U.S. Fish and Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

Fish Lines

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Barrier Inventory

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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.

Features

-Owen Johnson
The "Kids Ice Fishing Clinic" is an annual event, sponsored since 2003 by the *Friends of the Upper Mississippi Fishery Services.*

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

Fish Lines
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-USFWS/DavidHandrix
Neosho National Fish Hatchery Visitor Center

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Tag Recovery Lab Improved for Mass Marking Program

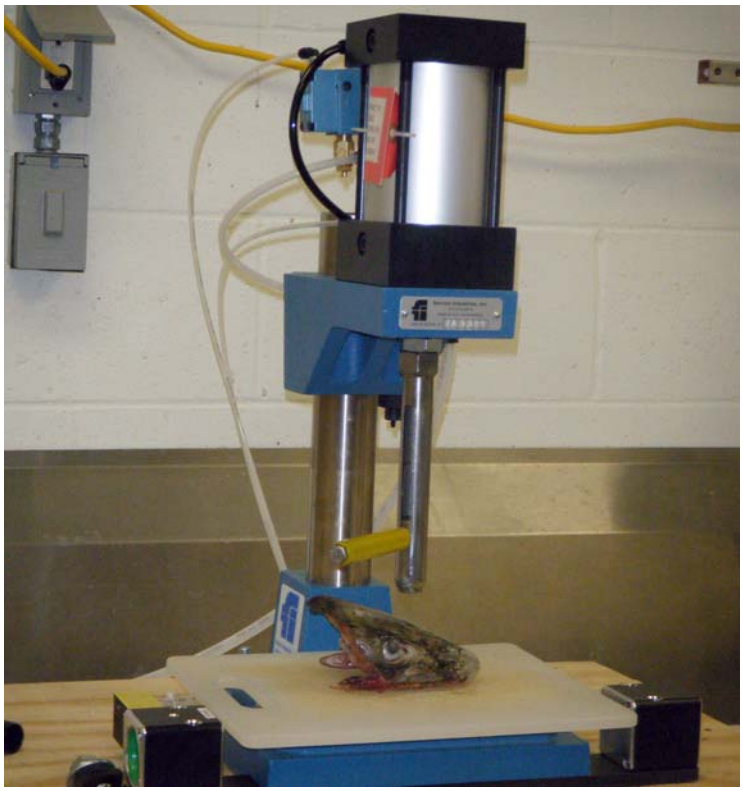
BY ALLEN LANE, GREEN BAY FWCO

Facility and efficiency improvements were made to the coded-wire tag recovery lab at the Green Bay Fish and Wildlife Conservation Office (FWCO). For over 15 years, the Green Bay office has been processing lake trout heads. Fish had been coded-wire tagged at federal hatcheries prior to stocking into the Great Lakes.

Tagging and recovery programs improve fisheries management and measure the success of restoration programs for native species. An expanded program to coded-wire tag 36 million salmon and trout stocked by all agencies in United States and Canadian waters will increase the demand for tag removal services. This initiative to increase capacity was initiated by Jim Webster and Allen Lane of the Green Bay FWCO. It began with visits to tag recovery labs in Washington and Oregon that process 70,000 to 120,000 tags per year.

Methods and equipment used in Washington and Oregon were adapted for use in processing salmon and trout recovered with coded-wire tags in the Great Lakes. Improvements to the facility include: A head coring press, which allows biologist to work with a small core of flesh minimizing the time needed to retrieve the tag, LCD video zoom microscopes to aid in reading coded-wire tags, walk-in freezer large enough to store heads before they are processed, and work stations to make the lab more efficient and ergonomic.

This year, the lab has extracted tags from Chinook salmon and lake trout from 5 state agencies and Canada. When the mass marking program is fully operational, it is expected that about 100,000 tags per year will be extracted from fish captured in fisheries and agency assessments in the Great Lakes.



-USFWS photos by Jim Webster

Equipment for the expanded tag recovery lab at the Green Bay Fish and Wildlife Conservation Office will increase efficiency of the mass marking program in the Great Lakes. (Top) This is one of three LCD zoom microscopes added to the recovery lab. (Left) A pneumatic air press is used to take a core sample from trout or salmon heads.

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

Biologists Lead 4th Grade Science Classes

BY JIM MCFEE, ALPENA FWCO

For the last three years, Alpena Fish and Wildlife Conservation Office (FWCO) has joined with Wilson Elementary School on a Children and Nature Project. This is a project that brings biologists out of the office or field and into the classroom monthly to educate children on the wonder of nature and science.

-USFWS

Students in Mrs Walterreit's science class at Wilson Elementary write down what they learned during a visit from a biologist from the Alpena Fish and Wildlife Conservation Office.

On December 10th, biologists Heather Rawlings and James McFee taught Mrs. Walterreit's two fourth grade science classes about electricity. They performed several experiments, as well as answered a wide range of questions. Experiments consisted of showing the difference between parallel and series circuits, demonstrating how a light switch works, harnessing electrical current from citrus fruit, and creating a simple battery using pennies. The classes were very engaged with all of the experiments. Each pair of students was able to build their own circuit using wires, a battery and a light bulb. It was a good opportunity for the students to learn that when a light turns on it is not magic - the light comes from a generating source.

On January 27th, McFee revisited Mrs. Walterreit's science classes. Topics consisted of weight, mass, volume, density and changing states of matter. An electric balance was used to demonstrate the difference between weight and mass. A graduated cylinder and beakers were used to show techniques for measuring volume. Then a combination of mass and volume was used to teach density. Also in the density lesson, a beaker was used to layer seven liquids with different densities. This demonstration was a real crowd pleaser and a great teaching tool.

Last was an experiment showing the changing states of matter. For this lesson, snow was melted into a liquid, boiled into a gas, and then condensed back into a liquid. The students' excitement during these visits shows that science and learning can be fun.

