



Fisheries Program

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**Klondike Dam Fish Passage
Project Complete**

Good
National Fish Hatchery

**Capacity to Rear Larval
Lake Sturgeon Increased**

**Coasters Find New Home at
Red Cliff Tribal Fish Hatchery**

**"Pallid Sturgeon" a Fish
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A Shocking New Training!



Fish Lines

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Klondike Dam Fish Passage Project

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Fish Tails

"**Fish Tails**" refers to articles that are submitted by field staff that do not appear as a feature in the current edition of Fish Lines. These articles provide examples of the diverse work that the Service's Midwest Fisheries Program and partners perform on behalf of our aquatic resources and for the benefit of the American public.

Field Notes

"**Field Notes**" is an online searchable database that showcases hundreds of employee-written summaries of field activities and accomplishments of the U.S. Fish and Wildlife Service from across the nation.



Better than Planned-Klondike Dam Fish Passage Project Complete

BY JEFF FINLEY, COLUMBIA FWCO



Dam area before removal. Credit: Nate Hoogeveen, Iowa DNR

It began in 2008, the long and arduous project of removing an old mill dam from the Big Sioux River between Lincoln and Lyon County Iowa. While Columbia Fish and Wildlife Conservation Office (FWCO) has partnered with others to complete dozens of fish passage projects, mostly slab stream crossings, this was the first dam removal.

The dam was first constructed in 1883 adjacent to the Kruger Mill to provide the hydraulic head to power a flour mill. The stones were gleaned from nearby hills and hauled in by horses. Spring floods ravaged the stone dam annually until it was raised to a height of 8 feet and a concrete cap installed around 1918. In 1922 it was sold, reconstructed and converted to a hydropower dam and the height elevated to 10 feet. There are no records of activity from 1932-1963. In 1975 it was nominated for the National Register of Historic Places. Attempts to repair the extremely degraded structure in 1980 failed a few short years later when the Kruger Mill collapsed in 1983. Seeking federal funding to repair the structure in 1989, a consulting historian

determined that due to the severe loss of structural integrity it was no longer eligible for the National Register of Historic Places. The dam was meagerly repaired but only to fail again in 2008.

Having been in place for over a century, public utilities, such as rural water, had come to depend on pool elevations with the dam in place. A century of blocking aquatic organism passage has also made an impact on the environment with significant declines in fish abundance and diversity upstream of the dam. The US Fish and Wildlife Service's Fish Passage Program through Columbia FWCO partnered with Iowa Department of Natural Resources, South Dakota Game Fish & Parks, Lyon and Sioux Rural Water, and Lyon County Conservation Board to remove the dam and replace it with rock arch rapids to maintain pool elevation while allowing aquatic organism passage. Prior to deconstruction the Big Sioux flooded again in 2009. Because of the flood damage to the dam, FEMA was able to use its "improved project" category to cover 90% of the cost of the project.



Dam area after removal. Credit: Nate Hoogeveen, Iowa DNR



With the structure replacement nearly fully funded through FEMA, the original funding now became additional funding. This provided conservation groups the money needed to complete the project even better than planned so that more environmental issues could be more adequately addressed and corrected. The dangerously steep and actively eroding banks downstream of the old structure were sloped, replanted and stabilized. This helps to maintain diversity of water depths and complexity that otherwise would have been silted in from slumping banks. It also increases the safety of resource users like anglers and paddlers. Overall, this habitat improvement project directly benefits several species of conservation need like the blackside darter, trout-perch, southern redbelly dace, and tadpole madtom. Other species expected to benefit directly from the overall project include flathead catfish, channel catfish, smallmouth bass, and numerous

Downstream stream bank before dam removal. Credit: Nate Hoogeveen, Iowa DNR

species of mussels.

During the construction process, the Klondike Dam project was selected as one of the 50 America's Great Outdoors Projects in 2012 highlighting habitat improvement projects across the Nation. A commemorative plaque is mounted on the pedestrian overpass just downstream of the old Klondike Dam. The USFWS Mission "...working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people" is embodied in the successful completion of the Klondike Dam Fish Passage Project.



