



U.S. Fish & Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

Fish Times

"Celebrate Success"
The Ruffe Control Program
From Microscopes to Manuscripts:
Three Little Fish...
Three Big Reports
Sense of Wonder
Discovery Wetland
SOP for the Sea Lamprey
Control Program



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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

Rainbow trout eggs from Ennis National Fish Hatchery (NFH) are being hatched in egg jars at Genoa NFH.

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

Steve Redman of the Iron River National Fish Hatchery displays a net filled with lake trout fingerlings.

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The Ruffe Control Program, “Celebrate Success”

BY GARY CZYPINSKI, ASHLAND NFWCO

“Celebrate success” was a comment expressed by Tom Busiahn, Chief – Branch of Fish & Wildlife Management Assistance (Washington, D.C. Office) in reference to the Ruffe Control Program. In 1992, the ruffe, pronounced ruff, was the first fish to be designated a “nuisance species” under the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990. Busiahn, then project leader of the Ashland Fishery Resources Office, was the initial Chair of the Ruffe Control Committee that was tasked by the National Aquatic Nuisance Species Task Force to draft a plan to control ruffe.



Ruffe were first detected in the Duluth-Superior Harbor (St. Louis River Estuary (SLRE)), by the Wisconsin Department of Natural Resources (DNR) in 1986, a likely accidental introduction from the ballast water discharge of ocean-going shipping. Ruffe became abundant very rapidly in the SLRE, and dominated the fish community by 1990. Initially, the goal of the Ruffe Control Program was “to prevent ruffe from spreading outside of Lake Superior”, but ruffe migrated rapidly eastward along the south shore of Lake Superior, reaching the Ontonagon River, Michigan, by 1994, 276 km east of the SLRE. Then in 1995, ruffe were detected in Lake Huron near Alpena, Michigan, 756 km east of the SLRE, likely a ballast water discharge of intra-lake shipping originating from the Duluth-Superior harbor.

The goal of the program was then revised “to prevent or delay the spread of ruffe through the Great Lakes and prevent their spread into inland waters”; however, upon reaching the Thunder Bay River in Lake Huron and the Ontonagon River in Lake Superior, ruffe range expansion began to slow, and surveillance verified that ruffe range expansion was proceeding very close to an unassisted migratory rate projected by the U.S. Geological Survey (USGS) - Lake Superior Biological Station. It took 20 years (1986-2006) for ruffe to span the south shore of Lake Superior. In Lake Huron, a combination of ruffe population reduction and natural predation likely prevented ruffe from expanding outside of the Thunder Bay River shipping channel, where they were initially detected, and no ruffe have been reported captured from Lake Huron since 2003. In Green Bay of Lake Michigan, it has taken five years (2002-2007) for ruffe to expand a distance of 55 miles, and no ruffe have been reported captured in Lake Michigan outside of Green Bay. No ruffe have ever been confirmed captured from the Lower Great Lakes, where they remain undetected, as well as in any inland lakes and streams within the Great Lakes basin. Five elements of the Ruffe Control Plan: ballast water management, bait fish management, education, population reduction, and surveillance, along with unfavorable habitat and predation are believed to have contributed in slowing and delaying the spread of ruffe. The success of the Ruffe Control Program can also be attributed to outstanding cooperation between Federal, state, and provincial agencies; the Great Lakes Maritime Industry; the Great Lakes Sea Grant Network; Great Lakes bait fish associations; Great Lakes universities; Great Lakes media; sport anglers; and commercial fishing operations.

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

From Microscopes to Manuscripts: Three Little Fish...Three Big Reports

BY ANDREW PLAUCK AND PATRICIA HERMAN, COLUMBIA NFWCO

Columbia National Fish and Wildlife Conservation Office (NFWCO) recently completed reports analyzing three years of age and growth data for three species of Missouri River cyprinids as part of the Pallid Sturgeon Population Assessment Program (PSPAP) - a multi-agency program which collects data on all Missouri River fish, not just pallid sturgeon. Each year field crews collect scales, otoliths and/or spines from eight different "target species" for age analysis. Each agency involved in the program is required to report on one or more of the target species. Columbia NFWCO was responsible for sicklefin, speckled, and sturgeon chubs. We now have at least three years of data from many segments of the Missouri River. Because multiple years of data are needed to detect trends in year classes, this was the first year of reporting the age and growth characteristics of the target species.



-USFWS

The Columbia National Fish and Wildlife Conservation Office is conducting an age analysis on speckled chubs as one of the "target species" assessed under the multi-agency Pallid Sturgeon Population Assessment Program.

Columbia NFWCO staff was heavily invested in all aspects of the project – from collection to analysis. After collection, the scales had to be gently removed from the one- to three-inch fish. The scales were carefully cleaned, mounted on a slide and digitized. Annual growth rings (annuli) were counted on each scale and measured using a microscope and specially designed computer software which calculates the size of the fish for every year of life. These calculations, along with data collected at the time of capture, were analyzed. After several weeks of crunching numbers, writing, and editing, we were happy to see the work of so many shipped off to the U.S. Army Corps of Engineers which is the funding agency for our work.

Preliminary results from the three analyses showed differences between years and river segments. Fish from upstream segments of the Missouri River were larger at all ages and generally grew faster than fish from downstream segments. As expected, there were higher numbers of age one fish collected in the years following high water events. Unfortunately, the cyprinid species we studied only live for three years, with an occasional fish surviving to age four. These short-lived fish only provide a snapshot of response to environmental conditions; whereas, long-lived fish populations such as sturgeon species reflect long-term changes in environmental conditions and management strategies.

Collaboration of multiple state and Federal agencies in the Missouri River basin promises to enhance the recovery effort for the pallid sturgeon. Continued standardized effort and reporting will allow biologists to detect future changes between years and segments of the Missouri River. While recovery of the pallid sturgeon is the main goal of the PSPAP, monitoring native fish assemblages is another important component of the program.

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

Sense of Wonder Discovery Wetland

BY JENNY WALKER AND DARLA WENGER, GENOA NFH

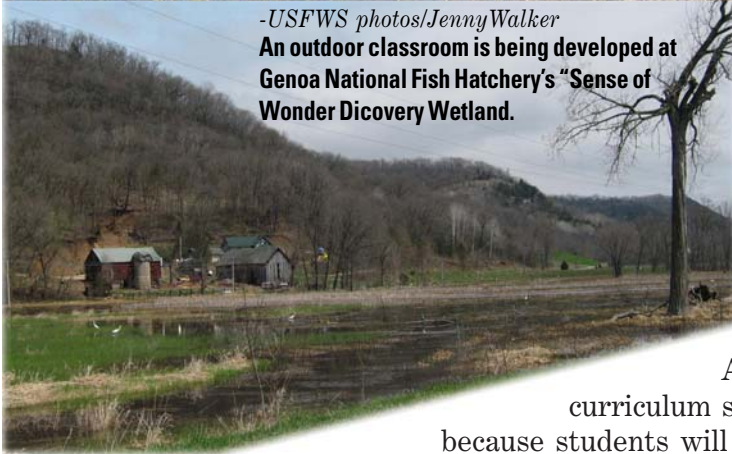


The health of today's children and the future of conservation rests in the hands of children and their guardians. Researchers have discovered that hands-on experiences in nature may be necessary for the healthy growth and development of children, and provide a lasting platform for later development of scientific theory and conservation ethics. That's why fifth graders from Southern Bluffs Elementary School in La Crosse, Wisconsin, will soon be exploring the wonders of nature in Genoa National Fish Hatchery's (NFH) Sense of Wonder Discovery Wetland. The Sense of Wonder Discovery Wetland was established as a place for children, educators, and families to explore, observe, and get grimy in nature.

This use of the wetland was inspired by environmentalist Rachel Carson, who stressed the importance of instilling a sense of wonder for the natural world in young children. Helping kids make lasting connections with nature is a priority for the Fish and Wildlife Service.



-USFWS photos/Jenny Walker
An outdoor classroom is being developed at Genoa National Fish Hatchery's "Sense of Wonder Discovery Wetland."



