U.S. Fish & Wildlife Service - Midwest Region
Fisheries & Aquatic Resources Program

Fish Lines

First Great Lakes Basin Fish Habitat Partnership Project Completed

Schoolyard Habitats and October Classroom Course

Hydrogen Peroxide Study Completed at Iron River NFH

Best Efforts Net No Asian Carp

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

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Removal of the old Boardman River hatchery ponds (Michigan) benefits the whole ecosystem. The restored site created a mosaic of island wildlife habitat, and the design eliminates water discharge during the summer months.

Fish Lines is produced by the Fisheries and Aquatic Resources Program, Region 3, U.S. Fish & Wildlife Service, Ft. Snelling, Minnesota. Items included are selected from monthly reports submitted by Region 3 fisheries offices. Photos included are used by permission and may be copyrighted.

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First GLRI Great Lakes Basin Fish Habitat Partnership Project Completed

BY PAM DRYER, ASHLAND FWCO

The Great Lakes Basin Fish Habitat Partnership's first on-the-ground habitat restoration project is complete. The Fish Habitat Partnership provided grant funds received from the Great Lakes Restoration Initiative, to several local organizations including the Bad River Watershed Association (BRWA) and Iron County in northern Wisconsin. These two organizations were the first to put their project money into action in the Lake Superior basin.

-USFWS

The Norman Creek culvert is undersized and inhibits fish passage. The project to replace this culvert was the first project completed through the Great Lakes Basin Fish Habitat Partnership.

The project was a culvert removal on Norman Creek in Iron County, Wisconsin. The culvert often washed out during heavy rains and because it was undersized, inhibited fish movement into quality upstream habitat. It was replaced with a free-span bridge in the fall of 2010 by Iron County Forestry, and Land and Water Conservation Departments.

"The Iron County Land and Water Conservation Department is grateful for the Great Lakes Basin Fish Habitat Partnership, which funded this fish passage project on Norman Creek in Iron County," said Mary Jo Gingras, County Conservationist for the Iron County Land and Water Conservation Department, "Even more so, we appreciate and credit our natural resource partners including the Bad River Watershed Association, Iron County Forestry Department, Fish and Wildlife Service, Sigurd Olson Environmental Institute and others who assist in these collaborative projects that implement real conservation on the ground and in the water, to improve fish and wildlife habitat and protect soil and water resources in Iron County."

Sites like these pose problems for fish and their habitats are not uncommon in the Bad River watershed. The BRWA, with strong support from the Fish and Wildlife Service and County Land and Water Conservation Departments, has led a culvert inventory and restoration program since 2005.

"We knew of many culverts in the watershed that were preventing fish from moving upstream," says BRWA Executive Director Michele Wheeler. "And we know that when fish can't get to important spawning and rearing habitats, populations suffer."

With the help of natural resource agencies, townships and local citizens, BRWA created a list of top priority sites. "We want to make sure that we're spending funds on sites that will have a significant benefit for fish. If sites are also a problem for towns and counties because they washout regularly, then it makes even more sense to work there. "

This was the case at Norman Creek. The new bridge opened 3.5 miles of habitat for brook trout and will significantly reduce sediment inputs downstream.

The Fish and Wildlife Service and Bad River Watershed Association are cooperating to monitor fish movement and habitat changes. They are working to determine how the project will affect the stream channel and brook trout that use this stream. "Monitoring after culvert replacements is essential," says Wheeler. "Landowners, county and township crews and partners can see how their stream changes over

time. Most importantly, we can use the data to improve our future culvert work."

The Land and Water Conservation Department has worked closely with townships and the Forestry Department in Iron County for the past eight years to improve water quality through reduced erosion and sedimentation and re-stabilizing crossings on roads and trails. Norman Creek was the first of eight projects that received funding through a Great Lakes Restoration Initiative grant to be funded through 2011 in Iron County.

-USFWS

A new free span bridge replaced the Norman Creek culvert and was built by the Iron County Forestry Department. Fish and Wildlife Service student employee Tyler Martin is as happy as the brook trout that now have uninhibited access to 3.5 miles of quality habitat.

The Great Lakes Fish Habitat Partnership is a recognized partnership of the National Fish Habitat Action Plan (http://www.fishhabitat.org/). The Partnership includes state, federal, tribal and non-profit organizations and was formed to make habitats whole and accessible for fish and other aquatic organisms, from headwater streams to deep lake habitats.

For further info about the Ashland FWCO: http://www.fws.gov/midwest/ashland/

Schoolyard Habitats and Outdoor Classrooms Course

BY KAREN KELLY, MULLINS-WILLOW OAK GROUP AND TIM SMIGIELSKI, REGIONAL OFFICE

Participants and course leaders from across the country visited our region during the week of October 18th to attend the NCTC (National Conservation Training Center) course on Schoolyard Habitats and Outdoor Classrooms. From sea to shining sea is an understatement in this case. They came from Maryland, Texas, California, Alaska and all parts in between. Over 20 people attended the course titled "Creating Schoolyard Habitats and Outdoor Classrooms" which was held in northwest Michigan this fall. Those who attended were from diverse backgrounds, agencies and organizations and possessed great talent and enthusiasm. In their positions across the country they have already been doing super work, delivering programs and projects designed to spark the interest of our future conservation stewards. Even so, they were here to perfect yet another tool for connecting children with nature and the outdoor world.

-USFWS

This is an art teacher's conception of a planned schoolyard habitat and outdoor classroom for the Concord Montessori and Community School located near Mancelona, Michigan.

This year, the host school was Concord Montessori and Community School located near Mancelona, Michigan. The school is small, housing pre K through 12th grade in one building. It is also unique in that it is a charter school offering fine arts and outdoor and environmental education emphasis. The school is an active participant in the conservation education and scientific literacy programs delivered by the Jordan River National Fish Hatchery (NFH). Project Leader Roger Gordon of the Jordan River NFH explained that, "Concord School is a tremendous partner. They really get it when it comes to providing hands-on experiences and outdoor connections for students. Some of the most popular activities that they participate in at the hatchery are the Adopt a Highway Program and Outdoor Classroom Days. Concord's leadership and student body is poised to make a difference for our future, with their own on-site programs like community gardens and community recycling receptacles, and they are even exploring alternative energy through a proposed wind turbine project." Creating Schoolyard Habitats and Outdoor Classrooms is an engaging and inspiring week of hands-on team work and interaction with a "real world school."

The course participants spend half of the first day in class and the rest of the day touring the school and its grounds. The tours are initially led by administrators and teachers. Lots of questions are asked by both the course participants and hosts from the school. This school is set on 28 acres, formerly a potato field and historically a white pine forest. The class was impressed with what they had to work with, especially when they were told that the whole property was fair game for transformation into wildlife habitat and outdoor learning space.

On day two, the class is divided into teams based upon the biographical information submitted during the enrollment process. Everyone felt that the teams

were cohesive and very productive right out of the gate. According to Karen Mullin, a NCTC Course instructor with the Willow Oak Group out of Maryland, "It is no coincidence that the teams perform so well in such a short timeframe, the course development committee puts a lot of thought into the makeup of the teams so that they get all they can out of the experience."

-USFWS

The "Schoolyard Habitats and Outdoor Classrooms" participants pose for a picture at Dead Man's Hill, a historic attraction and scenic overlook to the Jordan River Valley in northwest Michigan.