Downstream stream bank after dam removal, rock, toe and vane portion. Credit: Nate Hoogeveen, Iowa DNR



Genoa NFH Increases Capacity to Rear Larval Lake Sturgeon

BY DOUG ALOISI, GENOA NFH

Winter is usually a time where the hatchery receives and cares for our salmonid (rainbow trout, lake trout, and coaster brook trout) eggs and fry, and begins to maintain and winterize all of our nets and equipment that we have put to hard use during our field season. In the last few years however, it is also a time that we try to expand our capabilities for doing good things in the upcoming production season, usually involving increasing our capacity in freshwater mussel recovery and restoration and lake sturgeon restoration. This season, due to increased success in lake sturgeon egg survival, we noticed that the new bottleneck in the Genoa National Fish Hatchery (NFH) lake sturgeon production program was larval tank space.

So this fall, fourteen new circular tanks are being acquired and, plumbing systems are being modified to accommodate these tanks to be installed over the existing juvenile rearing tanks. This will save floor space and rearing space. Through these efforts, we should be able to house an extra 30,000 larval lake sturgeon, until they are large enough to be cared for in our current juvenile tanks. The new space should also allow for healthier sturgeon to be cared for in our current facilities, which will hopefully allow for a healthier fish to be stocked into receiving waters. The added capacity will be important in future years, as lake sturgeon propagation for restoration is very much in demand, with historic populations in the Midwest at historic low levels and propagated fish surviving very well in ongoing restoration programs.



Lake sturgeon starter tanks in operation in the summer of 2014. Credit: USFWS



Iron River NFH Coasters Find New Home at Red Cliff Tribal Fish Hatchery

BY CAREY EDWARDS, IRON RIVER NFH



Biologists Brandon Keesler with Red Cliff TFH and Carey Edwards with Iron River NFH net up brook trout from circular tanks for transport to the Red Cliff Tribal Fish Hatchery. Credit: USFWS

Tobin Harbor strain coaster brook trout. They have received eggs from the Iron River NFH for several years to meet production needs while their brood population matures. Iron River NFH was happy to assist a partner hatchery and delighted to put surplus fish to good use.

The Iron River National Fish Hatchery (NFH) maintains 10,000 adult and juvenile lake trout and coaster brook trout annually. These fish produce eggs that are used for restoration purposes in the upper Great Lakes region. The brook trout eggs are utilized at Iron River NFH as well as other federal, state and tribal hatcheries around the region.

Adult brood fish (serve in egg and milt production) are "retired" as their efficiency at producing eggs declines, or when egg and fish requests decline or when space is needed for new brood fish. The hatchery staff makes every effort to place these fish into the local fishery.

"Transfers" to other facilities occur from time to time as well. This fall we had an opportunity to help Red Cliff Tribal Fish Hatchery invigorate their captive brood stock population. Biologists from Red Cliff picked up two year classes of surplus juvenile coaster brook trout, 1,500 fish in total, for transport to their new home.

Red Cliff Hatchery Tribal Fish Hatchery has replaced their Nipigon strain brook trout with the



Smaller brook trout are placed in buckets of water and poured into a tank on the truck from Red Cliff TFH. Credit: USFWS



Surplus brook trout from Iron River NFH are netted into tanks by hatchery staff. Credit: USFWS



“Pallid Sturgeon” a Fish for All Seasons!

BY CAL YONCE AND JAVAR HENRY, COLUMBIA FWCO

Pallid sturgeon was listed under the Endangered Species Act as “Endangered” on September 6th, 1990. The Pallid Sturgeon Recovery Plan, implemented in Missouri in 1992, recommended hatchery propagation to augment the waning population. Stocking fish is a short-term recovery objective to sustain the species until habitat modifications could occur and allow for natural spawning and recruitment. The first hatchery in Missouri to implement this plan was the Missouri Department of Conservation’s (MDC) Blind Pony State Fish Hatchery. The hatchery is located in Sweet Springs, Missouri not far from the “Big Muddy” Missouri River. The U.S. Fish and Wildlife Service’s Neosho National Fish Hatchery (NFH) started contributing to the Pallid Sturgeon Recovery Program shortly after MDC. The two hatcheries rear pallid sturgeon collaboratively from wild brood fish collected from the Missouri River to augment the wild population. At Neosho, pallid sturgeon are ideally reared for two years, to a length of nine inches if space is available. These hearty two-year old fish are then tagged with PIT tags, a glass ampule with a unique number programmed into the tag, and then released into the lower Missouri River at multiple locations.