In February 2007, Director Dale Hall announced that *Connecting People and Nature* is one of the Fish and Wildlife Service's top six priorities. A new initiative, *Let's Go Outside*, has been developed to help get children back in touch with nature. As resource managers and educators, employees serve as guardians to nature and to the next generation. Creation of an outdoor classroom in 30 acres of untouched wetland safeguards both. Including exploration of the wetland and nature experiences as part of the 5th grade education plan is a way of communicating that nature is important for developing healthy minds and bodies as well as preserving wildlife and its habitat.

Fifth-grade teacher and *Friends of the Upper Mississippi Fisheries Services* member Susan Houlihan and Genoa NFH staff members Darla Wenger and Jenny Walker have been collaborating efforts to give fifth grade students at Southern Bluffs Elementary a place to make real connections with nature. The class will spend several days experiencing nature first-hand.

Activities will be based upon 5th grade state and national curriculum standards, and will have a greater and lasting impact because students will be learning nature's lessons by experience. These 5th graders will become part of nature's cycle in the marsh. They will see tadpoles develop into frogs, hear eagles calling to their mates, and identify dragonfly larvae and turtles as the class makes its way through cattails, grass and willows.

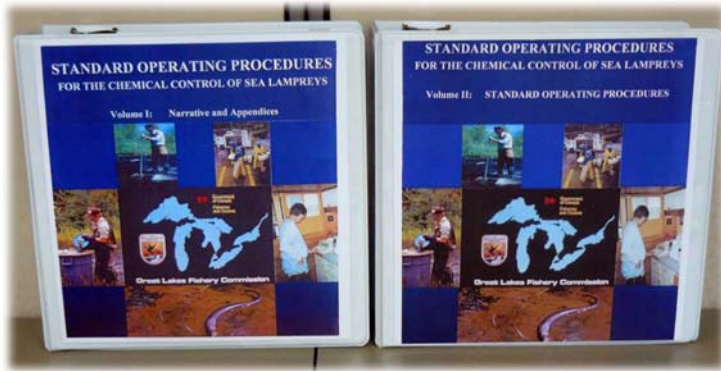
As opportunities for wildlife experiences become fewer in an increasingly suburban area, the Sense of Wonder Discovery Wetland promises to be a safe haven for wildlife, children and learning. The outdoor classroom partnership will provide students with a solid foundation for science, health, and learning conservation ethics by helping to create a lasting, personal relationship with nature.

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

SOP for the Sea Lamprey Control Program

BY DAVE JOHNSON, MARQUETTE BIOLOGICAL STATION

The Great Lakes Fishery Commission's (GLFC) Sea Lamprey Management Program, administered by the Fish and Wildlife Service and Department of Fisheries and Oceans Canada (DFO), depends heavily on lampricide control to manage numbers of sea lampreys in the Great Lakes. Sea lampreys entered the Great Lakes from the Atlantic Ocean through shipping canals, and contributed heavily to the declines of the sport and commercial fisheries in the Great Lakes. An effective means of control or eradication had to be



-GLFC
Procedures for the application of lampricides to streams and lentic areas to control lampreys is defined in the manual *Standard operating procedures for application of lampricides in the Great Lakes Fishery Commission integrated management of sea lamprey (Petromyzon marinus) control program*.

for application of lampricides in the Great Lakes Fishery Commission integrated management of sea lamprey (*Petromyzon marinus*) control program consolidates the methods and procedures utilized in chemical control and provides ready-reference on all aspects of the chemical control program.

The GLFC's Sea Lamprey Integration Committee required that a standardized set of procedures be produced for the chemical control program to promote the use of the best science-based methods available, and to aid in conducting cooperative field operations. In February 1998, representatives of the Marquette Biological Station, Ludington Biological Station, DFO Sea Lamprey Control Centre, and U.S. Geological Survey Upper Midwest Environmental Sciences Center held an organizational meeting to plan the project. Nearly two years later after many meetings and hundreds of hours of work, the first draft of the manual was sent out for peer review. In April, 2000, the first edition of the manual was distributed.

The amount of information contained in the document is considerable (about 1,400 pages), so the material requires a detailed organizational system. The primary sections of the manual are the narrative, appendices, administrative operating procedures, technical operating procedures and instrument operating procedures. Within these sections (at the present time) are a 32-page narrative, 17 appendices, 13 administrative operating procedures, 29 technical operating procedures, and 28 instrument operating procedures.

found to allow the reestablishment of a fishery. After considerable effort, researchers found a class of chemicals exhibiting selective toxicity against sea lampreys. The lampricide 3-trifluoromethyl-4-nitrophenol (TFM) was developed and adopted for use against lampreys. Lampricide control began with the first applications of TFM in 1958, and as a component of an integrated 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.

Procedures for the application of lampricides to streams and lentic areas to control lampreys must be defined well and followed closely to assure safety and efficacy. The manual *Standard operating procedures*



-GLFC
This image highlights the rasping mouth-parts of a parasitic sea lamprey.

The physical size of the first version of the document that made it logistically challenging to move and earned it the nickname “wheel chock”, prompted a minor reorganization. The second version of the manual, produced in 2004, was published in two volumes: volume I: narrative and appendices, and volume II: standard operating procedures.

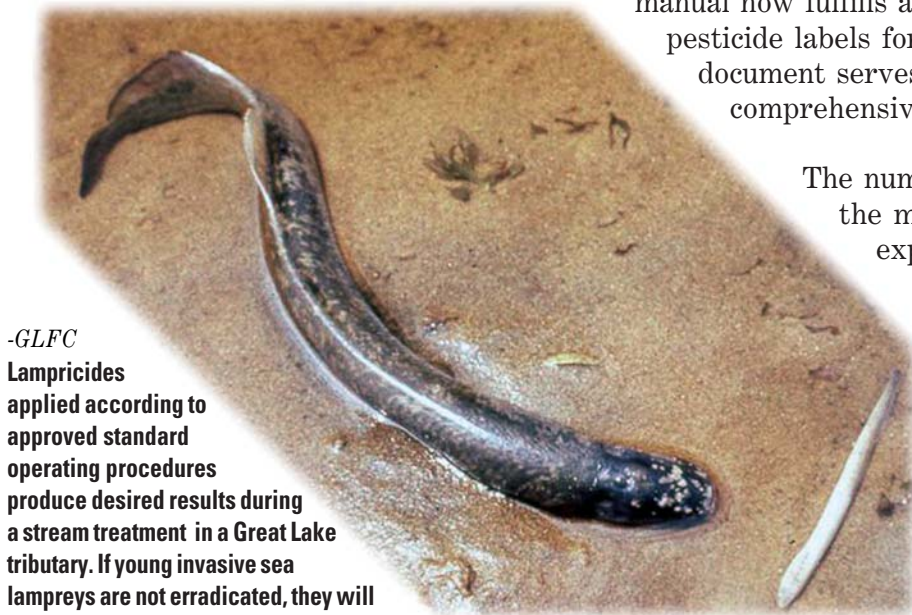
The manual has proven useful in many ways. Through the processes of creation and annual revision of the manual, sea lamprey management teams in the United States and Canada have standardized methodologies and now routinely work cooperatively in large field operations. In addition, the document is an up-to-date reference for use by Sea Lamprey Control personnel and persons outside of the program. State and Federal lamprey management teams working on the Lake Champlain and New York Finger Lakes watersheds adhere to the methods detailed in the manual. The manual was used often cited during the process of re-registration of lampricides, and served as a reference to both the United States and Canadian Environmental Protection Agencies during the re-registration process. Of equal importance is the role the



-GLFC
Technician Wayne Stanislawski of the Marquette Biological Station measures the application rate of lampricide during a typical stream treatment. All aspects of lampricide application as well as training and safety procedures are detailed in the manual of standard operating procedures.

manual now fulfills as a significant part of the restricted use pesticide labels for formulations of lampricides. Finally, the document serves as a training aid for employees and a comprehensive ready-reference for their use.

The numerous and varied applications found for the manual demonstrate that the resources expended in creating and maintaining this document are well spent. This is a “living document” that grows and changes with the Sea Lamprey Management Program. Significant annual revisions reflect the improvements in methodology continually introduced into this international control program.



-GLFC
Lampricides applied according to approved standard operating procedures produce desired results during a stream treatment in a Great Lake tributary. If young invasive sea lampreys are not eradicated, they will enter a parasitic phase in the Great Lakes and kill large recreational fish.

