



U.S. Fish & Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

# *fish lines*



**Saving the  
Pallid Sturgeon  
from Extinction**

**Sterile-Male-Releases  
to Control Sea Lampreys**

**Restoring Native Species  
to the Oneida Reservation**

**Coldwater Creek, Iowa,  
Restoration and Enhancement  
Project**



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# 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.

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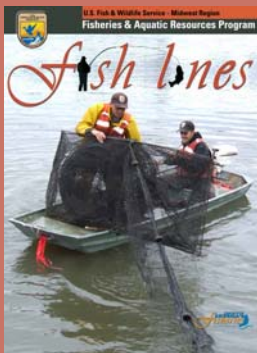
-USFWS

Local painter Bob Gofourth gives the beloved trout statue at the Neosho National Fish Hatchery a new coat of paint.

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

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-USFWS/Cliff Wilson

**An assessment crew sets a large trap net in a scour at the Overton Unit of the Big Muddy National Fish and Wildlife Refuge.**

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# Saving the Pallid Sturgeon from Extinction

BY MELISSA CHEUNG, NEOSHO NFH

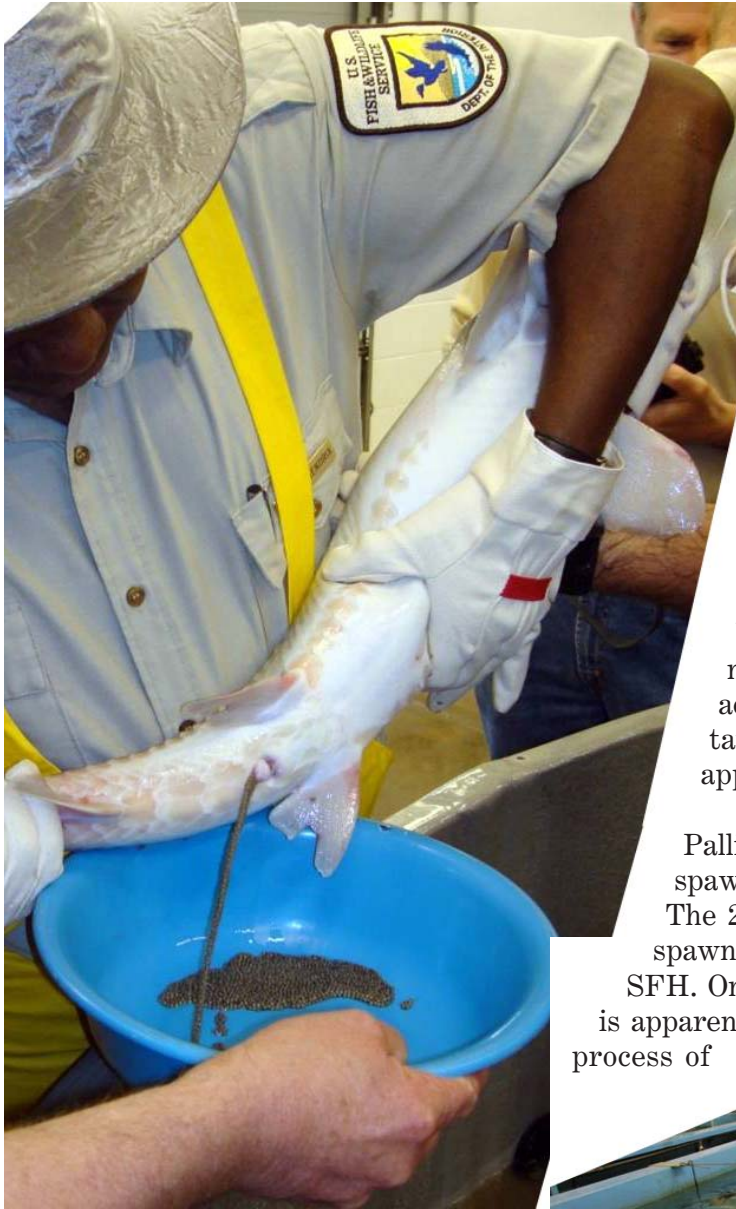
Rumors of the endangered pallid sturgeon being raised at the Neosho National Fish Hatchery (NFH) travel quickly. It is not uncommon to be greeted by excited children who promptly ask, “Are we going to see the dinosaur fish?” This primitive looking creature, with its slow methodical swimming style,

thick armor of plates running down its elongated body, and whiskered pointy snout, is, without doubt, a crowd-pleaser. Belonging to a family of bony fish that first appeared on the fossil record over 70 million years ago, they are most deserving of their nickname “dinosaur fish” and the awe and excitement with which they are greeted.

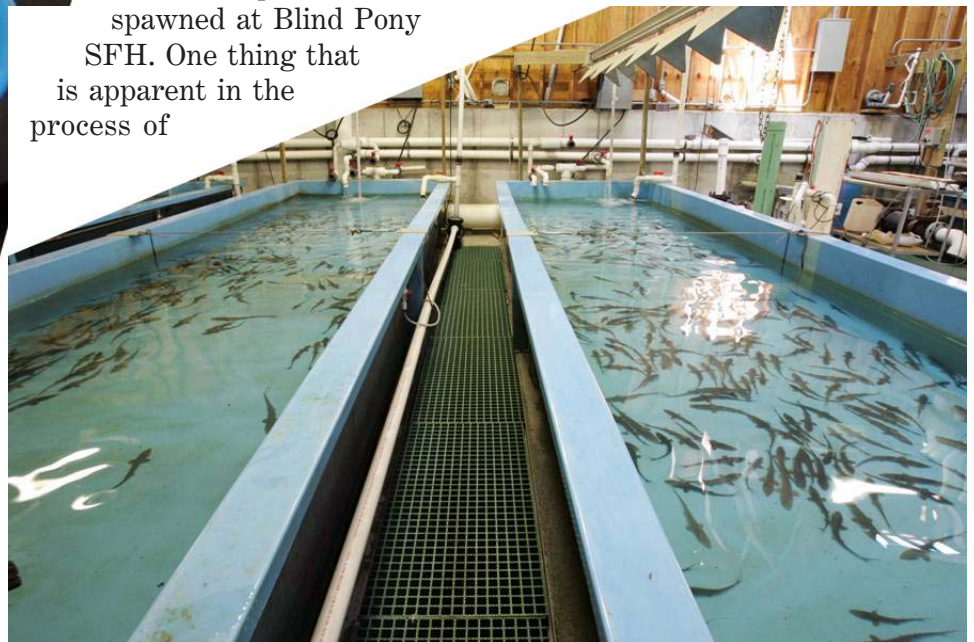
Originally, serving as a back-up facility to Blind Pony State Fish Hatchery (SFH) in Sweet Springs, Missouri, Neosho NFH began rearing endangered pallid sturgeon in 2002. The purpose was to supplement the pallid sturgeon being raised at Blind Pony, in case of a catastrophic event (ex: disease, water loss, etc.). Demand for pallid sturgeon production grew so great that Neosho NFH soon became an independent production facility. Thanks to funding from the U.S. Army Corps of Engineers, we tailored an existing building for sturgeon production and built an entirely new, larger building for sturgeon culture. A well was added alongside the new sturgeon building. Fifty sturgeon tanks are available for sturgeon culture and we can rear approximately 17,000 pallids at capacity.

Pallid sturgeon were spawned at Neosho in 2007 and will be spawned here again in April 2009.

The 2008 pallids were spawned at Blind Pony SFH. One thing that is apparent in the process of



-USFWS  
David Hendrix spawns a wild-caught female pallid sturgeon.



-USFWS  
Pictured are pallid sturgeon culture tanks at the Neosho National Fish Hatchery.

capturing wild brood stock from the Missouri River, is the fact that sexually mature sturgeon may differ greatly from the number of adults caught that year (2007: 10 fish captured; 3 sexually mature males and 2 females; 2008: 18 fish captured, 5 sexually mature males and 2 females). Fish that are reproductive, but appear to have low motility or a probability of low fertilization success, will most likely not be used for that year's spawning.



Since 2002, Neosho NFH has stocked 13,178 pallid sturgeon into the Missouri River at seven different sites spanning across Kansas, Iowa and Nebraska. Currently, we have over 3,000 pallid sturgeon on site which originated from the spawning events of only 2 females and 5 males. In comparison to the 225,000+ trout that we produce on station annually, these production numbers seem low. The pallid sturgeon eggs from the two females were divided between Blind Pony SFH and Neosho NFH. These fish are also notoriously difficult to culture, and they are endangered in all three of the basins in which they exist.

