark Harper, who competes on the FLW fishing tournament circuit. Harper is vice-president of a large door and window manufacturing company in Monett, MO. As it happened, he is also a Neosho native, so he was happy to be in Neosho again. The hatchery outreach display was a big success as hundreds of people came to the event. Hendrix and May were able to encour-

age families to get into sport fishing and spend time appreciating the great outdoors. This partnership with Wal-Mart and FLW was a great opportunity to promote the Department of Interior initiative “Youth in the Great Outdoors.”



-Kay Hively  
(Left to Right) Dave Hendrix, Mark Harper and Rod May get acquainted and talk about getting kids into fishing.

For further info about the Neosho NFH: <http://www.fws.gov/midwest/neosho/>

## Service Biologists Attend Hydroacoustics Workshop In Seattle

BY JUSTIN CHIOTTI, ALPENA FWCO

Hydroacoustics is an assessment tool used by biologists to assess the status and trends of fish populations. An acoustic echo sounder transmits a pulse of acoustic energy into the water. The pulse of energy travels through the water at a speed of approximately 1,500 m/sec. When the acoustic pulse encounters an object, such as a fish or the bottom, some of the energy (i.e. an echo) is reflected back to the transducer – see the following website for additional information: [http://www.htisonar.com/what\\_are\\_hydroacoustics.htm](http://www.htisonar.com/what_are_hydroacoustics.htm). The energy reflected back to the transducer can be used to estimate the number of fish, size of fish, and biomass of fish in a defined study area. Hydroacoustic equipment is most commonly used in mobile survey techniques where a boat is driven along predefined transects to estimate fish biomass and spatial distributions. Fixed-location techniques use stationary transducers to monitor passing fish in riverine systems.



-USFWS/JustinChiotti

**This set of transducers is part of the hydroacoustic equipment used by biologists to assess the status and trends of fish populations.**

On February 10-11<sup>th</sup>, biologists Josh Schloesser from the Ashland Fish and Wildlife Conservation Office (FWCO) and James Boase and Justin Chiotti from the Alpena FWCO attended a hydroacoustics

workshop offered by Hydroacoustic Technology Inc. (HTI) in Seattle, Washington. The workshop consisted of both a

classroom lecture/discussion section and “hands on” training in the field. Lectures and classroom discussions were led by HTI employees and Professor John Horne of the Aquatic and Fishery Sciences Department at the University of Washington. Participants were taught hydroacoustic theory, different uses of hydroacoustic equipment, data processing methods, and acoustic tagging techniques. On the evening of February 10<sup>th</sup>, a mobile survey demonstration took place on Lake Washington. Participants boarded a research vessel where employees from HTI discussed the operation and use of hydroacoustic equipment during mobile survey techniques. The mobile survey demonstration allowed participants to see data being collected in the field. The data collected that evening was then analyzed using post-processing techniques in the classroom the following day.

This training will enable biologists from the Ashland and Alpena FWCO’s to conduct fisheries assessments using hydroacoustic equipment. More specifically, the Ashland FWCO plans on using the fixed-location survey technique to monitor adult lake sturgeon ascending Wisconsin’s Bad River in the spring to spawn. Previous research has shown this to be an accurate approach to estimate the spawning population size of lake sturgeon. This technique can supplement traditional assessments. Biologists from the Alpena FWCO plan to employ the mobile survey technique to obtain population estimates of spawning lake sturgeon in the St. Clair and Detroit Rivers and describe the chronological movement of lake sturgeon on the spawning grounds.

The Fisheries Program maintains and implements a comprehensive set of tools and activities to conserve and manage self-sustaining populations of native fish and other aquatic resources. These tools and activities are linked to management and recovery plans that help achieve restoration and recovery goals, provide recreational benefits, and address Federal trust responsibilities. Sound science, effective partnerships, and careful planning and evaluation are integral to conservation and management efforts.

