



Fish Lines

Region 3 - Great Lakes/Big Rivers

Fiscal Year 2005
Vol. 3 No. 7

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Ludington Biological Station; Ludington, Michigan

(See the "Station Spotlight" on Page 5)



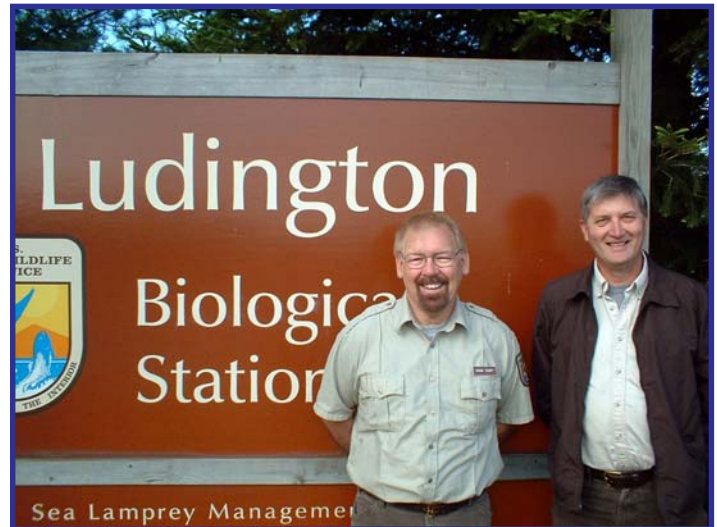
(Lt. to Rt.) Barry Matthews, Joe Tyron, Ellie Koon, Tana Reimer, Robert Anderson, Denny Lavis



(Lt. to Rt.) Amy DeWeerd, Tim Granger, Lynn Kanieski, Gary Haiss, Bobbi Jo Stewart, Jeff Slade



(Lt. to Rt.) (Front Row) Jeff Sartor, Rebecca Gannon, Danya Sanders, Margie Shaffer, Lois Mishler, Jason Krebill; (Back Row) Alex Gonzalez, Tim Sullivan, Pat McCullough, Ed Newburry, Kathy Hahka, Kevin Butterfield, Ken Chaltry, Steve Krieg



(Lt. to Rt.) Hank Cupp, Dave Bogus

(-GLFC photos)

To view other issues of "Fish Lines", see our Regional website at: (<http://www.fws.gov/midwest/Fisheries/>)



Region 3 - Great Lakes/Big Rivers 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

Region 3 Focus Areas

1. Partnerships and Accountability

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.

2. Aquatic Species Conservation and Management

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.

3. 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.

4. Public Use

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.

5. Cooperation with Native Americans

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.

6. Leadership in Science and Technology

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.

7. Aquatic Habitat Conservation and Management

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.

8. Workforce Management

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 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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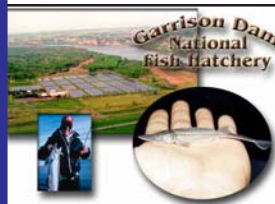
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Columbia FRO
Welcomes New
Biologist

Click here to visit our Fisheries Web Site

Great Lakes - Big Rivers Region Fisheries Field Offices

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.

Sea Lamprey Control Stations

Sea Lamprey Control Stations assess and control sea lamprey populations throughout the Great Lakes. The U.S. Department of State and Canadian Department of Fisheries and Oceans fund this program through the Great Lakes Fishery Commission.

Fishery Resources Offices

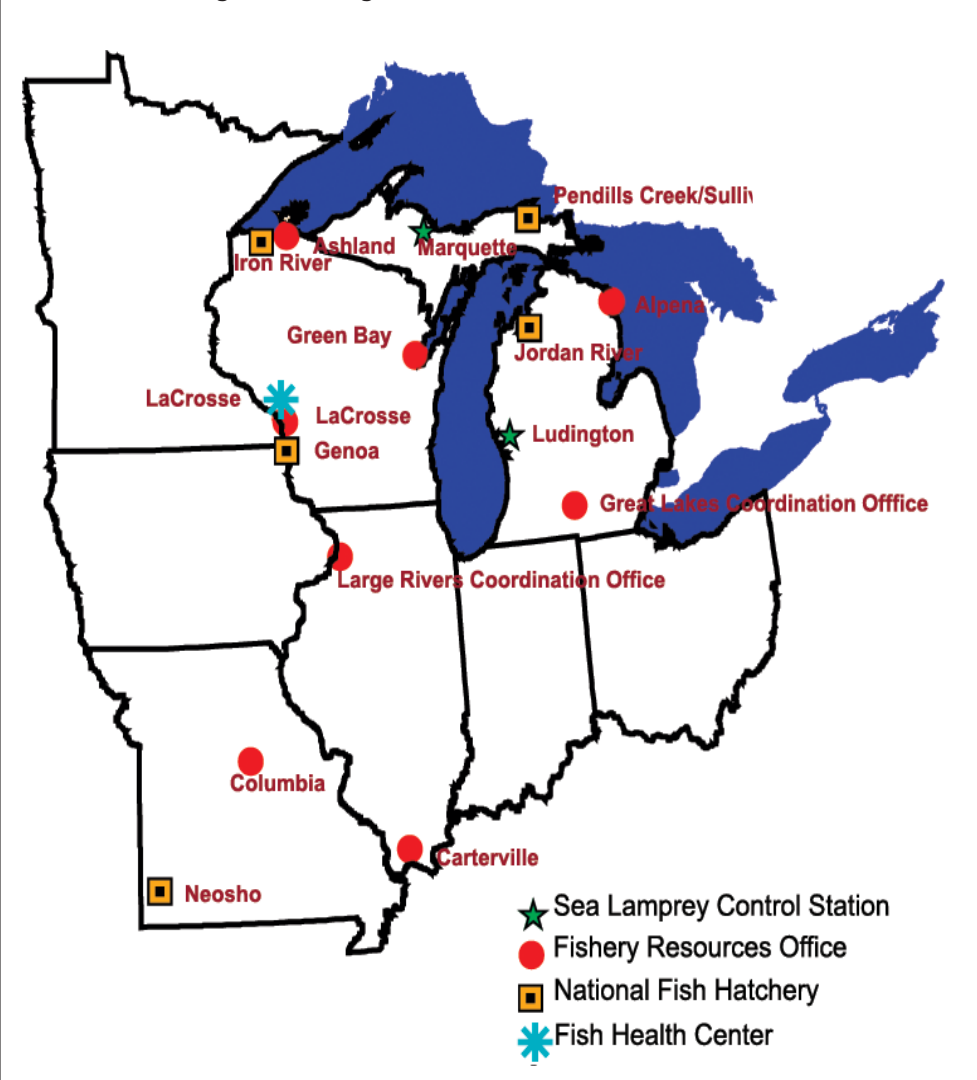
Fishery Resources Offices conduct assessments of fish populations to guide management decisions, perform key monitoring and control activities related to invasive, aquatic species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportu-