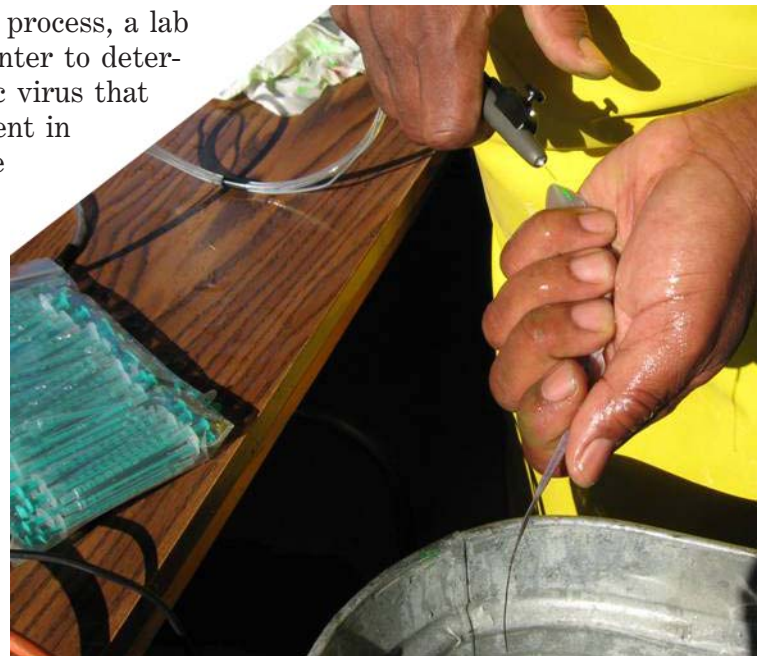
In order to measure the success of our pallids once they are stocked, we tag the fish. A variety of tagging methods are being used, based on the size at which they are stocked. Scute removal, just introduced in 2008, is done in combination with elastomere tagging or passive integrated transponder (PIT) tagging.

-USFWS

**A scute is carefully removed from a young pallid sturgeon prior to stocking to identify this individual as a stocked fish.**

Coded-wire tags are used for fish too small to be PIT tagged. The tagging protocol may be modified by the Middle Basin Pallid Sturgeon Recovery Work Group, and tagging methods depend on the hatchery facility, time of year and size of the fish.

The pallid sturgeon work group has greatly contributed to our current level of production. We depend on groups from the Missouri Department of Conservation and the Columbia National Fish and Wildlife Conservation Office (NFWCO) to collect adult pallids from the Missouri River from fall to late spring. As part of the brood stock collection process, a lab analysis is conducted by the La Crosse Fish Health Center to determine if the Pallid Sturgeon Iridovirus, a species-specific virus that we do not want passed to hatchery-reared fish, is present in the wild-caught fish - blood samples are obtained by the Columbia NFWCO for this analysis. In addition, staff from the U.S. Geological Survey (USGS) office in Columbia, Missouri, uses ultrasound and endoscope technology to verify the sex and sexual maturity of the sturgeon. Reproductive adults are spawned with the help of hatchery staff from Blind Pony SFH. Any non-reproductive adults are used by USGS for acoustic telemetry work. Tracking of these fish along the Missouri River, using telemetry, contributes to our knowledge base of pallid sturgeon habitat ranges and long-term survival. In addition to the decisions made by the Middle Basin Pallid Sturgeon Recovery Work Group, this information will be used to modify and improve propagation initiatives and recovery efforts.



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**A pallid sturgeon is elastomere-tagged using an air injection system.**

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

# Sterile-Male-Releases to Control Sea Lampreys

BY HEATHER DAWSON, MARQUETTE BIOLOGICAL STATION

The Great Lakes Fishery Commission (GLFC) Sea Lamprey Management Program, administered by the Fish and Wildlife Service and Department of Fisheries and Oceans Canada, is trying to reduce reliance on lampricides and accomplish at least 50 percent of Great Lakes sea lamprey suppression with alternative methods. Sea lampreys are parasitic pests that entered the Great Lakes from the Atlantic Ocean through a series of shipping canals and were a contributing factor in the collapse of lake trout, whitefish and deepwater cisco populations in the Great Lakes during the 1940s and 1950s. An integrated pest management program has proven to be very successful in controlling numbers of sea lampreys in the Great Lakes. This success allowed the reestablishment of viable sport and commercial fisheries throughout the Great Lakes.



-GLFC  
An invasive sea lamprey is attached to a native lake trout, their preferred prey.

Since the advent of sea lamprey control, the GLFC has researched the potential of new technologies to make an integrated pest management program more successful. One technology that was used in the past for insect pest control was the sterile-male-release technique (SMRT).

Originally proposed by Edward Knipling in 1937, the technique involves sterilizing males and releasing them into the population to compete with fertile males for females. This technique can reduce the number of viable eggs and pest population abundance over generations. For sterile-male-release to be effective, there must be an available supply of males, males must be sterilized without affecting competitiveness and behavior, and sterile males must mate with females and reduce progeny. This technique was successful in eradicating the screwworm on the island of

Curacao in the 1950s, and in 1970 it was suggested as a potential method to control sea lampreys.

For the SMRT to become part of the sea lamprey integrated management program, researchers needed to find a method of sterilization, determine its effectiveness in the lab and in the field and whether the method was to be feasible in controlling sea lamprey populations on a large-scale. During the 1970s and 1980s many methods of sterilization such as irradiation, heat, hormones and chemosterilants were tested in their efficacy to sterilize male sea lampreys. Of the 14 chemosterilants tested, P, P-bis(1-asiridinyl)-N-methylphosphinthioic amide (bisazir) was found in lab and field trials to successfully sterilize male sea lampreys without changing their ability to attract females and mate normally. Additionally, bisazir does not remain in tissues after 48 hours. Field trials indicated that in-stream releases of sterile males were



-USFWS/MikeTwohey

A male sea lamprey is fed into the auto-injector which measures and weighs each lamprey to deliver the appropriate dose of the sterilant bisazir into the body cavity which will sterilize the lamprey.

most effective and a supply of male sea lampreys could be provided by trapping sea lampreys in streams across the Great Lakes during their upstream migration to spawning grounds. Therefore, after more than 20 years of research and development, a large-scale implementation of the SMRT was initiated as a component of the Sea Lamprey Management Program.

The sea lamprey sterilization facility was constructed in 1991 at the U.S. Geological Survey's Hammond Bay Biological Station. The facility is centrally located in northern Lower Michigan to allow for the prompt delivery of males captured in over 25 source streams across the basin. Because bisazir is a toxic mutagen the facility has contained work areas, personnel wear protective equipment, and effluent is treated before release to prevent exposure of people and the environment to this chemical. An auto-injector sterilizes males quickly and effectively while limiting exposure of personnel to bisazir.

Personnel can sterilize up to 1,400 males per day and the facility has the capacity to hold approximately 9,000 sea lampreys. Methods of quality assurance are in place to assure effective sterilization.

The effectiveness of the SMRT at reducing reproduction in streams depends on the ability to achieve a high ratio of sterile males to normal males. Initially, 30 Lake Superior streams were selected for in-stream releases of sterile males that had a history of requiring regular lampricide treatments. During the period of 1991-1996, an average of 18,700 sterile males were released in these streams achieving an average ratio of 1.7 sterile males for each normal male, and an average theoretical reduction in reproduction of 60%. Because of the inability to achieve a high sterile to fertile male ratio, it was unlikely that a decline in the



-USFWS/MikeTwohey

**Technician Bruce Smith of the Marquette Biological Station releases sterilized males into the St. Mary's River**

abundance of sea lampreys in Lake Superior could be detected. However, the St. Marys River, a large river that effectively drains Lake Superior into Lake Huron, was a consistent producer of large numbers of sea lampreys and is prohibitively expensive to treat thoroughly with lampricides, so was chosen as an ideal location for releases of sterile males. Starting in 1997, in-stream releases of sterile males occurred only in the St. Marys River. Since 2001, an average of 27,800 males per year has been released achieving an average sterile to fertile male ratio of 4 to 1. Sterile-male-release, used in combination with trapping and spot chemical treatments, is part of an integrated pest management program to control production of sea lampreys in the St. Marys River. Since 2001, these efforts have led to an average theoretical reduction in reproduction of 86 percent in the river.

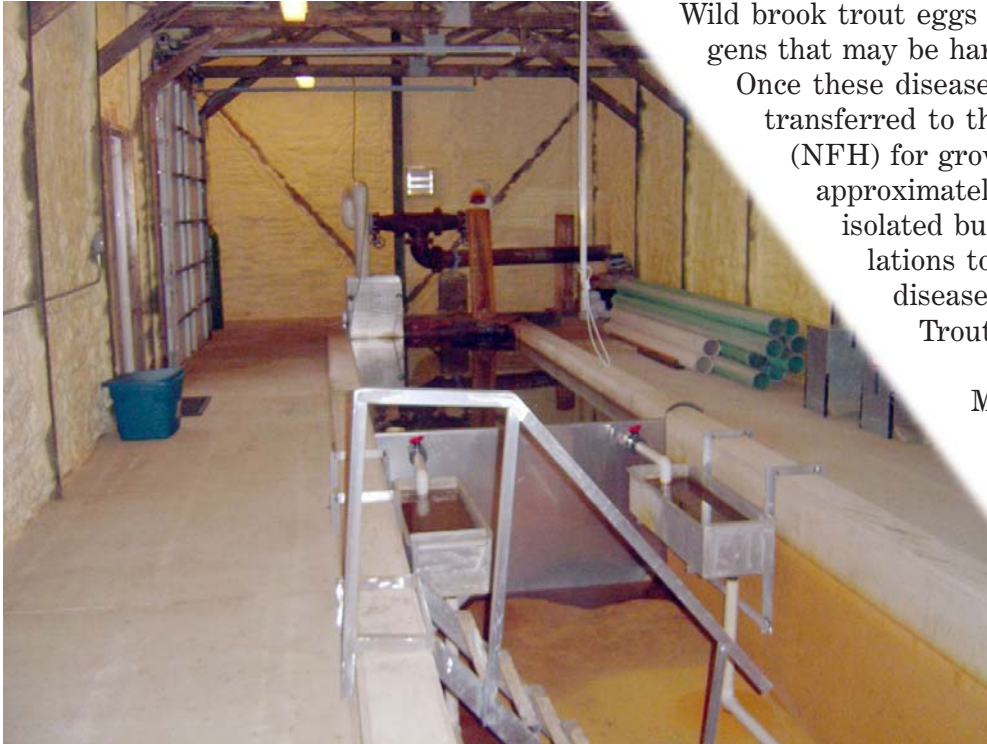
The incorporation of sterile-male-release into the Sea Lamprey Management Program has provided the GLFC with another tool in their effort to control Great Lakes sea lampreys. Greater reliance on mechanical control methods such as barriers and trapping, and biological control methods such as sterile-male-release gets the GLFC closer to their goal of reducing reliance on lampricides to control sea lampreys.