For further info about the Alpena FWCO: <http://www.fws.gov/midwest/alpena/index.htm>

## Controlling a Disease Outbreak

BY KEN PHILLIPS, LA CROSSE FHC

In early January, the La Crosse Fish Health Center (FHC) diagnosed an outbreak of furunculosis in a group of coaster brook trout at the Iron River National Fish Hatchery (NFH) in northern Wisconsin (WI). Caused by the bacterium *Aeromonas*

*salmonicida*, furunculosis is a deadly fish disease that affects numerous fish species, primarily salmon and trout. This was the first detection of *A. salmonicida* in the nearly 30-year history of the hatchery. Following the diagnosis, the La Crosse FHC moved-up the

regularly scheduled fish health inspection to determine if *A.salmonicida* was present in other lots of fish at the hatchery. Abby Purdy, Beka McCann and Ken Phillips of the La Crosse FHC traveled to the hatchery January 19th and 20th, to observe conditions at the hatchery and to collect tissue samples for fish pathogen screening. Tissue samples were collected from coaster brook trout brood stock (7 lots), lake trout yearlings (3 lots), lake trout fry (3 lots) and lake trout brood stock (6 lots). The tissue samples were screened for bacterial pathogens (*A. salmonicida*, *Renibacterium salmoninarum*, *Yersinia ruckeri*), viral pathogens (infectious hematopoietic necrosis virus, infectious pancreatic necrosis virus, viral hemorrhagic septicemia virus), and parasitic (*Myxobolus cerebralis*) pathogens at the La Crosse FHC's laboratory facilities in Onalaska, Wisconsin.

*Aeromonas salmonicida* was only detected in the same lot of brook trout brood stock where it had previously been detected. None of the other targeted fish pathogens were detected in the samples collected during the inspection. Tissue samples for fish pathogen screening were also taken from 32 brook trout, 2 brown trout, 1 lake trout, 1 rainbow trout, and 55 sculpin collected from Schacte Creek. Schacte Creek serves as the water source for the Iron River NFH. The tissue samples were screened for the same bacterial, viral and parasitic pathogens as the hatch-

ery. None of the fish pathogens screened for were detected in Schacte Creek fish.

Iron River NFH rears lake trout and coaster brook trout for native species rehabilitation programs. Lake trout reared at the hatchery are stocked into the Great Lakes as part of the Fish and Wildlife Service's rehabilitation efforts on the Upper Great Lakes. Coaster brook trout are stocked into Lake Superior waters as part of the Fish and Wildlife Service's efforts to restore the potamodromous strain of brook trout.



-USFWS/KenPhillips

**Abby Purdy (left) and Beka McCann (right) collect bacterial and viral samples from yearling lake trout at the Iron River National Fish Hatchery.**

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

## Spring has Sprung at Genoa NFH!

BY CHRIS OLDS, GENOA NFH

It is such a cliché phrase, but here at the Genoa National Fish Hatchery (NFH) it seems that every year the winter doldrums abruptly end and spring is right there at our door step. For hatchery staff, that means there is a lot of preparation to be done for the upcoming production season. This is the time to set up the ponds with screens, spawning structures and air stones. Along with pond setup, we have also been repairing and tarring nets for spring pike and walleye egg collection. The sturgeon building has been set up with small circular tanks for the 2011 year class of sturgeon that will be collected in the upcoming months. Mussel biologists, with the assistance of many volunteers, have checked all mussel cages to make sure they are free of invasive zebra mussels and ready for another season. All of these steps serve a critical role in the hatchery's ability to meet stocking requests of recreational and sport fish species, and to enhance threatened and endangered mussel, sturgeon and coaster brook trout species around the region.



-USFWS

**Jorge Buening installs and seals pond screens in preparation for the 2011 fish production season.**

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

## Iron River NFH Provides Year-Round Recreation and Multiple Use of Property

BY SHAWN SANDERS, IRON RIVER NFH

**I**ron River National Fish Hatchery (NFH), located in the northwoods of Wisconsin, has 1,200 beautiful acres which adjoins state, county and federal forest lands. Iron River NFH is in the heart of Bayfield County, which is known for its year-round recre-



-USFWS

**Iron River NFH offers over three miles of beautifully groomed cross-country ski trails.**

ational offerings. Summertime offers an interactive trail hiking opportunity combined with the best temperature for comfortable hatchery tours. Fall offers the pursuit of game with all property open for any legal hunting season, along with beautiful fall foliage. Winter may be the season with the least hatchery visitation but the most recreational potential.

Iron River NFH provides over three miles of beautifully groomed cross-country ski trails, open

For further info about the Iron River NFH: <http://www.fws.gov/midwest/ironriver/>

## Learning and Loving the Outdoors at Genoa NFH

BY JENNY BAILEY, GENOA NFH

**T**he Outdoor Classroom at Genoa National Fish Hatchery (NFH) proved itself again in connecting 5th graders from Southern Bluffs Elementary School with nature, wetland adventures, hands-on science lessons and healthy physical activity under the guidance of Fish and Wildlife Service professionals. Each winter, 5th grade students in Ms. Houlihan's class go to school for a day in the "Sense of Wonder Discovery Wetland."

daily and groomed whenever snowfall occurs. This year, the hatchery opened a candlelit loop which provided a hiking trail under the stars. Our Friends group provided refreshments and the hatchery provided shelter, firewood and candles. The trekkers returned to a warm bonfire to top off a pleasant evening. The east border of the hatchery provides an easement along the Battle Axe Grade (Trail 3), which connects the cities of Iron River and Port Wing by a snowmobile/off-road vehicle trail. Year-round firewood-cutting permit(s) allow permit holders to cut up to five logger's cords of wood per year within a specified cutting zone. Currently, a number of customers have visited the hatchery office applying for these permits to finish the long heating season.

