



U.S. Fish & Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

fish lines

Sea Lamprey

**Pheromones are investigated
as a Management Tool**

Mussel Blitz at Shiawassee NWR

**Every Child
should have a Chance to
Experience Nature**

**Tales From the
Night Riders:
Pallid Sturgeon Captured
with Night Push Trawl**



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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

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<http://www.fws.gov/midwest/Fisheries/library/fishlines.htm>

Fish Lines

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-USFWS/Karla Bartelt
**Trolling on Lake Superior's
 South Shore, July 2008**

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Sea Lamprey Pheromones are investigated as a Management Tool

BY MICHAEL TWOHEY, MARQUETTE BIOLOGICAL STATION

Sea lampreys use pheromones to help find spawning streams and mates during their once in a lifetime mating process. But these same compounds might be used against them to frustrate their reproductive ambition and thwart their destructive predation of Great Lakes fish. The Marquette and Ludington Biological Stations have been participating with Great Lakes Fishery Commission-sponsored researchers to understand the function of several compounds that sea lampreys use to communicate for successful mating.

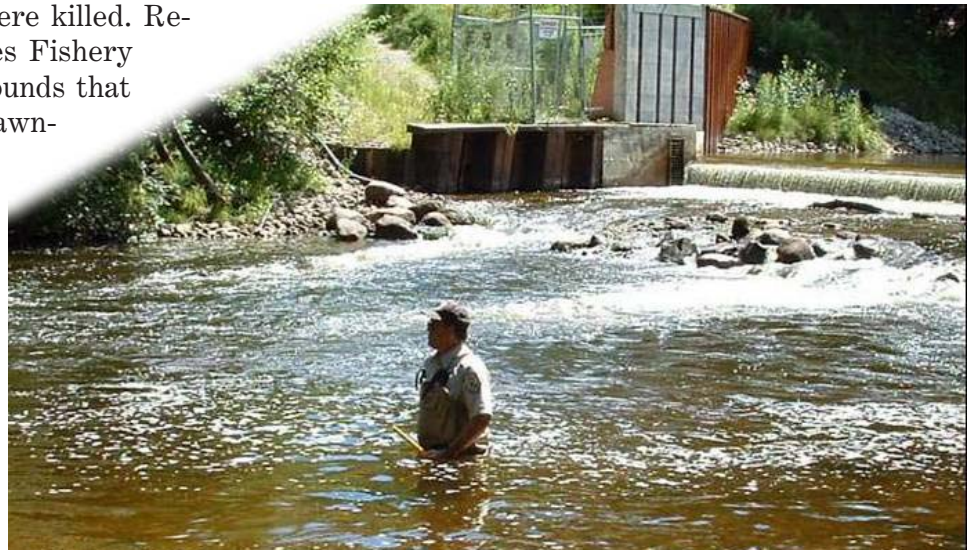
Sea lamprey control agents (Fish and Wildlife Service and Department of Fisheries and Oceans Canada) of the Great Lakes Fishery Commission Sea Lamprey Control Program had long noticed that spawning migrations diminished in streams in years immediately following lampricide treatments after larval sea lampreys were killed. Researchers working with the Great Lakes Fishery Commission eventually identified compounds that larval lampreys release that attract spawning phase lampreys into natal streams. Further studies identified compounds that mature lampreys release to aid in mate-finding and orientation on the spawning grounds.

The Marquette and Ludington Biological Stations have been participating in pheromone research since 2004. Annually, field staff from each station collect about 25,000 larvae from streams using electro-shockers and transport the larvae to the U.S. Geological Service Hammond Bay Biological Station near Millersburg, Mich., where the larval holding water is run through an extraction process

to collect and concentrate the pheromone. Field staff have been participating with various academics in field trials using the extract to discover how it affects lamprey behavior. Field staff receive formal training in good laboratory practices and recordkeeping. The control agents provide necessary expertise in trap design and placement, lamprey handling and behavior, and streamside logistics. Indeed, experiments with the extract have been successful in luring sea lampreys into small tributaries and traps at concentrations as low as 5×10^{-13} mol·L⁻¹. Also, lampreys used in the sterile-male-release technique were found to retain normal responses to pheromones after chemo-sterilization. In another study, the agents collected stream water during lamprey spawning activity to test new analytical techniques developed at Michigan State University.

Eventual use of pheromone compounds for lamprey control will require synthesized materials rather than extracted compounds. The control agents have been working with researchers from Michigan State University to ascertain the function of various constituents of the whole complex of pheromone-related chemicals that are released by sea lampreys. Some of the compounds have been commercially synthesized and tested in the field for their affect on lamprey behavior. Once the optimum “cocktail” of constituents has been identified, registration of the formulation will begin with the Environmental Protection Agency and another method will be added to the toolbox to manage sea lampreys in the Great Lakes.

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



-GLFC

Technician Scott Marvin checks the pheromone study site below the lamprey barrier on the Ocqueoc River near Millersburg, Michigan. Partners sponsor researchers to help understand the function of several compounds that sea lampreys use to communicate for successful mating, as a potential management tool for this invasive species.

Mussel Blitz at Shiawassee National Wildlife Refuge

BY JIM BOASE, ALPENA NFWCO

Biologists from the Michigan Chapter of The Nature Conservancy (TNC), Genoa National Fish Hatchery (NFH), Jordan River NFH, East Lansing Ecological Services Field Office, Shiawassee National Wildlife Refuge (NWR), and Alpena National Fish and Wildlife Conservation Office (NFWCO) met during the week of August 25 to conduct an extensive mussel survey of the rivers in and upstream of Shiawassee NWR. Staff sampled the Cass, Shiawassee, Tittabawassee, and Saginaw rivers to determine the number of species of native mussels that still inhabit these rivers. Prior to the survey, there were five known species of native mussels located within the NWR. By the end of the survey, 21 native species including two state listed mussels - the pink papershell and the Lilliput - were found. Highlights from the survey were picked up by a number of local and regional newspapers including *The Detroit Free Press*, *The Chicago Tribune*, *The Flint Journal*, and *The Alpena News*.

In Michigan, there are 45 species of native mussels, and one-third of those species are listed as threatened, endangered, or extirpated. This decline is attributed to water pollution, habitat loss, loss of fish host species, and the more recent introduction of invasive zebra mussels.

Although no data have been analyzed at this point, our preliminary survey results indicate that there were variations in abundance and diversity of mussels from one location to another. We

were disturbed by the discovery of the remains of thousands of mussel shells along the headwaters of the Saginaw River, which appeared

to have died many years ago; however, along this same stretch of the river we did collect a number of live mussels. Also, it appears that recruitment of mussels is still taking place. There were a number of young (less than five years old) mussels in the watershed. We plan to compare our mussel survey results with other recent and historical fishery survey results to determine if there are any correlations between the absences of native mussels versus the absence of host fish species, or to determine if there are other correlations that may explain the decline in the number and diversity of native mussels.

Funding for this project was provided by the Fish and Wildlife Service's Challenge Cost Share Grant Program

with in-kind support provided by TNC and the Fish and Wildlife Service offices involved with the project. Future plans by the group are to continue to identify mussel research needs and knowledge gaps within the Saginaw River and other Great Lakes Regions. The Alpena NFWCO will continue to promote existing partnerships and build new partnerships in an effort to solve ongoing resource problems related to native mussels in the Great Lakes Region.

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



-USFWS/Jim Boase

Biologists sort mussels collected from the Tittabawassee River to determine the number of species of native mussels that still inhabit this river.



-USFWS/Jim Boase

Biologist Jim McFee of the Alpena National Fish and Wildlife Conservation Office (lt.), Tony Brady of the Genoa NFH (bottom rt.), and Ed DeVries of the Shiawassee National Wildlife Refuge sort mussel species collected from the Shiawassee River.