For further info about the Marquette Biological Station: <http://www.fws.gov/midwest/marquette/>

# Restoring Native Species to the Oneida Reservation

BY DOUG ALOISI, GENOA NFH

The cooperative efforts of state, federal and tribal natural resource agencies are being harnessed to bring back the native brook trout to its former home in Trout Creek on the Oneida Indian Reservation near Green Bay, Wisconsin. Tribal conservation agencies contacted the Green Bay National Fish and Wildlife Conservation Office to garner help in planning and carrying out this undertaking. After determining that a wild source of brook trout from inside the state would be the most desirable for restoration, the Wisconsin Department of Natural Resources was contacted before their annual wild trout egg collections.



-USFWS

**This new water treatment and isolation system will house wild brook trout eggs at Genoa National Fish Hatchery, to restore brook trout in Trout Creek on the Oneida Indian Reservation.**

the added benefit of increasing low oxygen levels from deep well systems, which allow fish to have a healthier environment during their hatchery stay. This should maximize the fish's health in preparation for its release into the wilds of Trout Creek. It is hoped that a number of different year classes may be stocked in the near future to increase the chances of a successful restoration effort.

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

Wild brook trout eggs were collected and tested for pathogens that may be harmful to both hatchery and wild trout. Once these disease samples clear, 2,000 eggs will be transferred to the Genoa National Fish Hatchery (NFH) for grow out to the spring fingerling size of approximately 2 inches. They will be held in an isolated building from other hatchery fish populations to safeguard hatchery populations from disease exposure, and then be stocked into Trout Creek.

Modifications were necessary to Genoa NFH's fish culture building to allow for the treatment of incoming deep aquifer well water to remove harmful levels of iron to the young fish. This was done by installing an oxygen contactor and allowing a settling basin to flocculate the iron before exposing the young trout's gills to the heavy metal. High iron levels, and especially unoxidized iron is extremely toxic to young life stages of trout and salmon. This iron remedial treatment also has

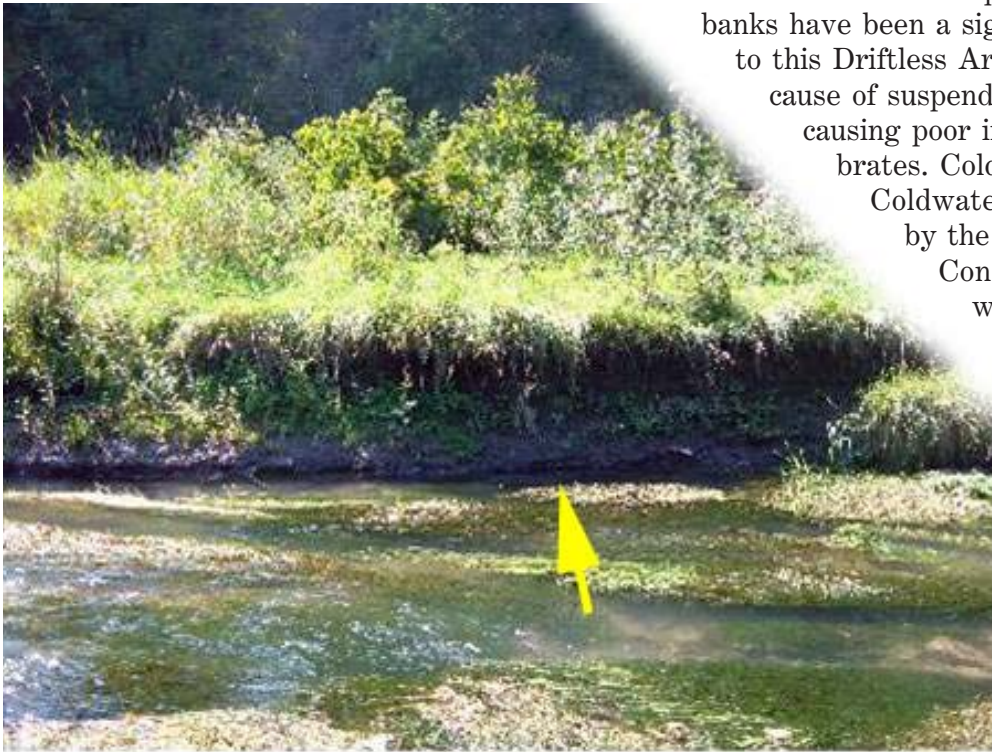


# Coldwater Creek, Iowa, Restoration and Enhancement Project



BY LOUISE MAULDIN, LA CROSSE NFWCO

Coldwater Creek is a headwater stream situated in the Upper Iowa River watershed of Winneshiek County, Iowa, and has been a valued trout fishery in northeast Iowa for many years. Coldwater is 1 of 25 priority streams identified by the Iowa Department of Natural Resources (DNR) that is in need of restoration and water quality improvement. Eroding stream banks have been a significant source of sediment delivery to this Driftless Area stream and have been the likely cause of suspended sediment in the water column causing poor in-stream habitat for fish and invertebrates. Coldwater Creek is part of the



-Northeast Iowa RC&D

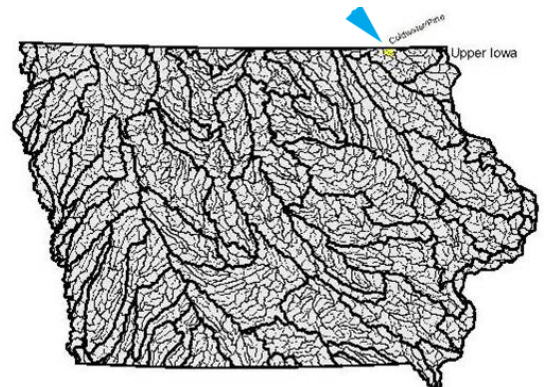
**This is one of three sections of eroding bank along Coldwater Creek (Iowa) that was re-sloped. Native vegetation was later planted in the riparian area to help stabilize the banks.**

practices within the watershed have included terraces, sediment control basins, grade stabilization structures, riparian corridor seeding, manure storage structures and implementation of grassed waterways. Efforts such as these have led to successful reductions in nutrient and sediment loads to portions of this popular stream.

Partially funded by the Fish and Wildlife Service's National Fish Habitat Action Plan Program, three sections of actively eroding bank were resloped and stabilized in the summer of 2008. Native prairie grasses and forbs were then planted in the riparian corridor to help stabilize banks, reduce surface runoff and provide some shade to the stream. Lunker structures and root wads were placed in-stream to enhance overhead cover and increase habitat diversity for brook and brown trout, slimy sculpin and several species of dace.

Local efforts by the SWCD, Iowa DNR, RC&D, NRCS, Upper River Watershed Alliance, Izaak Walton League and the Driftless Area Trout Unlimited chapter have made this project a great success. Strides will continue to be made in this focus watershed to improve water quality and stream habitat for fish, invertebrates and other aquatic communities.

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



## Joining Forces with the Hiawatha National Forest to Benefit Great Lakes Fisheries

BY JAMIE MASTERSON, PENDILLS CREEK NFH

Representatives from the Fish and Wildlife Service and the U.S. Forest Service signed a new Memorandum of Understanding (MOU)



-USFWS

**Hiawatha National Forest Supervisor Tom Schmidt (Lt.) and Assistant Regional Director for Fisheries Mike Weimer sign a Memorandum of Understanding which will protect and conserve the water supplies of the Pendills Creek and Sullivan Creek National Fish Hatcheries.**

between the Pendills Creek/Sullivan Creek National Fish Hatchery (NFH) Complex and the Hiawatha National Forest in a ceremony held at Sullivan Creek NFH on Dec. 2. Protection and conservation of water supplies located on Hiawatha Forest lands are utilized at both hatcheries and are of great importance since both hatcheries are an integral part of the Great Lakes lake trout rehabilitation efforts.

The MOU agreement signifies a solid partnership between the two agencies to protect and conserve these valuable water resources that are being used to rehabilitate native lake trout to the Great Lakes. Assistant Regional Director Mike Weimer for the Midwest Region Fisheries program and Hiawatha National Forest Supervisor Tom Schmidt ceremoniously signed the new MOU document. In all, about thirty guests witnessed the ceremony including Sheri Davie of Senator Stabenow's Office and Amy Berglund of Senator Levin's Office. Refreshments and hatchery tours were given on a cold, snowy evening in the Eastern Upper Peninsula of Michigan.

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.