The goal is to find out how the schoolyard can best serve the needs of the school as well as the local ecosystem. Each team develops a comprehensive master site plan for the schoolyard which includes habitat restoration, native gardening and outdoor classrooms. Each team develops a truly unique plan reflecting their own expertise as well as their vision for how redesigned landscapes can help connect communities to their natural heritage.

On day three of the course, teams hammer out the details of their master plans, considering costs, timelines and potential partners. This is all building up to the fourth day of the class, when the 4 teams of course participants present their plans to the school. There were over 30 members of the school community, students, faculty, staff and parents that attended the presentations. The school community was visibly overcome with enthusiasm for the plans presented to them and was excited to get moving on their own plan to transform their school property into native habitat and outdoor learning space.

On the final day of the course, the class took a step back from Concord school and delved into their own plans for how they would each help build a Schoolyard Habitat and Outdoor Classroom program at their own offices. Each schoolyard across the country provides unique local challenges and opportunities for providing communities 'near-by nature'. Jontie Aldrich, coordinator of the Fish and Wildlife Service's Partners for Fish and Wildlife program in Oklahoma, and a course instructor, pointed out that, "This course rates highly because of the results and on-the-ground actions that occur once participants return from it." At the end of the week it was unanimous, all of the participants understand how the Fish and Wildlife Service Schoolyard Habitat Program is a perfect alignment to connect kids with nature and help the public understand our mission.

-USFWS

Schoolyard Habitats and Outdoor Classrooms participants carved pumpkins for the Concord Montessori and Community School as a token of their appreciation for hosting the class.

For further info about the Regional Fisheries Program: http://www.fws.gov/midwest/Fisheries/

Hydrogen Peroxide Study completed at Iron River NFH

BY CAREY EDWARDS, IRON RIVER NFH

Gyrodactylus is a naturally occurring parasite found in Schacte Creek, which supplies the Iron River National Fish Hatchery (NFH) with 4,000 gallons per minute spring water. Under normal circumstances, this parasite poses little to no problems for the 1.6 million production or 6,000 adult fish reared and maintained at the hatchery. However, adult post-spawn coaster brook trout historically suffer from heavy Gyrodactylus infestations and treatment options have been limited to salt and formalin, which are both approved by the Food and Drug Administration (FDA) for use with fish. The staff at Iron River has been working under an Investigational New Animal Drug (INAD) protocol to use hydrogen peroxide as an alternative to formalin. Hydrogen peroxide breaks down readily in water to form oxygen and water and is less harmful to humans and the environment than formalin. In 2008, a study was conducted at the hatchery by the Upper Midwest Environmental Science Center (UMESC) and NFH staff to test and confirm the efficacy of 35% hydrogen peroxide to reduce the infestation density of Gyrodactylus on coaster brook trout. Results from this study proved that hydrogen peroxide is effective at reducing the parasite. The formal study has been submitted to the FDA and approval is pending.

-USFWS

Biologists from the Iron River National Fish Hatchery administer hydrogen peroxide treatments to lake trout in study tanks while Upper Midwest Environmental Science Center staff monitors water quality.

In mid-summer 2010, a number of factors were coming together to create a fish culturist's nightmare. High loading densities, severe rainfall and high water temperatures are thought to have joined forces to create an event that has never occurred at Iron River before, a severe Gyrodactylus infestation in production lake trout. What is one person's nightmare is another person's dream. In comes UMESC with a proposal for a laboratory study along with a full blown, practical hatchery setting, side by side, mother lode of studies. Can you feel the excitement in the air? This study could be the last and final piece of evidence needed to seal hydrogen peroxide's fate for approval with the FDA.

On August 23, UMESC staff arrived at the hatchery to set up equipment and tanks. Two 18 compartment tanks were set up and the "study" fish were designated. A fish sample was randomly placed into each compartment to mirror the density of the raceway it came from. Compartments were randomly selected to be treated three times, at 50 ppm, 100 ppm or a control for either 30 or 60 minutes. The study was blinded so that personnel enumerating parasites and verifying treatment concentrations would not know the assignment of treatment concentrations for each compartment. Tanks were monitored for mortality and moribund fish for an additional 14 days, with water quality parameters being taken every day. On the final day of the study, fish were sampled from every tank to be monitored for parasite loads.

Along with the "laboratory style" study that occurred, was a side by side study in the main hatchery building. Six raceways were treated with hydrogen peroxide at 100 ppm and six raceways were treated with formalin at 75 ppm. Pre- and post-analysis was completed on parasite load and all treatment concentrations were verified. Conclusive evidence was found that hydrogen peroxide was highly effective at removing the Gyrodactylus parasite. Parasites were not satisfactorily removed from raceways treated with formalin.

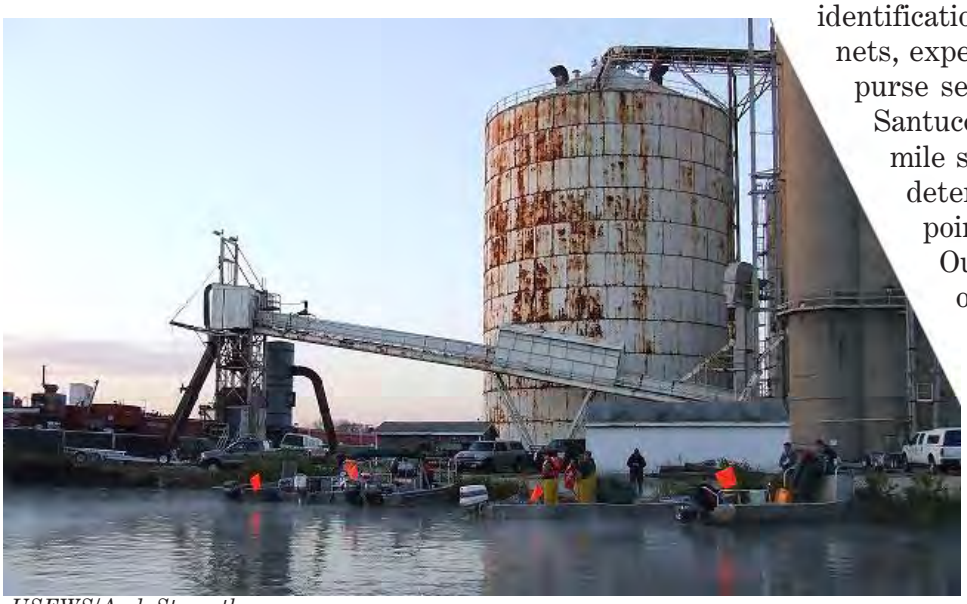
Once again, preliminary results look very promising for the addition of hydrogen peroxide to the arsenal of approved treatments for salmonid species as very little to no Gyrodactylus spp. were detected after treatment. The Iron River NFH staff enjoyed participating in the study, collaborating with UMESC staff and eagerly awaits FDA approval of hydrogen peroxide for treatment of Gyrodactylus.

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

Best Efforts Net No Asian Carp

BY BRETT WITTE, HEATHER CALKINS AND ANDY STAROSTKA, COLUMBIA FWCO

Representatives from numerous state and federal agencies converged on the Chicago Sanitary and Shipping Canal (CSSC) October 19th-21st near Romeoville, Illinois. This area is just downstream of the two electric barriers built to prevent fish passage between the CSSC and Lake Michigan.



-USFWS/AndyStarostka

Representatives from numerous state and federal agencies gather staff and equipment at the Cargill Launch site in the Chicago Sanitary and Shipping Canal (CSSC), to monitor Asian carp presence here.