Every Child should have a Chance to Experience Nature

BY TONY BRADY, GENOA NFH

According to Founder and President Brigid O'Donoghue, United Special Sportsman Alliance, Inc. (USSA) is a Non-profit "dream wish" granting charity that specializes in sending critically ill and disabled youth on the outdoor adventure of their dreams!



-United Special Sportsman Alliance

Brigid O' Donoghue is president and founder of the United Special Sportsman Alliance, a non-profit organization that specializes in sending critically ill and disabled youth on the outdoor adventures of their dreams!

The USSA has been granting outdoor adventures for eight years. The 100 percent volunteer staff of the USSA has taken kids, who would normally be overlooked for hunting or fishing opportunities due to their illness, on adventures all over the country and even into Canada. No game is too big or small for "Brigid's Kids," that have hunted everything from pheasant to black bear and whitetail deer to turkeys. When hunting season is over, Brigid sets her sights to water and fishing, enlisting the help of several Pro B.A.S.S. fishermen to take youth fishing for anything that bites a hook. In addition to arranging these adventures, USSA hosts a family weekend in July at Brigid's home just outside Black River Falls, Wisconsin. At the USSA family weekend, families from all across the country gather together to participate in a number of outdoor activities such as target shooting with bow and arrow or a 22 caliber rifle, fishing the numerous ponds that surround the cranberry bogs, riding tubes pulled by jet skies, singing, eating and fellowshiping with others who understand the countless doctor visits and treatments they endure.

Genoa National Fish Hatchery (NFH) has been delighted for the past three years to be a part of the USSA family weekend

by providing an aquarium with fish for their viewing enjoyment, and by giving several presentations on fish and mussel conservation.

In the downtime, Genoa NFH personnel

assist the families at the fishing ponds or simply by building relationships and support by listening to the incredible stories that these kids have gone through.



-USFWS

This young lady receives her first target practice lesson through the United Special Sportsman Alliance.

At the end of the weekend, I'm not sure who has been blessed the most, the kids and their families or the volunteers. I do know that Brigid, with her video camera, treasures each moment. For more information about USSA please check out their web site at: www.childwish.com.

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

Tales from the NIGHT RIDERS: Pallid Sturgeon Captured with Night Push Trawl

BY CLAYTON RIDENOUR AND ANDY STAROSTKA, COLUMBIA NFWCO

Time: 12:18 AM.

Date: 13 Aug, 2008.

Location: River Mile 177, Missouri River, USA. Significance: HAMP collects nocturnal pallid sturgeon with push trawl.

Near Columbia, Missouri, at a large channel sandbar locally known as California Island, HAMP (Habitat Assessment and Monitoring Project) went nocturnal to claim the first pallid sturgeon collected with a push trawl on the lower Missouri River. HAMP's purpose was to determine if sturgeon move into shallow water areas at night. This catch is notable because HAMP has push trawled for the last three years with a total of over 2,500 gear deployments during the day without a single pallid sturgeon captured. This fish was captured with fewer than 35 push trawl deployments over just three nights. The individual was stocked as a fingerling during the winter of 2003 in the channelized portion of the lower Missouri River and was marked with only a right-side pink elastomer tag on the ventral side of its snout. Elastomer tags are brightly colored latex that is injected under the skin and marks the fish much like a tattoo.

Using the push trawl at night, we have been able to capture multiple juvenile and young of year shovelnose sturgeon. Few juvenile sturgeon - pallid or shovelnose - have been captured in areas meeting the criteria for shallow water habitat (SWH) as defined by the Biological Opinion; however, a vast majority of the effort to sample these areas occurs during daylight hours. Other large river fish species are known to seek deep water during the day then move into shallow areas during the nocturnal period. For example, blue suckers are seldom captured in SWH with the push trawl during the day, but several were captured during the night effort. Scientists have several ideas to explain why some fish migrate towards shallow areas at night. One that we are interested in testing is that large predatory fishes move shallow at night to hunt prey. This seems especially relevant to pallid sturgeon because they adapted to life in the very turbid Missouri before upstream dams were closed causing the river to become much clearer. If pallid sturgeon are photophobic (avoid bright light because of clear, shallow water during the day), their only option is to access this feeding area at night. Due to the complex nature of large river ecosystems and our lack of understanding about river biology; pallid sturgeon's response to light and diet and a host of other questions have yet to be studied on the lower Missouri River. The extra sampling effort put forth by HAMP crews at night is the preliminary step to scientifically answering important questions to aid sturgeon recovery.

Currently, night push trawling effort is limited in scope and resources, and no formal analyses have been conducted on the data collected; however, the concept that fish shift habitats between day and night is well supported in the scientific literature. Since the nocturnal period represents approximately half of a sturgeon's life span, it is worthwhile to address day-night habitat use in the context of SWH restoration. In short, most of the data on sturgeon habitat use in lower Missouri River accounts for only half of the story.

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



-USFWS/Clayton Ridenour

This Federally endangered pallid sturgeon was collected in shallow water habitat of the Missouri River during a night assessment.

Secretary Kempthorne visits Detroit River International Wildlife Refuge

BY JIM BOASE, ALPENA NFWCO

Plum Creek Bay was added to the Detroit River International Wildlife Refuge (IWR) on Saturday, July 26, 2008. In a signing ceremony at Monroe County Community College with Secretary of the Interior Dirk Kempthorn, Congressman John D. Dingell (D-MI15), Congresswoman Marcy Kaptur (D-OH09), and Michigan Lt. Governor John D. Cherry, Jr. (D), Plum Creek was transferred from Monroe County to the Fish and Wildlife Service.

Plum Creek Bay is comprised of 126 acres of unique coastal wetland habitat that serves migratory birds as they migrate each year through the Great Lakes Flyway and fish that use the wetland as spawning and nursery habitat. With over 90% of coastal wetlands either lost or destroyed in the region, saving places like Plum Creek is critical to the health of fish and wildlife species that depend on coastal wetland areas.



-USFWS/Jim Boase

Congressman John D. Dingell speaks at Monroe Community College during a ceremony that accepts Monroe County's Plum Creek Bay as part of the Detroit River International Wildlife Refuge.

Energy Foundation, BASF Corp., Daimler Chrysler, Ford Motor Company/AutoAlliance, General Motors Corp., ITC Transmission, Hamilton Anderson Associates, Praxair, and Wade Trim, Metropolitan Affairs Coalition International Wildlife Refuge Alliance, Wild Bird Unlimited, CN Railroad, Riverside Kayak Connection, Community Foundation for southeast Michigan, and *Friends of the Detroit River*.

Our goal in 2005 and 2007 was to provide baseline information for the Refuge about what species, both native and invasive, were found in places like Plum Creek. The Refuge provides some of the last remaining natural wetland areas available in the Detroit River and western Lake Erie. Those nursery areas are critical to the early life stages of many species of sport fish, as well as for some state listed species. Historical records from past surveys identified over 30 species of fish using those wetland habitats for either spawning or nursery areas. Results from the 2005 and 2007 survey work determined that a total of 46 different fish species were collected in the near-shore habitats of Lake Erie. More importantly, young-of-the-year age groups of major sport fish species including walleye, largemouth bass, small mouth bass, northern pike and other sunfishes were collected along with one state listed species.

Those fishery results proved helpful in convincing Monroe County that Plum Creek Bay would be best protected if it became part of the Detroit River IWR. On July 26, Secretary Kempthorn was very pleased to accept Plum Creek Bay as part of the Refuge. "The Department of the Interior is grateful for Michigan's generosity and we look forward to preserving this land so generations of Americans and Canadians will be able to enjoy it for years to come." Congressman Dingell added that, "The Plum Creek Bay site is precious – one of Michigan's great treasures. Now, we can be sure it will be protected for future generations."