Alpena FWCO staff continues to seek diverse opportunities to increase scientific literacy in our future natural resource stewards. Nice work!

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

Illinois Fish Passage Barrier Inventory

BY BRAD ROGERS, CARTERVILLE FWCO

Improving habitat for fish is one part of the Fish and Wildlife Service's mission. Habitat improvements come in many forms and can be as simple as placing brush piles in a local lake, or as complicated as re-directing a stream's course. Part of the habitat program is directed towards dam removals.

Brad Rogers of the Carterville Fish and Wildlife Conservation Office surveyed all the streams in 11 Illinois watersheds using Google Earth, MSRMaps, and Terraserver in search for un-documented barriers to fish passage.

(Above) A Google Earth aerial image of a barrier found while surveying Jackson Creek, Illinois. (Below) - A site visit was made to the location revealing this barrier on Jackson Creek.

-USFWS/BradRogers

Many dams exist in streams today that no longer serve their original or intended purposes and do little more than segment streams and block fish migration. In an attempt to restore stream connectivity, habitat biologists use multiple barrier inventories and the Fish Passage Decision Support System (FPDSS) to decide which barriers, if removed, would be the most beneficial to fish. The number of stream miles opened up after a barrier is removed is one way in which we measure a benefit to fish. This number can be obtained by modeling a barrier removal in the FPDSS prior to on-the-ground work. The model output, while being extremely valuable, can sometimes be misleading. Such is the case when unidentified barriers exist in watersheds. If an unidentified barrier exists in a watershed where a barrier is planned for removal or has already been removed, the actual number of stream miles re-opened may be significantly less than the FPDSS model predicted.

In order to make future modeling results as accurate as possible, Carterville Fish and Wildlife Conservation Office (FWCO) felt it was essential to update the FPDSS with additional barriers that are not currently inventoried. Staff developed a project known as the Illinois Fish Passage Barrier Inventory to accomplish this task. The project tested the use of publicly available remote sensing applications as a way to survey watersheds and locate undocumented barriers. Technician Brad Rogers of the Carterville FWCO was tasked with seeing this project through. He surveyed all the streams in 11 Illinois watersheds using Google Earth, MSRMaps and TerraServer in a search for new undocumented barriers. Locating barriers from aerial images was challenging at first, but after some study of barrier characteristics from on-the-ground and aerial photographs of known barriers, this task

became much easier. In all, 140 new potential barriers were marked in the 11 remotely surveyed watersheds. Brad was able to make site visits to 79 of these new locations, and verified that 59 of the potential barriers were indeed barriers to fish passage. The other 20 sites were verified to be non-barriers. Sites that were not barriers were often dams that had been previously removed, small log jams, home-made rock bridges for crossing streams, beaver dams, or other unusually placed rock piles and refuse in the stream. Unfortunately, time and funding did not allow for the verification of the remaining sites, but as funds become available, Carterville FWCO plans to continue verifying and locating new barriers.

This method of locating barriers was tedious, but a very simple way to survey a large area in a minimal amount of time. The information we gathered will make the FPDSS a more complete database and make model results of dam removals more accurate. When used in conjunction with the FPDSS, this type of survey will allow us to make the best management decisions (e.g. which barrier removal opens the most miles of stream), and potentially avoid mistakes (e.g. not realizing an unforeseen barrier exists). The detailed report is available from Carterville FWCO along with a spreadsheet detailing all the newly identified barriers.

-USFWS/BradRogers

(Left) A Google Earth aerial image of a suspected barrier on Prentiss Creek, Illinois, was verified as a barrier during a subsequent site visit (Right).

-USFWS/BradRogers

(Left) A Google Earth image shows a suspected barrier on Jackson Creek, Illinois, that was marked based on the appearance of water levels indicating a possible barrier. (Right) We found a previously breached barrier during the site visit.

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

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.

Lake Sturgeon Streamside Rearing Facility Collaboration

BY KEVIN MANN, GREEN BAY FWCO

In early January, biologists Kevin Mann and Rob Elliott from the Green Bay Fish and Wildlife Conservation Office (FWCO) traveled to Plainwell, Michigan, to meet with Michigan Department of Natural Resources (DNR) biologists to discuss their upcoming cooperative project focused on rehabilitation of lake sturgeon in the Kalamazoo River using a new lake sturgeon streamside rearing facility. The mobile facility, being designed and built by Genoa National Fish Hatchery staff, will be set up and operated on the Kalamazoo River beginning in early April, 2011 to rear lake sturgeon eggs and larvae collected from the Kalamazoo River for released back into the Kalamazoo River in late September.

-USFWS/RobElliott

Biologist Kevin Mann (left) and Michigan Department of Natural Resources biologist Kregg Smith survey the future site of a lake sturgeon streamside rearing facility on the Kalamazoo River.

The goal of the streamside rearing facility is to increase survival of these young fish, while facilitating imprinting to the Kalamazoo River by rearing the fish within the rearing facility on their natal waters. This rearing process also helps maintains the unique genetics of the lake sturgeon population in the Kalamazoo River, because only fish which were collected from the river are released back during the fall. Biologists for the two agencies spent time discussing staffing, gear construction, equipment needs and travel to the various locations on the Kalamazoo River where they will be collecting wild produced eggs and larvae to be reared in the streamside trailer. The trip was a great way for the two agencies to discuss their collaborative effort and to coordinate their rapidly approaching work aimed at rehabilitating this ancient fish.

During their site visit, biologists also toured the future location of the streamside facility to finalize facility placement and utility installation. The facility will be located just off the river within a county park boat launch, which is associated with DNR owned property containing hiking and biking trails. These trails have interpretive signs about sturgeon and other fish species which can be found in the Kalamazoo River. Additional signs are in the works that will help inform boaters, fishermen, bikers and hikers about how the streamside rearing facility is run and the its importance.