Removing a scute from a hatchery reared juvenile pallid sturgeon. Credit: Jeremiah Smith, USFWS

Once again in September of 2014 the Columbia Fish and Wildlife Conservation Office (FWCO) teamed up with these hatcheries, to mark and release this year’s sturgeon, however, this time there was a problem. Between the two hatcheries there is just not enough space to rear the number of fish on hand for 12-24 months. So a decision was made to stock out most of the four to five month old pallids, keeping the remaining 3,500 for the usual rearing period.



Marking a juvenile pallid sturgeon with a color coded elastomer. Credit: Jeremiah Smith, USFWS

These fish were too small to PIT tag; therefore the fish were double marked by removing a scute from their side and injected with a colored elastomer mark on their snout. The scutes will not grow back and can serve as a visual mark to indicate from which hatchery and year class they were stocked. The different colored elastomer marks indicate where on the river the fish would be released. A total of 19,582 juvenile pallid sturgeon were released this year at five different locations throughout the Missouri River.

The long term partnership between the State and Federal hatcheries and the staff of Columbia FWCO remains strong. We enjoy the opportunity to come together and work toward recovering the species. Being in the FWCO, we have the unique opportunity to collect the parents of these fish, tag the progeny and collect these fish after they are released and assess how they are coping with life in the wild. Several weeks after the releasing this batch of fish, we captured some of the pallids from Neosho and Blind Pony Hatcheries near Klondike and Herman during our routine pallid sturgeon

population monitoring efforts. It was exciting to see the fish we helped tag, inhabiting areas with the wild born sturgeon.



A Shocking New Training!

BY PHILIP ROGERS, CARTERVILLE FWCO



New experimental electrofishing equipment and designs such as Columbia FWCO's electrified Paupier boat were also explored and tested during the training. Credit: Jeff Stewart, USFWS

In the fall of 2014 Service employees from Ashland, Carterville, Columbia, and Green Bay Fish and Wildlife Conservation Offices (FWCO) all came together for a week long electrofishing advanced practicum course. There have been hands on electrofishing courses offered in the past but this was the first time that the course was offered in a new and unique way.

On the first day of class, two world renowned electrofishing experts Alan Temple and Jan Dean asked us what our objectives were for the training. This is different than training courses we are used to attending. Typically, there is a set schedule and learning objectives. Here, we set the schedule and learning objectives. Alan and Jan had some core learning for us, but for the most part they focused on what our wants and needs were.

The class boiled down to answering a pretty simple question for us here at Carterville FWCO. How can we be more effective and efficient when it comes to electrofishing? We have all had experiences in the past where we were in the boat with a seasoned veteran of electrofishing. The training that a new fish technician or biologist usually gets is, "just crank it up 'till you start seeing 'em roll!" While this works to some extent, this hands-on practicum really gave us a good answer to our question. To be more effective and efficient we need to have a clear understanding of our objectives, our equipment, and how electricity, water, and fish interact.

The in-depth conversations about theory, lab trials, and field trials all helped to build the big picture. Some of the topics covered in great detail were field mapping, standardizing by power, and standardizing by boat among many others. We now know which settings are appropriate depending on the body of water, what fish we are interested in sampling, and what equipment is available. The most important thing we learned is why we are setting electrofishing sampling up the way we are and how we can adjust to get the best results. There are some simple tools to measure the outputs of all our different boats and adjust as necessary to achieve the desired results.

For someone that spends a large majority of their time behind the controls of an electrofishing unit, this class is a must! Everyone here at Carterville FWCO felt that we left the class with valuable information that will enable us to perform our jobs better. We would like to thank our instructors once again for taking the time to pound all this information into our heads. Give the class a shot and I bet you will be "shocked" to see what you learn!



Wisconsin's Genoa NFH: Visitor Center Dream to Become a Reality

BY DOUG ALOISI, GENOA NFH

The dream of getting a dedicated visitor service facility at the Genoa National Fish Hatchery (NFH) will soon be a reality, thanks to many different benefactors from both inside and outside the Fish and Wildlife Service. The project got off the ground in 2010,



Artists Rendering of New Interpretive Center at Genoa NFH. Credit: USFWS

when a grant was received from the National Scenic Byways Program which provides grant monies for facilities and activities that increase visitor usage and experiences while traveling on the Nation's scenic byways. Highway 35, which bisects the hatchery, was recognized as a national scenic byway in 1938 by Franklin Delano Roosevelt. Building design and site work have already been completed, and construction on the building itself will begin in the spring of 2015.