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

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

The importance of Plum Creek Bay was identified in 2005 when biologists from the Alpena National Fish and Wildlife Conservation Office (NFWCO) met with partners from the Refuge, East Lansing Ecological Services Field Office, Michigan Department of Natural Resources (DNR), and U.S. Geological Survey (USGS) Great Lakes Science Center to identify the best remaining wetlands in Michigan waters of western Lake Erie. With monies secured through the Fish and Wildlife Service's Challenge Cost Share Grant Program, a near-shore fishery survey was conducted in the fall of 2005 and again in the summer of 2007. Prior to that survey, Plum Creek was last surveyed in the 1980's. Other partners for this project include Michigan Sea Grant, University of Michigan, Michigan State University, Eastern Michigan University, DTE

Lights ...Camera ...Mayflies ...Action!

BY MARK STEINGRAEBER, LACROSSE NFWCO

As “Ol’ Man River keeps rollin’ along” through the heart of the Upper Mississippi River National Wildlife and Fish Refuge (NW&FR), the pulse of nature beats at a pace that changes seasonally as it has for millennia. Amid broad landscapes of lush



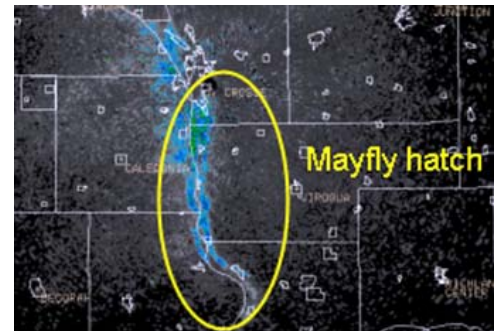
-Calvin R. Fremling -USFWS
(Lt.) A mayfly nymph inhabits a U-shaped burrow.
(Rt.) An adult mayfly.

vegetation that frame an array of scenic river settings, an international group of award-winning cinematographers has intermittently gathered here this year to film a variety of wildlife spectacles for a National Geographic Television production titled *Planet in Motion*. While majestic bald eagles, graceful tundra swans, and brilliant neo-tropical songbirds are responsible, in part, for annually drawing an estimated 3.7 million visitors to this Refuge to (re)connect with nature, *Planet in Motion* producer John Benam also wanted to highlight the vital ecological role played here by the deep-burrowing *Hexagenia* mayfly. This small aquatic insect goes largely unnoticed throughout most of its year-long life cycle while it consumes decayed organic matter on the river bottom. Later, however, when they dramatically emerge from the water en masse, take flight and swarm to reproduce, mayflies become a widely available source of nutrition for a variety of omnivorous creatures that inhabit the Refuge. Cultural accounts of this apparent ephemeral existence, including the summertime use of snow-plows to remove mayflies from bridges where they can accumulate knee-deep overnight, have been the subject of syndicated articles that have appeared in *The New York Times* and *Ripley’s Believe It or Not*. In addition, some National Weather Service (NWS) offices now report the ability to detect large, distant swarms of mayflies with Doppler radar imagery when the insects emerge to mate.

To help plan and execute filming needs for the mayfly segment of this television production, Benam contacted La Crosse National Fish and Wildlife Conservation Office (NFWCO) biologist Mark Steingraeber in April. Earlier in his career, Steingraeber published research on mayflies in the Upper Mississippi River NW&FR and also helped the British Broadcasting Corporation film mayflies for a televised insect documentary. Steingraeber provided

detailed life-history and ecological information about the most common NW&FR mayfly species and assembled a list of key contacts which could provide additional assistance to the film crew. Based on the fact that large numbers of emergent mayflies are often reported here during Fourth of July celebrations, the film crew was advised to plan for a large emergence during either the week preceding or the week following Independence Day.

Packing tons of gear from points scattered around the globe, Benam and his cinematic troupe began to reassemble in La Crosse, Wisconsin, on June 30. While the crew carefully prepared to film a large emergence late at night from the water with floodlights and high-speed cameras, Steingraeber helped collect nymphs and construct sets that were used during the day to film underwater scenes of the burrowing



-National Weather Service
Mayflies emerge from their burrows in such large numbers on the Upper Mississippi River that Doppler radar can detect their hatch (shown in blue).

insects in natural settings. Scenes of fish preying upon mayflies as they emerge from the water were also filmed nearby at the Genoa National Fish Hatchery. The film crew was rewarded for its patient vigilance on July 9 when Doppler radar detected a large mayfly emergence at dusk. Setting out on the dark river aboard a brightly lit pontoon boat, which was perceived by the mayflies as a landing strip on an aircraft carrier with no one in the control tower, the crew filmed this brief spectacle into the wee hours of July 10 while trying to breathe without inhaling the insects that swarmed and accumulated almost knee-deep on the “flight deck.” Interviewed later by local media about his over-night experience, renowned British wildlife cinematographer Alistair MacEwen described the fantastic sight as “One of the great biological events of the world.” If you are unable to experience this brief mid-summer spectacle of “Ol’ Man River” in person, then tune to National Geographic Television in 2010 when these mayflies are scheduled to swarm again throughout the country on *Planet in Motion*.

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

Sampling Small Fishes in Side Channel Chutes

BY CHRIS MCLELAND AND JOSHUA SCHLOESSER, COLUMBIA NFWCO

Biologists from Columbia National Fish and Wildlife Conservation Office (NFWCO) are deploying mini-fyke nets and push trawls to sample small-bodied fishes in side channel chutes of the Lower Missouri River. Sampling of constructed and natural chutes is part of a monitoring program designed to determine if mitigation efforts on the river are beneficial to native fishes. Referred to as the Mitigation Project, biologists deploy a variety of gears under a standardized sampling protocol. Mini-fyke nets and push trawls are two of the gears used to monitor the fish community and species diversity at four side channel chutes. Mini-fyke nets and push trawls are used specifically to sample shallow water habitats. Deploying both gear types allow biologists to sample a range of habitats, substrates, and water velocities. Mini-fyke nets are used to sample near shore areas such as sand bars, silt flats, and steep sloping banks. Push trawls can sample many of the same habitats as mini-fyke nets, but push trawls can also be used in some habitat types where mini-fyke nets are not practical. For example, push trawls effectively sample shallow, open water areas and can also be used in fast flowing water.



-USFWS/Joshua Schloesser

The Missouri River crew of the Columbia National Fish and Wildlife Conservation Office examine the various small-bodied fishes captured in a mini-fyke net.

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

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.

Small fishes collected with these two gears include all life stages of minnows and chubs, and a variety of juvenile fishes. Push trawls are an effective gear for collecting bottom dwelling fishes, where mini-fyke nets generally are not. Sampling with a combination of gears allows biologists to determine how the fish community utilizes side channel chutes. Understanding habitat use provides for more effective mitigation efforts that will benefit native fishes in the future.

Mussels Reintroduced into a Restored Stream in the Driftless Area

BY JAMES LUOMA, GENOA NFH

Iowa is a major agriculture state producing food for millions of Americans. Unfortunately, some agricultural land use practices have contributed to a decline in water quality in many of the streams and rivers in Iowa.

Many of these impacted streams are located in the Driftless Area, an area of peculiar topography in Wisconsin, Minnesota, Iowa and Illinois that hosts unique species and habitats due to the lack of glacial ice migration through the region. Due to changes in

land use practices and point source pollution, populations of native mussels once abundant in the streams and rivers of Iowa, have either declined or have been extirpated. The Iowa Department of Agriculture and Land Stewardship and the Department of Natural Resources (DNR) has recently completed a stream restoration in Jones County along a stretch of Mineral Creek in cooperation with a large land owner.