For further info about the Pendills Creek NFH/Sullivan Creek NFH: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/pendills.pdf>

## Sea Lamprey Program highlighted for DOI Deputy Assistant Secretary for Water and Science

BY MICHAEL TWOHEY, MARQUETTE BIOLOGICAL STATION

The sea lamprey management program had the opportunity to brief the Department of Interior's Deputy Assistant for Water and Science Timothy Petty and the U.S. Geological Survey (USGS) Acting Regional Executive for the Midwest Area David Bornholt when they visited USGS's Hammond Bay Biological Station during a recent tour of USGS field stations. The visitors were briefed on the importance of sea lamprey control in the Great Lakes, program successes and challenges, new initiatives and the role of emerging science in the program. Roger Bergstedt, field station supervisor at the Hammond Bay Biological Station, hosted the briefing. The briefing was also attended by Michael Twohey from the Marquette Biological Station, Great Lakes Fishery Commission Communications Officer Mark Gaden, and Weiming Li, a sea lamprey pheromone researcher from Michigan State University.

Bergstedt covered the history of sea lampreys, the importance of their control in shaping Great Lakes fisheries and the role of the USGS in current research. Gaden briefed them on the role of the Great Lakes Fishery Commission in conducting sea lamprey control and in facilitating multi-agency fishery management in the Great Lakes. Li provided an informative briefing on exciting new discoveries of sea lamprey pheromones and current efforts to map the sea lamprey genome. Twohey then provided a tour of the sea lamprey sterilization facility which is located at the Hammond Bay Biological Station but operated by the Fish and Wildlife Service, and discussed the Fish and Wildlife Service's role in sea lamprey management, particularly those strategies that use alternatives to lampricides.

For further info about the Marquette Biological Station: <http://www.fws.gov/midwest/marquette/>

## Genoa NFH provides Largemouth Bass to Wisconsin

BY JENNY WALKER BAILEY, GENOA NFH

In recent years, emerging fish diseases such as Viral Hemorrhagic Septicemia (VHS), Spring Viremia of Carp Virus (SVCV), Bluegill Virus (BGV) and Largemouth Bass Virus (LMBV) have changed the way fish hatcheries operate in most of North America. In 2007, the states of Wisconsin and Michigan suspended some fisheries operations due to occurrences of fish diseases in state and adjacent waters. Even the threat of fish stocks becoming infected with these viruses may shut down operations because of the potential to spread new fish diseases to uninfected waters. For propagation programs that have traditionally depended on wild fish as a source for eggs and genetics, an uninfected source of eggs may be nearly impossible to find.

Until recently, the Black River Falls Fish Propagation and Rearing Station collected wild largemouth and smallmouth bass to use as brood stock for their propagation programs. Offspring from these fish were stocked into Wisconsin waters yearly and provided all largemouth and smallmouth bass for the Wisconsin Department of Natural Resources (DNR) propagation programs. The occurrence of VHS within Wisconsin and Lake Michigan has eliminated use of wild fish as a source of eggs for these programs.

Genoa National Fish Hatchery (NFH) has developed a captive brood line of largemouth and smallmouth bass from disease-free wild stocks starting in 2004, when LMBV was discovered in the upper Mississippi River. These brood lines are isolated from wild fish and receive health inspections twice yearly to ensure their disease-free status. Today, Genoa NFH produces over 120,000 certified disease-free largemouth and smallmouth bass and also bluegill fingerlings annually from this captive brood line for recreational and sport fishing enhancement programs in the Midwest Region. Partnering with Wisconsin DNR to enhance recreational and sport fish species, as well as threatened and endangered species has been a long-standing tradition at Genoa NFH. Currently, the two entities partner to recover endan-

gered mussel species, threatened lake sturgeon populations, and enhance sport fishing species such as yellow perch, largemouth and smallmouth bass, and black crappie. This year, Genoa NFH was able to help the Wisconsin DNR develop their own captive brood stock at Black River Falls Fish Propagation and Rearing Station by providing 150 disease-free (9 inch) largemouth bass for their program. Like Genoa NFH, the Black River Station plans to develop a certified disease-free stock of brood stock for stocking programs in the state.



-USFWS

**The bass raised at the Genoa National Fish Hatchery must receive a health inspection prior to transfer.**

Maintaining captive brood stock populations will help to ensure that fish stockings in the State of Wisconsin do not spread diseases such as BGV and LMBV. Sharing management methods and stocks between hatcheries is another way the Fish and Wildlife Service and the Wisconsin DNR hope to control the spread of fish diseases in order to protect the health of fisheries while maintaining recovery and sport fish stocking programs.

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

## Fall Fishery use in Mississippi River Pool 9

BY HEIDI KEULER, LA CROSSE NFWCO

It's not every day that the La Crosse National Fish and Wildlife Conservation Office (NFWCO) receives a request from the Wisconsin Department of Natural Resources (DNR) to assist with a study on the Upper Mississippi River National Wildlife and Fish Refuge (NW&FR); so Louise Mauldin, Heidi Keuler and volunteer Jeff Saxton jumped at the chance to help out. The fall bird migration was at its peak with millions of ducks, coots, swans, pelicans and bald eagles watching the busy biologists. Weather conditions couldn't



-USFWS

**Preliminary studies show that few fish utilize the open water portion of Pool 9 of the Upper Mississippi River during early November, probably due to the lack of diverse habitat.**

years, although La Crosse NFWCO has only assisted in 2008.

Jeff Janvrin of the Wisconsin DNR says that preliminary results show there are relatively few fish utilizing the open water portion of Pool 9 during early November. This is possibly due to the lack of suitable habitat; however, the total number of fish increases in areas where structure such as islands exist, with the greatest diversity and numbers of fish found in the backwater areas near Lansing, Iowa. These areas have a diversity of habitats (backwater lakes, islands and channels) compared to the relatively homogeneous habitat found in the open water area of pool 9. These results are not too surprising for biologists, but data is needed for pre- and post-project assessment, planning, and to show the impact HREPS have on the fishery.

The La Crosse NFWCO hopes to work with the Wisconsin DNR and Iowa DNR as well as the Upper Mississippi River NW&FR in the future on these projects, especially if the fall migration is on and it feels like summer in November!

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

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.

have been more perfect for the first week of November. It was sunny and a balmy 24°C (75°F) - more like a nice summer day than late fall. This warm weather combined with ultimate waterfowl viewing was one of the most amazing electrofishing surveys ever in lower Pool 9 near Lynxville, Wisconsin. Lynxville is just one of the towns located in the study area from Lansing, Iowa, to Lock and Dam 9.

Wisconsin DNR, in cooperation with the Iowa DNR and La Crosse NFWCO, are documenting late fall fishery use in a portion of Pool 9 where three different Upper Mississippi River Environmental Management Program (EMP) Habitat Rehabilitation and Enhancement Projects (HREPs) are being planned (Capoli Slough, Harper's Slough Islands and Winneshiek Islands). The area also includes portions of three HREPs that have been completed (Pool 9 Islands, Cold Springs and Bank Stabilization). The data collected within boundaries of completed projects are being used for both post project assessment and as a control area for the projects being planned.

Wisconsin DNR, Iowa DNR and La Crosse NFWCO used electrofishing gear to sample 80 random sites and 20 fixed stations when main channel water temperatures were at or below 10°C (50°F) - typically the 1st week of November. Sampling has been done for the past two

## Genoa NFH sets the Mood for Smallmouth Bass Spawning

BY JAMES LUOMA, GENOA NFH

The Genoa National Fish Hatchery (NFH) was created by the Upper Mississippi River Wildlife and Fish Act of 1924. It is one of 69 Federal hatcheries managed by the Fish and Wildlife Service, and it is located along the banks of the Mississippi and Bad Axe rivers. Genoa NFH is one of the most diverse hatcheries in the National Fish Hatchery System, producing cold, cool and warm water fish as well as native mussels for Federal, state and tribal conservation, restoration, and recreational needs. To ensure that only top quality, disease free fish are produced for these needs, it is imperative that the hatchery



-USFWS

Genoa National Fish Hatchery maintenance worker Jeff Lockington relines a spawning pond with gravel to provide a suitable habitat for the spawning and harvesting of the smallmouth bass.

maintains captive brood stocks for several fish species. Species for which brood stock are held and spawned in hatchery ponds include large and smallmouth bass, yellow perch, bluegill, black crappies and fathead minnows. Genoa NFH annually dedicates most of its nineteen ponds for the over-wintering, spawning and fingerling grow-out of these fish species as well as producing hundreds of gallons of fathead minnows to feed the hungry brood stock throughout the year.

Accumulations of weeds and sediment over time can deteriorate the rearing conditions in the ponds, which can greatly reduce fish production and harvesting. Genoa NFH currently uses two 0.5 acre ponds for spawning smallmouth bass brood stock. These ponds had significant accumulations of aquatic vegetation, sediments and sub-par spawning environments for the smallmouth bass brood stock until the recent transformation by the hatchery. Maintenance worker Jeff Lockington set the mood for the 2009 spring spawn by removing nearly 300 cubic yards of accumulated vegetation and sediment and then relining the bottom of the ponds with crushed rock to provide a suitable habitat for the spawning and harvesting of the smallmouth bass. Lockington again proved his superior equipment operator skills by using the hatchery's skid loader to remove the debris and to spread the new rock, all while maintaining the ponds proper slope to the drain structure. With the newly lined ponds, the hatchery biologists anticipate an improved brood stock spawn and greater ease to capture the newly hatched fish for enumeration and transfer to grow out ponds.