All of the recreation and public use provides our agency with a chance to educate the public on the hatchery and regional mission(s) with a very beautiful backdrop. We look forward to your visit to Iron River NFH, whatever the season.

As the population in the United States continues to grow, the potential for adverse impacts on aquatic resources, including habitat will increase. At the same time, demands for responsible, quality recreational fishing experiences will also increase. The Service has a long tradition of providing opportunities for public enjoyment of aquatic resources through recreational fishing, habitat restoration, and education programs and through mitigating impacts of Federal water projects. The Service also recognizes that some aquatic habitats have been irreversibly altered by human activity (i.e. - dam building). To compensate for these significant changes in habitat and lost fishing opportunities, managers often introduce non-native species when native species can no longer survive in the altered habitat.

and uncovered some wonders of nature hiding in the snow.

The Sense of Wonder Discovery Wetland serves as a winter refuge for otters, muskrats, deer, voles and mice. Students did some sleuthing in the wetland and found evidence of all of these. They also had a hands-on lesson in anthropology and discovered some lost artifacts from the old farm that existed before the land was turned over to nature. A day of exploring nature, experiencing healthy activities, and making connections with conservationists inspires kids to think about the bright possibilities of the future.

Hatchery employees Dan Kumlin and Jeff Lockington took some time on this day to help kids learn how to make some of these dreams come true. Mr. Kumlin shared knowledge gained from a lifetime of trapping with the class as they came inside for a break from the cold. Kumlin has a historical collection of furs and traps which he shared with the class along with identification tips and tracking pointers for future trappers of wildlife. Jeff Lockington shared his work experiences and advised youth on how to pursue a rewarding career in the outdoors. Some of the career aspirations of students after spending a day in the Outdoor Classroom were: veterinarian, athlete, anthropologist, teacher and archaeologist.

The Fish and Wildlife Service is making it a top priority to help connect kids with nature to improve the health of American children and to ensure the

future of conservation. The Outdoor Classroom provides the foundation for a healthy lifestyle and paves a career path for future conservationists. These hands-on experiences in nature will stay with these children as they grow, and inspire them to stay active, connected, to learn about nature, and to apply this knowledge to actions and choices in the future.



-USFWS

**Students from Southern Bluffs Elementary School learned about trapping, did some tracking, and uncovered some wonders of nature hiding in the snow in Genoa National Fish Hatchery's Sense of Wonder Discovery Wetland.**

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

## Star Trekking at Iron River NFH

BY CAREY EDWARDS, IRON RIVER NFH

The Iron River National Fish Hatchery (NFH) held its first ever candlelight trek on March 5th. Guests could walk, ski or snowshoe a ¾ mile trail by the light of luminaries. Supporting the hatchery with this venture was the *Friends of the Iron River National Fish Hatchery*. The group purchased hot chocolate, hot cider and s'more fixings for event goers to enjoy. Friend's members also manned a table with information on joining the group and Friend's merchandise. Hatchery staff arrived early to set out candles, boil water and make a bonfire. Despite Mother Nature's best attempt at thwarting our event

with record highs in February, the trail was still in great shape for walking. Tea lights set in 1 gallon plastic buckets served as luminaries and wrapped the trail in a warm glow every 50 feet. The weather was perfect for an evening stroll, and with the clear skies, trekkers were star gazing and counting shooting stars. People gathered around the fire to roast marshmallows, drink cocoa and chat about the pleasant evening. After this successful occasion, stay tuned for more information to come on future evening events at the Iron River NFH.

For further info about the Iron River NFH: <http://www.fws.gov/midwest/ironriver/>

## New Parasiticide?

BY JORGE BUENING, GENOA NFH

One relatively common part of our natural world is its persistence of parasites. From the mites that live in our eyelashes to the ticks that we could possibly pick up in our daily activities, they are always around us. This fact is no different in the aquatic culture business and especially in the somewhat stressful conditions of aquatic culture systems. Most of the time, parasites living on a host are maintained by the host's immune system at levels where the host it is not harmed. Sometimes that balance can be tilted in which mortality can result from an overabundance of parasites. In these cases, we must treat the animals to try to kill off the parasites that are causing harm.