The land owner has removed cattle from the affected areas to provide stream bank stability and

the DNR constructed a riffle and pool stretch in the creek to restore stream habitat for aquatic organisms. On August 18th, the Genoa National Fish Hatchery (NFH) was able to provide over 600, two year old sub-adult fatmucket mussels to stock in four sections of the restored reach of Mineral Creek. The mussels were hand placed into substrate by personnel from the Genoa NFH and Iowa agencies. Some of the mussels were fitted with passive integrated transponder (PIT) tags to determine if they can be located in the future with a sensing wand dragged over the stream bottom. Along with PIT tagging, mussels were also tagged with traditional glued-on numbered tags to track stocking location and date. Tagging mussels helps biologists determine the conditions most conducive for long term survival and reproductive success. Information gained from the Mineral Creek rehabilitation and restocking effort will be directly applicable to future watershed restoration efforts in Iowa as well as throughout the nation.

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



-USFWS

Personnel from the Iowa Department of Natural Resources, Iowa Department of Agriculture and Land Stewardship, and Genoa National Fish Hatchery prepare to stock native mussels in a rehabilitated stretch of Mineral Creek, Jones County, Iowa.

Lake Huron PIT Tag Detection Enhanced

BY ADAM KOWALSKI, ALPENA NFWCO

During the month of August, biologist Adam Kowalski received a grant for \$17,575 from the Great Lakes Fishery Trust to purchase passive integrated transponder (PIT) tag readers and tagging equipment for commercial fishers in Lake Huron and western Lake Erie. Currently, the Alpena National Fish and Wildlife Conservation Office (NFWCO) partners with nine state-licensed commercial fishers operating 14 vessels primarily in Saginaw Bay that record bio-data and externally tag lake sturgeon encountered as by-catch in their trap nets. An additional 15 vessels, consisting of state, tribal and provincial commercial fishers, have agreed to participate in this project, expanding the fishing area from Western Lake Erie to northern Lake Huron. This grant will allow 23 PIT tag readers to be purchased to enhance tag detection capabilities in Lake Huron and Lake Erie. The new PIT tag readers will be distributed to eight Saginaw Bay fishers, six tribal fishers in

northern Lake Huron, and five United States and four Canadian commercial fishers in western Lake Erie. In addition, 700 PIT tags and 84 PIT tag injectors will be purchased for this expanded program.

This project will also supply the 15 new commercial fishers with Floy cinch tags, cinch tag applicators, a soft measuring tape, hacksaw, fin ray envelopes/data sheets, and a waterproof storage box. The Alpena NFWCO will enter all PIT tags (new and recaptured) into the lake sturgeon tag identification database, a project also funded by the Great Lakes Fishery Trust in 2004.

This project will improve information sharing between agencies and commercial fishers that may encounter tagged lake sturgeon. Improved data sharing will lead to a better understanding of the population trends and movement patterns of lake sturgeon in the Great Lakes.

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

Early Detection Survey for Invasive Fish in the Duluth-Superior Harbor

BY GARY CZYPINSKI, ASHLAND NFWCO

The Ashland National Fish and Wildlife Conservation Office (NFWCO) and the National Health and Environmental Effects Research Laboratory of the Environmental Protection Agency (EPA) completed a five-day early detection survey for newly introduced invasive fish in the St.



-USFWS

Staff from the Ashland National Fish and Wildlife Conservation Office and the National Health and Environmental Effects Research Laboratory (EPA) assess the St. Louis River Estuary (Duluth-Superior Harbor) for new invasive species.

was based on the ability of each gear to collect the greatest diversity of species over a given period of time. Many of the same fish species were collected by all three gears or by two of the gears, but a total of 14 species were collected uniquely by one specific gear type, including five by fyke-net, five by electrofishing, and four by bottom trawl. The latter emphasizes the importance of using multiple gears for early detection monitoring of invasive fish.

The EPA plans to use the data from this survey to fine tune the model. Using the model, the Ashland NFWCO plans to continue this survey annually in the St. Louis River Estuary, considered the highest risk location in Lake Superior waters for the introduction of new invasive aquatic species.

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

Invasive Free Zone Partnership

BY TED KOEHLER, ASHLAND NFWCO

Since its inception, the Invasive Free Zone (IFZ) has made considerable progress both inside and outside of the project boundaries. Whittlesey Creek National Wildlife Refuge (NWR) provides the leadership for the project and continues to receive support from many partners and funding organizations. The Ashland National Fish and Wildlife Conservation Office (NFWCO) has been an active partner from the beginning. Funding from the Fish and Wildlife Service's Coastal Program - Great Lakes which is administered by the Ashland NFWCO helped get the

IFZ off the ground. The office has also contributed to the project through the Partners for Fish and Wildlife Program with both technical and financial support.

Initially, a landscape-scale mapping effort was undertaken to determine the extent of invasive species within the IFZ. A database was then established to track the location of infestations. The focus then shifted to treatment efforts with over 150 acres treated and 80 acres declared as invasive free. After two years of refining mapping and treatment methods, project staff wrote a long-term plan for the

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.

Louis River Estuary (Duluth-Superior Harbor), Minnesota/Wisconsin, Lake Superior waters.

Using an early detection model in the final stages of development by the EPA, the two offices combined to complete 14 five-minute bottom trawl tows, 15 fyke-net locations each fished for one night, and 13 electrofishing locations each fished for 10 minutes. Totals of 27, 25 and 20 fish species were collected by fyke-net, electrofishing, and bottom trawling respectively, which included established invasives consisting of ruffe, round and tubenose goby, white perch and common carp. No new invasive fish were detected in this survey. The effort expended on each gear type consisted of 40% fyke-netting, 40% electrofishing, and 20% bottom trawling. This ratio of effort by gear type

project. An Invasive Species Management Plan has been written for the area which incorporates the knowledge gained from the mapping and treatment methods. Also recently developed is the Invasive Free Zone Guidebook, which was written as a resource for those who would like to establish an IFZ elsewhere. The Guidebook and Invasive Species Management Plan are available at the Whittlesey Creek NWR website: <http://www.fws.gov/midwest/whittleseycreek/>.

This IFZ is one of many parts of the strategic approach being undertaken for the Whittlesey Creek watershed. The habitat restoration and enhancement provided through this project will benefit Whittlesey Creek and its important Lake Superior tributary fishery through the removal of invasive species such as buckthorn. These invasive plants do not hold the stream bank soils in place as well as native species, thus contributing to problems like siltation of coaster brook trout spawning sites. Removal of the invasives and planting native conifers and other species will benefit the trout as well as other Fish and Wildlife Service trust resources such as migratory songbirds.



-USFWS

Partners pose for a photo in the "Invasive Free Zone" of the Whittlesey Creek National Wildlife Refuge. The Zone is managed under a plan to replace invasive species with native plants.

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

Asian Carps Surveillance

BY MARK STEINGRAEBER, LACROSSE NFWCO

La Crosse National Fish and Wildlife Conservation Office (NFWCO) biologist Mark Steingraeber led surveillance efforts for Asian carps in portions of the Illinois Waterway System near Joliet on August 12-13. With assistance from Chris Olds, a Lake Superior State University undergraduate student Student Career



-USFWS

This sign informs all who navigate the Chicago Sanitary and Ship Canal of safety precautions to follow while transiting the electrical fish barrier near Romeoville, Illinois. The barrier prevents invasive Asian carp from entering Lake Michigan.

Experience Program (SCEP) employee, now detailed to the Genoa National Fish Hatchery (NFH), and Mari Nord, a biologist with the U.S. Environmental Protection Agency in Chicago, trammel nets and electrofishing gear were used in efforts to capture or detect the presence of Asian carps at several sites in the Brandon Road and Lockport Pools. No Asian carp species were caught or observed at any of the survey sites. These U.S. Fish and Wildlife Service-led efforts completed surveillance requirements for the month to determine whether Asian carps have approached closer to an electrical barrier, located further upstream in the Lockport Pool (river mile 296) near Romeoville, which is designed to prevent these invasive fish from entering Lake Michigan. Bighead carp and silver carp have previously been captured as far upstream as river mile 281 and river mile 275 in the Dresden Island Pool, respectively. The responsibility for conducting monthly surveillance for Asian carps is shared and rotates among the Fish and Wildlife Service, Illinois Department of Natural Resources (DNR), and the Illinois Natural History Survey.