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

## Fall Inspections at National Fish Hatcheries

BY COREY PUZACH, LA CROSSE FHC

The La Crosse Fish Health Center (FHC) completed annual fall inspections at the Sullivan Creek National Fish Hatchery (NFH), Iron River NFH and Neosho NFH. The purpose of the inspections are to screen for any harmful pathogens. Each group of fish (lot) was screened for certifiable pathogens. A kidney swab on TSA media was taken to screen for the bacterial pathogens (*Aeromonas salmonicida*) and (*Yersinia ruckeri*). A second kidney

sample was taken to be screened for (*Renibacterium salmoninarum*), the causative agent of Bacterial Kidney Disease. Kidney and spleen samples were collected and screened for viruses such as Infectious Pancreatic Necrosis virus (IPNV), Oncorhynchus Masou Virus (OMV), Viral Hemorrhagic Septicemia virus (VHSV) and Infectious Hematopoietic Necrosis virus (IHNV). The fish were also screened for the parasite (*Myxobolus cerebralis*), or Whirling Disease.

On August 5th and 6th, Julie Teskie and Corey Puzach completed the inspection at Sullivan Creek NFH and Pendills Creek NFH. Ten lots were sampled at Sullivan's Creek NFH and 4 lots were sampled from Pendills Creek NFH. A total of 215 fish were sampled from each hatchery. These inspections ensure fish are free of serious pathogens prior to stocking and also are necessary to monitor the health of brood stocks. The water supplies for each hatchery was also inspected for certifiable pathogens. Hatchery staff used electrofishing units to collect fish from Sullivan's Creek and Videan's Creek. It is important to monitor health of fish in water supplies because they may harbor pathogens that could potentially be transmitted to hatchery stocks.



-USFWS/Corey Puzach

**Julie Teskie takes samples during the inspection at the Pendills Creek National Fish Hatchery.**

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

## Keep Them Coming!

BY JAIME PACHECO, NEOSHO NFH

**F**ive more adult brood stock pallid sturgeons were brought to the Neosho National Fish Hatchery (NFH) by the Missouri Department of Conservation and Columbia National Fish and Wildlife Conservation Office. These additional fish bring our wild-caught sturgeon numbers to a total of 11 adults that can potentially be used for spawning this year. The pallid sturgeon will be held at Neosho NFH until tested for sexual maturity and genetic viability this coming spring.

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

The fall inspection at Iron River NFH occurred on August 10 and 11. Tissue samples were collected from coaster brook trout fingerlings (2 lots), coaster brook trout brood stock (3 lots), lake trout fingerlings (3 lots), and lake trout brood stock (5 lots). No fish pathogens were detected in the samples collected. Tissue samples for fish pathogen screening were also taken from 58 brook trout and 45 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 hatchery. None of the fish pathogens screened for were detected in Schacte Creek Fish.

Ken Phillips conducted the fish health inspection at Neosho NFH, observing the conditions at the hatchery and collecting tissue samples to screen for fish pathogens. Biologist Melissa Cheung of the Neosho NFH assisted Ken Phillips with tissue sample collection during the inspection. Tissue samples were collected from four (4) lots of rainbow trout reared at the hatchery.

Lake trout reared at the Pendills Creek and Iron River NFH's 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 reared at Iron River NFH are stocked into Lake Superior waters as part of the Fish and Wildlife Service's efforts to restore this anadromous strain of brook trout. Rainbow trout reared at Neosho NFH are primarily stocked into Lake Taneycomo in southwest Missouri as mandated mitigation.

Neosho NFH staff is very hopeful that these fish will provide us with enough eggs to allow us to operate at an estimated capacity of 20,000 (9 inch) fish. With absolute honesty, another 11 reproductive adults would be great, and we look forward to working with the members of the Middle Basin Pallid Sturgeon Recovery Work Group to maximize our production goals.

## Boat Hulls Inspected for Invasive Mussels and Snails

BY GARY CZYPINSKI, ASHLAND NFWCO

Under the guidance of the Ashland National Fish and Wildlife Conservation Office (NFWCO), Jeremy Bates, a student at the University of Wisconsin (UWS)-Superior and a Wisconsin Sea Grant volunteer, inspected a total of 16 boat hulls as the vessels were being lifted from Wisconsin waters of Lake Superior for winter dry dock. The vessels spanned six marinas from Bayfield to Port Wing, Wisconsin, at a distance of 36 miles. Unidentified snails were collected from three vessels, and



**Zebra mussels attached to freshwater snails.**

identification of the snails is pending. In addition, the managers of the marinas of Ashland and Washburn, Wisconsin, reported that no mussels or snails were observed on over 30 vessels lifted at their marinas. Typically, Lake Superior does not contain sufficient calcium content for zebra and quagga mussels to become established; however, with the discovery of two zebra mussels in the mouth of the Amnicon River, Wisconsin, in 2007 and increased warming of Lake Superior waters, the Ashland NFWCO initiated a limited mussel and snail surveillance in Wisconsin waters of Lake Superior. The Amnicon River is a Lake Superior tributary (10 miles east of the Duluth-Superior Harbor), and is the only location in Lake Superior where zebra mussels are established. Dr. Mary Balcer (director of biological research at UWS) expressed concern that higher temperatures in Lake Superior for longer periods of time may help invasive mussels to survive longer. This observation coupled with private vessel traffic between Ashland, Wisconsin, and the Duluth-Superior Harbor has also stimulated renewed interest in invasive mussel and snail monitoring by the Ashland NFWCO.

For further info about the Ashland NFWCO: <http://www.fws.gov/midwest/ashland/>

### Aquatic Invasive Species

Aquatic invasive species are one of the most significant threats to fish and wildlife and their habitats. Local and regional economies are severely affected with control costs exceeding \$123 billion annually. The Fisheries Program has focused its efforts on preventing introductions of new aquatic invasive species, detecting and monitoring new and established invasives, controlling established invasives, providing coordination and technical assistance to organizations that respond to invasive species problems, and developing comprehensive, integrated plans to fight aquatic invasive species.

## 2008 Open House

BY CAREY EDWARDS, IRON RIVER NFH

The Iron River National Fish Hatchery (NFH) hosted its fourth annual Open House on August 9th, 2008. This year's event brought in over 100 visitors. While the event draws quite a contingent of locals, visitors from Florida to Arizona and as far away as Germany were in attendance. Guests were able to view the entire facility, with knowledgeable staff on hand to give tours and demonstrations and to answer any questions on hatchery practices and the life cycle of lake trout and brook trout. Feature displays included a 10 gallon aquarium with lake trout fingerlings, a tub of anesthetized adult lake trout and brook trout for up-close-and-



-USFWS

**Kurt Schilling explains about the fish egg incubation process to visitors during Iron River National Fish Hatchery's annual open house.**

Tim Smigielski (and son Luke) from Jordan River NFH, Darla Wenger (and husband Paul) from Genoa NFH and Becky Lasee and Ken Phillips from the La Crosse Fish Health Center. Each group had informative booths, hands-on displays, pamphlets and souvenirs. Guests could learn about mussels, invasive species, fish health processes as well as the operations at NFH's.

This year's open house utilized old alliances but the creation of a new partnership is underway. Stopping by the open house this year was Northwest Passage, an outreach group for young men. Dialogue is underway to develop a work unit for small maintenance projects on hatchery grounds. Next year's open house planning is in progress with hopes for new collaborations and partnerships to add to the agenda and to round out another successful event.

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

## Local Artist restores that Beloved Trout Statue

BY MELISSA CHEUNG, NEOSHO NFH

Local painter Bob Gofourth knows a little bit about the Neosho National Fish Hatchery (NFH). In fact, he and his sister, a local mural artist, grew up three blocks from the hatchery where their 87 year old mother still resides. Over the last 20 years, he has returned to restore and repaint our rainbow trout statues three times.

The fish statue is a local celebrity in its own right. It has been the center point of many photos with hatchery visitors, and children seem to gravitate toward it. The fish has become a trademark of our hatchery, and we are very fortunate to have volunteers like Bob using his talents to keep the statue in top-notch condition.

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

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.

personal viewing, and a fin-clipping/fish tagging station. Also on hand for viewing were egg incubation equipment, a fish loader and fish distribution trucks. When it was all said and done, tourists could enjoy lemonade, coffee and cookies and chew on all that they had learned during the day's events.

Partnerships are the cornerstone to any successful operation and the Iron River NFH Open House is no exception. Joining the Iron River staff this year was



## Rydell NWR Walleye Harvest

BY DAVE WEDAN, LA CROSSE NFWCO

Clifford Lake, Rydell National Wildlife Refuge (NWR), provided another successful walleye fingerling year-class for the Fish and Wildlife Service and Minnesota Department of Natural Resources (DNR), yielding 53,882 fish for stocking in tribal and state lakes!

The annual Clifford Lake walleye rearing program at Rydell NWR is a shining example of success achieved through inter-agency cooperation. Minnesota DNR hatchery personnel provide newly-hatched walleye fry each spring for the Genoa National Fish Hatchery (NFH) crews to stock in one of the ideal natural rearing lakes at Rydell. These fry grow naturally in Clifford Lake, but before they are netted and relocated to other Federal, state and tribal waters, they are checked and certified "clean" for certain viruses and diseases by the La Crosse Fish Health Center.