Vic Santucci from the Aquatic Nuisance Species Program of the Illinois Department of Natural Resources (DNR) sent out a call for crews to arrive with boats and gear to check the status of invasive Asian carp in this area. The Fish and Wildlife Service was present with staff from the La Crosse Fish Health Center, Carterville Fish and Wildlife Conservation Office (FWCO) and Columbia FWCO. Also in attendance was staff from the Indiana DNR, Illinois Natural History Survey (INHS), U.S. Coast Guard (USCG) and U.S. Army Corps of Engineers (USACE).

Andy Starostka, Heather Calkins and Brett Witte from the Columbia FWCO arrived at the Cargill launch site just before 3:00 pm on the 19th to a muted buzz of activity. Within an hour, all boats were in the water and an informational/safety briefing was led by Santucci with additional comments from the USACE and USCG. With the exception of a Hanson Material tug boat loading barges with gravel and sand, the canal was effectively closed by a safety zone established by the USCG and enforced by state conservation officers. No other navigation would occur from 4-7 pm the 19th and 20th and from 7 am-12 pm the 20th and 21st. After the briefing, we divided up radios, identification flags and gear including trammel nets, experimental gill nets, mini-fyke nets and a purse seine. Electrofishing also occurred. As Santucci put it, the goal is to saturate a two-mile stretch of the canal with sampling to determine if Asian carp are present at that point in time.

Our boat motored upstream to a slip owned by Hanson Material. Within the slip, which cupped out from the canal like a miniature bay, the crew deployed five (200 feet) monofilament trammel nets. Three of the nets had larger diameter float line allowing them to stay at the surface, hanging down 8 feet into the water, while the others fished from the bottom up 8 feet.

For each of the next two mornings, we checked our nets beginning at 7 am. Common carp, buffalo species and freshwater drum were desired for tracking by the USACE, as species with similar habits to Asian carp. Numerous common carp of appropriate size (>1 lb) were caught in our nets and we returned several to the launch for tagging. The nets were re-set after removing fish and debris. They were checked and redeployed on the afternoon of the 20th and finally pulled on the 21st. With the exception of a goldfish and a drum, common carp comprised the entirety of our catch.

The "saturation" of those two miles of the canal gave the USACE more common carp to track and will hopefully advance their understanding of how Asian carp would use the canal if they ever populate it. Otherwise, we achieved our goal of determining the presence/absence of Asian carp in the CSSC. As for now, they appear to be absent.

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

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.

Alpena FWCO Assists Students with Thunder Bay River Water Quality Investigation

BY ANJANETTE BOWEN, ALPENA FWCO

On October 7 and October 21, Alpena Fish and Wildlife Conservation Office (FWCO) biologist Anjanette Bowen and members from the National Oceanic and Atmospheric Administration (NOAA) Thunder Bay National Marine Sanctuary participated in field trips with Sandborn Elementary 5th/6th grade science class (Alpena, Michigan, public school) to investigate water quality and zebra mussels on the Thunder Bay River in Alpena County. The investigation is part of a Thunder Bay River watershed place-based education project that the class is conducting with local community partners. The project is funded by the Northeast Michigan Great Lakes Stewardship Initiative's small grant program.

During October, the students conducted water quality testing and macro-invertebrate analysis at two locations along the Thunder Bay River watershed to document the environmental condition. They also took a number of measurements on zebra mussels found on rocks near the Four Mile Dam. Students measured and calculated the average length and weight of mussels removed from rocks and also calculated the average number of zebra mussels found on the rocks per area. The students are studying invasive zebra mussels in their classroom and are doing a project on zebra mussel attachment rates to a variety of substrates near shipwrecks in Thunder Bay (Lake Huron) with the Thunder Bay National Marine Sanctuary. Michigan Sea Grant and other community partners are involved with this project as well.

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

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

What's a Wetland … Without its Fish?

BY HEIDI KEULER, LA CROSSE FWCO

All too often, we forget about what we can't see. As a biologist, I was hoping to be a "quiet" reminder of the importance of fish in wetlands while attending the International Importance designation event for the Upper Mississippi River Floodplain Wetlands on October 14, 2010. The Upper Mississippi River Floodplains Wetland includes 300,000 acres of federal and state lands and waters that extend more than 261 river miles between Wabasha, Minnesota, and Rock Island, Illinois. It is the 27th United States wetland designated under the Ramsar Convention on Wetlands.

Imagine my surprise when the organizer of the event, Cindy Samples from the Upper Mississippi River National Wildlife and Fish Refuge (NW&FR), asked me to help lead a terrestrial nature hike to view waterfowl. I jumped at the chance to help Tex Hawkins, a well-known Fish and Wildlife Service naturalist, talk about the history of the surrounding wetland refuge and how fish play an important role in the Upper Mississippi River NW&FR.

Special attendees at this event included Fish and Wildlife Service Deputy-Director Paul Schmidt, Midwest Regional Director Tom Melius, Wisconsin Congressman Ron Kind, Wetland Convention Secretariat Anada Tiega (from Gland, Switzerland), and U.S. Ramsar Delegate Suzanne Pittenger-Slear. Others who attended were from National Wildlife Refuges in the tri-state area and other federal or state natural resource agencies including the U.S. Army Corps of Engineers, U.S. Coast Guard and many nonprofit organizations.

During some very moving presentations, the speakers talked about birds, waterfowl, amphibians, mammals, aquatic invertebrates and plant species. However, most presenters didn't mention a very important component of many wetland ecosystems. All too often they forget about the fish. I was thankful for the opportunity to provide perspective about the role that wetland habitats play for many fish species. I guess I wasn't just a "quiet" reminder that day.

The Ramsar Convention on Wetlands of International Importance is an environmental treaty made up of many cooperators that work on the conservation and wise use of wetlands across national boundaries. It is called Ramsar because the first convention was held in 1971 in Ramsar, Iran. For more information on the Wetlands of International Importance program, visit www.ramsar.org.

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

Columbia FWCO and Iowa DNR Complete Electrofishing Survey at DeSoto NWR

BY AARON WALKER, COLUMBIA FWCO

On October 26th, Aaron Walker of the Columbia Fish and Wildlife Conservation Office (FWCO) along with Mark Boucher and Bryan Hayes of the Iowa Department of Natural Resources teamed up to perform an electrofishing survey on DeSoto Lake, located in the DeSoto National Wildlife Refuge (NWR). Sampling was completed as part of a long-term monitoring and management program started in the 1970's. The sampling consisted of three (30 minute) night-time electrofishing runs targeting walleye. The biggest walleye captured was 18 inches long and weighed just over 2 pounds.

Data collected from that night will be analyzed, interpreted and incorporated into the annual DeSoto Lake Management Plan. Our team of inter-jurisdictional biologists can then make management decisions to help improve recreational fishing on DeSoto Lake. The lake, and its recreational fishing opportunities, draws large numbers of visitors to the DeSoto NWR each year. With our work, we hope to maintain and continue to improve the popular recreational fishing opportunities at DeSoto Lake.

-USFWS

A few walleyes are showing up during fishery assessments on DeSoto Lake which is part of the DeSoto National Wildlife Refuge.

For further info about the Columbia FWCO: 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.