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

Lake Sturgeon Make a Splash at Aquariums

BY JENNY WALKER, GENOA NFH

This summer, four healthy lake sturgeon raised at the Genoa National Fish Hatchery (NFH) were invited to serve as “Ambassadors of the Great Lakes” in their very own program as part of a week-long program series, Great Lakes Adventure, produced by the Great Lakes Science Center in Cleveland, Ohio.



-L Palermo

Visitors to the Natural History Museum in Ohio can observe one of the lake sturgeon provided by the Genoa National Fish Hatchery.

In addition, four more healthy sturgeons from Genoa NFH found a new permanent home at the Seneca Park Zoo in Rochester, New York. This facility helps educate all ages about science and environmental issues, and teaches how humans may have a positive or negative effect on ecosystems, habitat, and the plants and animals that are an essential part of them. Now, with lake sturgeon as part of the program, visitors can learn about the lake sturgeon life cycle, their biology and anatomy, and why this ancient species needs our help to survive in the wild. The Seneca Park Zoo greets over 300,000 visitors annually.

These new partners promise to be a strong voice for conservation awareness, and will help teach millions why this ancient species needs our help to survive in the wild. Genoa NFH has been raising lake sturgeon to support Federal, state and tribal restoration efforts in Wisconsin, Minnesota and Missouri since 1995. Many populations have suffered over-harvest and habitat destruction since the late 1800's, and because female lake sturgeon may not reproduce until they are 22 years or more, restoration efforts will take many years to reach the goal of reestablishing self-sustaining populations.

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

The Summer of the Trout

BY RUSSEL HIVELY, NOESHO NFH

Tobias Dwyer is an energetic sixth grader at Neosho Middle School. He is a good student, getting As for grades. Later in life he thinks he will probably become a doctor.

“They make lots of money,” he explained.

But Tobias is something else - he is a fisherman - a serious fisherman. This summer he fished four or five times a week, usually in Morse Park where he fishes five or six hours each day for rainbow trout.

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.

The lake sturgeon program opened at the film premier of *Mysteries of the Great Lakes*, an IMAX film that was co-produced by the Great Lakes Science Center to introduce the ecology of the Great Lakes region and explore the wonders of the Great Lakes. Great Lakes Adventure was a huge success, attracting over 4,500 visitors to the Science Center that week; Genoa NFH's lake sturgeons were a big part of that success, greeting 2,050 people that attended *Mysteries of the Great Lakes*. After the program series, the young lake sturgeon found a permanent home at the Natural History Museum, where they will continue to serve as “Ambassadors of the Great Lakes.”

His mother Stefanie said, “Tobias forgets time when he is fishing.”

Tobias recalls first fishing with his dad in a farm pond when he was three or four years old. He said they “...caught lots of bass...one time we were catching so many my dad asked us to quit.”

Boredom from being out of school for the summer made this twelve-year-old a trout fisherman. According to Tobias, “Boredom is a horrible curse!”

A family friend took him to Morse Park this spring and showed him how to trout fish. Then he decided he would try his hand fishing alone. Now he is almost an expert trout fisherman. Much of his fishing knowledge has come from watching fishermen around him. “One day some kids were using crawdad tails to catch fish,” Tobias said. “One of them caught a big one.”

The next day, Tobias tried using crayfish tails himself.

“I caught two trout that day,” he said. Now Tobias uses crawdad tails when the water is clear and Hickory Creek is low. He uses Power Eggs in murky water. “The color doesn’t matter,” Tobias said. One week this summer, Tobias had a specific goal with his trout fishing. His dad planned a fish fry on Saturday night, and Tobias was asked to furnish the trout. Tobias worked particularly hard to achieve that goal. By Friday of that week he had thirteen trout in the freezer, and he was in Morse Park trying for two more.

Perpetual motion is the main method used by this young man to fish. He is constantly changing the location of his fishing rods, watching the line for “jerks,” looking for crayfish under the rocks in Hickory Creek, or reeling in a trout. His enthusiasm is contagious. This summer he went to Germany to visit his mother’s family. While there, he learned that one of his uncles is a trout fisherman. Tobias took advantage of a wonderful opportunity to fish for trout with his German uncle.

Tobias’ German uncle sent him back home with an eight-foot, collapsible fishing rod. Tobias does not use it much at Morse Park though. It is so long it catches in the trees where he usually fishes. One day, a fly fisherman came to the same area where Tobias was fishing. Soon Tobias was learning how to use a fly rod and which lures to use for certain situations. After that, one of his dad’s brothers gave Tobias a fly rod so he now can choose which rod to use in his quest for trout.

So far the largest rainbow trout Tobias has brought in was a 16-17 incher. When there is a reason to save trout, such as for his dad’s fish fry, he takes his catch home and cleans them there. Other times, he catches and releases. Once in a while, if there are fishermen nearby who seems to need fish, he gives his catch to them.

Tobias carries his fishing equipment in a large back pack and usually rides his bicycle to Morse Park. If he becomes so engrossed in his fishing that he forgets to eat, he has found that Rosetta’s Bakery down the street has some wonderful food.

“For less than two dollars you can get a drink and three of those cinnamon rolls filled with yellow cream,” he explained. “It is enough to eat for lunch and have some to take home for my brother.”

Fishing for several hours four or five days each week has ended for Tobias Dwyer. He is in school doing his studies. Still, he has the memories of a very special trout fishing summer at Morse Park.

But even now, on weekends you may see a young man on his bike headed to Morse Park with fishing rods sticking out of his backpack. It’s hard to keep one of Neosho’s best trout fishermen away from the water.

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

Request from the Lac du Flambeau Band of Lake Superior Chippewa

BY FRANK STONE, ASHLAND NFWCO

Larry Wawronowicz (Deputy Administrator of Natural Resources) from the Lac du Flambeau (LDF) Band of Lake Superior Chippewa, requested that the Ashland National Fish and Wildlife Conservation Office (NFWCO) review and comment on a Tribal Wildlife Grant (TWG) application for a project in 2009. Biologist Frank Stone reviewed the draft document *The utilization of Cisco as VHS free forage fish, for extended growth Muskellunge fingerling production for stocking Reservation Lakes* and provided comments back to Mr. Wawronowicz.

In order to maintain a high level subsistence fishery, the LDF Conservation Department believes it's necessary to raise muskie for stocking reservation waters. Before the increase of Viral Hemorrhagic Septicemia (VHS), extended growth muskie fingerlings were produced by using wild or purchased bait fish. The increase in the cost of bait fish is associated with the forage being VHS free and being able to provide the muskie fingerlings with the right size forage at the right time. Currently, the Tribe has suspended raising extended growth muskellunge because of VHS and associated high costs of forage fish. The LDF Conservation Department is proposing to develop and evaluate cost effective fish culture techniques to raise VHS free extended growth muskellunge fingerlings using lake herring as a forage fish.

The TWG program provides new funding opportunities to Tribes for activities that protect and restore habitats that will benefit fish and wildlife species of Tribal significance. Tribal resource programs throughout the United States will receive financial help in 2009 to initiate projects ranging from base line data collection and habitat restoration to the control of invasive plant species. TWG grants also support the efforts of tribal governments to develop or augment their capacity to manage, conserve, or protect fish and wildlife species of concern through the provision of additional funding and technical support.