This project is funded in large part by the Fish and Wildlife Service but has many collaborative partners including Michigan DNR, Sturgeon for Tomorrow-Kalamazoo Chapter, Match-e-be-nash-she-wish Band of Pottawatomi Indians and Allegan County Parks Commission, as well as others.

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

Now That's a Partnership!

BY ELLIE KOON, LUDINGTON BIOLOGICAL STATION

Lowney Creek, a small, pristine tributary to Lake Superior, flows through some beautiful country - the Beaver Basin Wilderness, part of Pictured Rocks National Lakeshore, which is administered by our institutional brethren in the National Park Service (NPS). Unfortunately, clean water and excellent habitat make Lowney Creek a fine nursery stream for the invasive sea lamprey. Accordingly, it was scheduled for lampricide treatment in fall 2010 to prevent larval lampreys from maturing and descending to Lake Superior as parasites.

Lampricide treatments require a lot of equipment including pumps, car batteries and containers of lampricide that weigh 50 lbs. each. The flow and water chemistry of Lowney Creek dictated that as many as 15 containers of lampricide would have to be applied at three different stream locations. Unfortunately, these locations could be reached only by a

steep, mile and a half-long hiking trail. Normally, sea lamprey management staff uses four-wheeled ATVs to transport equipment to remote areas. The challenge? Wilderness regulations prohibit the use of motorized vehicles. So limited by this regulation, how do you get 1,000 lbs. of supplies and equipment to the stream? NPS staff remained firmly committed to wilderness regulations, but graciously volunteered to help us transport the materials, on short notice and on a holiday weekend!

And so, on the bright and dewy morning of Friday, September 3, four Fish and Wildlife Service employees and five NPS employees transported 12 containers of TFM (lampricide) and the necessary equipment to the three designated application points. The NPS provided two garden carts, a large-wheeled wheelbarrow, and three backpacks; The Fish and Wildlife Service supplied two "deer carts" and four backpacks.

The outcome? No cardiac defibrillation was needed, an estimated 12,000 larval sea lampreys were destroyed, and we were tremendously impressed with the NPS's commitment to the preservation of wilderness values. A true partnership resulting in the proper management and stewardship of our natural resources!

-USFWS/EllieKoon

Because wilderness regulations restricted motorized vehicle use, the Lowney Creek invasive sea lamprey treatment required National Park Service and Fish and Wildlife Service staff to manually transport 12 containers of TFM and the necessary equipment to three designated application points.

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

Northeast Michigan Great Lakes Stewardship Working Dinner

BY ANJANETTE BOWEN, ALPENA FWCO

Alpena Fish and Wildlife Conservation Office (FWCO) biologist Anjanette Bowen attended the Northeast Michigan Great Lakes Stewardship Initiative (GLSI) working dinner for the Alpena-Montmorency-Alcona Educational Service District. The meeting was held at the National Oceanic and Atmospheric Administration Great Lakes Maritime Heritage Center in Alpena, Michigan.

The GLSI provides small grants to schools in Northeast Michigan for place-based education projects. Alpena FWCO serves as a community partner for school projects and as a member of the GLSI Leadership Team. The purpose of the meeting was to share program updates and to allow GLSI project teams the opportunity to plan and network existing projects. Alpena FWCO was able to continue planning with three project teams during the meeting including the Alpena High School project to remove invasive buckthorn and conduct water quality sampling along the Thunder Bay River, Wilson Elementary School project to construct and plan activities for an outdoor classroom, and the Sprinkler Lake Education Center project to provide hands-on education for area schools.

For more information about the Northeast Michigan Great Lakes Stewardship Initiative, individual projects, or place-based education, please visit http://nemiglsi.org/.

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

It Pays to Have Friends

BY MELISSA CHEUNG, NEOSHO NFH

Just over a year ago, the *Friends of the Neosho National Fish Hatchery* (also known as our Friends group) learned they would be operating a gift shop in our new hatchery visitor center at the Neosho National Fish Hatchery (NFH). For startup funds they rallied local support and recruited new members. Little did we know that our Friends group was about to raise the bar for hatchery Friends groups across Region 3.

The first line of business was to determine what would be sold. Friends group members unanimously agreed that the focus should be on local talent. Betty Wright, a Friends group member, was appointed gift shop manager. With the help of other members, she recruited local artists to donate or sell their handmade wares. By choosing products that originate in the local area, the Friends group reduced shipping costs and the amount of required startup funds. Aside from donated and purchased items for sale, approximately 30% of the gift store's merchandise is sold on consignment. A portion of the purchase price for consigned items goes toward the fish hatchery. The gift shop, operated solely by Friends group volunteers, has become a place to showcase local talent and local support. While interviewing Betty in the gift shop, she told me a little about a local folk artist who has wood carvings of fish, geese and quail on display. Betty recalled a hatchery visitor that had inquired if the carvings were made outside of the United States. Upon learning that the carvings were made right here in the local area, the man picked out two of the carvings and brought them to the register to purchase. He later came back and bought two more. Hatchery visitors like this gentleman appreciate the unique items offered at our gift shop, especially items made in the area.

More than half of the artists selling crafts in the gift shop are members of the Friends group or relatives of members. A Friends group member, gift shop volunteer, and local artist, uses native plants to dye the yarn that she uses to make her trout patterned neck scarves. It takes time to create her masterpieces. She uses parts of native plants such as walnut hulls, flowers and berries to dye her yarn. During the visitor center's grand opening week, all four of her scarves on display sold. She went home to weave more scarves as fast as she could. Kay, co-author of "At This Place", a book about the history of the Neosho NFH, volunteers her time at the gift shop in addition to being a lifetime Friends group member and Neosho Daily News writer. "At This Place" is available for sale at the gift shop.