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

Rare Eagle Appearances Highlight Recognition Dinner

BY MARK STEINGRAEBER, LA CROSSE NFWCO

Bald eagles are now a common sight near La Crosse, Wisconsin, especially during late winter when they congregate in large numbers to feed on the bountiful supply of fish that appear as the blanket of ice covering the Upper Mississippi River recedes. Recently; however, a select group of about 100 area residents had the chance to view a distinctly different and very rare type of eagle they had never seen before. This unique opportunity occurred on a likewise unique date, Leap Day (February 29), at a recognition dinner for local Fish and Wildlife Service volunteers, partners and friends. The event, co-hosted annually by the La Crosse NFWCO and the La Crosse District Office of the Upper Mississippi River National Wildlife and Fish Refuge (NW&FR), was held this year at the friendly confines of the City Brewery Hospitality Center in downtown La Crosse.

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.



-USFWS

Silver Eagle Award recipient Neil Rettig displays an endangered South American harpy eagle named Cal at the La Crosse, Wisconsin, area volunteer awards banquet.

Midwest Regional Director Robyn Thorson followed next on the evening program. She presented Rettig with the rare and prestigious Silver Eagle Award. This is the highest level of recognition for achievements by a non-Service employee in the Midwest Region. It was given to the cinematographer for his outstanding contributions to fish and wildlife resources of the Great Lakes-Big Rivers Region. Rettig's parents, who also live in Southwest Wisconsin, were special guests at the dinner and enjoyed seeing their son recognized for his outstanding achievements.

Following these highlights, the program continued with 58 volunteers and program partners recognized for their contributions to the mission of local Fish and Wildlife Service offices during the past year. These efforts cumulatively totaled about 500 hours for the fishery program and 1,000 hours for the National Wildlife Refuge (NWR) program. In keeping with the raptor-based theme of this year's awards program, each of these individuals received a certificate of thanks bearing the impressive image of a bald eagle in flight, as well as a token gift of appreciation. Sarah Bauer, Chuck Chihak and Barb Hammes received additional recognition for their enthusiastic efforts and were named "Volunteer of the Year" for the La Crosse Fish Health Center (FHC), La Crosse NFWCO, and the Upper Mississippi River NW&FR - La Crosse District Office, respectively. Friends group organization members who have actively supported the mission of these Fish and Wildlife Service offices were also present and were acknowledged for their continued commitment.

As the evening program concluded, one could not help but feel enthused by the genuine spirit of friendship, and thankful for the levels of support, that volunteers, partners, and Friends annually provide Fish and Wildlife Service employees who are fortunate to work here in "God's Country."

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

Fisheries Friends Initiative Revisited

BY CURT FRIEZ, PENDILLS CREEK NFH

The Fisheries Friends Initiative was revisited by twelve Fisheries Friends group members from around the country at a meeting in Washington D.C. Also in attendance were several Fish and Wildlife Service employees from the Fisheries program. The meeting began with introductions and brief history/updates from each Friends Group. The focus then shifted to the Fisheries Friends Initiative which is based upon the implementation of the 2006 National Fish Hatchery Volunteer Act. The Friends Initiative and the Volunteer Act prompted a vote by Friends Group members to form a National Fisheries Friends Association in which Richard Christian of the Fish and Wildlife Service Washington D.C. Fisheries Office was charged with developing a National Charter. The meeting was a great success and highlighted by a visit from Fish and Wildlife Service Director Dale Hall. Hall thanked the Friends Groups for working so diligently in support of the Fish and Wildlife Service. Currently, there are 25 Fisheries Friends Groups representing 34 Fisheries stations. Once the National Fisheries Friends Association becomes a reality and develops into a strong cohesive association, its power as an advocacy group will help promote and support the Fisheries and Habitat Conservation Program nationally. The *Friends of Pendills Creek Hatchery* was represented at the meeting by President George Goetz, a strong supporter for the National Association.



-USFWS

Friends of Pendills Creek Hatchery president George Goetz addresses Fisheries Friends Group representatives at a meeting in Washington, D.C.

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

New Mussel Culture Cages for the West Virginia DNR

BY TONY BRADY, GENOA NFH

Over the past seven years, Genoa NFH has gained valuable experience in the culture and restoration of eight species of freshwater mussels. Mussels are considered one of the most endangered fauna in North America, with many species being listed as threatened or endangered. This experience has earned Genoa NFH an invitation to be a member of the Ohio River Aquatic Restoration Technical Committee (ORARTC) along with West Virginia and Ohio DNR's, Ohio Islands NWR, Ohio State University, and White Sulfur Springs NFH. Genoa NFH has participated in the ORARTC restoration efforts by conducting host fish confirmation trials and hosting West Virginia DNR biologists during an expedition in 2007 to learn how Genoa NFH used mussel culture cages as a part of the Higgins' eye pearl mussel recovery program.

Janet Clayton and Scott Morrison from West Virginia DNR traveled to the Midwest and helped place culture cages in the Mississippi River. After their visit, Clayton and Morrison decided to start up a cage culture program in support of the ORARTC mussel restoration plans, and asked Genoa NFH to design and build a culture cage system that could be suspended from underneath boat docks at an existing marina.

Blueprints and photographs of the dock were sent to the hatchery in order to design a suspended cage system. A hanging rack was designed to fit within the dimensions of the dock and still allow boat access to the docks. Eleven hanging racks were constructed to house a total of 33 cages which will be used to culture three mussel species this summer. A total of 35 cages were built providing a couple of spares in case of breakage. Genoa NFH staff also built a set of juvenile mussel collection screens to assist in harvesting cages in the fall, and two corrals that will be used to contain adult brood mussels next spring. This new cage system will be delivered to Stonewall Resort State Park in Roanoke, West Virginia, in time for the mussel's reproductive season this spring.

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

Iron River NFH extends a Helping Hand

BY STEVE REDMAN, IRON RIVER NFH

Iron River NFH recently helped the State of Minnesota by providing lake trout to fill a portion of a yearling stocking request for Lake Superior. Biologists prepared a group of 50,000 young fish with a unique year-class and lake wide fin clip.



-USFWS

Iron River National Fish Hatchery provided 50,000 lake trout for stocking into Lake Superior after Crystal Springs State Fish Hatchery, Minnesota, lost their fish production due to severe flooding.

This past August, pounding rains (up to 15" in as little as 24 hours) created a tremendous flood throughout Southeastern Minnesota. Crystal Springs State Fish Hatchery near Elba, Minnesota, was located in the heart of the devastation. Flood-waters reached 13.5 feet over normal river stage and destroyed all production lots on station.

When bad things happen, a little help from friends can often ease some of the burden, and in this case, keep fish stocked in Lake Superior. In late January, biologists at the Iron River NFH, with cooperation from the Minnesota DNR, stocked the 50,000 lake trout into the partially frozen waters of Lake Superior, just north of Duluth, Minnesota. These fish helped to make up for some of the losses at Crystal Springs State Fish Hatchery.

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

Communication among Partners is Key to Missouri River Recovery

BY NICK UTRUP AND CLAYTON RIDENOUR, COLUMBIA NFWCO

The cold and icy month of February finds biologists from Columbia NFWCO busy writing annual reports and attending meetings. These activities largely influence the scope and implementation of work during the remainder of the year. During the last week in February, the Missouri River Natural Resources Committee (MRNRC) hosts an annual forum focused on the Missouri River. This is an annual platform for biologists, engineers, and decision makers to come together and discuss important Missouri River-related issues. In many ways, this is the most important meeting of the year and sets the groundwork for Missouri River recovery efforts well into

the future. It is also an important opportunity for biologists to see what others throughout the basin are doing relative to Missouri River and pallid sturgeon recovery. The MRNRC is a forum for river managers and researchers to learn what advancements have been made from research and monitoring efforts and what new challenges need to be addressed. Columbia NFWCO played an important part in this process as biologists Nick Utrup and Clayton Ridenour each gave oral presentations that were well received and facilitated excellent discussion among biologists throughout the basin.

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

Keeping the Stress Down for Lake Trout Onboard the *M/V Spencer F. Baird*

BY SCOTT KOPROSKI, ALPENA NFWCO

Lake trout stocking took place for the first time on the newly christened *M/V Spencer F. Baird* in the spring of 2007. As with any new vessel, minor problems were identified during field operations. One problem encountered during stocking was elevated water temperatures in the lake trout holding tanks. Unlike the *M/V Togue* (the retired stocking vessel), the *Baird* was constructed with the holding tanks mounted on top of the deck. The advantage to this design is that it allows for gravity release of the fish and the tanks to be removed after stocking is com-

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.