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

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

2008 Fishery Independent Lake Whitefish Survey in Northern Lake Huron

BY ADAM KOWALSKI, ALPENA NFWCO

During July and August, staff from the Alpena National Fish and Wildlife Conservation Office (NFWCO) and volunteers conducted a fishery independent lake-whitefish survey in 1836 Treaty waters of northern Lake Huron. Staff involved included biologists Adam Kowalski, Scott Koproski and Aaron Woldt. Volunteers included Jerry McClain, Clarence (Tuffy) Cross, Jerry Kowalski and Colt Pfaff. The purpose of this survey is to collect fishery independent abundance and biological data on lake whitefish stocks in treaty waters for use in statistical-catch-at-age population models that are updated annually to determine harvest regulations for tribal commercial fishers in 1836 Treaty waters.

During the survey, we set 24 overnight, variable mesh gill nets at randomly selected sites in lake whitefish management unit WFH 04 (Hammond Bay to Presque Isle) and lake whitefish management unit WFH 05 (Presque Isle to Alpena). All whitefish collected were measured, weighed, checked for lamprey wounds, fin clips, and tags, sexed, and assessed for maturity and visceral fat content. We took scales and otoliths for age determination and removed stomachs whole for diet analysis. Non-target species were worked up in a similar manner.

Twelve additional overnight, small mesh gill nets were set along the selected lake whitefish sites to capture juvenile lake trout. All juvenile lake trout collected were measured, weighed, checked for lamprey wounds and fin clips, sexed, and assessed for visceral fat content, maturity, and stomach contents. Scales and otoliths were taken from coded-wire tagged and unclipped (presumed wild) lake trout for age determination.

Data collected in this survey will improve the accuracy of population models used to set lake whitefish harvest guidelines in 1836 Treaty waters of northern Lake Huron. Harvest limits allow fisheries to be executed while still protecting the biological integrity of the stocks.



-USFWS/Scott Koproski

Biologists Adam Kowalski and Aaron Woldt set gillnets during the fishery independent whitefish survey in northern Lake Huron.

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

Review of Research at Isle Royale National Park

BY HENRY QUINLAN, ASHLAND NFWCO

Isle Royale National Park is one of the most remote and unique wilderness areas in the United States. The park consists of one large island surrounded by about 400 smaller islands; it includes submerged land which extends 4 ½ miles out into the largest fresh water lake in the world, Lake Superior. Due to Isle Royale's biological and ecological uniqueness, it was designated an International Biosphere Reserve in 1980.



-USFWS

Ashland National Fish and Wildlife Conservation Office works with partners to research coaster brook trout restoration efforts in the waters of Isle Royale National Park.

of fish, wildlife and plant monitoring and research at Isle Royale National Park.

Isle Royale is home to three of about a dozen populations of coaster brook trout remaining in Lake Superior. Data collected by the Fish and Wildlife Service such as age and size at maturity has contributed to management actions by the Park and Michigan Department of Natural Resources (DNR) to help ensure the continued existence of coasters at Isle Royale.

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

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.

The Park is undergoing a comprehensive review of research activities on the island including the historic wolf-moose studies led by Michigan Tech. researchers and coaster brook trout work led by the Fish and Wildlife Service. Nine highly acclaimed academics from Alaska to North Carolina and points between have been contracted to provide review of existing activities and recommendations for future research at the island.

Henry Quinlan of the Ashland National Fish and Wildlife Conservation Office (NFWCO) was among a group of presenters that addressed current and future natural resource activities at Isle Royale. Quinlan presented information on Fish and Wildlife Service work with coaster and stream dwelling brook trout and future plans for lake trout studies at Isle Royale to the panelists and participated in discussion

Evaluation of Habitat Potential for Lake Sturgeon Rehabilitation in Lake Michigan Tributaries

BY ROBERT ELLIOTT, GREEN BAY NFWCO

A critical step to implement lake sturgeon rehabilitation in Lake Michigan is the consideration of available riverine habitat suitable for spawning and rearing of this species. Two publications dealing with this subject were recently published in the scientific literature; *Potential for reintroduction of lake sturgeon in five northern Lake Michigan tributaries: a habitat suitability perspective* (in Aquatic Conservation: Marine and Freshwater Ecosystems), and *Suitability modeling of lake sturgeon habitat in five northern Lake Michigan tributaries: implications for population rehabilitation* (in

Restoration Ecology). Green Bay National Fish and Wildlife Conservation Office (NFWCO) biologist Rob Elliott was a co-author on these papers along with Dr. Trent Sutton, and lead author, Dr. Dan Daugherty. This effort was initiated in 2004, when the Green Bay NFWCO secured funding through the Green Bay Fox River Natural Resources Damage Assessment to initiate a study to characterize and quantify both currently available and potential habitat in tributaries to Green Bay and Lake Michigan, waters that once supported a significant proportion of the Lake Michigan lake sturgeon population. The

intent of this work was to develop a decision tool to help prioritize areas for both habitat restoration and for areas where lake sturgeon rehabilitation might best be implemented. The Green Bay NFWCO then solicited the assistance of Dr. Sutton at Purdue University who helped secure additional funding from the Great Lakes Fishery Trust, and brought on Dan Daugherty as a PhD student to lead the project implementation.

As part of the project, habitat surveys were conducted on ten Northern Lake Michigan tributaries (Lower Fox, Peshtigo, Oconto, Pensaukee, Little Suamico, Suamico Rivers and Duck Creek, Wisconsin and Menominee, Ford, and Manistique rivers, Michigan). Each are known to be or suspected to have been historically important spawning tributaries for this

species. Field collections of habitat data characterized substrate composition, water depth, flow rate, and associated physico-chemical factors. Each system was sampled from the mouth at Lake Michigan upstream to previously identified historic natural barriers, resulting in a total collection of over 10,000 samples. Using GIS spatial modeling software, these habitat data were used to determine the availability, quantity, accessibility, and spatial distribution of habitats required by egg, larval, juvenile, and spawning/staging adult lake sturgeon. These data were then used to develop high resolution maps for each river system and a decision support model for the determination of appropriate restoration strategies in these systems.

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

What's for Dinner?

BY ANDY PLAUCK AND JEFF FINLEY, COLUMBIA NFWCO

The Missouri River Pallid Sturgeon Monitoring Program has been in place for several years. Increasing numbers of pallid sturgeon captures each year indicate hatchery-reared fish are taking their place in the population. Along with that, recurring capture locations and time of year help us target popular pallid sturgeon “hang-outs.” Pallids prefer sand or gravel substrate below 2-4 meters of fairly fast moving water. Stocking fish into a population is only part of the recovery effort. Many questions remain regarding their habitat use, spawning requirements and diet. Based on our trotline catches, we know they like eating night crawlers. But what else do they eat?



-USFWS/Andrew Plauck

Courtney Culler (left) and Cliff Wilson hold up a pallid sturgeon captured in the Missouri River near Boonville, Missouri. This fish was the first fish captured in a project to determine diets of hatchery stocked fish.

The Missouri River crews at the Columbia National Fish and Wildlife Conservation Office (NFWCO) decided to tackle this question. Several diet studies have been conducted on sturgeon using gastric lavage. This simple technique uses a very low pressure stream of water to flush the contents of the stomach. A soft plastic hose, or catheter, connected to a garden sprayer is our “high-tech” contraption of choice for this operation. The hose is gently pushed down the esophagus and into the stomach. Water is then slowly released into the fish. While one person is operating the water flow, another is gently massaging the fish’s underside. After a few strange gurgles, the fish’s most recent meals are purged into a small plastic catch pan. This sample can now be preserved and processed to determine what the fish has eaten.

Previous work has shown that large, adult pallid sturgeon prefer to eat benthic fish and small sturgeon eat aquatic macro-invertebrates; however, we do not yet know what the small fish stocked from a hatchery eat once they are released into the river. Our goal is to identify the key diet components of immature pallid sturgeons and hopefully determine when they transition from feeding on invertebrates to praying on fish. We hope that our work will lead us to a better understanding of this endangered fish’s role in the Missouri River’s food-chain.