Other locally made gifts include homemade scented soy wax candles, walking sticks, printed postcards, fish stone sculptures, sturgeon and trout inspired pottery, pins made using fly tying materials, illustrated note cards, and handmade birdhouses. Photos and names of the artists are posted near the items as proof that the merchandise is locally made.

-USFWS

The visitor center gift shop items at the Neosho National Fish Hatchery feature local talent.

-USFWS

One area of the gift shop showcases the work of three local artists: trout patterned scarves, a stone fish sculpture and wood carvings.

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

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.

Two Pallid Sturgeon Now Call the St. Louis Zoo Home

BY TRACY HILL, COLUMBIA FWCO

Two pallid sturgeon are now on display at the St. Louis Zoo due to the combined efforts of several individuals. The transfer of pallid sturgeon from the U.S. Geological Survey (USGS) Columbia Environmental Research Center to the zoo was accomplished with the assistance of several partners. Pallid Sturgeon Recovery Team Leader George Jordan worked in conjunction with James Candrl of the USGS and Jane Ledwin of the Columbia Ecological Services Field Station to ensure all the necessary permits were obtained prior to fish transfer. Project Leader Tracy Hill and Branch Chief for Missouri River Studies Wyatt Doyle transported the two pallid sturgeon to the St. Louis Zoo. Jane Ledwin will work with the zoo staff to develop an education display that will be located outside the holding tank where the pallid sturgeon now reside. The opportunity to have hundreds if not thousands of people view and learn about endangered pallid sturgeon makes this a truly unique learning opportunity.

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

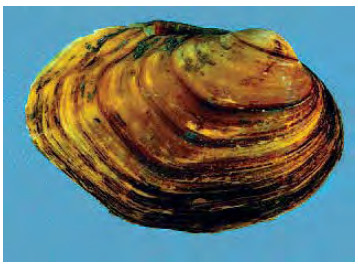
Three New Mussels Proposed for Federally Endangered Status

BY NATHAN ECKERT, GENOA NFH

Recently, three species of freshwater mussels found in the Upper Mississippi River system were proposed for listing as Federally Endangered species. They are the sheepnose, snuffbox and spectaclecase.

Genoa National Fish Hatchery (NFH) has been working to build a propagation program for the sheepnose over the last few years, and will continue to do so. The future listing of the snuffbox and spectaclecase will mean new additions to the list of mussels propagated at Genoa NFH.

Methodology for producing juvenile snuffbox has been established; however, the host fish for the larvae of the spectaclecase has not been determined. Without a known host fish, artificial propagation of that species will not be possible. The proposed listing should breathe new life into efforts by researchers to find a suitable host. The mussel culture staff at Genoa NFH plans to be part of the effort, and looks forward to the challenge.



Sheepnose Mussel

Snuffbox Mussel

Spectaclecase Mussel

These three species of freshwater mussels found in the Upper Mississippi River system were proposed for listing as Federally Endangered species.

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

Sullivan Creek NFH's "Egg Garage"

BY JAMES ANDERSON, SULLIVAN CREEK NFH

Sullivan Creek National Fish Hatchery (NFH) produces up to five million eyed lake trout eggs yearly, and all of these are housed in what is called the "egg incubation garage". The garage was built back in 1971, designed to house the hatchery plow truck and various fish culture equipment. Later on, the garage was revamped to be used for fin clipping yearling lake trout when production fish were reared here.

Fast forward to 1994, and Sullivan Creek is now transformed into a lake trout broodstock facility, and once again the garage goes through what was described as a "temporary" transformation into an "egg incubation garage". Keep in mind the garage was never designed to have running water in it, with just a

few floor drains to accommodate melting snow off the plow truck. The building had to be plumbed for creek water to incubate eggs, plus raise future brood lots in small fry tanks. The hatchery has done its best to funnel the water down the original drain system, but any water that was not collected by the drains flowed towards the doors, which is how the slope on the floor was poured when the garage was built. To make matters worse, during the winter months the doors freeze shut with staff inside the garage while working with the eggs or fish. So, lots of salt had to be used to keep ice from forming and freezing the doors shut which in turn led to the bottom of the doors becoming seriously decayed.

During January 2011, the doors were finally replaced thanks to funding through the American Recovery and Reinvestment Act (ARRA). The door project was slated for October of 2010, but with that being the hatchery's prime egg collection time and the garage being used to its maximum capacity, it was decided that the door project would be pushed back to winter. Over the past forty years, this little garage has been used in various ways and has played a big role in the Great Lakes lake trout rehabilitation program. It is hoped that someday Sullivan Creek NFH will get "a real incubation building" before the life expectancy of the new doors is put to the test.

-USFWS

The small garage at the Sullivan Creek National Fish Hatchery has been used to (temporarily) incubate lake trout eggs since 1994; however, the structure has deteriorated over the years due to the water use in the building.

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

Pallid Sturgeon Broodstock Evaluation

BY MELISSA CHEUNG, NEOSHO NFH

Every few months, we weigh the broodstock pallid sturgeon held on station. This is our chance to examine the overall health of the fish. If they have not been fin clipped, that means a DNA sample has not been sent to the geneticist. In that case, we cut a small piece from their caudal or pectoral fin and send it to La Crosse Fish Health Center. Because it can be awkward to weigh such large fish, we have made a few adjustments in our weighing process. We have a large shallow net with a modified hook attachment that we built specifically for obtaining sturgeon weights. We hang the scale from a hook that is screwed into the threshold of the garage door. A chain is used to adjust the height at which the scale is hung from the hook. This allows us plenty of room to maneuver our modified net when carrying a restless sturgeon. The mesh size of the net is also small so that the sturgeon's rostrum (snout) does not get caught in the mesh.

-USFWS

Jaime Pacheco prepares to weigh a pallid sturgeon while Melissa Cheung records biological date including the fish's 10 digit passive integrated transponder (PIT) tag number.