-USFWS/AaronWoldt

Alpena National Fish and Wildlife Conservation Office biologists worked to resolve elevated fish tank temperatures on the new vessel *M/V Spencer F. Baird* prior to the 2008 fish stocking season.

pleted; however, with the tanks located on the deck, they are subjected to direct sun-light and heat appears to be transferring to the water. Elevated water temperatures increase the stress of the fish during transport to stocking sites, which is already a stressful event for these fish.

Staff of the Alpena NFWCO, including the crew of the *Baird*, discussed options to minimize the transfer of heat from the tanks to the water within the tanks. Each of the 10 tanks (1,000 gallons capacity each) is insulated except for the three lids located on top of the tanks. During stocking activities in 2007, the crew noticed that on sunny days the lids absorbed so much heat that they could not be touched. It is thought that the heat also transferred to the water from the lids. Biologists Scott Koproski and Adam Kowalski were charged with painting and insulating the lids in an attempt to alleviate the problem. By painting the lids white (instead of the raw aluminum surface) it is thought that a majority of the heat produced by direct sunlight will be reflected from the surface thus resulting in a more consistent and cooler water temperature. In addition to painting, one tank had insulation injected into the void between two sheets of raw aluminum on the lid. This tank will be compared to the remaining nine tanks during stocking activities in 2008 and differences in water temperatures will be recorded. If the tests indicate that the insulated tank kept the water cooler, the remainder of the tanks will be insulated.

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

Ennis NFH Trout aid Endangered Mussel Recovery

BY JIM LUOMA, GENOA NFH

The Genoa NFH currently holds approximately 10,000 four to six inch fish consisting of five different cool- and warm-water species for use in the hatchery's mussel propagation program. Some of the host fish are currently infected with Federally endangered winged mapleleaf larvae (glochidia). The remaining host fish will be infected with mussel glochidia during the 2008 production year, or they will be used in host trials for species for which the host fish has not been previously identified. Rearing some cool- and

warm-water fish to suitable size for use as a host fish requires the use of live forage.

The Genoa NFH annually produces hundreds of gallons of fathead minnows for a forage source for the growing host fish. Due to limited pond rearing space, the high demand for forage, and the timing requirements for small forage availability, the need for forage cannot be met solely by the hatchery's fathead minnow production. The Ennis NFH plays a critical role in the Genoa NFH's ability to rear large numbers of quality host fish by supplying the hatchery with

rainbow trout eggs from which suitable sized forage can be obtained during the critical winter and spring months. The Genoa NFH received 300,000 rainbow trout eggs from the Ennis NFH throughout the winter of 2007/2008. Approximately 270,000 of these fish will be raised up to two inches in length, at which time they will be used for forage for the host fish.

Using rainbow trout derived from a certified disease-free facility also reduces the chances of disease exposure to the host fish. This is extremely critical to fish already infested with mussel glochidia since therapeutic treatments for diseases may have negative impacts on mussel survival.

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

Winter Fish Community Surveys in the Middle Mississippi River

BY NATHAN RICHARDS, CARTERVILLE NFWCO

Carterville NFWCO completed pre-project monitoring of the fish community during the winter season in the Herculaneum and Trail of Tears reach of the Middle Mississippi River for the Stone Dike Alterations Project. The U.S. Army Corps of Engineers St. Louis District is planning a project that will alter the configuration of dike fields in the Herculaneum reach to restore some habitat diversity in the river. Notching of wing dikes and constructing chevron dikes will create island and side-channel habitat that this particular reach is lacking. During November and December 2007, Carterville NFWCO conducted surveys of the fish community in these reaches to obtain baseline data for evaluating potential benefits of restoration for the fish community. A suite of fishery gears (electrofishing, mini-fyke nets, hoop nets, gill nets, and trawling) was used to capture a wide range of species. Surveys were conducted at a similar “control” reach located near Trail of Tears State Park in Missouri. This will help to determine if any changes in the fish community at Herculaneum are systemic or the result of restoration activities.



-USFWS/MattWegener

Carterville National Fish and Wildlife Conservation Office biologists Nathan Richards (left) and Nate Caswell (right) brave the elements while trawling during December within the Trail of Tears reach of the Middle Mississippi River.

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

Fish Health Samples Collected from Lake Winnebago Speared Sturgeon

BY SARAH BAUER, LA CROSSE FHC

February 9th, 2008 was the opening day of lake sturgeon spearing on Lake Winnebago in Eastern Wisconsin. Weather conditions were ideal and water clarity was about 17 feet. These factors yielded a successful harvest. Eric Leis and Sarah Bauer of the La Crosse Fish Health Center (FHC) and Dave Wedan of the La Crosse NFWCO traveled to Lake Winnebago to collect samples from harvested lake sturgeon for annual disease monitoring. The disease of primary concern is viral hemorrhagic septicemia virus (VHSv). In the spring of 2007, VHSv caused a large-scale kill of freshwater drum in Lake Winnebago.

Harvested lake sturgeons were tested for other viruses and a variety of bacterial pathogens. The sturgeon have not tested positive for any viruses in previous years of testing. The results of this year's laboratory tests are still pending.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/lacrosse-fhc.pdf>

National Asian Carps Management and Control Plan Approved

BY GREG CONOVER, CARTERVILLE NFWCO

Bighead, grass, and silver carps have established reproducing populations over a large geographic range in the Central United States and probably will continue to expand unless a concerted, proactive effort is made to restrict their introduction and spread. Numerous strategies and plans to manage and control Asian carp species are actively being developed by Federal, state, and tribal agencies; non-governmental organizations; private commercial interests; and the public.

The Asian Carp Working Group is a group that was comprised of members from several different agencies and organizations. This group's sole purpose was to develop a plan that would describe the required steps and procedures needed to prevent future introductions and manage existing populations. The final product recognized 48 strategies and 131 recommendations to manage and control Asian carps in the United States.

After years of hard work by the Asian Carp Working Group, approval of the *Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States* was received from the Aquatic Nuisance Species Task Force in November 2007. The management plan provides a mechanism for national coordination of multi-agency efforts to control wild populations of Asian carps. Advance planning and coordination are essential to determine the availability of resources (e.g., staff, equipment, expertise, and funds) needed to effectively integrate and mobilize these resources and to determine methods for evaluating success. Management and control of Asian carps will be most efficient and effective when actions are integrated within nationally- or regionally-coordinated strategies.

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

Upper Illinois River Dispersal Barrier Meeting

BY NATHAN RICHARDS, CARTERVILLE NFWCO

Carterville NFWCO recently attended the Dispersal Barrier Panel meeting held January 17, 2008 in Chicago, Illinois. This meeting is represented by individuals from Federal, state, local, and private entities, and is designed to discuss all aspects of an acoustic network and an electric dispersal barrier designed to keep bighead and silver carps from entering the Great Lakes. The acoustic network consists of 12 stationary receivers and 38 tagged bighead and silver carps that are located within a 60-mile stretch of the Upper Illinois River from Starved Rock Lock and Dam to the electric dispersal barrier near Lockport Lock and Dam. This network is designed to monitor the movements and dispersal of bighead and silver carps in the Upper Illinois River.

Carterville NFWCO biologist Nathan Richards presented information to the Panel which summarized all bighead and silver carp movement from the acoustic network in 2007. Major movements included 1 bighead carp that moved upstream through the Marseilles Lock and Dam, 1 bighead carp moved a total of 29 miles through the Marseilles Lock and Dam twice, and 2 silver carp moved downstream through the Starved Rock Lock and Dam and out of the study area. Although movement during 2007 was relatively limited, Carterville NFWCO expects movement rates to increase in spring 2008 during high water levels. Panel members used this information to discuss ways to improve the acoustic network in preparation for this expected increase in movement.

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

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.

Iron River NFH Trails are ready for Action

BY KURT SCHILLING, IRON RIVER NFH

Over the past several years, Iron River NFH and its Friends Group have developed several miles of trails for hiking, cross country skiing, snowshoeing, and for access to some of the 1,200 acres of property surrounding the hatchery.