In October, a Fish and Wildlife Service netting and distribution effort for fish produced in Clifford Lake filled Red Lake and White Earth tribal stocking requests, and was conducted by a crew consisting of Dan Kumlin and Jeff Lockington from Genoa NFH, and Dave Wedan from the La Crosse National Fish and Wildlife Conservation Office (NFWCO). Much appreciated and critical support and assistance was provided by Rydell NWR manager Dave Bennett and staff members Bob Hiltner, Juancarlos Giese, Pat Wagner, Jay Ciucci and Rydell Friends Group volunteers Skip Morris and Doug Bratrud. Technician Kristin Fritz from Agassiz NWR also assisted the netting and distribution crews, gaining valuable fisheries experience. The complete harvest netted a total of 36,100 fingerling walleye.

Minnesota DNR fishery crews continued netting operations and successfully removed and stocked another 17,782 walleyes into state-managed lakes - one of which was Maple Lake which is located adjacent to Rydell NWR and is a very popular destination for local fishermen. Thanks to all who contributed to the success of the Rydell NWR walleye rearing and distribution program for 2008!

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

## Another Edition of the MTAN is now on the WEB

BY FRANK STONE, ASHLAND NFWCO

The Ashland National Fish and Wildlife Conservation Office (NFWCO) has the unique distinction of providing technical assistance for the development of numerous tribal fish hatchery programs. One of the ways we contribute is by publishing a quarterly newsletter. The Midwest Tribal Aquaculture Network (MTAN) is dedicated to assisting tribal hatchery programs through the sharing of cool/cold water fish culture information. The most recent addition of the MTAN (Volume 66) has just been completed and is now available on the Internet at [http://www.fws.gov/midwest/ashland/mtan\\_65.html](http://www.fws.gov/midwest/ashland/mtan_65.html). This quarter's newsletter contains the following articles: *Aquatic Animal Drug Approval Partnership Program*, *Replacing Traditional Sturgeon Diets with Commercially Formulated Diets*, *Question for the Tribal Aquaculture Programs in the Midwest Region*, *NADF Walleye Project for 2007* and *Evaluation of Brook Trout Culture in a Water Recirculating System*.

The objective of the MTAN is to provide current information that will help tribal aquaculture programs promote their specific resource needs. Often these needs will be equipment oriented, step-by-step procedural questions or perhaps just the need to contact another facility to ask how they would solve a particular problem. The MTAN hopes its readers will use this resource to better understand the hatchery operations taking place in this area and to provide contact information to help solve any fish rearing questions that may arise.

The MTAN has been assisting tribal fish hatchery programs for the past 17 years. The MTAN has also helped to educate fish hatchery workers and direct them to other areas so they can better research their specific needs.

Previous issues of the MTAN newsletters are accessible from the Ashland NFWCO web page. Readers can access this information by pointing their web browsers to: <http://midwest.fws.gov/ashland/mtanhome.html>.

For further info about the Ashland NFWCO: <http://www.fws.gov/midwest/ashland/>

Conserving this Nation's fish and other aquatic resources cannot be successful without the partnership of Tribes; they manage or influence some of the most important aquatic habitats both on and off reservations. In addition, the Federal government and the Service have distinct and unique obligations toward Tribes based on trust responsibility, treaty provisions, and statutory mandates. The Fisheries Program plays an important role in providing help and support to Tribes as they exercise their sovereignty in the management of their fish and wildlife resources on more than 55 million acres of Federal Indian trust land and in treaty reserved areas.

## Photo-Manipulation Tanks

BY CAREY EDWARDS, IRON RIVER NFH

The Iron River National Fish Hatchery (NFH) produces 1,600,000 lake trout and 315,000 brook trout for stocking into the Great Lakes each year. This happens in part due to the 4,000 coaster brook trout and 3,000 lake trout brood stock housed on-site. At the hatchery, there are two strains of lake trout and two strains of coaster brook trout. The brook trout strains are from populations found in the wild around Isle Royale, an island in Michigan waters of Lake Superior, namely Tobin Harbor and Siscowet Bay strains. Every two to three years, biologists from the Ashland National Fish and Wildlife Conservation Office, Genoa NFH and Iron River NFH set out to collect gametes from the wild population, and this year the target strain was Tobin Harbor. If all goes as planned, 15 sexually mature females and 30 males are collected and held until ready to spawn - eggs are collected, divided and fertilized to make 30 different family pairs and then transported by ferry back to the mainland for transport to Genoa NFH for isolation. Of course, it rarely goes as planned. Sometimes the fish, and/or the weather, does not cooperate and all that hard work doesn't pay off. Usually when troubles occur with fish collection in the wild, it is due to not collecting enough mature/ripe females to make a new brood stock. Every best laid plan needs a back-up, which is where the creative thinking of the Iron River NFH staff came in. In the event that not enough females were collected on Isle Royale, milt (fish sperm), which is viable for up to a week after collected, was to be transported to the Iron River NFH to fertilize Tobin Harbor brood stock eggs at the hatchery - this process ensures that wild genetics from the wild male fish is still incorporated into the brood stock.

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

Wild fish found in Tobin Harbor spawn in mid-October but at the Iron River NFH,

they spawn in mid-November (two key factors that trigger spawning in fish are photoperiod and water temperature). Hatchery staff acquired two surplus round tanks from Genoa NFH, outfitted each with a light-tight lid and revamped them to accommodate 15 females each. Biologists calculated the difference in day length from the month of October (wild spawning) to November (hatchery spawning) and started to accelerate the photoperiod of the fish. This was done over a six week period by closing the light-tight lids on the tanks and increasing the amount of darkness week by week. By mid-October, the goal was to convince the fish that it was mid-November and time to spawn, coinciding with the wild population. The photo-acceleration was a success and the females matured in October; however, the crew on Isle Royale was able to capture the prescribed number of wild females and males and created 30 brood families and transported them to the mainland for transfer to Genoa NFH.

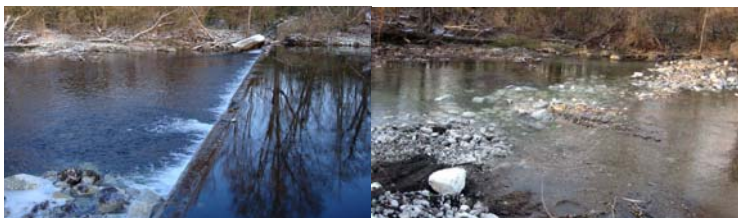
Once at Genoa, the eggs will hatch, and the fish will be held in isolation for 18 months. During the 18 month period, the fish will be tested for diseases three times until a clean bill of health is achieved before they can be transported to the Iron River NFH. Stay tuned to find out the outcome of what has been a very successful venture.

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.

## Fish Passage is restored on Forked Creek, Illinois

BY NATE CASWELL, CARTERVILLE NFWCO

Leonard's Dam is located in Wilmington, Illinois, on Forked Creek which is less than a half mile above its confluence with the Kankakee River. Built in the early half of the 20th century, in a time when our collective consciousness was just beginning to turn toward thoughts of conservation, the dam isolated the entire Forked Creek watershed. Nearly 100 miles of stream habitat was disconnected from the Kankakee River, a vital source of mussel and fish recruitment. Unlike many old dams, such as mill dams that once served vital roles, Leonard's Dam was built strictly for private recreational purposes. The dam was built by Art Leonard, a wealthy resident of Wilmington. According to Bud Lombardi, one of the landowners involved in this project, Mr. Leonard wanted his daughter to have a place to paddle her canoe, so he built the dam to create a small impoundment. Another version of the story is that he built the dam to enhance the beauty of Mrs. Leonard's gardens. Whatever the reason for building the dam, the end result was decades of habitat fragmentation for Forked Creek.



*-USFWS/NateCaswell*      *-BioTechnical Erosion Control/RandyStowe*  
**Leonard's Dam on Forked Creek in Wilmington, Illinois, before fish passage (Lt.) and after fish passage improvements (Rt.).**

Like many areas surrounding urban centers, the population in once-rural portions of Will County in northeastern Illinois is rapidly expanding. As development accelerates, local watersheds are subjected to ever-increasing pressures that lead to water quality and habitat degradation. Prairie Streams, a community based watershed initiative, was formed in 2002 to work on behalf of Forked Creek and other watersheds in this area. Working closely with Openlands (a non-profit organization seeking to preserve open spaces in northeastern Illinois) and the Illinois Department of Natural Resources (DNR), Prairie Streams developed a Watershed Plan that identified fish passage as a top priority. The group assessed restoration opportunities in the four watersheds and identified removal of Leonard's Dam as one of the

Loss and alteration of aquatic habitats are principal factors in the decline of native fish and other aquatic resources and the loss of biodiversity. Seventy percent of the Nation's rivers have altered flows, and 50 percent of waterways fail to meet minimum biological criteria.

projects that would have the greatest benefit to Forked Creek.

In 2005, Prairie Streams, Illinois DNR and Openlands approached the Village of Wilmington about removing the dam, and the Village supported the project. An evaluation of the possible alternatives resulted in partial removal of the dam being the preferred option. In 2006, Steve Pescitelli with the Illinois DNR contacted the Carterville National Fish and Wildlife Conservation Office (NFWCO) to discuss removal of Leonard's Dam, and we submitted a proposal to the Fish and Wildlife Service's National Fish Passage Program. The Fish and Wildlife Service was able to contribute more than \$55,000 to the project, while cash and in-kind contributions from Openlands, the Illinois DNR and the Village of Wilmington totaled more than \$33,000. Of course, no project would be complete without a few speed bumps along the way. After a bit of wrangling with land ownership, historic preservation, and permitting issues, the project was finally ready to get underway in December 2008.