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

GLRI Risk Assessments: A First Step in Fighting Invasive Species

BY TERESA CAMPBELL, CARTERVILLE FWCO

When introduced to novel locations, aquatic invasive species are known to negatively impact native populations by reducing growth and survival and displacing species entirely. Invasive fishes prey upon, out-compete and hybridize with native fishes, alter habitats, and introduce parasites and other diseases. United States waters are already infested with non-native fishes from all over the world. Many introductions result from aquarium releases or escapes from fish farms and aquaculture facilities. Florida, Puerto Rico, California and Hawaii are inundated with non-natives as they provide compatible habitat for the many tropical fishes used in the aquarium trade. Other bodies of water also contain their share of invasives, as exemplified by Asian carp in the Mississippi and Illinois Rivers. Numerous species of catfish, cichlids (i.e. tilapias and gouramis), and poeciliids (i.e. mollies and mosquitofish) are other common invaders.

As part of the Great Lakes Restoration Initiative (GLRI), the Carterville Fish and Wildlife Conservation Office received a list of 101 fish species that were invasive, or potentially-invasive, to United States waters. The charge was to analyze the risk these species pose to aquatic ecosystems and human industry. Technician Teresa Campbell researched biological and ecological information, prior history of invasiveness, as well as the current status of these fishes in the United States to find geographic areas of highest invasion concern. She used climate matching software to match environmental parameters from the species' native and established ranges to those in the United States. The climate match and history of invasiveness were used to generate a risk assessment category of "low," "medium," or "high." These assessments are preliminary risk screenings, and results may lead to further investigation, research or management action. Fighting the spread of invasive species is a critical part of the Fish and Wildlife Service's mission to: "Conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people."

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.

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

2011 Chicago Area Asian Carp Monitoring Plan Comes Together

BY SAM FINNEY, CARTERVILLE FWCO

As another field season is upon us, it is that time of year to plan work for the upcoming sampling season. In that spirit, senior field and administrative staff from the Carterville, La Crosse and Columbia Fish and Wildlife Conservation Offices (FWCO) recently convened. The meetings were held in Columbia, Missouri and Springfield, Illinois.

Our agency serves an action and advisory role in the "Monitoring and Rapid Response Workgroup for the Chicago Area Waterways System." This group convenes annually to refine plans based on our current and body of knowledge. Fish and Wildlife Service staff discussed the projects we are leading, the projects that we are being called to assist with, and the sampling plan as a whole. The plan is a 98 page document that lists 19 separate projects. Projects that we have the lead on involve using a hydro acoustic camera to assess the efficacy of the electric fish barrier, monitoring a fish barrier between the Des Plaines River and the Chicago Sanitary and Ship Canal during high water events, and developing novel and more effective gear for capturing Asian carp.

We will also be assisting with eDNA and traditional gear sampling projects, barrier maintenance efforts, and responding rapidly to findings where appropriate. Other projects in the plan include removing Asian carp downstream of the barrier to reduce risk of fish challenging the barrier, fish tracking around the barrier, baitfish surveillance monitoring, and monitoring larval and juvenile fish. I encourage others to look at the plan and other projects in the plan upon its completion. The final version of this year's plan, and other information about Asian carp management, can be found at asiancarp.org.

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

Yuck! Are Those Things Still Around?

BY TIMOTHY SULLIVAN, LUDINGTON BIOLOGICAL STATION

This was the general response heard throughout the weekend at the sea lamprey display in Novi, Michigan. This display continues to draw large crowds during the Michigan United Conservation Club's Outdoorama sports show, which is annually attended by about 35,000 people. Young and old were intrigued and fascinated by the live adult sea lampreys. After spending several minutes gazing into the aquariums, the typical reaction was an upturned facial expression followed by a pronounced statement of "gross". Many were amazed after being educated that, yes, the sea lamprey control battle continues and were quite surprised to hear that sea lampreys do in fact inhabit all of the Great Lakes.

-USFWS/KevinButterfield

These boys are facinated with the live invasive sea lampreys at the Outdoorama sports show.

Many questions from the public centered on other Great Lakes invaders, including zebra mussels and gobies. There was also a great concern over Asian carp and the possible ramifications of their entry into the Great Lakes. Many people asked about the potential impacts to the existing fishery and what defenses could be used to combat yet another Great Lakes invader.

The display was staffed by past and present Fish and Wildlife Service employees with assistance from the Great Lakes Fishery Commission and Department of Fisheries and Oceans Canada staff. The public was educated about current sea lamprey control practices, alternative management methods and ongoing research projects. The sea lamprey display continues to be a hit and functions as an excellent outreach tool.

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.

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

Fish—Freeze—Food—FUN!

BY JENNY BAILEY, GENOA NFH

On February 5, *Friends of the Upper Mississippi Fishery Services* (FUMFS) and staff from Genoa National Fish Hatchery (NFH), La Crosse Fish and Wildlife Conservation Office (FWCO), and La Crosse Fish Health Center (FHC) hosted an event attended by 485 children (ages 5-12) and their families that provided a day of fishing, food, outdoors and fun in winter. This was the third year that the annual Kids Ice Fishing Day was held at Genoa NFH where over 1500 one-, two- and three-year-old rainbow trout were stocked into a frozen pond for beginning ice-fishers. Kids could be sure to catch at least one rainbow as well as a cup of hot cocoa, hot dogs, ice safety tips and angler education for free. The staff at Genoa NFH would like to thank all the volunteers, our Friends Group and the staff from the La Crosse FHC and FWCO for their help in getting all the kids geared up, out on the ice and fed!