The center will not only assist the staff to tell the story of fish and wildlife conservation both past and present on the upper Mississippi River, but also will be used to interpret both natural and regional history surrounding the Upper Mississippi River. The facility will also be a great benefit to the outdoor classroom curriculum that hatchery currently maintains. It will mix in not only the value of fish and wildlife conservation and habitat conservation to the six local schools that currently use our wetland learning area, but also provide opportunities for classes to learn more about local history as well.



Wisconsin's 3rd District Representative Ron Kind awarding National Scenic Byways Program Grant check to station staff and friends group. Credit: USFWS

Construction is expected to be complete by spring of 2017. Many thanks to the support of our Regional Fisheries Team and the Regional Refuge Support Team, the Regional Engineering and Construction and Facilities management Team in providing support to ensure the project will come to fruition. Many thanks also need to go to Congressman Ron Kind; our local Friends group the Friends of the Upper Mississippi, and the local community for their interest and support of this project.

Genoa NFH will be the second National Fish Hatchery in the Fish and Wildlife Service's Midwest Region (Region 3) to receive a dedicated visitor service facility. Missouri's Neosho NFH, the nation's oldest operating federal fish hatchery, dedicated their new visitor facility in 2010.



Fish Tails

Articles submitted by field staff that do not appear as a feature within Fish Lines. These articles provide examples of the diverse work that is performed on behalf of aquatic resources.

Lots of Mussels On-Hand this Winter at Genoa NFH

BY NATHAN ECKERT, GENOA NFH

The production year ended with some of our mussel cages returning modest results, others returning negative results and one location yielding exceptional results. The upshot is that we have a significantly higher number of mussels on hand this winter than last. Last winter we held just over 6,000 mussels over winter in the mussel building. Increased production this year and some carry-over from last year has us looking at just shy of twenty-three thousand at 22,992. These mussels will be held in our black pan system using pond water that will match the normal temperature regime they would experience in the wild. Last year our over-winter survival of juveniles was 95%. If we are fortunate enough to experience that level of survival this year we should be set for exceptional release numbers in the coming years. Next year these animals will be placed in various locations for further grow-out and ultimately release. Some will go in our MARS trailer fed with Mississippi River water. Others will be placed in our standard mussel cages at good culture locations, and a portion will be grown on the grounds of Genoa National Fish Hatchery (NFH) to determine the best pond and culture technique for advanced grow out at the hatchery.

Fish Community Monitoring and Fish Identification

BY CAL YONCE, COLUMBIA FWCO

The Columbia Fish and Wildlife Conservation Office (FWCO) monitors Missouri River fish populations as part of the Pallid Sturgeon Population Assessment Project. Fisheries biologists use different sampling methods each field season to collect fishes in their natural habitat. During summer months, trawl, trammel and mini-fyke nets are used to catch a diversity of fish species. Each year 25 random river bends stretching from the confluence of the Mississippi River upstream to the Grand River and Missouri River confluence are sampled using these fish collection methods. Capture events often yield a variety of fish, some of which can't be identified in the field. Such fish are preserved for future identification, genetic analysis or reference collection specimens.

Using taxonomic keys, lab equipment and scientific protocols, preserved fish are identified and recorded for input into a multi-agency database. This information can then be accessed by other fisheries biologists to update fish ranges and habitat use for reports and literature.

Employees of the Columbia FWCO take great pride in correctly identifying new specimens coming into the lab. The data collected will help fisheries managers make vital decisions in conservation for years to come and will further the understanding of this unique river system ecology. For instance, several types of minnows found in the Missouri River thrive in the same micro niche habitat as juvenile sturgeon. These minnows are usually found in higher abundance than juvenile sturgeon and quite often need to be identified in the laboratory. By monitoring population trends of minnow species biologists may be able to correlate fluctuations in sturgeon relative abundance with abundances of these minnow species, which are also a prey item for pallid sturgeon.

The effort to collect fish community data helps biologists to analyze habitats used by multiple species and the interspecies relationships found within that ecosystem.



Midwest Region Fisheries Divisions

National Fish Hatcheries

The Region's National Fish Hatcheries (NFH) focus on native species recovery and restoration. Primary species include: lake trout, endangered pallid sturgeon, and endangered, threatened, and native mussels. Other major programs include coaster brook trout and lake sturgeon restoration, fulfilling tribal trust responsibilities for native aquatic species, and cost reimbursed rainbow trout production for recreational fishing. Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, and develop and maintain brood stocks of various species and strains.