-USFWS

**Genoa National Fish Hatchery has set up nine experimental tanks with consistent volume, water flow, water temperature and fish densities, to conduct an experiment with the U.S. Geological Survey to get the approved use of hydrogen peroxide extended to include parasites on warm water fishes.**

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

Science and technology form the foundation of successful fish and aquatic resource conservation and are used to structure and implement monitoring and evaluation programs that are critical to determine the success of management actions. The Service is committed to following established principles of sound science.

In order to be more effective in the treatment of parasites, Genoa National Fish

Hatchery (NFH) is working with the United States Geological Services (USGS) to get the approved use of hydrogen peroxide extended to include parasites on warm water fishes. Currently, hydrogen peroxide can be used to treat fungus on fish eggs and for control of external bacterial infections on cold and cool water fish. In order to get a label extended, tests must be conducted to ensure the effectiveness of the treatment, the safety to the organisms being treated, and the safety of the individuals doing the treatment.

Genoa NFH will be using nine experimental tanks with consistent volume, water flow, water temperature and fish densities. USGS will set a protocol for the execution of this experiment for hatchery staff to follow. A subsample of our fathead minnow population was determined to have *Gyrodactylus spp.* and *Dactylogyrus spp.* parasites. These fish will be held in a tank with a very high fish density to cause the parasite numbers to increase to levels where they are detrimental to the fish. The number of parasites will be recorded from a subsample of the fish and the remaining fish will then be moved to the experimental tanks. They will be treated for one hour every other day for three days over a six day period. Following the treatment sequence, the number of parasites on the fish will again be determined from a subsample and the results recorded. Upon the completion of this study and the labeling process to follow, we will hopefully have a new tool in our toolbox which may enable us to keep our fish healthy and have a quality product to distribute into America's waterways.

## New Small Stream Trawl Designs Introduced at Missouri's Natural Resource Conference

BY WYATT DOYLE, COLUMBIA FWCO

New trawl techniques and applications are slowly changing the way fisheries managers can sample mid-western streams and rivers. I recently had the opportunity to present some new applications of our trawls at the annual Missouri Natural Resources Conference in Osage Beach, Missouri (MO). My presentation introduced Ozark stream managers to new techniques adapted from our big river efforts. Having spent time in graduate school researching an electric seine and conducting many comparative seine depletion studies, I was eager to find a way to mechanize the process. In 2008, I worked with fellow biologist Clayton Ridenour to test our Missouri River push trawl on a small and shallow Ozark stream. We used a video recorder to document the success of the push trawl in clear, shallow water. With minimal effort, we were able to collect dozens of native small bodied fishes in each trawl tow by using a unique rock-rolling trawl design.

Bolstered by the success of this push trawl effort on a small river, I worked with a graduate student from Oklahoma State University, in an even smaller

non-flowing stream, searching for the state's endangered long nose darter. The challenge was to sample an area without an improved boat ramp and still use mechanized efforts, including towing a trawl behind the boat. We used a 12-foot jon boat with a 15 hp motor and a modified version of our benthic rock trawl. Our efforts over 2 days proved that we could, for the first time, actively sample benthic fish species over slab and chunk rock substrates, within a wide range of water depths (0.3 -3 meters) in confined riverine systems.

It is exciting to be on the edge of developing new gears that will provide better sampling tools to managers and will ultimately enable us to quickly and thoroughly assess the health of our watersheds. The commitment by our agency toward exploring new science along with the innovative thinking of our staff and net designer have allowed our office to introduce eight new trawl nets to the Midwest in the last six years. These new trawls can sample any measure of water available throughout our watershed.



-USFWS

**Columbia Fish and Wildlife Conservation Office's push trawl design effectively sampled fishes from a shallow Ozark stream.**

For further info about the Columbia FWCO: <http://www.fws.gov/midwest/columbiafisheries/>

## Enhancing Lake Sturgeon Passage at Hydroelectric Facilities in the Great Lakes

BY PATRICK FORSYTHE, GREENBAY FWCO

Green Bay Fish and Wildlife Conservation Office (FWCO) biologists Patrick Forsythe, Robert Elliott and Mark Holey assisted the Great Lakes Fishery Trust (Trust) with the planning and execution of a workshop held February 1-2 in Detroit, Michigan. The mission of the Trust is to provide funding to enhance, protect, and rehabilitate the Great lakes fishery. The goal of the workshop was to identify knowledge gaps that limit our ability to provide upstream and downstream passage of adult and juvenile lake sturgeon at hydroelectric facilities in the Great Lakes. Hydroelectric facilities that block migrating adults from reaching historic spawning areas, and reduce miles of in-stream larval and juvenile nursery habitat are likely the greatest impediment to lake sturgeon populations reaching healthy/restored levels.