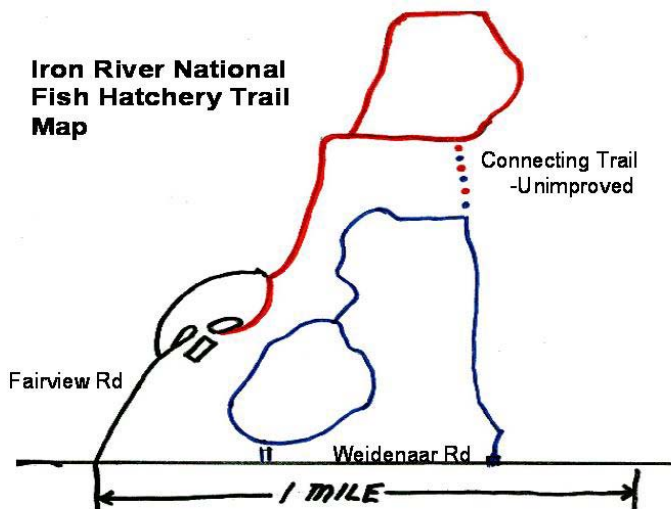
Two different loops (red and blue), allow entry to different areas of the property. The red loop is the easier of the two since much of it is on existing roads.

In addition, lower portions of the red loop are stroller and wheel-chair friendly. The blue loop is longer and

follows un-even terrain. Both trails are marked about every quarter-mile and maintained for year-round use. A field guide developed by our Friends Group is available and contains hand drawn pictures of local plants, animals, and flowers.

Greater snowfall amounts this winter have resulted in quality trail conditions for cross country skiing and snowshoeing. A group of local residents found this out in early January. Come out and explore the trails at the Iron River NFH.

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.



Iron River National Fish Hatchery staff and Friends Group volunteers have developed a series of multiple-use trails through the beautiful north woods of Wisconsin.

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

National Wildlife Refuges - A Natural Remedy for Cabin Fever

BY MARK SWTEINGRAEBER, LA CROSSE NFWCO

Long weeks of mid-winter darkness, sub-freezing temperatures, and record-breaking snow falls have given chills to many Coulee Region families who are coping with symptoms of cabin fever. To help cure this annually recurring malady, the La Crosse NFWCO participated for the third consecutive year in the Mid-Winter Family Sport Show, a community event held February 15-16 at the Coulee Region Christian School in nearby West Salem, Wisconsin. Posters encouraging families to *Discover the Nature of America* and *Prevent Nature-Deficit Disorder* were prominently displayed at the Fish and Wildlife Service booth near the entrance to the show. Brochures describing recreational opportunities (e.g., fishing, hunting, camping, canoeing, hiking, photography, wildlife observation, foraging) available at nearby refuges (Necedah, Trempealeau, Upper Mississippi River), as well as practices that encourage ethical outdoor behavior and environmental stewardship, were also distributed.

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

What's the Big Picture for the Big Muddy?

BY WYATT DOYLE, COLUMBIA NFWCO

Big Muddy National Fish and Wildlife Refuge staff sat down with a select group of participants from the Regional Office, U.S. Geological Survey, Missouri Conservation Department, University of Missouri, and Columbia NFWCO to provide recommendations towards the Refuge's Comprehensive Conservation Plan. This plan takes about three years to develop and will serve as a guiding document for the Refuge's efforts for the next 15 years. Biologists discussed each unit of the Refuge and provided their opinions on how landscape or community-based change could

occur within them. The effort provided a unique opportunity to see the commitment of multiple agencies toward collaboration in protecting and enhancing resources along the Missouri River. Columbia NFWCO's involvement has been a cooperative relationship using each office's expertise and resources to enhance fisheries communities along the river and provide recreational fishing opportunities to the public. Our combined commitment to protect the river will be solidified through the Comprehensive Conservation Plan.

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

2008 Science Night at Mason Elementary

BY JIM MCFEE, ALPENA NFWCO

On February 26, Alpena NFWCO biologist Jim McFee took part in the Mason Elementary School science night. The school is located in Grosse Point Woods, Michigan, on the shores of Lake St. Clair. Science night consisted of several rooms that more than 100 students and parents could visit. Most rooms had displays and information dealing with physics related topics. The Fish and Wildlife Service room dealt with educating the students and parents about invasive species and control measures.

The night was filled with questions and answers about aquatic invasive species. A display board filled with information on invasive species triggered questions in addition to a movie about Asian carp. The display board contained information on round goby, Eurasian ruffe, sea lamprey, zebra mussels and Asian carp. The students also had a chance to look at preserved specimens of these invasive species. These items gave the students a chance to see some of the species first hand, to help them identify them on their next fishing or lake trip. Plenty of literature was also available to take home. The big message of the night was to help stop the spread of these unwanted species by cleaning boats and not dumping excess bait into lakes or rivers. This event once again shows how education is one of the strongest tools natural resource professionals can use in dealing with invasive species.

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

Let's Go Outside!

Helping Families Connect With Nature

"If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in." - Rachel Carson

Native American Wildlife Disease Workshop

BY COREY PUZACH, LA CROSSE FHC

Corey Puzach of the La Crosse FHC spoke at the Native American Fish and Wildlife Society Wildlife Disease Workshop. The Workshop was held at the U.S. Geological Survey's National Wildlife Health Center in Madison, Wisconsin. In the past years, the main agenda for the workshop was wildlife diseases, but the threat of the fish virus viral hemorrhagic septicemia (VHS) has gained national attention. This sparked the interest for



-USFWS
Corey Puzach of the La Crosse Fish Health Center gives a presentation on fish health at the Native American Fish and Wildlife Society Wildlife Disease Workshop.

covering fish health topics in the workshop.

Workshop participants traveled from all parts of the country to learn about fish and wildlife diseases. Corey gave presentations on fish anatomy, disease signs, fish parasites, the National Wild Fish Health Survey, and an overview of the La Crosse FHC. Wisconsin DNR fish health biologist Susan Marcquenski covered fish health management, bacterial pathogens, viral pathogens and an overview of fish health concerns of the Wisconsin DNR.

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.

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 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 63) has just been completed and is now available on the Internet at http://www.fws.gov/midwest/ashland/mtan/mtan63/mtan_63.html. This quarter's newsletter discusses the tribal hatchery programs of the Northern Great Lakes region.

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 your area and to provide contact information to help solve any fish rearing questions you may have.

The MTAN has been assisting tribal fish hatchery programs for the past 17 years. The rewards from this kind of technical assistance is in knowing we are providing information that enables hatchery programs to better utilize their resources and provide a healthier product for the fishery. The MTAN has also helped to educate fish hatchery workers and direct them to other areas so they can better research their specific needs.

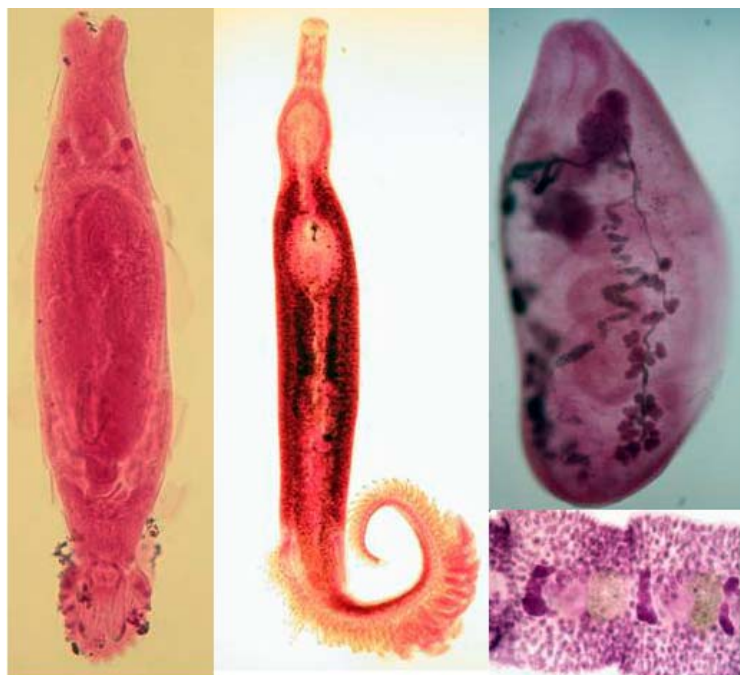
Previous issues of the MTAN newsletters are now accessible from the Ashland NFWCO web page. Readers can access this information by pointing their web browsers to: <http://midwest.fws.gov/ashland/mtan/mtanhome.html>.