Fish and Wildlife Conservation Offices

Fish and Wildlife Conservation Offices (FWCO) conduct assessments of fish populations to guide management decisions, play a key role in targeting and implementing native fish and habitat restoration programs; perform key monitoring and control activities related to aquatic invasive species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's National Fish Passage Program, National Fish Habitat Partnerships, 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. The Whitney Genetics Lab serves as a leading edge genetics laboratory and conducts environmental DNA (eDNA) sample processing for early detection of invasive species.

Whitney Genetics Lab

The Whitney Genetics lab provides environmental DNA (eDNA) surveillance for the early detection of invasive Silver and Bighead carp as part of the Asian Carp Regional Coordinating Committee's plans to detect, monitor, and respond to the threat of invasive carp in the Great Lakes. The lab also provides analysis for determining the ploidy of wild-caught Black and Grass carp, two more invasive carp species.



Midwest Region Fisheries Contacts

Regional Office

5600 American Blvd West
Bloomington, MN 55437
Todd Turner (todd_turner@fws.gov)
612-713-5111

Alpena Fish & Wildlife Conservation

Office

480 W. Fletcher Street
Alpena, MI 49707
Scott Koproski (scott_koproski@fws.gov)
989-356-5102
Area of Responsibility (MI, OH)

Ashland Fish & Wildlife

Conservation Office

2800 Lake Shore Drive East
Ashland, WI 54806
Mark Brouder (mark_brouder@fws.gov)
715-682-6185
Area of Responsibility (MI, MN, WI)

Carterville Fish & Wildlife

Conservation Office

9053 Route 148, Suite A
Marion, Illinois 62959
Rob Simmonds(rob_simmonds@fws.gov)
618-997-6869
Area of Responsibility (IL, IN, OH)

Columbia Fish & Wildlife

Conservation Office

101 Park Deville Drive, Suite A
Columbia, MO 65203
Acting Wyatt Doyle (wyatt_doyle@fws.gov)
573-234-2132
Area of Responsibility (IA, MO)

Genoa National Fish Hatchery

S 5689 State Road 35
Genoa, WI 54632
Doug Aloisi (doug_aloisi@fws.gov)
608-689-2605

Green Bay Fish & Wildlife

Conservation Office

2661 Scott Tower Road
New Franken, WI 54229
Mark Holey (mark_holey@fws.gov)
920-866-1717
Area of Responsibility (IL, IN, MI, WI)

Iron River National Fish Hatchery

10325 Fairview Road
Iron River, WI 54847
Nick Starzl (nick_starzl@fws.gov)
715-372-8510

Jordan River National Fish Hatchery

6623 Turner Road
Elmira, MI 49730
Roger Gordon (roger_gordon@fws.gov)
231-584-2461

LaCrosse Fish Health Center

555 Lester Avenue
Onalaska, WI 54650
Acting Terry Ott (terrance_ott@fws.gov)
608-783-8444

LaCrosse Fish & Wildlife

Conservation Office

555 Lester Avenue
Onalaska, WI 54650
Acting Scott Yess (scott_yess@fws.gov)
608-783-8434
Area of Responsibility (IA, IL, MO, MN, WI)

Ludington Biological Station

229 S. Jevity Drive
Ludington, MI 49431
Scott Grunder (scott_grunder@fws.gov)
231-845-6205

Marquette Biological Station

3090 Wright Street
Marquette, MI 49855
Kasia Mullett (katherine_mullett@fws.gov)
906-226-6571

Neosho National Fish Hatchery

520 E Park Street
Neosho, MO 64850
David Hendrix (david_hendrix@fws.gov)
417-451-0554

Pendills Creek National Fish Hatchery

21990 W. Trout Lane
Brimley, MI 49715
Curt Friez (curt_friez@fws.gov)
906-437-5231

Sullivan Creek National Fish Hatchery

21200 West Hatchery Road
Brimley, MI 49715
Curt Friez (curt_friez@fws.gov)
906-437-5231

Whitney Genetics Lab

555 Lester Avenue
Onalaska, WI 54650
Acting Terry Ott (terrance_ott@fws.gov)
608-783-8444