-USFWS/PatrickForsythe

**Green Bay Fish and Wildlife Conservation Office biologist Mark Holey facilitates a small breakout group of experts in lake sturgeon biology, fish passage engineering, and hydropower generation at a Great Lakes lake sturgeon passage workshop.**

Forty experts in lake sturgeon biology, fish passage engineering, and hydropower generation from across the country participated in the workshop. In the morning of the first day, four focal presentations provided background information on global passage efforts to date, the distribution and status of lake sturgeon populations and hydroelectric facilities across the Great Lakes, and a synthesis of the biological and technological factors that may be related to sturgeon passage. In the afternoon, knowledge gaps across the diversity of dam types and plausible

variations such as those with and without power canals, impoundment size, dam height, sequential order (i.e., first vs. upstream barrier to migration) and proximity of other facilities were discussed in small breakout groups. A social was held on the evening of Day 1, during which time participants had informal discussion and shared informational materials on research activities via report and publication handouts, posters and presentations.

On the second day, five hydroelectric facilities on Wisconsin's Menominee River were discussed amongst small groups. The facilities included the Menominee, Park Mill, Grand Rapids, Chalk and White Rapids dams. This tributary was provided as a model system to illustrate the need for passage, the diversity of hydroelectric facilities, and the complexity of passage issues. Today, these five hydroelectric facilities also prevent an estimated 2,000 Menominee River lake sturgeon from reaching upstream spawning habitats.

Knowledge gaps receiving the greatest attention during breakout discussions included, but were not limited to, upstream and downstream migratory routes and the influence of stream flow on movement, guidance and attraction mechanisms that provide the strongest motivational cues for fish-way entry, characteristics of passage facility entrances and exits that enhance effectiveness, and the fate of sturgeon that pass upstream and downstream and those that fail.

A synthesis across all knowledge gaps discussed further indicated a consolidation of uncertainty into programs of research (i.e., a framework) including 1) lake sturgeon behavior during migration and passage, 2) physiological consequences of passage, 3) passage design, technology, implementation, and development of operational windows, and 4) advancement of technologies that improve assessment and monitoring of passage efforts.

An integrated research approach based on these fundamental program areas is thought to enhance the probability of deploying successful passage efforts and promote collaboration and partnerships that can bridge the diversity of knowledge gaps in each area. Each can be also be supported by funding entities with interest in restoring lake sturgeon populations such as the Trust.

For further info about the Green Bay FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

## In Memory of John M. Whitney (December 4, 1954-February 18, 2011)

BY BECKY LASEE, LA CROSSE FHC

The La Crosse Fish Health Center (FHC) is saddened to inform you that our dear friend and colleague, John M. Whitney, passed away on Friday, February 18th, at his home, after a short illness. John



-USFWS

**Biologist John Whitney of the La Crosse Fish Health Center passed away in February after a short illness.**

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

## Alpena FWCO Staff Complete Adult First Aid, CPR and AED Training

BY ASHLEY HORNE, ALPENA FWCO

On March 4<sup>th</sup>, biologists Ashlee Horne, James Boase and Justin Chiotti from the Alpena Fish and Wildlife Conservation Office (FWCO) -Waterford substation completed their annual adult first aid, cardio pulmonary resuscitation (CPR), and automated external defibrillator (AED) training. Training was held by the Michigan Department of Natural Resources (DNR) at their office in Southfield, Michigan, where Fish and Wildlife Service biologists joined several Michigan DNR employees for the training.

Participants were refreshed in the proper care procedures for adults in need of first aid. Training exercises included how to field dress wounds, care for severe burns, perform abdominal thrusts, and the

For further info about the Alpena FWCO: <http://www.fws.gov/midwest/alpena/index.htm>

began his career with the La Crosse FHC in 1993. As a biologist, John was considered an expert in fish

health, with a special talent for virology. He was the first to identify a novel bluegill virus. In addition to John's talented virology skills, he was knowledgeable in many other aspects of fish diseases. Although John had talented lab skills, he was highly regarded as the office prankster. Some classics were filling offices with balloons and taping chairs to desks among other humorous stunts.