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

Fish Parasites identified for a Multi-Jurisdictional, Multi-Agency Biological Survey on Devil's Lake, North Dakota

BY BECKY LASEE, LA CROSSE FHC

A multi-jurisdictional, multi-agency survey was initiated by the U.S. Council on Environmental Quality in late June 2005. The survey was in response to



-USFWS
Stained Preparations of Parasitic Worms
 (left to right) Gill fluke (*Gyrodactylus hoffmani*) from gills of fathead minnow; gill fluke from freshwater drum; fluke from body cavity of goldeneye; (lower right) tapeworm segments from intestine of walleye.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/lacrosse-fhc.pdf>

MRNRC + Columbia NFWCO = KUDOS!

BY JOE MCMULLEN AND PATTY HERMAN, COLUMBIA NFWCO

Staff of Columbia NFWCO attended the 2008 Biological Forum - Missouri River Natural Resources Conference (MRNRC). The forum was held in Nebraska City, Nebraska, to highlight issues facing management of the Missouri River. Information was presented through 40 posters and three days of presentations. Representation from our office included two well received presentations and seven posters.

Nick Utrup presented data on stocked pallid sturgeon dispersal, and Clayton Ridenour presented habitat preferences of chubs in the Lower Missouri River. Columbia NFWCO was also well represented in the poster session. This year, two of the three poster presentation awards at MRNRC came home with Columbia NFWCO employees. Patty Herman won an award for her poster *Evaluating Wound Treatments of Shovel-nose Sturgeon Egg Checks* co-authored by Wyatt Doyle, Emily Kunz and Tracy Hill. While still congratulating his co-worker, Joe McMullen was granted the same honor for *Fish Assemblage Similarities in Natural and Constructed Side-channels on the Lower Missouri River* co-authored by Zac Beussink, Jeff Finley and Tracy Hill. Each winner was presented with a framed picture of a Missouri River scene by Joe Riis. Colby Wrasse, Andrew Plauck, Brian Elkington, Clayton Ridenour and Andy Starostka also authored informative and striking posters of ongoing research conducted by Columbia NFWCO. A number of staff from our office were also co-authors on posters presented by other state and Federal agencies.

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

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.

concerns for transfer of biota from either natural overflow or from an existing outlet that would connect Devil's Lake to the Sheyenne and Red rivers within the Hudson Bay drainage.

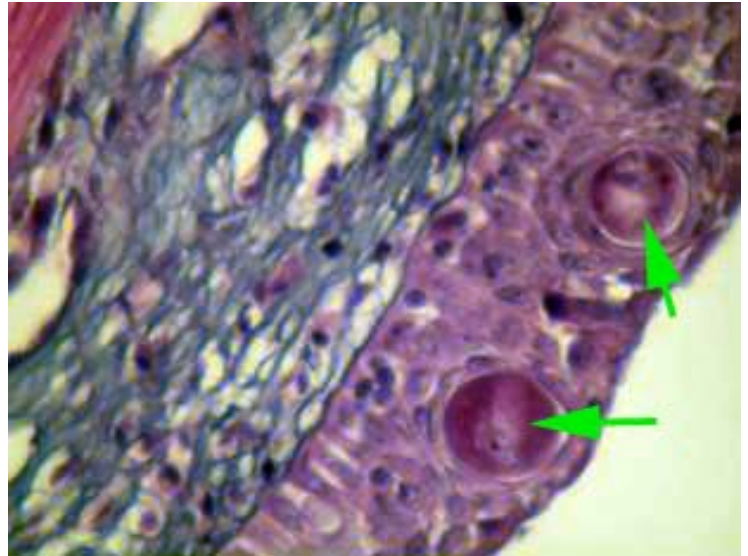
The accidental transfer of harmful pathogens could potentially impact commercial and sport fisheries in the Red River and Lake Winnipeg. The Bozeman FHC was asked to initiate a fish pathogen survey of Devil's Lake. La Crosse FHC's contribution was to provide identification of the fish parasites recovered.

La Crosse FHC staff are nationally recognized as authorities in fish parasite taxonomy. In the past three years, approximately 20 different parasite taxa of trematodes (flukes), cestodes (tapeworms), nematodes (roundworms), spiny-headed worms and leeches have been identified from Devil's Lake fish. The trematode (*Gyrodactylus hoffmani*) was identified as a species of concern for Manitoba because it is a harmful parasite for fathead minnows (an important baitfish). Final results from the survey will be used to perform risk analyses associated with biota transfers.

Pallid Sturgeon Iridovirus detected in Pallid Sturgeon

BY BECKY LASEE, LA CROSSE FHC

The Neosho NFH raises endangered pallid sturgeon for recovery efforts in the Lower Missouri River. The pallid sturgeon iridovirus is a serious pathogen for hatchery pallid sturgeon because it can cause high mortalities. Standard tissue cell culture methods are not available to detect the virus; therefore, fins must be chemically fixed and processed for histological analysis. Seven pectoral fin samples from feral Missouri River pallid sturgeon were collected by the Neosho NFH and sent to the La Crosse FHC. Two of the seven fin samples were lightly infected with the virus.



-USFWS

Shown here are pallid sturgeon iridoviral cells (arrows) in a tissue section of a fin.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/lacrosse-fhc.pdf>

Genoa NFH's Research Capabilities bolstered by the Addition of an Experimental Fish Rearing Battery

BY NICK STARZL, GENOA NFH

In support of sound science and technology, the Genoa NFH bolstered their ability to conduct research by designing and constructing a portable experimental rearing battery. The system was designed to have up to three replicated observations (9 tanks) at a time. Until now, production tanks had to be used which unfortunately pulls valuable tank space away from non-experimental fish. The scaled down tank layout will also require less fish per study, which is a huge factor whenever threatened or endangered species are used. Genoa NFH has been conducting lake sturgeon feed trials over the last six years. It is hoped that with the new experimental rearing battery, trials will become easier and more valid due to the higher level of control.

The system was also designed to be portable. This allows the system to be moved around the hatchery for various needs such as cool-water fish disinfection techniques, coaster brook trout growth studies, and endangered mussel research.



-USFWS

This new experimental rearing tank set-up (battery) will allow the Genoa National Fish Hatchery staff to conduct more in-depth research, aimed at improving the station's fish production.

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

Erosion Sites repaired on Michigan's Black River

BY HEATHER RAWLINGS, ALPENA NFWCO

Two eroding stream banks were restored on the main branch of the Black River in Montmorency County, Michigan, in July 2007. The 50-acre property is owned by a private individual and was recently placed under a permanent protective easement through the Headwaters Land Conservancy. The repair of these erosion sites was coordinated with many partners, and is part of a larger, locally-driven watershed restoration and protection effort. The Alpena NFWCO Partners for Fish and Wildlife program biologist Heather Rawlings was part of the watershed team that identified problem sites, prioritized work actions, secured necessary funding, and implemented the restoration projects.



-USFWS/HeatherRawlings

Two stream bank erosion sites were restored on the main branch of the Black River in Montmorency County, Michigan. Vegetative plantings will begin this spring.

value of volunteers was evident during the restoration process and demonstrates collaborative conservation. All materials had to be carried down to the creek through a winding path. A combination of biologs, lunker structures, tree revetments, and vegetative plantings were used to stabilize the sites. The days were hot and sunny, but the river was cold, so there were plenty of volunteers offering to get wet. Both sites were completed by the Black River Work Crew the following week. Due to the drought conditions, vegetative plantings will be completed in the spring of 2008.

In addition to the Work Crew and volunteers (Trout Unlimited, Headwaters Chapter and Montmorency County Conservation Club) that completed the on-site work, this project was supported in part through the North East Michigan Council of Governments, which contributed \$2,000 in labor for the design, permitting, and implementation of the project. Huron Pines Resource, Conservation & Development donated a vast amount of technical expertise and directed the volunteers during the work weekend. This project demonstrates how the Partners for Fish and Wildlife program can engage a wide range of partners and become part of locally-driven conservation efforts.