Free events such as the Kids Ice Fishing Day encourage families to try new outdoor activities that

could become family traditions. Getting outdoors, spending time with family, catching the food that you eat, exercising in winter – these all improve well-being, health, knowledge and growth of children. Starting these habits early makes them more likely to stick for a lifetime of health and enjoyment. Studies show that spending time as a child in the outdoors makes adults much more likely to spend time in nature and getting outside today may be more important than ever. As we become increasingly more dependent on technology in work and play, sedentary lifestyles reduce our quality of life and longevity. It is predicted that 1 in 3 children born after the year 2000 will develop diabetes in their lifetime. Getting active, enjoying outdoors, and learning a great lifetime sport may go a long way in preventing this from happening. Come spend a day at Genoa NFH on May 21 for the FUMFS sponsored Annual Spring Kids Fishing Day for an ice-free event that will include fishing, food and fun the un-frozen way!

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The annual Kids Ice Fishing Day attracted 485 children (ages 5-12) and their families to the Genoa National Fish Hatchery, with a fun-filled day of fishing, food, outdoors and winter fun.

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

Exhibiting Awareness

BY MARK STIENGRAEBER, LACROSSE FWCO

The La Crosse Fish and Wildlife Conservation Office (FWCO) , Genoa National Fish Hatchery, and Upper Mississippi River National Wildlife and Fish Refuge -Winona District hosted about 1,600 winter-weary visitors who toured a Fish and Wildlife Service display booth during the 34th Annual La Crosse Boat, Sports, Travel, & RV Show held February 10-13 at the La Crosse Exhibition Center.

Representatives from these offices and the *Friends of the Upper Mississippi Fishery Services* were here throughout the four-day event to greet visitors and report on a variety of local/regional Fish and Wildlife Service programs and activities. An attractive display of posters, maps, photos, brochures, watch cards, and aquaria containing fish and mussels were prominently displayed near a main entrance to the exhibition hall. Fishery topics of frequent interest this year included Asian carp and other invasive species, as well as freshwater mussels, fish disease pathogens and lake sturgeon. The opportunity to personally exchange natural resource information with the large, diverse audience that attends this annual midwinter event makes our participation here a valuable outreach tool for all area offices.

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Visitors to the Fish and Wildlife Service booth at the 34th Annual La Crosse Boat, Sports, Travel, & RV Show were urged to reduce the use of consumer products containing ingredients like triclosan, which is toxic to aquatic life.

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

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.

Mussel Propagation Cage Design Paper Published

BY DOUG ALOISI, GENOA NFH

A technical paper on freshwater mussel propagation cage design was accepted for publication in the Fish and Wildlife Service's "Journal of Fish and Wildlife Management". The cages play an important role in the success of the Higgin's eye pearlymussel recovery effort. The "Journal of Fish and Wildlife Management" publishes research on all aspects of fish, wildlife, plants, ecology and land management. The Journal provides a wide system for rigorous peer review and dissemination for a wide range of scientific manuscripts. Article authors included Tony Brady, a Genoa National Fish Hatchery (NFH) graduate (currently mussel biologist at the Natchitoches NFH in Louisiana), Roger Gordon formerly of Genoa NFH, (manager of the Jordan River NFH) and Gary Wege retired, formerly of the Twin Cities Field Office. Development of the cages was a cooperative effort of some very creative folks in the natural resource field, including the current maintenance staff at the Genoa facility, Dan Kumlin and Jeffrey Lockington.

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Biologists set mussel culture cages.

Due to the success of the cages, over 40,000 two and three year old adult and sub adult Federally endangered Higgin's eye pearlymussels have been returned to the wild. Mussel biology has several bottlenecks that affect reproductive success. One of these bottlenecks is to get a fish host and gravid mussel together for the mussel to transfer larvae, or glochidia to its fish host. Then the fish must remain alive and healthy for a period of time to allow for the larvae to develop and drop off. Then they must avoid predators for three to four years, when the adult Higgin's eye becomes reproductively mature to start the whole process over again. The cages protect fish that have been artificially infested with mussel larvae. The fish are then released after they have dropped off their precious cargo of juvenile mussels. The juvenile mussels are protected from predation by placing substrate on the bottom of the cages and keeping fish from entering the cages. Cage design has also been modified for a variety of mussel and fish species and the aquatic habitats in which they occur.

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

Green Bay FWCO Provides Data Submission to Modeling Sub Committee

BY DALE HANSON, GREEN BAY FWCO

Lindsey Lesmeister and Dale Hanson of the Green Bay Fish and Wildlife Conservation Office (FWCO) recently worked through the biological samples collected during last summer's fishery independent lake whitefish surveys in northeastern Lake Michigan, whitefish management units WFM-04 & WFM-05. Lindsey thin-sectioned the otoliths from 135 lake trout; thin-sectioning exposes the light and dark bands that are indicative of annular growth patterns in the otolith or "ear bone" in the fish. Ages estimated from annuli counts were summarized along with fish length, weight, sex, maturity and lamprey wounding rate, and data was provided to the modeling subcommittee (MSC) where the data are used in fisheries models to estimate the status of the fishery. The fishery status, as well as next fishing season's harvest quotas, will be reported soon to the Technical Fisheries Committee (TFC) for discussion and approval.

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

World Wetlands Day Celebrated at Carlson High School

BY JUSTIN CHIOTTI AND ASHLEE HORNE, ALPENA FWCO

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.

On February 2, 1971, countries around the world signed an International Treaty (Convention on Wetlands) in Ramsar, Iran, proclaiming the international importance of wetlands. To celebrate the signing of the treaty, February 2nd was designated as world wetlands day and has been observed every year since 1997. This year, World Wetlands Day was celebrated on Feb. 9th at Carlson High School in Gibraltar, Michigan, due to a major snow storm on February 2nd.

To date, 30 wetlands in the United States have been designated "Wetlands of International Importance," including the only one in Michigan - Humbug Marsh. Humbug Marsh was designated as a wetland of international importance on February 2, 2010 and is located on the Detroit River in the cities of Trenton and Gibraltar, Michigan. Humbug Marsh represents most of the remaining unaltered marshland on the Detroit River.