Fall Lake Trout Assessment at Yankee Reef

BY SCOTT KOPROSKI, ALPENA FWCO

Alpena Fish and Wildlife Conservation Office (FWCO) has been conducting fall lake trout spawning surveys at two offshore reefs since 1993: Six Fathom Bank and Yankee Reef. Both of these reefs are located in the central part of Lake Huron and have the preferred habitat (honeycomb limestone rock) for spawning lake trout. Alpena FWCO attempts to conduct a spawning survey annually at both reefs; however, the weather during the fall can be quite challenging with gale force winds and high seas, which may not provide an opportunity for them to sample one or both reefs. As a result, each year the priority reef alternates in the event that two fall cruises are not possible.

-USFWS

Aboard the *M/V Spencer F. Baird*, Alpena Fish and Wildlife Conservation Office biologists remove lake trout from gillnets during recent fishery assessment work in Lake Huron.

The priority reef in 2010 was Yankee Reef, which is located about 20 miles offshore of Tawas, Michigan. The *M/V Spencer F. Baird* arrived in Alpena, Michigan, on October 18th. Due to consecutive days of gale force winds and high seas, the staff from Alpena FWCO was forced to wait until the end of the allocated three week period to conduct the lake trout spawning survey. On November 1st, the *M/V Baird* cast lines and departed for Yankee Reef. On board the *M/V Baird* was the vessel crew, which consisted of Captain Michael Perry, Marine Engineer Robert Bergstrom, Seamen Fishermen David Bohn, Deckhand Keith Colborn, and the assessment crew which consisted of Scott Koproski and Adam Kowalski from Alpena FWCO.

Two (400 foot) gangs of gill nets were deployed on Yankee Reef. Each gang consisted of one (100 foot) panel of 4.5 to 6.0 inch stretch mesh and was fished for one night. The effort and sites have been standardized at Yankee Reef since the inception of this survey in 1993. In total, 58 lake trout were captured between the two sites, marking the fourth highest catch since implementing this survey. More notable is that over 44% (26 wild fish) of the total lake trout catch was unclipped fish (presumable wild). This year had the combined highest percentage and number of wild lake trout we have sampled since 1993.

This increasing trend of wild fish was also observed during our last sampling event at Yankee Reef which took place in 2008. The catch of wild fish during the 2008 survey was the highest percentage and number of lake trout observed at that time (22 wild fish comprising 22% of the catch). Additionally, the catch-per-effort (CPE) of wild fish in 2008 and 2010 was 27.5 and 32.5, respectively. Both CPE's surpassed the previous high of 16.3 set in 2004. The increase in wild fish encourages staff and further justifies the Fish and Wildlife Service's efforts to rehabilitate lake trout in Lake Huron.

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

Assessment of Great Lakes Muskellunge and Walleye in the Fox River

BY TED TRESKA, GREEN BAY FWCO

Biologist Ted Treska of the Green Bay Fish and Wildlife Conservation Office (FWCO) assisted the Wisconsin Department of Natural Resources (DNR) crew on the Lower Fox River in their effort to assess walleye and muskellunge populations. Treska joined Wisconsin DNR biologist Dave Rowe and technician

Rod Lange for part of a three day effort that collected nearly 1,000 walleyes and 33 muskies for biological samples including genetics and aging samples, and passive integrated transponder (PIT) tagging of muskies. Genetics samples from the muskies will be analyzed to determine their origins, as a number have been stocked in the area and the population is on the rise. Spotted muskies have been stocked into the Fox River system since 2003 as part of a Natural Resource Damage Assessment and Restoration effort to establish more top level predators to control a large forage base that exists in the river, including invasive species. The survey also provides a measure of how well the walleye population is doing. The sampling showed that young-of-the-year walleye are present at near record sizes and good numbers of larger fish are present in the population.

-WIDNR/GaryKincaid

A Wisconsin Department of Natural Resources biologist holds a healthy example of a Great Lakes Spotted Muskie.

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

Two New Species of Mussels are 'Dropped-off' at Genoa NFH

BY NATHAN ECKERT, GENOA NFH

During our fall propagation run, we successfully transformed two species of mussel not previously propagated at the Genoa National Fish Hatchery (NFH). They are the butterfly and washboard. Past propagation attempts with these species have either produced fish stocked as free ranging hosts or ended with negative results due to host fish mortality.

Both species present propagation challenges due to either host fish requirements or reproductive strategy. The butterfly uses the freshwater drum as a host, a species which can be collected, but is difficult to hold for the extended periods required for mussel propagation. Improved fish culture techniques at the hatchery have resulted in better health and survival of this host fish, allowing time for the butterfly to transform and "drop off."

Washboard **Butterfly**

Genoa National Fish Hatchery staff continue to refine culture techniques for several species of state threatened and endangered mussels including the washboard and butterfly.

The washboard has a unique reproductive strategy. It produces larvae (glochidia) during a short period of time around late October. High flows and sudden temperature changes can abruptly end the brooding period for this species. Genoa staff monitored river temperatures and water levels, periodically checking known mussel beds for washboards with glochidia. This constant monitoring allowed for the collection of several gravid (larvae bearing) washboards, that were brought back to the hatchery to collect the glochidia for host fish.

These mussel species are important targets for restoration efforts because they are listed by multiple states in this region. The washboard is listed as a state threatened species in Minnesota and a species of special concern in Wisconsin. The butterfly is a listed state endangered species in Wisconsin and a listed threated species in the states of Iowa, Illinois and Minnesota. Hopefully, both species will culture well this winter and provide many individuals for our partners in the future.

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

Mass Marking of Pendills Creek NFH Lake Trout Completed

BY JAMES WEBSTER, GREEN BAY FWCO

On September 28th, the Great Lakes mass marking team traveled to Pendills Creek National Fish Hatchery (NFH) near Brimley, Michigan, to coded-wire tag and adipose fin clip their entire year class of lake trout. The team split the project into two separate trips spending a total of 12 days processing fish using two AutoFish trailers. By the time the last fish was processed on October 15th, a total of 986,367 lake trout had been clipped and tagged at an average of 5,688 fish per hour. Upon completion, the trailers were immediately disinfected and transported to Iron River NFH near Iron River, Wisconsin, where the next lake trout tagging project commenced on October 18th.

The AutoFish system, manufactured by Northwest Marine Technology Inc., is a self-contained mobile fish marking and tagging laboratory that has the ability to apply coded-wire tags and adipose fin clips to trout and salmon at high speeds with minimal handling stresses. The Great Lakes Mass Marking Program, headquartered at the Green Bay Fish and Wildlife Conservation Office (FWCO), currently operates two AutoFish trailers and one manual tagging and marking trailer. Throughout this fall, Green Bay FWCO staff will be using these trailers to adipose fin clip and coded-wire tag about 4.6 million lake trout at three Fish and Wildlife Service hatcheries in Michigan and Wisconsin.