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

Pleasant Valley Branch Stream Restoration

BY LOUISE MAULDIN, LACROSSE NFWCO

Dane County is working with the Driftless Area Restoration Effort (DARE), a nationally recognized fish habitat partnership led by Trout Unlimited to coordinate stream restoration efforts and upland conservation practices to reduce sediment and nutrient inputs to streams and improve habitat conditions for native fish species. Pleasant Valley is five miles in length and is currently listed on the EPA 303(d) list for degraded habitat due to sedimentation from overgrazing and lack of in-stream habitat; however, the stream is capable of supporting a coldwater fishery.



-USFWS

The Wisconsin Dane County Land and Water Resources Department completed a habitat restoration project on Pleasant Valley branch, located in the upper Pecatonica River watershed this past fall. Dane County received \$15,000 through the Fish and Wildlife Service's National Fish Habitat Action Plan program, to help restore 2.2 miles of Pleasant Valley branch.

Fish response to these habitat improvements on Pleasant Valley has been positive. The fish community has shifted from a warm water community to a cold water fishery dominated by mottled sculpin, American brook lamprey and brown trout. Dane County and the DNR will continue to monitor water temperature and fish community health. If stream conditions at Pleasant Valley Branch continue to improve as anticipated, they will propose to remove the site from its list of impaired waters.

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

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.

Extensive habitat work has been completed on the stream since 2003 through efforts of Dane County, Wisconsin, Wisconsin Department of Natural Resources (DNR) and landowners within the watershed. Farm Bill Programs such as the Wildlife Habitat Improvement Program (WHIP), Conservation Reserve Enhancement Program (CREP) and the state's Targeted Runoff Management Program have helped fund these improvement projects. Work at Pleasant Valley began in the summer of 2007. The two mile project area consisted of several reaches with wide, shallow channels with little flow, resulting in silt settling over gravel substrate, providing little habitat for invertebrates and fish. In-stream and riparian rehabilitation in conjunction with upland conservation practices have reduced sediment inputs to the stream and will likely provide long-term ecological effects. The 2007 project involved removing woody vegetation (invasive box elder trees) in the project area, stabilizing eroding stream banks, constructing and installing LUNKER structures to provide overhead bank cover for trout and seeding banks with native vegetation.

Butcher Knife Habitat Restoration Project

BY TED KOEHLER, ASHLAND NFWCO

The Butcher Knife Stream and wetland complex cuts across the remote southwest corner of the Red Lake Indian Reservation in northwest Minnesota, and outlets into a channelized portion of the Clearwater River, which forms the southwest boundary of the Reservation. The lower 4 to 5 miles of Butcher Knife Creek includes 4 shallow lakes 15 to 100 acres in size, which are referred to as the

Butcher Knife chain. Historical accounts suggest that habitats associated with this drainage attracted large numbers of migrating and breeding waterfowl, due to abundant stands of wild rice and adjacent upland grassland nesting cover.

Channelization of the Clearwater River in the 1960s, extensive beaver activity, and lack of fire and other natural disturbance have altered the hydrology

of this portion of the drainage and allowed upland sites to become over-mature. These factors reduced the capacity of the drainage to support natural stands of wild rice, as well as the overall utility and attractiveness of the site to waterfowl and other wildlife.

This project restored the natural hydrology in the lower reaches of the creek and associated wetlands, and restored local habitats in an effort to increase use by waterfowl. Restoration efforts were undertaken in the stream channel along the lower 2.5 miles of the drainage, restoring a more natural water regime to approximately 200 acres of riverine/wetland habitat. A native strain of wild rice was seeded into select sites, and 50 waterfowl nesting structures were built and will be monitored. Approximately 25 acres of upland were cleared and restored to an appropriate grassland mixture, and public access to select areas was improved.

Working in partnership with the Red Lake Tribe and the Bureau of Indian Affairs – Circle of Flight Program, the Ashland National Fish and Wildlife Conservation Office (NFWCO) was involved in the project through the Partners for Fish and Wildlife Program. The restoration and enhancement efforts undertaken by this project have improved a large amount of habitat for the benefit of Fish and Wildlife Service trust resources such as migratory waterfowl and songbirds.

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

Fish Passage at Menominee River Hydroelectric Facilities

BY ROBERT ELLIOTT, GREEN BAY NFWCO

Throughout this past year, the Green Bay National Fish and Wildlife Conservation Office (NFWCO) continued involvement in a working group to develop a comprehensive plan to provide needed and effective up and down stream fish passage at the Menominee and Park Mill dams on the Menominee River, tributary to Lake Michigan. Members of the work group include representatives from the Wisconsin Department of Natural Resources (DNR), Michigan DNR, National Park Service, River Alliance, Green Bay Ecological Services Field Office and dam owner North American Hydro. The group meets every other month and communicates regularly via conference calls and email to complete assignments and work through the process of planning for and designing feasible means for providing fish passage at these dams. Because these dams also serve as critical barriers to sea lamprey migration, the passage facilities need to incorporate trap and sort facilities capable of selectively passing target fish species such as lake sturgeon while continuing to block undesirable species such as lamprey.

In 2008, the group oversaw the testing of fish attraction flows that allowed for the final selection of the preferred location and conceptual design for the needed upstream fish collection and sorting facility. The group has now reached a point where final conceptual engineering plans that have been developed for each component of the overall passage project will be incorporated into a final conceptual fish passage plan for these facilities that all parties agree to. It is expected that this plan will be an integral component of the next Federal Energy Regulatory Commission (FERC) license to be issued for this project.

Enhanced access by native fish species to historically important habitats that are currently blocked by barriers, such as these on the Menominee River, continues to be a needed component to an integrated approach to maintenance, rehabilitation and restoration of native fish populations. Considerations include access and safe passage to critical habitat by all life stages while precluding passage of undesirable invasive species.

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



-USFWS

The Butcher Knife Habitat Restoration Project in the southwest corner of the Red Lake Indian Reservation restored a more natural water regime to approximately 200 acres of riverine/wetland habitat.



-USFWS/Robert Elliott

Lake sturgeon congregate below the Menominee dam and hydroelectric facility, one of several barriers on the Menominee River where fish passage is being planned.

Lacing Up the Cross-trainers

BY JOE MCMULLEN, COLUMBIA NFWCO

For the past few months, employees at Columbia National Fish and Wildlife Conservation Office (NFWCO) have been broadening their level of experience in the world of Missouri River fisheries biology. Patty Herman, Colby Wrasse and Joe McMullen assumed their roles as lead technicians at the office early in 2007, and each quickly carved out a unique niche. Patty has worked on the Pallid Sturgeon Recovery Program for the majority of her time at the office, studying and dealing with issues associated with this endangered species. Colby is a Habitat Assessment and Monitoring Program crew leader, responsible for collecting fish community information in shallow water habitat on the Missouri River. Joe has been on the Mitigation crew for most of his Fish and Wildlife Service career, studying the fish and habitats within natural and man made side-channels on the river.



-USFWS/Joe McMullen

Boat operator Patty Herman bow-trawls Missouri River's Tate chute with help from other Columbia National Fish and Wildlife Conservation Office staff.

it's winches, and was exposed to many areas of the river he never visited when working on the Mitigation project.

The Fish and Wildlife Service acknowledges that providing education and training opportunities to its employees is crucial to our efforts to conserve, protect and enhance our nation's resources. Employees at Columbia NFWCO now have a better rounded education, which benefits not only themselves but the entire team. With a broadened level of experience these employees are in a better position to assist on other projects when help is needed and provide meaningful insight when questions or problems arise.

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

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.