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

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.

A robust brook trout population occurs in Hobbs Creek and the Main Branch of the Black River that run through this property. These waterways are high quality coldwater streams that provide both spawning and rearing habitat for brook trout, a Region 3 priority conservation species. Sedimentation into the streams remains the largest pollutant problem and degrades the substrate by reducing habitat quality and renders it unsuitable for fish spawning. By restoring eroding stream-banks, this project improved stream quality for brook trout and other aquatic resources.

Two large erosion sites, approximately 500 feet in length, were present on the property when the landowner purchased it. Approximately 20 volunteers from the Headwaters Chapter of Trout Unlimited and the Black River Work Crew restored the two erosion sites in a marathon work weekend. The spirit and

Fort Leavenworth considering adding Pallid Sturgeon Habitat

BY JOANNE GRADY, COLUMBIA NFWCO

Tracy Hill, Joanne Grady and Andy Starostka of the Columbia NFWCO met with Matt Nowak of Fort Leavenworth's Environmental Services division in February. Fort Leavenworth is located on a large bend of the Missouri River on the Kansas border with Missouri. Pallid sturgeon and hybrid sturgeon have been captured in the vicinity of the Fort by both Columbia NFWCO and Missouri Department of Conservation crews.

The U.S. Army Corps of Engineers approached the Fort about constructing a chute or shallow water habitat on their property. Columbia NFWCO was contracted by the Fort to develop a floodplain plan which outlines opportunities to develop pallid sturgeon habitat. Staff from the Fish and Wildlife Service visited the site and discussed several possible opportunities for aquatic habitat. There is amazing potential to add fisheries habitat at the Fort.



-USFWS/Joanne Grady

Matt Nowak of Fort Leavenworth points out a stand of young pecan trees on the Missouri River floodplain to Tracy Hill and Andy Starostka of Columbia National Fish and Wildlife Conservation Office (NFWCO). Columbia NFWCO has been contracted by the Fort to develop a floodplain plan to outline opportunities to develop pallid sturgeon habitat.

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

Huron Pines RC&D Annual Meeting

BY HEATHER RAWLINGS, ALPENA NFWCO

Biologists Andrea Ania and Heather Rawlings attended the Huron Pines Annual Meeting held in Hillman, Michigan, on February 2. The meeting was held to showcase watershed restoration projects completed in the 2007 field season, partnerships created, and general activities of Huron Pines. Key-note speaker was Michigan DNR Fisheries Chief Kelley Smith. In lieu of resource agency reports, key agency personnel were requested to remain in the building after the formal meeting for a "meet and greet" session with interested partners. Rawlings

and Ania remained after the meeting to discuss restoration initiatives in the Ocqueoc and Sturgeon rivers. The Alpena NFWCO is working closely with Huron Pines on a number of large projects and initiatives for the 2008 field season.

Approximately 100 resource agency, local government and conservation organization personnel were updated and/or introduced to habitat restoration programs and grant opportunities offered through the Fish and Wildlife Service.

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

Ohio River Basin Habitat Partnership

Rob Simmonds continued to work with partners towards establishing the Ohio River Basin Habitat Partnership. A partnership meeting is scheduled for April to determine goals and objectives that will help us get the most out of a strategic planning workshop for National Fish Habitat Action Plan (NFHAP) partnerships in the Midwest Region. Including the meeting and subsequent workshop, we should make major steps forward in becoming a fully recognized partnership under NFHAP and become eligible for funding.

Scientific Writing Course

BY ADAM KOWALSKI, ALPENA NFWCO

The Fish and Wildlife Service contracted with Pam Hurley of Hurley Write, Inc. to host a scientific writing workshop in La Crosse, Wisconsin. Several Fish and Wildlife Service personnel were in attendance including Anjie Bowen, Scott Koproski and Adam Kowalski from the Alpena NFWCO. This was a two-day workshop with the following objectives: discuss the role of persuasion in writing, analyze the paper's audience and purpose, create useful writing strategies, describe methods of effective language use, apply various proofreading/editing strategies, and apply effective writing strategies to work-related documents.

Day one focused on discussions relating to the idea that writing is persuasive and reviewed the three ways to persuade according to Aristotle. Knowing and understanding your audience was also a large part of the first day. Other day one topics included: working through the writing process, critical thinking, using language effectively, reducing expletives and redundancy, creating flow, and use of tables, charts and graphs. Open discussions and reviewing writing examples were also conducted throughout the day to help fortify the lessons.

Day two focused on editing, proofreading and reviewing documents from others. Writing grants and proposals was also discussed during day two. Other topics covered were writing the individual parts of a scientific paper, writing abstracts, and using outlines. Editing written examples as a group, discussing what needed to be corrected, what was correct, and how the examples could be improved was addressed. This was a very good workshop and should improve the writing abilities of all in attendance and improve the quality of work produced.

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

39th "Introduction to Fish Health Management" Course

BY COREY PUZACH, LA CROSSE FHC

The La Crosse FHC presented its 39th *Introduction to Fish Health Management* course in Onalaska, Wisconsin, in February. The fish health course is taught in cooperation with the National Conservation



-USFWS
Class participants of the 39th annual "Introduction to Fish Health Management course" held in Onalaska, Wisconsin.

Training Center (Shepherdstown, West Virginia). Students traveled from Ohio, Pennsylvania, and other parts of the United States, and also from Winnipeg, Canada. Instructors were La Crosse FHC staff. There were also guest speakers from the La Crosse NFWCO, Upper Mississippi River National Wildlife and Fish Refuge, Genoa NFH, and the Upper Midwest Environmental Science Center. Students attended lectures in the morning and performed "hands-on" laboratory exercises in the afternoon. Topics included fish anatomy, disease signs, bacteriology, virology, parasitology, nutritional problems and proper disinfection techniques. In the lectures, the students also worked on chemotherapeutic calculations and situational fish health problems. In the laboratory, students gained experience in fish necropsy, proper fish health sampling techniques, bacterial isolation and identification, biochemical testing, parasite searches, microscope use and drug sensitivities.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/lacrosse-fhc.pdf>

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.

Congressional Actions

H.R. 1495 (enr) To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. [Enrolled bill]

S. 1248 (pcs) To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. [Placed on Calendar Senate]

H.R. 4455 (ih) To authorize the Secretary of the Interior to provide international wildlife management and conservation programs through the Wildlife Without Borders Program in the United States Fish and Wildlife Service, and for other purposes. [Introduced in House]

H.R. 3891 (rh) To amend the National Fish and Wildlife Foundation Establishment Act to increase the number of Directors on the Board of Directors of the National Fish and Wildlife Foundation. [Reported in House]

H.R. 2764 (enr) Making appropriations for the Department of State, foreign operations, [Enrolled bill]

H.R. 2764 (eah) This Act may be cited as the "Consolidated Appropriations Act, 2008". [Engrossed Amendment House]

S. 2758 (is) To authorize the exploration, leasing, development, production, and economically feasible and prudent transportation of oil and gas in and from the Coastal Plain in Alaska. [Introduced in Senate]

H.R. 3891 (eh) To amend the National Fish and Wildlife Foundation Establishment Act to increase the number of Directors on the Board of Directors of the National Fish and Wildlife Foundation. [Engrossed in House]

H.R. 3891 (ih) To amend the National Fish and Wildlife Foundation Establishment Act to increase the number of Directors on the Board of Directors of the National Fish and Wildlife Foundation. [Introduced in House]

H.R. 767 (rh) To protect, conserve, and restore native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes. [Reported in House]

H.R. 767 (ih) To protect, conserve, and restore native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes. [Introduced in House]

H.R. 767 (eh) To protect, conserve, and restore native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes. [Engrossed in House]

H.R. 1533 (ih) To provide for the establishment of a national mercury monitoring program. [Introduced in House]

S.J.Res. 17 (rs) Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean. [Reported in Senate]

S. 843 (is) To provide for the establishment of a national mercury monitoring program. [Introduced in Senate]

H.R. 767 (rfs) To protect, conserve, and restore native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes. [Referred in Senate]

H.R. 767 (rcs) To protect, conserve, and restore native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes. [Reference Change Senate]

S.J.Res. 17 (es) Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean. [Engrossed in Senate]

S.J.Res. 17 (is) Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean. [Introduced in Senate]

S.J.Res. 17 (rcs) Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean. [Reference Change Senate]

S.J.Res. 17 (rfh) Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean. [Referred in House]

H.R. 3663 (ih) To amend the Fish and Wildlife Act of 1956 to establish additional prohibitions on shooting wildlife from aircraft, and for other purposes. [Introduced in House]

H.R. 2830 (rh) To authorize appropriations for the Coast Guard for fiscal year 2008, and for other purposes. [Reported in House]

H.R. 1495 (eh) To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. [Engrossed in House]

H.R. 1495 (pcs) To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. [Placed on Calendar Senate]

H.R. 3227 (ih) To direct the Secretary of the Interior to continue stocking fish in certain lakes in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area. [Introduced in House]

H.R. 3891 (rfs) To amend the National Fish and Wildlife Foundation Establishment Act to increase the number of Directors on the Board of Directors of the National Fish and Wildlife Foundation. [Referred in Senate]

H.R. 1495 (ih) To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, 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.