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

Drying Out from the 2010 Pallid Sturgeon Sampling Season

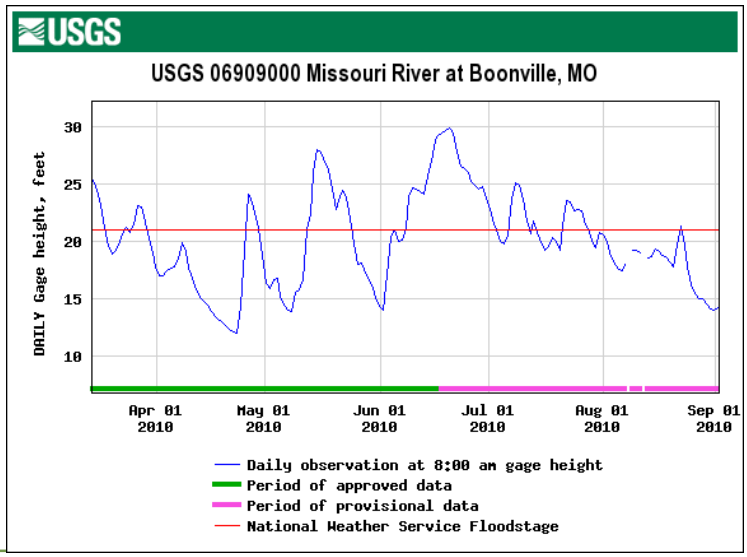
BY COLBY WRASSE, COLUMBIA FWCO

Mother Nature made 2010 a tough year to sample the Missouri River. Due to heavy spring and summer rains and upstream reservoir releases, Missouri River levels were near or above flood stage for much of the year. The resulting high water was not conducive to standardized fish sampling, and at times the river conditions were downright dangerous. We were forced to work on the river's terms this year, waiting for those brief periods when the flood waters would recede and then working feverishly until the next deluge of water came.

-USFWS

An angry Missouri River, out of its banks and carrying large trees downstream, was the case on many occasions this summer.

Although sampling in these conditions was difficult, data collected during 2010 may provide us with valuable insights into the effects of high water on the Missouri River fish community. Though we were not able to deploy all of our standard gears, 24 pallid sturgeon were captured in the 2010 sample year. Seventeen of the pallids were captured on trotlines, as well as three hybrid sturgeon, once again proving their merits as an extremely effective sampling gear. Trotlines are the only standard gear that allows us to effectively sample during high water conditions that rendered other gears ineffective, dangerous - or both.



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

Electrofishing Efforts Continue in Chicago Land

BY HEATHER CALKINS, ANDY PLAUCK AND BRETT WITTE, COLUMBIA FWCO

In early October, a crew from the Columbia Fish and Wildlife Conservation Office (FWCO) headed northeast to the Chicago land area once again in search of Asian carp. As with the previous trips, there were five fixed sites to sample at different locations on the Chicago Area Waterway System (CAWS). These sites extended from near Skokie, Illinois, on the North Shore channel down to the Cal-Sag channel and Lake Calumet around Dolton. While the crew had their eyes trained to look for invasive silver and bighead carp, the usual suspects were captured, with the majority being gizzard shad, yellow perch, basses, sunfish, common carp and several different minnow species.

Fortunately, no Asian carp were detected at any of the sites, although the crew did have a bit of excitement while sampling in Lake Calumet (the site nearest to Lake Michigan where a live Asian carp had previously been captured). During one of the electrofishing runs, a silvery fusiform shape was rolled by the electrical current. The crew was stunned for an instant thinking it may be an Asian carp, but after getting a better look realized it was a large steelhead (lake dwelling rainbow trout). Other interesting species that were identified include central mudminnow, banded killifish, oriental weather loach and a Louisiana red swamp crayfish. This trip was part of a continuing effort between the Illinois Department of Natural Resources, U.S. Army Corps of Engineers, and the Carterville and La Crosse FWCO's.

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.

-USFWS/HeatherCalkins and AndyPlauck

Some of the surprise catches during Asian carp assessments in the Chicago Area Waterway System include: Heather Calkins with a steelhead trout; Brett Witte with a Louisiana red swamp crayfish; and a central mudminnow.

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

Fish, Food and Fun!

BY CAREY EDWARDS, IRON RIVER NFH

The Iron River National Fish Hatchery (NFH) hosted its 8th annual open house on September 11, 2010. One of the six high priorities of the Fish and Wildlife Service is connecting children with nature and that concept was put forth in an effort to draw children to this year's open house. Hatchery staff planned a unique experience for visitors with several fun outdoor activities being offered while showcasing the hatchery and its mission.

-USFWS

A member of Trout Unlimited demonstrates fly casting at the annual open house at the Iron River National Fish Hatchery.

Despite the rainy start, approximately 170 visitors toured the hatchery, many of whom were from out of state. Upon entering the hatchery, guests registered themselves and children were offered gift bags with coloring books, stickers and personalized Iron River NFH pencils, tattoos, crayons, window clings and carabineers. Guided tours from knowledgeable hatchery staff awaited groups every half hour.

The first stop for most parents was the Gyotaku table. (Gyotaku is the Japanese art of transposing the image of a fish using paint onto cloth or paper.) Parents lined up to find the correct size shirt for their child's art work. Rubber molds featured leaves, butterflies and mammal tracks and over a dozen fish including bluegill, rainbow trout and northern pike. Children were able to decorate in an array of colors for a one of a kind shirt. Eighty five shirts were made.

Another very popular activity was the casting games. Plastic lawn bass were spread out in the lawn for children to practice their casting skills. Rod and reel combinations were donated by Woods and Water Outfitters, a local sporting goods store. While supplies lasted, children received a prize (donated by the *Friends of the Iron River National Fish Hatchery*) for catching the wily bass.

Back for the second year was the Wild Rivers Chapter of Trout Unlimited. President Chuck Campbell and another member assisted children with tying their own flies and trying their hand at fly casting in the hatchery lawn. Trout Unlimited donated all materials used, and children were able to take their homemade fly home.

There was also a display by the La Crosse Fish Health Center. A biologist was on hand to answer questions about disease concerns and personalized water bottles, pens and Frisbees were handed out.

Making a debut appearance at the open house was The *Friends of the Iron River National Fish Hatchery*. This newly rekindled hatchery friends group showcased sale items such as hats and tee shirts sporting the group logo. A board member was present to answer questions about the group and its mission and to sign up new members.

The final touch to a perfect day was the barbeque lunch donated by the Brule River Sportsman's Club. Club members cooked and served approximately 200 hot dogs to hungry guests. Potato chips and soda were also provided by the club. The Iron River NFH provided lemonade, coffee and cookies.

Partnerships are the cornerstone to any successful operation and the Iron River NFH is no exception. Thanks to these new collaborations, the hatchery was able to host a very successful event. Next year's planning is already underway with a commitment from the Brule River Sportsman's Club to provide lunch again. Stay tuned to see what new events and collaborations take place next year.

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

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.

Missouri University Fisheries Techniques River Field Day: Six Years of Success

BY PATTY HERMAN, COLUMBIA FWCO

Nine eager, however reserved, Missouri University (Mizzou) students and their gregarious professor met us at the boat ramp ready to work on the Big Muddy. Unlike past years, we had "chamber of commerce" weather for this year's field day – shiny and brisk, a beautiful autumn day to be out on the river fishing. Missouri River Branch Chief Wyatt Doyle introduced the class to an abbreviated version of the issues swirling around the Missouri River and explained our specific role in the effort to recover the endangered pallid sturgeon. Sensing their collective reluctance to speak out, Wyatt began peppering the students with questions until the answers (and laughter) flowed freely. Students then divided into four groups to get hands-on training with stern trawling, trotlining, gill netting and push trawling. Objectives of working on the river were discussed, as well as our different Missouri River projects. The students seemed to enjoy getting a different aspect of fisheries management and a change in scenery from the ponds they had been working on all semester. Everyone was treated to an opportunity to see the "star of the show." A pallid sturgeon was captured in the first gill net to be pulled. Students had a front row seat to watch the process as measurements were taken, genetic samples removed, a microchip inserted and pictures snapped. Students were also treated to a variety of river fishes including shovelnose sturgeon, catfish, gar, blue sucker, silver carp and several chub species.