During the months of July and August, lead technicians got the opportunity to see what it was like to try and fill their co-workers shoes. This opportunity has broadened these employees' experiences outside of their day-to-day routines and enriched their understanding of the Missouri River and the issues surrounding it. For example, the Mitigation project employs several different techniques not used by other projects on the river. While acting as the Mitigation crew leader, Patty and Colby were exposed to techniques such as electrofishing and hoop netting, while learning their way around the side-channels of the river which they often only see in passing. Patty and Colby were forced to trade in their powerful stern trawl boats for the average river john boat which is used to bow trawl the side-channels. Days go by rather differently when the arms and backs of the crew are doing the trawling, as opposed to a hydraulic winch. On the other hand, Joe gained experience stern trawling, learning how to operate the boat and

Congressional Actions

H.R. 7150 (ih) To conserve the United States fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the people of the United States, and for other purposes. [Introduced in House]

S. 3552 (is) To conserve the United States fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the people of the United States, and for other purposes. [Introduced in Senate]

S. 2907 (rs) To establish uniform administrative and enforcement procedures and penalties for the enforcement of the High Seas Driftnet Fishing Moratorium Protection Act and similar statutes, and for other purposes. [Reported in Senate]

S. 2907 (is) To establish uniform administrative and enforcement procedures and penalties for the enforcement of the High Seas Driftnet Fishing Moratorium Protection Act and similar statutes, and for other purposes. [Introduced in Senate]

S. 2191 (rs) To direct the Administrator of the Environmental Protection Agency to [Reported in Senate]

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. 6316 (ih) To reduce global greenhouse gas emissions through the creation of a domestic carbon market and international trade measures, and to direct the revenue therefrom to public interests. [Introduced in House]

S. 3280 (is) To increase refining capacity and the supply of fuel, to open and preserve access to oil and gas, and for other purposes. [Introduced in 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]

S. 3366 (is) 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 plant species, and for other purposes. [Introduced in Senate]

S. 3213 (pcs) To designate certain land as components of the National Wilderness Preservation System, to authorize certain programs and activities in the Department of the Interior and the Department of Agriculture, and for other purposes. [Placed on Calendar Senate]

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. 3891 (rs) 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 Senate]

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]

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-

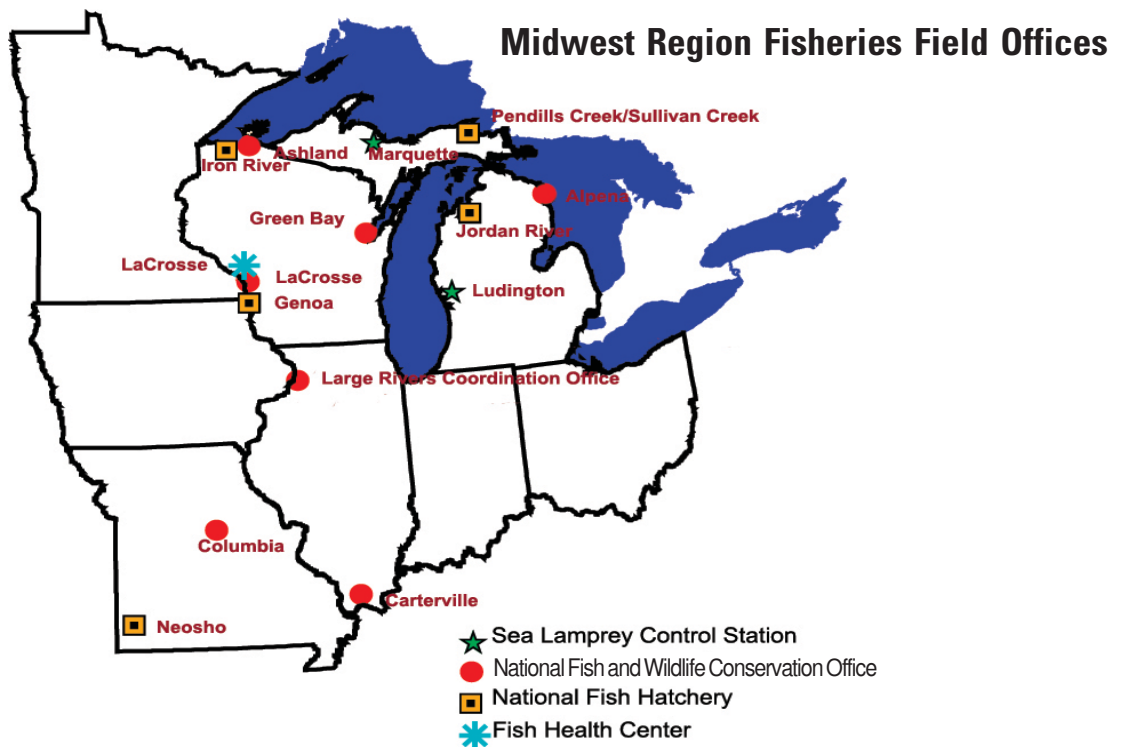
ies databases; provide technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments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

- [Congressional Staff Tour Visits Huron Erie Corridor](#)
 - Jim Boase, Alpena NFWCO
- [First years implementation of Lake Sturgeon Protection Plan on Lower Fox River a success](#)
 - Robert Elliott, Green Bay NFWCO
- [Genetic Guidelines for the Stocking of Lake Sturgeon in the Great lakes Basin out for agency review](#)
 - Robert Elliott, Green Bay NFWCO
- [Great Lakes Lake Sturgeon Coordination Meeting](#)
 - Robert Elliott, Green Bay NFWCO
- [Lakewide Mangement Plan for Lake Superior Released](#)
 - Henry Quinlan, Ashland NFWCO
- [Mapping Meeting](#)
 - Mark Corio, Columbia NFWCO
- [Middle Basin Pallid Sturgeon Workgroup Summer Meeting](#)
 - Tracy Hill, Columbia NFWCO
- [M/V Baird Remains in Dry-Dock](#)
 - Submitted by Aaron Woltdt
- [Sampling the Missouri River at a National Conference, “Aye”](#)
 - Joshua Schloesser, Columbia NFWCO
- [Thinking Green Promotes Safe Medication Disposal](#)
 - Mark Steingraeber, La Crosse NFWCO

Aquatic Species Conservation and Management

- [A new species for the Columbia NFWCO; Brook stickleback](#)
 - Andy Starostka and Colby Wrasse, Columbia NFWCO
- [Biologists Find Rare Fish in Lower Missouri River...Twice](#)
 - Clayton Ridenour, Aaron Walker, and Brett Witte, Columbia NFWCO
- [Coaster Ecology Studied](#)
 - Henry Quinlan, Ashland NFWCO
- [Schacte Creek Fish Relocation Conducted to Determine the Presence of Bacterial and Viral Pathogens](#)
 - Frank Stone, Ashland NFWCO

Aquatic Invasive Species

- [Alpena NFWCO Participates in Invasive Species Workshop Hosted by Inland Seas Education Association](#)
 - Anjanette Bowen, Alpena NFWCO
- [Partners Prevent Release of Pet Fish](#)
 - Mark Steingraeber, La Crosse NFWCO

Public Use

- [Alpena NFWCO Skull Collection Ready for Use](#)
 - Adam Kowalski, Alpena NFWCO
- [Animal Impression Tracks Acquired for Outreach Activities](#)
 - Scott Koproski, Alpena NFWCO
- [Wild Wetlands Day at Partridge Point](#)
 - Andra Ania, Alpena NFWCO

Cooperation with Native Americans

- [Another Edition of the MTAN Is Now on the WEB](#)

Leadership in Science and Technology

Aquatic Habitat Conservation and Management

- [Fort Leavenworth Report Completed!](#)
 - Brian Elkington, Columbia NFWCO
- [Great Plains Prairie Fish Habitat Partnership Meets in Spearfish, SD](#)
 - Brian Elkington, Columbia NFWCO

Workforce Management



-Calvin R. Fremling

Water Under the Bridge
A Glimpse into our Proud Past
Emergent mayflies accumulate knee-deep on an
Upper Mississippi River bridge near Winona, Minne-
sota (circa 1960s).