The contractor prepared the site on December 1, and began breaking up the dam the following day. Once the dam was breached, it took only a few hours for the impoundment to drain completely. Even before the project was complete, two riffles above the dam were exposed, giving the stream a more natural appearance. The dam was lowered 2-3 feet, and the concrete rubble was used to partially fill the scour hole that was present at the base of the dam. Additional rock was then added to finish filling the hole and reinforce the dam abutments which had been left in place. As the new stones accumulate biological material in the coming years, we anticipate that the site will take on the appearance of a more natural rock riffle. The project was completed on December 3, and additional adjustments and access site re-seeding will take place in the spring.

Based on a 2004 fishery survey of Forked Creek, at least eight native fishes occurred only downstream of Leonard's Dam. These included species such as channel catfish and shorthead redhorse, which are good indicators of the presence of barriers in the streams of northeastern Illinois. In an open stream

system, we would expect to find these species throughout the watershed, at least during certain times of the year; however, they are typically not found above the first barrier in streams that are blocked by dams. This project restored a permanent connection between the Kankakee River and 93 stream miles of the Forked Creek watershed for the first time in more than half a century. We anticipate

that this project will help restore the original distribution of previously excluded fish species. In addition, Forked Creek is home to 13 mussels that may benefit from restored stream access for host species. Our hope is that this project will help to insure the long-term viability of the biological communities in the Forked Creek watershed.

For further info about the Carterville NFWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/carterville.pdf>

## BRW #391 Road Crossing Fish Passage Restoration and Project Monitoring

BY GLENN MILLER, ASHLAND NFWCO

**M**ultiple partners in northern Wisconsin worked together to restore fish passage at Bad River Watershed Culvert #391 on a tributary to 18 Mile Creek at South Sweden Road in Bayfield County, Wisconsin. The culvert located within the Bad River Watershed was both perched and a velocity barrier to brook trout and



-USFWS

(Lt. to Rt.) Glenn Miller, Pam Dryer and Michele Wheeler monitor the effectiveness of a fish passage restoration project at Bad River Watershed Culvert #391 on a tributary to 18 Mile Creek at South Sweden Road in Bayfield County, Wisconsin.

Several factors at this site including delays in construction which added an extra month and a half between surveys most likely contributed to the lower percentage of recaptures. Overall, the project is a great success with confirmed successful fish passage. The Ashland NFWCO and the BRWA conducted the monitoring and plan to do more of this type of evaluation on future habitat restoration projects.

For further info about the Ashland NFWCO: <http://www.fws.gov/midwest/ashland/>

other fish. The Bad River watershed is a high priority for restoration and evaluation by the area's private organizations, government agencies and the Bad River Band of Lake Superior Chippewa. The Ashland National Fish and Wildlife Conservation Office (NFWCO) and the Bad River Watershed Association (BRWA) are evaluating the status and compiling an inventory of nearly 1,100 road crossings in the watershed. This provides a strategic approach to habitat restoration within this large and complex system.

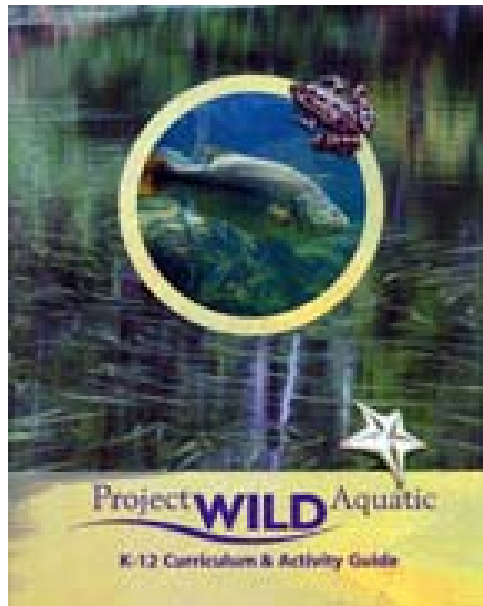
The Town of Grandview, BRWA, Bayfield County Land and Water Conservation Department, Wisconsin Department of Natural Resources and the Fish and Wildlife Service partnered to install and embed a 4 foot high and 5 foot high pipe arch culvert at the road crossing and restore fish passage to 2.5 miles of cold water habitat above the former barrier. The restoration of this site now provides access to miles of new spawning habitat to brook trout that lived below the old culvert.

Monitoring the effectiveness of the restoration was also an important part of this project. A mark and recapture study was carried out in order to assess the newly installed culverts ability to pass fish. Trout from above the barrier were collected and marked prior to installation. Upon completion of construction, the site was electrofished above the barrier and 10% of the originally marked fish were recaptured. This was a lower percentage recaptured when compared to results of some other fish passage monitoring efforts, but still considered satisfactory.

## Federal, State and Public Individuals from Four States “Hook Up” for Training

BY HEIDI KEULER, LA CROSSE NFWCO

Just about all of you have heard about national outreach programs for children called, *Children and Nature*, *No Child Left Inside*, *Hooked On Fishing Not On Drugs* (HOFNOD) and *Take Me Fishing*. Because there



is such a need to get children outside and away from video games and computer screens, both Federal and state employees in the natural resources field are going through training to facilitate fun activities for children in their hometowns. Jeff Janvrin from the Wisconsin Department of Natural Resources (DNR) is a facilitator with the national HOFNOD and with three other successful Wisconsin programs called *Project Learning Tree*, *Project Wet* and *Project Wild*. Jeff led a Project Wet/Wild and Angler Education workshop in 2008 for Fish and Wildlife Service employees, volunteers and Friends Group members. The training workshop included topics such as conducting fishing clinics, age-group activities and lessons that meet state educational standards, environmental ethics and conservation, resources available to instructors, etc. Trainees received hands-on training and four large guide books to use for outreach with children (K-12). Twenty people attended the workshops from Iowa, Minnesota, Missouri and Wisconsin.

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.

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

## Fish and Wildlife Service Office shares Mussel Conservation Expertise

BY TONY BRADY, GENOA NFH

Over the past seven years, Genoa National Fish Hatchery (NFH) has built the infrastructure and support programs to become one of the nations largest freshwater mussel culture facilities. Due to the recent advances in mussel propagation at the station, state agencies and other Fish and Wildlife Service Offices have contacted Genoa for consultations and demonstrations of mussel culture techniques. Due to this information exchange, mussel cage culture techniques are now being used as far east as West Virginia for mussel restoration on the Ohio River.

Recently, Genoa also hosted biologist Melissa Cheung from the Neosho NFH for a detail so that she could learn more about propagating and culturing freshwater mussels. As Neosho NFH prepares to begin a mussel culture program of its own, manager Dave Hendrix stated that, “There is no need to re-invent the wheel,” meaning that his staff can learn from the trials and errors that Genoa NFH has

already experienced. During this detail, Melissa saw what a gravid mussel looks like, harvest larval mussels called glochidia, introduce the parasitic glochidia to its required host fish and looked at newly transformed mussels recently excysting off their fish host. Melissa also gathered information about where to look for additional information about mussel culture and locations to purchase specialized equipment that Genoa NFH has adapted into their mussel program.

This information exchange between hatcheries is the most recent of many that have taken place over the years. Genoa and Neosho have long histories of working together since many managers and biologists are assigned to multiple facilities through their career development. It is hoped that this transfer of knowledge will enable Neosho NFH to quickly establish a successful mussel program giving Region 3 two mussel conservation hatcheries in which to meet the Fish and Wildlife Service’s mission.

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

## Fish Spawning Successful Due to the Help of Many

BY KURT SCHILLING, IRON RIVER NFH

Iron River NFH spawns thousands of lake trout and coaster brook trout annually. Each year, the hatchery solicits employees from within and outside of the Fish and Wildlife Service to help complete this important task. Fish and Wildlife Service employees are “detailed” to the hatchery to work side-by-side with hatchery biologists. Non-Fish and Wildlife Service workers are signed up as volunteers and given an opportunity to learn what fish spawning is all about.

This year, Iron River staff worked with 29 individuals. This included 14 students from Northland College, four National Wildlife Refuge employees, nine Regional Office employees, five Fisheries employees, one worker from the 1834 Treaty Authority and one individual from the general public.

With all of the help, a total of 1,059 female lake trout and 1,285 female coaster brook trout were spawned yielding an estimated 3.7 million green lake trout and 1.9 million green coaster brook trout eggs. The eggs were incubated at the Iron River NFH or shipped to other hatcheries to start a new rearing cycle of production fish.

Iron River NFH welcomed back several workers who participated in previous years spawning activities, and developed many new relationships. All of the temporary crew worked together to complete a very successful spawning season. We appreciated all the help, and we look forward to next fall when the next group of folks arrive to help spawn fish.