For six years, Columbia Fish and Wildlife Conservation Office (FWCO) has assisted Dr. Douglas Noltie and the University of Missouri-Columbia (MU) with teaching the big river component of his Fisheries Techniques course. As most Midwestern fisheries management occurs on impoundments or reservoirs, Dr. Noltie's Fish Techniques class generally addresses issues surrounding lakes and ponds. Realizing riverine fisheries management is a growing area of fisheries sciences, Dr. Noltie has enlisted the resources of the Columbia FWCO to introduce his students to the Missouri River. In the past, working with MU students has not only enabled the Columbia FWCO to shed light on new developments in riverine sampling techniques, but also has provided our office an opportunity to get to know prospective student interns. For many of the students, this field day led to an opportunity to participate in a job shadow assignment. Several of the students were able to assist with field work the following week and get a better taste (literally and figuratively) of the Missouri River. We were honored to be a part of this class and hope that the students and Dr. Noltie enjoyed their field day on the Big Muddy.

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

Out and About At Genoa NFH

BY ANGELA BARAN, GENOA NFH

October was a very busy month for outreach events at Genoa National Fish Hatchery (NFH), with staff going to schools and groups coming out to tour the hatchery. The month started with the Valley Stewardship Network from Viroqua coming out to the hatchery for a tour on October 6th. We then shipped Nathan Eckert out to Desoto High School for a Career Day on October 18th. He was on hand to answer questions from the students and also gave several presentations about being a biologist and the internship and temporary student programs available to prepare for careers in the Fish and Wildlife Service. Jenny Bailey gave a presentation to 60 students from the Cashton Middle School Nature Club on October 18th and traveled to Southern Bluffs School to give a classroom of 27 students a presentation about fish identification on October 22nd. The hatchery welcomed Tyler Garabalia, a student from Bangor High School who came out to complete a job shadow on October 20th, following staff members around to learn about fish and mussel culture and what steps to take in school to end up in the Fish and Wildlife Service some day. Staff from the hatchery gave tours to the Department of Aging on October 19th and the Limnology Class at Viterbo University. There should be a few future Fish and Wildlife Service employees recruited from all these tours and presentations!

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

Established Lake Sturgeon Population is Focus of Attention

BY ANN RUNSTROM LA CROSSE FWCO

Photo opportunities for 50+ pound lake sturgeon are not uncommon during gillnet sampling in Legend Lake on the Menominee Indian Reservation in northeastern Wisconsin. In fact, the recently established lake sturgeon population here has been the focus of several activities in the fall of 2010. On September 25, three tribal offices (Historic Preservation, Conservation and Community Development) partnered with the La Crosse Fish and Wildlife Conservation Office (FWCO) to host the 3rd Annual Sturgeon Awareness and Kids Fishing Day. Fishing was a new event this year, and kids who participated had the opportunity to go angling for lake sturgeon from a boat.

-USFWS

Lake sturgeon captured from Legend Lake were held in a portable tank where visitors could view and touch them during the 3rd Annual Sturgeon Awareness and Kids Fishing Day at the Menominee Indian Reservation.

Alex Zacarias, a producer for Educational Television Productions, filmed the event and conducted interviews for inclusion in a documentary based on the book entitled *People of the Sturgeon*. The La Crosse FWCO also assisted the Menominee Conservation Department with their annual assessment of the lake sturgeon population during the weeks of October 4 and November 1. On October 5, Tim Knox, Regional Coordinator of Aboriginal Programs for the Queensland Murray-Darling Committee of Australia, came aboard the FWCO sampling vessel. Mr. Knox was visiting Tribes across the country to observe resource management programs of native peoples in North America. While in Wisconsin, he took the opportunity to photograph lake sturgeon management efforts on the Menominee Reservation, as well as catch a Green Bay Packers game! Mr. Zacarias returned to Legend Lake during our assessment on November 4. He was pleased with the film he captured that day and will be conducting additional interviews of some of the Menominee people, documenting their sturgeon stories.

Over 60,000 lake sturgeon, reared at the Genoa and Neosho National Fish Hatcheries, have been stocked into Legend Lake since 1994. In the short span of sixteen years, the lake now hosts a lake sturgeon population with some fish weighing up to 70 pounds.

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

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

Field Sampling Complete for Research Relating Lake Trout Diet to Egg Survival

BY DALE HANSON, GREEN BAY FWCO

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.

Field sampling for a three-year Great Lakes Fishery Trust (GLFT) funded research project is complete! Biologist Dale Hanson of the Green Bay Fish and Wildlife Conservation Office (FWCO) has spent the last three years collaborating with principal investigators Sergiusz Czesny (Illinois Natural History Survey) and Jacques Rinchard (SUNY-Brockport) on a GLFT project designed to evaluate the influence of lake trout diet on the biochemical make-up of lake trout eggs, and ultimately their survival. In the first two years of the project, forage fish and lake trout were collected seasonally from Clay Banks reef in northwestern Lake Michigan and reefs near Waukegan, Illinois, to describe biochemical compositions among forage fish and to identify regional differences in lake trout diet between reefs. This work set the stage for year three — the proof is in the eggs!

To complete the field sampling, ripe lake trout eggs were collected during Green Bay FWCO's recent completion of fall spawn surveys on Clay Banks reef and Illinois Department of Natural Resources surveys on reefs in Illinois waters of Lake Michigan. Egg samples were sent to Jacques Rinchard for analysis of thiamin concentrations and determination of the biochemical make-up of lipids, or fats, in the eggs. The rest of the egg sample from each female was fertilized and are currently being held in aquaria to determine the proportion of each female's eggs that survive beyond eight weeks.

This ambitious project provides a detailed account of lake trout diet at each reef, the biochemical make-up of lipids in lake trout eggs, egg thiamin content, and ultimately the survival rates of these lake trout progeny. Results describing the possible effect of regional diet differences on the survival of lake trout progeny will be reported at the 2011 meeting of the Lake Michigan technical committee and will help us understand the potential role of the forage base in impeding the restoration of naturally reproducing lake trout populations in Lake Michigan.

-SUNY-Brockport/JacquesRinchard

Lake trout eyed eggs (the eyes of the developing fish inside the egg are visible) are reared in the lab to monitor the proportion that survive after hatching as part of a research project.

-SUNY-Brockport/JacquesRinchard

Jacques Rinchard extracts the thiamin from a sample of lake trout eggs to evaluate the influence of lake trout diet on the biochemical make-up of lake trout eggs, and ultimately their survival.

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

Green Bay FWCO Assists with Research on Thiamin Content in Lake Trout Eggs

BY DALE HANSON, GREENBAY FWCO

PhD candidate Allison Evans (Oregon State University) recently accompanied Green Bay Fish and Wildlife Conservation Office (FWCO) staff on a lake trout spawning survey to obtain samples of ripe, running lake trout eggs for her PhD dissertation. Since the early 1990's, the Green Bay FWCO has surveyed the Clay Banks reef in northwestern Lake Michigan. There is widespread interest in Clay Bank's lake trout eggs as the Fish and Wildlife Service's efforts at this site have helped create one of the longest time-series available for egg/thiamin concentrations, and also eggs from Clay Banks historically have shown the lowest thiamin levels within the Great Lakes. This is important because a diet-related thiamin deficiency can cause lake trout progeny to experience high mortality shortly after hatching. This thiamin deficiency affects egg stages but it stems from a maternal lake trout diet rich in thiaminase, a thiamin-destroying enzyme, which is often present in invasive alewives and other forage fish. Therefore, monitoring thiamin content in lake trout eggs is a valuable tool to evaluate the regional suitability of Lake Michigan's forage base for natural reproduction among lake trout populations.