This was the second year World Wetlands Day was celebrated at Carlson High School. Over 1,000 students walked from booth to booth manned by local representatives and environmental leaders, including biologists from the Alpena Fish and Wildlife Conservation Office (FWCO). Students learned about the ecological importance of wetlands, the organisms inhabiting these unique ecosystems, and why the preservation of wetlands is important. Biologists Justin Chiotti and Ashlee Horne described what the Alpena FWCO is doing to monitor and preserve fish communities within wetland habitats. An aquarium containing fish species often found within wetlands provided a good conversation starter with students. At times, 10-15 students surrounded the booth while they learned about fish tagging, lake sturgeon life history, sea lamprey ammocetes, and their career potential in the field of natural resources. Students were particularly interested in learning about the effects of invasive sea lampreys on fish, size and unique morphological traits of lake sturgeon, and tools (tagging techniques) fisheries managers use to monitor fish populations.

United States National Ramsar Committee Chairperson Suzanne Pittenger-Slear, Ms. Lynette Dowler (Plant Director of DTE Energy's Trenton Channel and River Rouge Power Plants), Andrew Hartz (District Supervisor of Land and Water Management Division of Michigan Department of Environmental Quality), and Dr. John Hartig (Detroit River International Wildlife Refuge Manager), gave speeches on the importance of wetlands and how children can learn about these unique ecosystems through hands on education. An act was performed by Dorothy McLeer to illustrate the importance of conservation from the perspective of Rachel Carlson. World Wetlands Day 2011 at Carlson High School was concluded by opening the gymnasium to the public to allow parents and other interested individuals to learn about wetlands and what we are doing to protect these invaluable resources.

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

Top Quality MOCC Training in Tiburon

BY KEVIN MANN, GREEN BAY FWCO

Biologist Kevin Mann from the Green Bay Fish and Wildlife Conservation Office (FWCO) participated in the Department of Interior (DOI) Motorboat Operator Certification Course (MOCC) which was held in Tiburon, California. It was a cooperative course hosted by San Francisco State University (SFSU) and the Romberg Tiburon Center for Environmental Studies. Each DOI employee working on watercraft is required to pass the course to become certified to work on their respective watercraft. The course was three days in length and covered basic boating safety concepts which employees need to know in order to operate motorboats on the job.

The first day was spent learning boat orientation and terminology as well as navigation rules and aids to navigation. Instructors taught the "rules of the road" for boats in water. The day ended by having all the students jump in the water and perform safety tasks including the proper way to get into safety suits and ways to get back into a boat if you have fallen out.

Day two began with an overview of the things we learned the previous day as well as instruction on knot tying and stowing lines. Students were shown the different types of visual distress signals with a hands-on exercise where everyone had the opportunity to launch aerial flares and smoke signals. Instructors used a fire simulation where students had the opportunity to test multiple fire extinguishers to see what each type was best suited for. Students were also shown the different parts to a boat trailer and how to properly launch and retrieve boats.

The third and final day began with instructors giving a quick tutorial on anchoring vessels before students were broken into groups. The remainder of the day was spent testing each group on the previous two days events including knots, boat trailering and boat maneuvering in the water. Students were tested on how well they were able to drive a boat into a circle of buoys, perform a three point turn and then exit the circle between the same two buoys they entered. The course ended by taking a written test covering the rules of boating.

Instructors teaching the course came from multiple organizations including the Scientific Boating Safety Association, University of California-Davis and SFSU. Instructors took a hands-on approach to the course and much of the time learning was spent on the water. While this course was a requirement for DOI employees using motorboats during their work, it is an excellent course for graduate students, university employees or anyone else who desires solid instruction on boat operation and safety.

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 Green Bay FWCO: http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf

Welcome Emilia!

BY MARK STIENGRAEBER, LA CROSSE FWCO

Emilia Kenow is a senior at Logan High School in La Crosse, Wisconsin. During the 2011 spring semester, she is participating in an internship (10 hours/week) with local offices of the U.S. Geological Survey, Fish and Wildlife Service, and the U.S. Army Corps of Engineers. Emilia will use this opportunity to survey career options in natural resources. She plans to attend the University of Wisconsin-Stevens Point next fall where she may pursue coarse work in Environmental Studies and Political Science. We look forward to Emilia's assistance in "Making Waves" for the La Crosse Fish and Wildlife Conservation Office (FWCO) this year!

-USFWS

Emilia Kenow is participating in an internship (10 hours/week) with La Crosse, Wisconsin, offices of the U.S. Geological Survey, Fish and Wildlife Service, and the U.S. Army Corps of Engineers.

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

112th CONGRESS
1st Session

S. 471

To require the Secretary of the Army to study the feasibility of the hydrological separation of the Great Lakes and Mississippi River Basins.

IN THE SENATE OF THE UNITED STATES

March 3, 2011

Ms. Stabenow (for herself, Mr. Durbin, Mr. Brown of Ohio, Mr. Schumer, Ms. Klobuchar, Mr. Levin, and Mrs. Gillibrand) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

A BILL

To require the Secretary of the Army to study the feasibility of the hydrological separation of the Great Lakes and Mississippi River Basins.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Stop Asian Carp Act of 2011".

SEC. 2. DEFINITIONS.

In this Act:

(1) CAWS.—The term "CAWS" means the Chicago Area Water System.

(2) Director.—The term "Director" means the Director of the United States Geological Survey.

(3) Hydrological separation.—The term "hydrological separation" means a physical separation on the CAWS that—

(A) would disconnect the Mississippi River from Lake Michigan; and

(B) shall be designed to be adequate in scope to prevent the transfer of aquatic species between each of those bodies of water.

(4) Secretary.—The term "Secretary" means the Secretary of the Army, acting through the Chief of Engineers.

(5) Study.—The term "study" means the feasibility study described in section 101(a).

TITLE I—FEASIBILITY STUDY

SEC. 101. FEASIBILITY STUDY.