In John's spare time, he had an excellent green thumb and spent many hours with his wife, Wendy, in their greenhouse and gardens. Our sincere condolences go out to John's wife and family. The staff has planned memorials in John's honor, including a plaque within our office building and outside, erecting a bench, and planting a tree.

The Fisheries Program relies on a broad range of professionals to accomplish its mission: biologists, managers, administrators, clerks, animal caretakers, and maintenance workers. Without their skills and dedication, the Fisheries Program cannot succeed. Employees must be trained, equipped and supported in order to perform their jobs safely, often under demanding environmental conditions, and to keep current with the constantly expanding science of fish and aquatic resource management and conservation.

proper way to roll over an unconscious person. The most up-to-date CPR methods were discussed and real life scenarios were acted out with the help of CPR mannequins to learn proper chest compression and rescue breathing techniques. The course instructor brought AED simulators, allowing attendees to learn proper pad placement and use. Several questions were raised and answered on the proper way to perform these methods, under specific field conditions, in order to give proper care to a victim. This training provides employees the knowledge to help save the life of a co-worker or partner in the event of an accident in the workplace.

## The Pursuit of Happiness

BY MARK STEINGAEBER, LA CROSSE FWCO

As citizens of the United States, we believe that “Life, liberty, and the pursuit of happiness” are unalienable rights endowed to all of humanity. But what makes one happy? For the 8<sup>th</sup> grade class at Aquinas Middle School in La Crosse, Wisconsin, the continuing search for answers to this question should help guide these students to personally satisfying occupations in the years ahead. That was the keynote message delivered to 82 students here on March 3<sup>rd</sup> by a human resource expert from a major employer in the community during the school’s annual Career Day.

A career fair followed this address with fifteen occupations represented in 2011. Students selected



-USFWS

**Biologist Mark Steingraeber of the La Crosse Fish and Wildlife Conservation Office discusses his career with students at Aquinas Middle School.**

For further info about the La Crosse FWCO: <http://www.fws.gov/midwest/lacrossefisheries/>

from among these to attend four 20-minute presentations given by a local professional representing that occupation. This morning program culminated a month-long Guidance Department plan to encourage students to think about career options for their future. In keeping with the ‘quest for happiness’ theme, La Crosse Fish and Wildlife Conservation Office (FWCO) biologist Mark Steingraeber participated in this annual event. For the seventh consecutive year, he described the educational path and life-journey that led him to a satisfying natural resource career in service to our nation which began more than 30 years ago. Mark included information on the duties, responsibilities and requirements of a professional biologist, while images of the diverse work performed by Fish and Wildlife Service biologists around the country were projected for display. The importance of communication, information technology, math and interpersonal skills was stressed in whatever career a student might select.

Students were also encouraged to closely examine potential career choices by actively participating in job-shadow and volunteer opportunities available to them in high school and college. Life, liberty, and the pursuit of happiness ... in my case, *fish*... what more could one ask for?

## New Administration at the La Crosse FHC

BY SARAH BAUER, LACROSSE FHC

Administrative technician Jan Beitlich retired from the United States Fish and Wildlife Service last December. Jan served as administrative technician to the La Crosse Fish Health Center (FHC) for over 20 years and during the tenure of two project leaders.

In January, Ashley Kast began volunteering at the La Crosse FHC, performing administrative duties as part of an internship with Wisconsin Technical College (WTC), where she is a student in the Administrative

Professionals program. In March, Ashley became a Student Career Experience Program hire with the La Crosse FHC.

Nancy Christopherson of the La Crosse Fish and Wildlife Conservation Office will be supervising and training Ashley, while assisting La Crosse FHC staff with administrative duties. Jan will be missed by our staff, but we look forward to working with Ashley and Nancy.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

# Congressional Actions

S. 52 (is) To establish uniform administrative and enforcement procedures and penalties for the enforcement of the High Seas Driftnet Fishing Moratorium Protection Act and similar statutes, and for other purposes. [Introduced in Senate]

S. 651 (is) To require the Secretary of the Interior to convey the McKinney Lake National Fish Hatchery to the State of North Carolina, and for other purposes. [Introduced in Senate]

H.Con.Res. 15 (ih) Expressing the sense of the Congress that the United States Fish and Wildlife Service should incorporate consideration of global warming and sea-level rise into the comprehensive conservation plans for coastal national wildlife refuges, and for other purposes. [Introduced in House]