-USFWS

PhD candidate Allison Evans proves her versatility as she handles lake trout in the field which provides a nice break from analyzing the biochemical properties of lake trout eggs in the lab.

Allison's research is focused on the origin of thiaminase in alewives and how it depletes thiamin reserves in lake trout eggs. Generally, thiamin content is reported as an average value representing a batch of eggs obtained from a single female; as such, low thiamin concentrations below 4 nmol\g are thought to induce 100% mortality among that female's progeny; however, each female may spawn thousands of eggs and the process of when or how thiaminase depletes egg thiamin reserves is not known. Allison collected fifty individual eggs from fifteen different females captured from Clay Banks reef, and she will use these samples to describe the variability in thiamin among individual lake trout eggs. A female that displays low but variable egg thiamin levels would suggest thiamin reserves are not uniformly depleted and at least some of her progeny may survive. This information will increase the overall understanding how predator-prey interactions may affect recruitment of lake-spawned lake trout. This is one of many projects the Fish and Wildlife Service is proud to support to advance lake trout rehabilitation efforts in the Great Lakes.

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

Ohio River Basin Fish Habitat Partnership Represented at NFHAP Board Meeting

BY ROB SIMMONDS, CARTERVILLE FWCO

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

As does many Carterville Fish and Wildlife Conservation Office (FWCO) staff, Project Leader Rob Simmonds "wears multiple hats." One of those is coordinator for the Ohio River Basin Fish Habitat Partnership. It was in this role that he participated in the October National Fish Habitat Action Plan (NFHAP) board meeting. In addition to the board's regular business, they held sessions specifically designed to get input from those who provided feedback to a recent board survey. Primarily, input was sought on communication efforts, measures of performance for fish habitat partnerships, and criteria for making funding recommendations. These topics resulted in some good discussion and spirited debate. A number of suggestions were captured that will result in immediate improvements to board performance. The topics of measures and funding decisions were larger than time allowed, so a committee was formed to pick up where the group left off. In addition to providing input to the board, this was a rare face-to-face opportunity to network and discuss common issues with fellow coordinators and others who are deeply involved in helping to keep NFHAP moving along.

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

Columbia FWCO Samples Dalbey Bottoms on the Missouri River

BY ADAM MCDANIEL, COLUMBIA FWCO

Dalbey Bottoms is located on the Missouri River between northwest Missouri and northeast Kansas near River Mile 417. The U.S. Army Corps of Engineers (USACE) has proposed building a side channel chute along this stretch of river. This project would address part of the Missouri River Recovery Plan, aimed at restoring habitat for federally endangered pallid sturgeon. The Columbia Fish and Wildlife Conservation Office (FWCO) and USACE are cooperating to study Missouri River habitat at Dalbey Bottoms before and after construction of the side channel. Baseline information about fish species in this area is being collected to assess the ecological impact of the constructed chute on pallid sturgeon and other native Missouri River fishes.

During the month of October, biologists from Columbia FWCO completed two sampling trips with trotlines at Dalbey Bottoms to assess abundance of adult pallid sturgeon. Thirty pallid sturgeon were captured between the two sampling trips, five of which were unmarked and potentially wild fish. Crews plan to return in the spring to continue monitoring the fish community at Dalbey Bottoms. The addition of this side-channel will add to the diversity of Missouri River habitat. Along with other projects up-and-down the river, habitat projects will aide in the recovery of the endangered pallid sturgeon as well as other species of concern.

-USFWS

Neil Bass of the U.S. Army Corps of Engineers poses with a wild pallid sturgeon captured on the Missouri River at Dalbey Bottoms.

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

Former Boardman River Hatchery Receives Make-Over

BY HEATHER RAWLINGS, ALPENA FWCO

Alpena Fish and Wildlife Conservation Office (FWCO) Partners for Fish and Wildlife (PFW) Program has been working with the Grand Traverse Conservation District, Michigan Department of Natural Resources and Environment Fisheries Division and numerous other partners to improve water quality in the Boardman River, a state designated "Blue Ribbon" trout stream. This was accomplished in part by closing off the outflow of fourteen former trout rearing ponds located in the floodplain of the Boardman River. These man-made ponds were constructed in the mid 1960's and are fed by cold water from the Boardman River (downstream of Garfield Road in Section 21 of Paradise Township, Grand Traverse County). Summer temperatures at the outlet of the ponds have reached in excess of 80 degrees F.

Though all the ponds still cycle water, they had not been active in over 30 years. The ponds have filled in with silt and sand and act as "solar panels," heating the water before flowing back into the Boardman River. Shutting off this seasonal inflow of hot water was a high priority for the long-term health of the Boardman River, and compliments on-going restoration efforts within the watershed.

In a draft report entitled "Boardman River Fisheries Habitat Survey & Data Collection" (January 2008) prepared by Dr. Bryan Burroughs, Ph.D. for the Boardman River Dams Committee, he states that "Fish habitat quality below Brown Bridge Dam is primarily negatively affected by the warmer water temperatures caused by the dam." When Dr. Burroughs conducted his study in 2007, he was, as most people are, unaware of the presence of the 14-ponds site. He stated, "This site (14 ponds) is exacerbating the water temperature problems caused by Brown Bridge Dam."

The citizen-based Boardman River Dams Committee is in the middle of preparing a recommendation to the City of Traverse City and Grand Traverse County on the fate of four dams on the Boardman River system. A final recommendation was reached in December, 2009. Brown Bridge Dam is the upper most dam on the river system and is owned by the

-USFWS

These old Boardman River hatchery ponds impounded water from the Boardman River (Michigan) increasing water temperatures dramatically, with a seasonal discharge of water up to 80 degrees F.

City of Traverse City. Recommendations included removal, which will provide a cold water release. Together, the dams project and the 14-ponds remediation project will have a positive impact on the cold water fishery in this section of the Boardman River.

The hatchery pond renovation plan, suggested by the Fish and Wildlife Service PFW Coordinator, called for reshaping the 14-ponds site to create a mosaic of island habitat for wildlife. Trout Unlimited, Ducks Unlimited, the Grand Traverse Band of Indians and the Fish and Wildlife Service were all involved in the final design of this site. Additionally, remediation plans included the placement of a flow control structure at the closure of the outlet to the river, to ensure water would only be released during high precipitation events (typically in the spring and fall). Equipment accessed the site via the railroad that crosses the property to the south-west.

Construction began September 7, 2010. Elsholz Excavating from Merritt, Michigan, won the bid and brought in an excavator with an extended arm, which allowed the machine to work in this floodplain area with minimal impact. The ponds were re-shaped so they all connected and deeper holes (approximately 8 ft. deep) and submerged islands were incorporated into the project. A control structure was placed at the outlet, and is designed to release water only during flood events. Copious amounts of groundwater seeping into the former hatchery area made placement of an inlet structure unnecessary. The 10-acre area will benefit multitudes of migratory birds and will benefit the Boardman River by not allowing warm-water release during the summer months. Construction was completed September 10. The Grand Traverse Conservation District worked the week of September 20th to seed and mulch all disturbed areas on-site, and to plant native grasses and shrubs in the disturbed areas to discourage invasive species from getting established.