(a) In General.—Not later than 30 days after the date of enactment of this Act, the Secretary, pursuant to section 206 of the Flood Control Act of 1958 (Public Law 85-500; 72 Stat. 317), shall initiate a study of the watersheds of the following rivers (including the tributaries of the rivers) that drain directly into Lake Michigan:

(1) The Illinois River, at and in the vicinity of Chicago, Illinois.

(2) The Chicago River in the State of Illinois.

(3) The Calumet River in the States of Illinois and Indiana.

(b) Purpose of Study.—The purpose of the study shall be to determine the feasibility and best means of implementing the hydrological separation of the Great Lakes and Mississippi River Basins to prevent the introduction or establishment of populations of aquatic nuisance species between the Great Lakes and Mississippi River Basins through the CAWS and other aquatic pathways.

(c) Requirements of Study.—

(1) Options.—The study shall include options to address—

(A) flooding;

(B) Chicago wastewater and stormwater infrastructure;

(C) waterway safety operations; and

(D) barge and recreational vessel traffic alternatives, which shall include—

(i) examining other modes of transportation for cargo and CAWS users; and

(ii) creating engineering designs to move canal traffic from 1 body of water to another body of water without transferring aquatic species.

(2) Cost-benefit analysis.—The study shall contain a detailed analysis of the environmental benefits and costs of each option described in paragraph (1).

(3) Association with other study.—The study shall be conducted in association with the study required under section 3061(d) of the Water Resources Development Act of 2007 (Public Law 110-114; 121 Stat. 1121).

(4) Consultation.—In conducting the study, the Secretary shall consult with any relevant expert or stakeholder knowledgeable on the issues of hydrological separation and aquatic nuisance species.

(d) Deadline.—The Secretary shall complete the study by not later than the date that is 18 months after the date of enactment of this Act.

SEC. 102. REPORT.

(a) In General.—The Secretary shall prepare a report on the waterways described in section 101(a) in accordance with—

(1) the purpose described in section 101(b); and

(2) each requirement described in section 101(c).

(b) Deadlines.—The Secretary shall submit to Congress and the President—

(1) not later than 180 days after the date of enactment of this Act, an initial report under this section;

(2) not later than 1 year after the date of enactment of this Act, an interim report under this section; and

(3) not later than 18 months after the date of enactment of this Act, a final report under this section.

SEC. 103. FEDERAL EXPENSE REQUIREMENT.

The Secretary shall carry out this Act at full Federal expense.

SEC. 104. PRESIDENTIAL OVERSIGHT.

The President, or the Council on Environmental Quality, acting as a designee of the President, shall oversee the study to ensure the thoroughness and timely completion of the study.

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

Midwest Region Fisheries Divisions

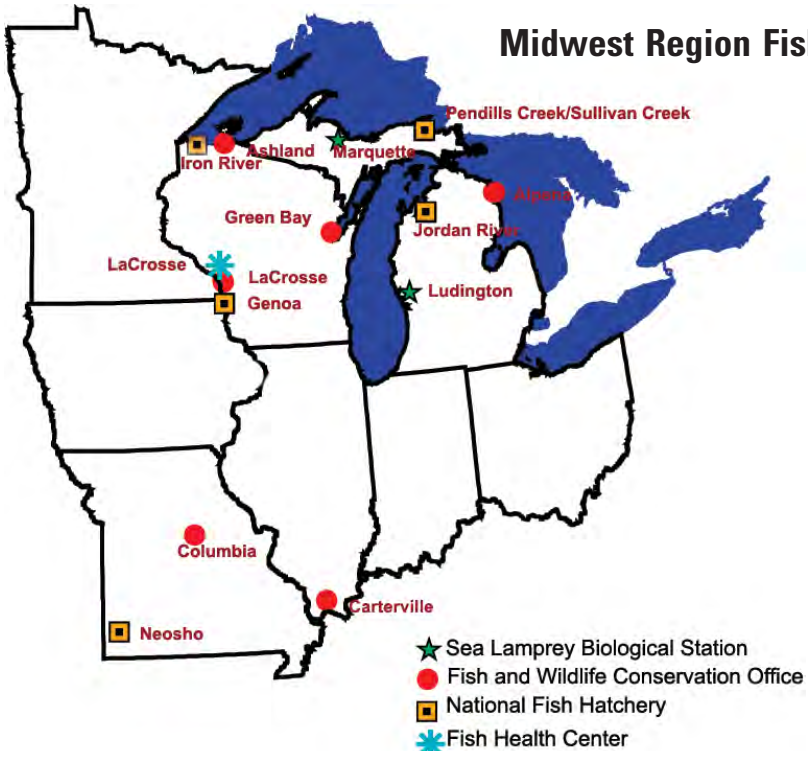
National Fish Hatcheries
The Region's National Fish Hatcheries primarily focus on native fish restoration/rehabilitation by stocking fish and eggs, such as pallid and lake sturgeon and by developing and maintaining brood stocks of selected fish strains, such as lake trout and brook trout. Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, stock rainbow trout in fulfillment of federal mitigation obligations and assist with recovery of native mussels and other native aquatic species.

Fish and Wildlife Conservation Offices
Fish and Wildlife Conservation Offices conduct assessments of fish populations to guide management decisions, perform key monitoring and control activities related to invasive, aquatic species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; play a key role in targeting and implementing native fish and habitat restoration programs; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's Partners for Fish and Wildlife and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency fisheries databases; provide technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and relicensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

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

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

Midwest Region Fisheries Field Offices



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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

Aquatic Species Conservation and Management

- **Cold-Water Fish Species Swim-Up**
  - **Jorge Buening, Genoa NFH**

Aquatic Invasive Species

Public Use

Cooperation with Native Americans

Leadership in Science and Technology

Aquatic Habitat Conservation and Management

Workforce Management