S. 632 (is) To amend the Magnuson-Stevens Fishery Conservation and Management Act to extend the authorized period for rebuilding of certain overfished fisheries, and for other purposes. [Introduced in Senate]

H.R. 521 (ih) To amend the Federal Food, Drug, and Cosmetic Act to prevent the approval of genetically engineered fish. [Introduced in House]

S. 230 (is) To amend the Federal Food, Drug, and Cosmetic Act to prevent the approval of genetically engineered fish. [Introduced in Senate]

H.R. 520 (ih) To amend the Federal Food, Drug, and Cosmetic Act to require labeling of genetically engineered fish. [Introduced in House]

H.R. 1646 (ih) To amend the Magnuson-Stevens Fishery Conservation and Management Act to preserve jobs and coastal communities through transparency and accountability in fishery management, and for other purposes. [Introduced in House]

S. 229 (is) To amend the Federal Food, Drug, and Cosmetic Act to require labeling of genetically engineered fish. [Introduced in Senate]  
Size: 1466 , Score: 198 , TEXT , SUMMARY , PDF [29]

H.R. 1251 (ih) To provide congressional direction for implementation of the Endangered Species Act as it relates to operation of the Central Valley Project and the California State Water Project and for water relief in the State of California. [Introduced in House]

S. 471 (is) To require the Secretary of the Army to study the feasibility of the hydrological separation of the Great Lakes and Mississippi River Basins. [Introduced in Senate]

H.R. 892 (ih) To require the Secretary of the Army to study the feasibility of the hydrological separation of the Great Lakes and Mississippi River Basins. [Introduced in House]

H.R. 1042 (ih) To amend the Endangered Species Act of 1973 to require that certain species be treated as extinct for purposes of that Act if there is not a substantial increase in the population of a species during the 15- year period beginning on the date the species is determined to be an endangered species, and for other purposes. [Introduced in House]

Source is <http://www.gpoaccess.gov/bills/index.html>  
Searched database by keyword = "fish"

# Midwest Region Fisheries Divisions

## National Fish Hatcheries

The Region's National Fish Hatcheries primarily focus on native fish restoration/rehabilitation by stocking fish and eggs, such as pallid and lake sturgeon and by developing and maintaining brood stocks of selected fish strains, such as lake trout and brook trout.

Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, stock rainbow trout in fulfillment of federal mitigation obligations and assist with recovery of native mussels and other native aquatic species.

## Fish and Wildlife Conservation Offices

Fish and Wildlife Conservation Offices conduct assessments of fish populations to guide management decisions, perform key monitoring and control activities related to invasive, aquatic species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; play a key role in targeting and implementing native fish and habitat restoration programs; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's Partners for Fish and Wildlife and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency fisheries databases; provide

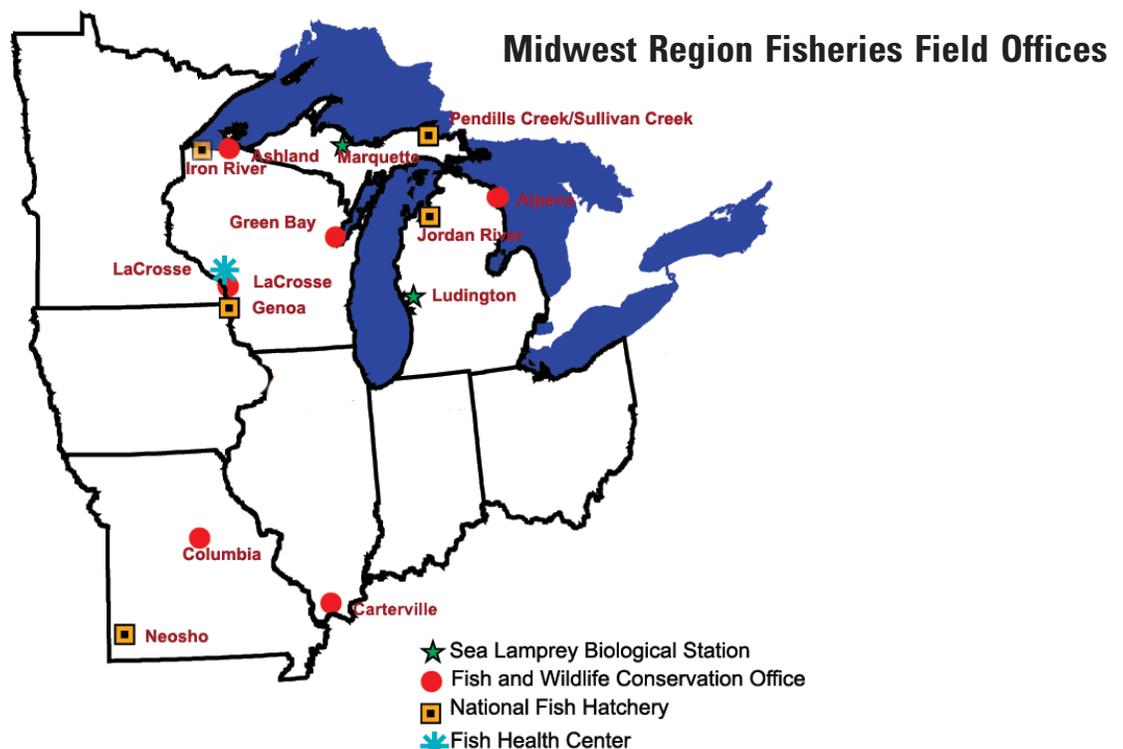
technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and relicensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