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-

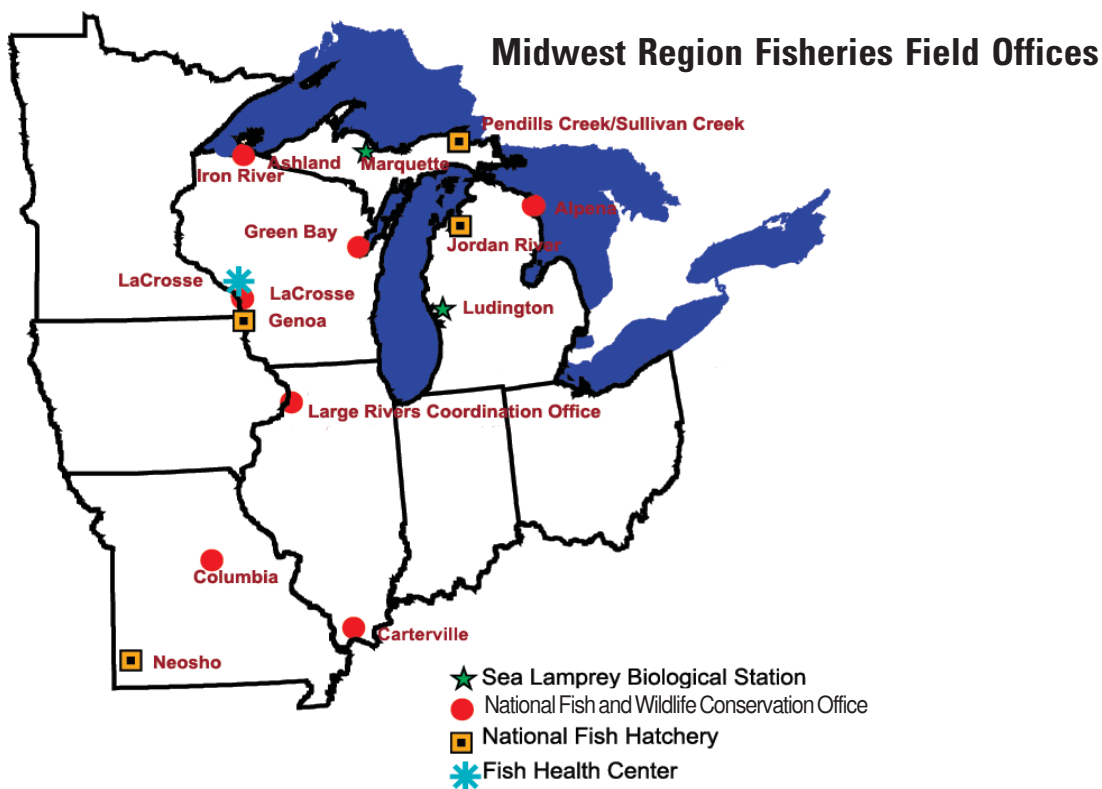
ies databases; provide technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments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



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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

- Pendills Creek NFH Office Remodeled
 - Curt Friez, Pendills Creek NFH
- 2008 Ohio Fish Producers Association Meeting
 - Jim McFee, Alpena NFWCO
- MICRA Sub-Committee Meets in Nebraska
 - Brian Elkington, Columbia NFWCO

Aquatic Species Conservation and Management

- Laboratory Testing Services Provided to State Partners
 - La Crosse FHC staff
- La Crosse Fish Health Center Conducts Spring Fish Health Inspections of Lake Trout and Coaster Brook Trout at National Fish Hatcheries
 - Ken Phillips, La Crosse FHC
- Recovery of Pallid Sturgeon in the Lower Missouri River
 - Tracy Hill, Columbia NFWCO
- Iron River NFH completes Fish Spawning and Egg Shipping
 - Kurt Schilling, Iron River NFH

Aquatic Invasive Species

Public Use

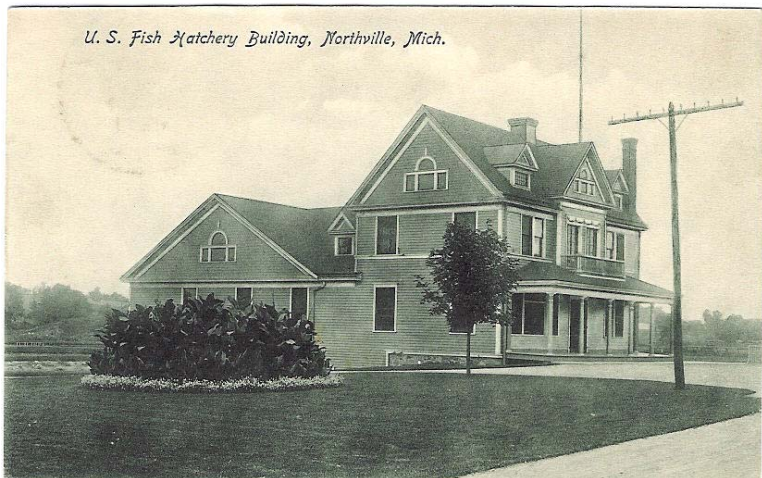
- Sport Show Exhibit Promotes Environmental Awareness
 - Mark Steingraeber, La Crosse NFWCO
- LNFOWCO Biologists Assist at Kids Ice Fishing Day
 - Ann Runstrom, La Crosse NFWCO
- Information Added to the Alpena NFWCO Web Site
 - Anjanette Bowen, Alpena NFWCO

Cooperation with Native Americans

Leadership in Science and Technology

Workforce Management

- Annual Career Day for Northland College Students
 - Frank Stone, Ashland NFWCO
- Volunteer Helps Out at Carterville NFWCO
 - Nate Caswell, Carterville NFWCO
- A tale of two volunteers
 - Colby Wrasse, Columbia NFWCO
- The Wide, Wide World of Ben Murray
 - Brett Witte, Columbia NFWCO
- Pendills Creek/Sullivan Creek NFH Complex Hires Two New Biologists
 - Curt Friez, Pendills Creek NFH
- La Crosse Fish Health Center Recognizes Volunteer Sarah Bauer
 - Terry Ott, La Crosse FHC
- Volunteer Returns for a Fourth Year!
 - Curt Friez, Pendills Creek NFH
- Forklift Training Completed at Pendills Creek National Fish Hatchery
 - Curt Friez, Pendills Creek NFH
- New Project Leaders Indoctrinated – Project Leader Academy Completed
 - Rob Simmonds, Carterville NFWCO
- Carterville, Columbia, and La Crosse NFWCO's Come Together to Discuss and Solve Common Issues
 - Rob Simmonds, Carterville NFWCO
- Student Job Fair at Missouri Natural Resources Conference
 - Joanne Grady, Columbia NFWCO



U. S. Fish Hatchery Building, Northville, Mich.

-Jerry French Postcard Collection; U.S. Fish Hatchery at Northville, Michigan (circa 1910)

Water Under the Bridge A Glimpse into our Proud Past

The U.S. Fish Hatchery at Northville was established in 1889 in Wayne County, Michigan. Northville is now a suburb of Detroit. The Northville Hatchery operated until 1957 when it was transferred to the Division of Fishery Research.