-USFWS

Removal of the old Boardman River hatchery ponds benefits the whole ecosystem. The restored site created a mosaic of island wildlife habitat, and the design eliminates the warm water discharge during the summer months.

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

Some Shadows Do More Than Follow You Around

BY BRETT WITTE, COLUMBIA FWCO

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.

The students of Dr. Noltie's Fish Techniques class at the University of Missouri-Columbia are required to spend a day job-shadowing someone working in the student's degree field. Following a class field trip spent on the Muddy Missouri sampling with the Columbia Fish and Wildlife Conservation Office (FWCO) staff, the majority of Dr. Noltie's Fish Techniques class decided to pursue their job-shadowing assignment with our field crews.

Fortunately for the students, high summer flows pushed our standard sampling back and a flurry of trawling was still occurring on the Missouri River. Sampling at some sites can find push trawling and stern trawling transpiring simultaneously in one bend. Most students spent their day on one boat or the other, but a few were lucky enough to lend a hand on both, swapping boats at lunchtime. Though the physical size of the push trawl and stern trawl boats are at the far ends of the spectrum, the fishing principals are the same. Students got to throw out the nets, pull them back into boat, untie and re-tie the cod ends, measure and weigh the catch. As job-shadows, the students also gain an understanding of winch operation, data recording, habitat description and the technology we use, like our highly valuable side-scan sonar. A few students spent their day on one of our net boats working with gill nets. After a quick lesson in marlinespike, the students got to practice a bowline knot on an anchor before chucking it into the river and spreading the net while it went singing out of the basket and over the bow rail. Not only did the students get to familiarize themselves with the nets, but also a net pick, measuring board and scale. We discussed the importance of net structure and function as well as understanding the inherent behavior of sturgeon when working with gill nets.

Each student asked valid questions and seemed to enjoy the experience. One individual in particular had revealed a seasonal work experience with prairie chickens. When asked, at the end of his day on the boat, about his preference for terrestrial endeavors or fisheries, he nodded enthusiastically and said, "This!" For a student working on a degree in natural resources, that's a huge affirmation.

-USFWS/ColbyWrasse

Job shadow students Larry McGallagher (left) and Scott Chiu (right) hold a Missouri River lake sturgeon collected in an otter trawl.

-USFWS/ColbyWrasse

University of Missouri job shadow student Adam Love holds a pallid sturgeon captured during a chilly morning of gill netting.

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

Congressional Actions

Congressional Bills, 112th Congress

For: "FISH"

H.R. 49 (ih) To direct the Secretary of the Interior to establish and implement a competitive oil and gas leasing program that will result in an environmentally sound program for the exploration, development, and production of the oil and gas resources of the Coastal Plain of Alaska, and for other purposes. [Introduced in House]

H.R. 113 (ih) To provide for additions to the Cucamonga and Sheep Mountain Wilderness Areas in the Angeles and San Bernardino National Forests and the protection of existing property rights in such additions, to require the Secretary of Agriculture to take steps to prevent and prepare for wildfires in the Cucamonga, Sheep Mountain, and San Gabriel Wilderness Areas and address the backlog of maintenance in the Angeles and San Bernardino National Forests, and for other purposes. [Introduced in House]

H.R. 39 (ih) To delist the polar bear as a threatened species under the Endangered Species Act of 1973. [Introduced in House]

H.R. 163 (ih) To establish certain wilderness areas in central Idaho and to authorize various land conveyances involving National Forest System land and Bureau of Land Management land in central Idaho. [Introduced in House]

H.R. 390 (ih) To amend the Internal Revenue Code of 1986 to provide an exclusion from the gross estate for certain farmlands and lands subject to qualified conservation easements, and for other purposes. [Introduced in House]

H.R. 279 (ih) To amend the Internal Revenue Code of 1986 to provide for tax exempt qualified small issue bonds to finance agricultural processing property. [Introduced in House]

H.R. 56 (ih) To provide for restoration of the coastal areas of the Gulf of Mexico affected by the Deepwater Horizon oil spill, and for other purposes. [Introduced in House]

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

Midwest Region Fisheries Divisions

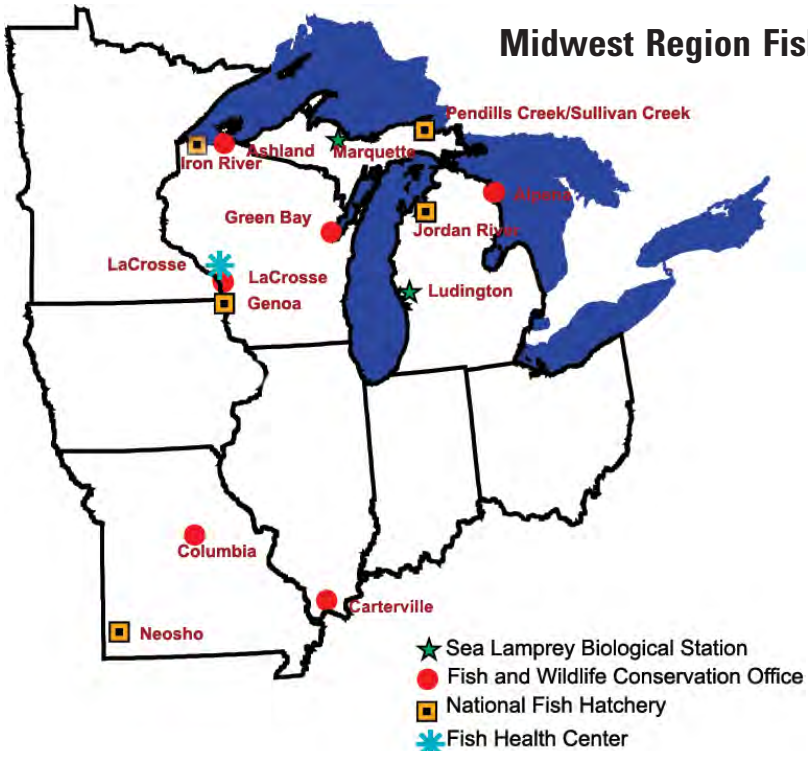
National Fish Hatcheries
The Region's National Fish Hatcheries primarily focus on native fish restoration/rehabilitation by stocking fish and eggs, such as pallid and lake sturgeon and by developing and maintaining brood stocks of selected fish strains, such as lake trout and brook trout. Hatcheries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

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

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

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

Midwest Region Fisheries Field Offices



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Fish Tails

"Fish Tails" includes articles that are included in field station reports that are not published in the "Conservation Briefs." These articles are categorized by focus area and includes the article title, author and field station. The website link, where the full article can be viewed, is highlighted in blue type.

Partnerships and Accountability

Aquatic Species Conservation and Management

- **Inspection Time 2010!**
  - James Andersen, Sullivan Creek NFH

Aquatic Invasive Species

Public Use

- **NOAA Thunder Bay Marine Sanctuary Hosts Family Fun Event for Wilson Elementary Students and their Families**
  - Anjanette Bowen, Alpena FWCO

Cooperation with Native Americans

Leadership in Science and Technology

Aquatic Habitat Conservation and Management

Workforce Management

- **Genoa NFH Lands New Assistant Project Leader**
  - Doug Aloisi, Genoa NFH

-USFWS

Out and About at the Genoa National Fish Hatchery