## Sea Lamprey Biological Stations

The Fish and Wildlife Service is the United States Agent for sea lamprey control, with two Biological Stations assessing and managing sea lamprey populations throughout the Great Lakes. The Great Lakes Fishery Commission administers the Sea Lamprey Management Program, with funding provided through the U.S. Department of State, U.S. Department of the Interior, and Fisheries and Oceans Canada.

## Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to federal, state and tribal hatcheries in the region; conducts extensive monitoring and evaluation of wild fish health; examines and certifies the health of captive hatchery stocks; and, performs a wide range of special services helping to coordinate fishery program offices and partner organizations.



# Midwest Region Fisheries Contacts

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989/356-3052  
Area of Responsibility (Michigan, Ohio)

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National Fish Hatchery  
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Area of Responsibility (Illinois, Iowa, Minnesota, Wisconsin)

# Fish Tails

“Fish Tails” includes articles that are included in field station reports that are not published in the “Conservation Briefs.” These articles are categorized by focus area and includes the article title, author and field station. The website link, where the full article can be viewed, is highlighted in blue type.

## Partnerships and Accountability

### Aquatic Species Conservation and Management

- Annual Preventative Restorations Keep Old Rig Up To Date and On The Road
  - Shawn Sanders, Iron River NFH
- Pump Issues at Sullivan Creek NFH
  - James Anderson, Pendlills Creek NFH

## Aquatic Invasive Species

### Public Use

- Show and Tell for Genoa National Fish Hatchery
  - Angela Baran, Genoa NFH

## Cooperation with Native Americans

## Leadership in Science and Technology

## Aquatic Habitat Conservation and Management

## Workforce Management



**U.S. Fish & Wildlife Service  
Volunteers & FUMFS**



**Let's Make  
Waves!**

## 2011 Service Opportunities



What	Where	Who	When
Family Fun Fair	Onalaska Omni Ctr	LaX FWCO	March 27
Pike & Walleye Spawning	Genoa NFH	Genoa NFH	March - May
Fish Health Assessments	Genoa NFH	LaX FHC	April-May
Higgins Eye Infestation	Genoa NFH	Genoa NFH	mid-April
River Clean-Up Day	Mississippi River	LaX FWCO	April 23
Smallmouth Bass Collection	Mississippi/WI Rivers	Genoa NFH	May
River Education Days	Trempealeau NWR	LaX FWCO	May 16-18
Veterans Fishing Day	Tomah VA Hospital	LaX FWCO	May 19
Friends Youth Fishing Day	Genoa NFH	Genoa NFH	May 22
Nuisance Species Control	Genoa NFH	Genoa NFH	Summer
Trout Stream Surveys	Green County (WI)	LaX FWCO	Summer
Youth Outdoor Fest	Pettibone Park	LaX FWCO	July 16
Trout Fest	Coon Valley	LaX FWCO	July 23
Sturgeon Tagging	Genoa NFH	Genoa NFH	August
Mussel Surveys	Central IA Rivers	LaX FWCO	August 15-19
Winged Mapleleaf Survey	St Croix River (MN/WI)	LaX FWCO	September
Wild Fish Health Surveys	Mississippi River	LaX FHC	July - August
Electrofishing Surveys	Mississippi River	LaX FWCO	April - November
Data Entry	Onalaska	LaX FWCO	Year Round






**U.S. Fish and Wildlife Service Fishery Program Offices**

Friends of the Upper  
Mississippi Fishery Services

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**La Crosse Fish Health Ctr**  
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**La Crosse Fish & Wild. Cons. Office**  
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3

22 Fish Lines / February 2011

Fish Tails