-USFWS photos

**This year, Iron River National Fish Hatchery recruited 29 individuals to assist with the annual spawning activities. Assistance was received from the following: Northland College, National Wildlife Refuge System, Regional Office, other Fisheries stations, 1834 Treaty Authority and the general public.**

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

# Congressional Actions

Current Congress Only — 111th Congress (2009-10)

S. 22 (es) To designate certain land as components of the National Wilderness Preservation System, to authorize certain programs and activities in the Department of the Interior and the Department of Agriculture, and for other purposes. [Engrossed in Senate]

S. 22 (pcs) To designate certain land as components of the National Wilderness Preservation System, to authorize certain programs and activities in the Department of the Interior and the Department of Agriculture, and for other purposes. [Placed on Calendar Senate]

H.Con.Res. 2 (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]

H.R. 372 (ih) To authorize implementation of the San Joaquin River Restoration Settlement, and for other purposes. [Introduced in House]

S. 161 (is) To authorize implementation of the San Joaquin River Restoration Settlement, and for other purposes. [Introduced in Senate]

H.R. 51 (ih) To direct the Director of the United States Fish and Wildlife Service to conduct a study of the feasibility of a variety of approaches to eradicating Asian carp from the Great Lakes and their tributary and connecting waters. [Introduced in House]

S. 40 (is) A bill to designate Fossil Creek, a tributary of the Verde River in the State of Arizona, as a component of the National Wild and Scenic Rivers System. [Introduced in Senate]

H.R. 192 (ih) To authorize various land conveyances involving National Forest System [Introduced in House]

S. 140 (is) To modify the requirements applicable to locatable minerals on public domain lands, consistent with the principles of self-initiation of mining claims, and for other purposes. [Introduced in Senate]

H.R. 80 (ih) To amend the Lacey Act Amendments of 1981 to treat nonhuman primates as prohibited wildlife species under that Act, to make corrections in the provisions relating to captive wildlife offenses under that Act, and for other purposes. [Introduced in House]

H.R. 170 (ih) To establish the Dominguez-Escalante National Conservation Area and the Dominguez Canyon Wilderness Area. [Introduced in House]

H.R. 169 (ih) To amend the Great Sand Dunes National Park and Preserve Act of 2000 to explain the purpose and provide for the administration of the Baca National Wildlife Refuge. [Introduced in House]

S. 191 (is) To amend the Great Sand Dunes National Park and Preserve Act of 2000 to explain the purpose and provide for the administration of the Baca National Wildlife Refuge. [Introduced in Senate]

H.R. 328 (ih) To amend the National Trails System Act to designate the Washington- Rochambeau Revolutionary Route National Historic Trail. [Introduced in House]

S. 170 (is) To authorize the acquisition of interests in undeveloped coastal areas in order better to ensure their protection from development and for other purposes. [Introduced in Senate]

H.R. 75 (ih) To authorize the Secretary of the Interior to construct facilities to provide water for irrigation, municipal, domestic, military, and other uses from the Santa Margarita River, California, and for other purposes. [Introduced in House]

S. 185 (is) To establish the Sangre de Cristo National Heritage Area in the State of Colorado, and for other purposes. [Introduced in Senate]

S. 186 (is) To establish the South Park National Heritage Area in the State of Colorado, and for other purposes. [Introduced in Senate]

S. 174 (is) To establish a coordinated and comprehensive Federal ocean and coastal mapping program. [Introduced in Senate]

S. 183 (is) To establish the Dominguez-Escalante National Conservation Area and the Dominguez Canyon Wilderness Area. [Introduced in Senate]

H.R. 324 (ih) To establish the Santa Cruz Valley National Heritage Area, and for other purposes. [Introduced in House]

H.R.48

Title: To amend section 42 of title 18, United States Code, popularly known as the Lacey Act, to add certain species of carp to the list of injurious species that are prohibited from being imported or shipped. Sponsor: Rep Biggert, Judy [IL-13] (introduced 1/6/2009) Cosponsors (None)

Latest Major Action: 1/6/2009 Referred to House committee. Status: Referred to the House Committee on the Judiciary.

## INVASIVE SPECIES

H.R.51

Title: To direct the Director of the United States Fish and Wildlife Service to conduct a study of the feasibility of a variety of approaches to eradicating Asian carp from the Great Lakes and their tributary and connecting waters.

Sponsor: Rep Kirk, Mark Steven [IL-10] (introduced 1/6/2009) Cosponsors (None)

Latest Major Action: 1/6/2009 Referred to House committee. Status: Referred to the House Committee on Natural Resources.

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.

## National Fish and Wildlife Conservation Offices

National 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 fisher-

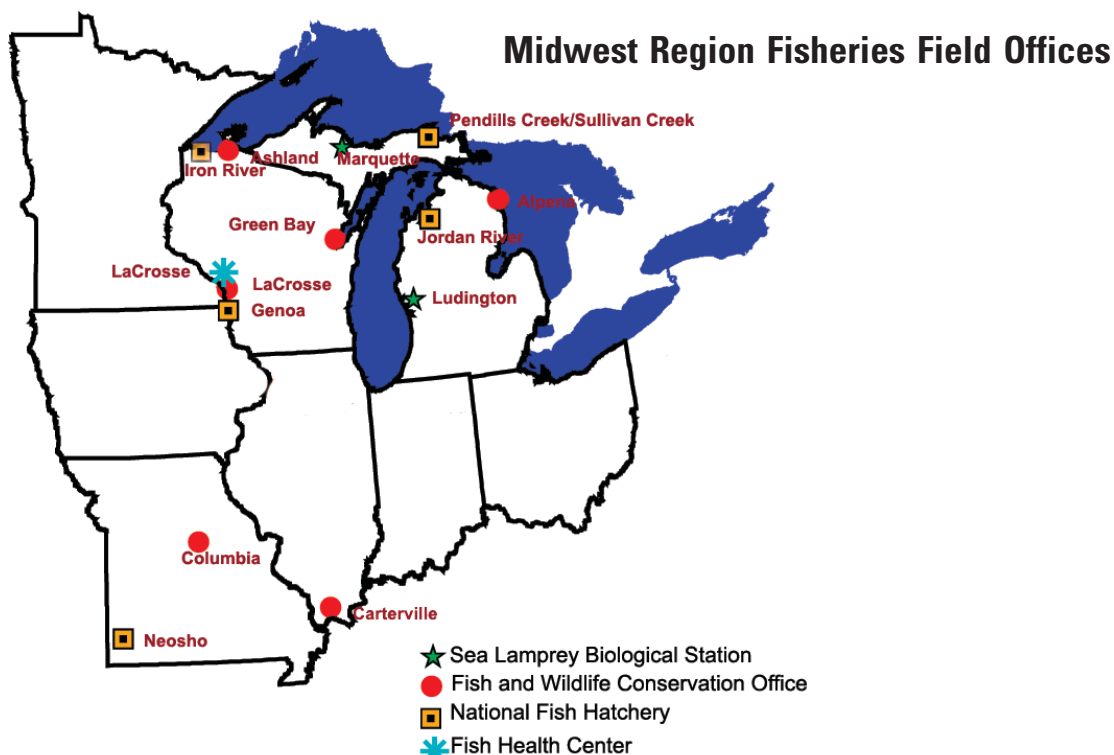
ies databases; provide technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments 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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# 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

- La Crosse Fish Health Center Staff Attend Directorate Picnic
  - La Crosse Fish Health Center Staff
- Pendills Creek NFH Hosts Michigan Project Leader Meeting
  - Pendills Creek NFH Staff
- Sea Lamprey Research Board Meets
  - Michael Twohey, Marquette Biological Station

## Aquatic Species Conservation and Management

- Leaky Pipe No More
  - Jeff Messens, Neosho NFH
- More Mouths to Feed
  - Melissa Cheung, Neosho NFH
- Pendills Creek National Fish Hatchery “Raceway Construction Update”

- Pendills Creek NFH Staff
- Ponds in Use Again
  - Melissa Cheung, Neosho NFH
- This Fall at the Genoa NFH, the Harvest was Plentiful
  - Nick Starzl, Genoa NFH

## Aquatic Invasive Species

### Public Use

- Future Stars of Major League Soccer
  - Jaime Pacheco, Neosho NFH
- La Crosse FHC Participates in Iron River NFH Open House
  - La Crosse FHC Staff
- Teacher for a Day
  - Jaime Pacheco, Neosho NFH

## Cooperation with Native Americans

### Leadership in Science and Technology

### Aquatic Habitat Conservation and Management

- Fishers and Farmers Partnership “Make Hay” in a Successful Meeting

### Workforce Management

- Can Endangered Mussels Be Raised at Neosho?
  - Melissa Cheung, Neosho NFH
- The More You Know...
  - Melissa Cheung, Neosho NFH

## Bacterial Kidney Disease

**Bacterial Kidney Disease (BKD) is also known as corynebacterial disease, salmonid kidney disease, white boil disease and Dee disease. It produces a chronic systemic infection in salmonid (salmon and trout) fish. The disease is characterized by lesions in the kidney and other organs of infected fish.**

**Signs of the disease include swollen kidneys with white, pus-forming lesions (lesions may also appear in the liver, heart and spleen), exophthalmia (“pop-eye”), hemorrhaging in the musculature, hemorrhaging and deep abscesses on the body, and swelling of the abdomen. In severe cases, the kidneys can be immensely swollen, decaying and grayish-white in appearance.**

**The bacterium that causes BKD is *Renibacterium salmoninarum*.**

**BKD has been detected in both free-ranging and hatchery-raised salmonids. All species of salmonids are susceptible to BKD in varying degrees. Pacific salmon are the least resistant, whereas, rainbow trout are the most resistant.**

**The disease can be transmitted both through the ingestion of feces from infected fish and from parental fish to their young.**

**Currently, there are no effective treatments for BKD infections. The disease can be controlled through the use of antimicrobial compounds, but cannot be eradicated this way.**

**Some researchers propose that all fish are carriers of *R. salmoninarum* and the disease occurs only when the conditions are favorable to the bacterium. Therefore, a stressful environment plays a role in the development of the disease.**

Check out the new website for the La Crosse Fish Health Center at:

<http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>