nities; 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 re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities. In other Regions of the Service, FRO's are also referred to as Fish and Wildlife Management Assistance Offices.

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 throughout the region; 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.

Great Lakes - Big Rivers Region Fisheries Field Offices



List of Acronyms

DNR- Department of Natural Resources
 FHC- Fish Health Center
 FRO- Fishery Resources Office
 NFH- National Fish Hatchery
 NWR- National Wildlife Refuge

Great Lakes - Big Rivers Regional Fisheries Program

Station Spotlight - Ludington Biological Station

Located in Ludington, Michigan, on the eastern shore of Lake Michigan, the Ludington Biological Station is on the vanguard of sea lamprey control. The station has been in the same location since 1956 and is staffed by 21 permanent and 11 temporary seasonal employees. The Ludington office is a sub-station of the Marquette Biological Station and is responsible for sea lamprey assessment and lampricide control activities in U.S. waters of western Lake Huron, western and southern Lake Erie, and the eastern and southern shores of Lake Michigan. Staff also operates the Pere Marquette River electrical weir and fishway each spring.

Sea lampreys are aquatic vertebrates native to the Atlantic Ocean. They resemble eels, but unlike eels, they feed on large fish. Sea lampreys, which can live in both salt and fresh water, gained access to the Great Lakes early in the 20th century via shipping canals. Today, adult sea lampreys are found in all of the Great Lakes and the larval (developmental) phase infests many tributaries to the Lakes. The Great Lakes Fishery Commission works with Fisheries and Oceans Canada and the U.S. Fish and Wildlife Service to undertake sea lamprey control using several techniques. This effort (known as “integrated sea lamprey management”) includes:

- sea lamprey assessment
- use of lampricides (chemical control)
- barriers to sea lamprey migration
- sea lamprey traps
- the sterile-male-release-technique



-GLFC

A sea lamprey presses its mouth against the glass of an aquarium. The mouth is the business end of the adult. Sea lampreys are parasites and attach to fish and feed off their prey's body fluids. The sharp tooth in the middle is used to rasp a hole into the side of a fish.



-GLFC

The Ludington Biological Station; Ludington, Michigan

Sea lamprey management in the Great Lakes is rapidly progressing because of new technology and research. Since the late 1970s, efforts have been made to develop an integrated pest management approach with the addition of management tools such as low-head barriers, new styles of electrical weirs and sterilization of male sea lampreys for release. An exciting addition for the future will involve the release of sea lamprey pheromones to guide migrating sea lampreys into areas where they can be easily captured. The Great Lakes Fishery Commission has stated a goal of reducing dependence on chemical control by 20 percent by the year 2010, and alternate control strategies are integral to achieving this goal.



-GLFC

The electrical barrier on the Pere Marquette River is energized when adult sea lampreys migrate into this Great Lake tributary to spawn. The series of electrodes can be seen below the water surface.

For more information about the Ludington Biological Station, contact the office at (231) 843-6205 or visit the websites at: <http://midwest.fws.gov/ludington/> or <http://www.glfec.org/lampcon.php>

Partnerships and Accountability

Fish and Wildlife Service Consulted and Protocol Implemented to Minimize Effects of Lampricide Stream Treatments on Listed Species

Sea lamprey management program staff consulted with staff from the Fish and Wildlife Service Green Bay, East Lansing, Bloomington, Pennsylvania, and New York Ecological Services Field Offices, completing Section 7 reviews on proposed lampricide stream treatments to comply with the Endangered Species Act. Biologists achieved concurrence on lampricide treatment strategies to kill larval sea lampreys, and conservation measures to protect and avoid disturbance to eight federal and state-listed endangered, threatened, candidate, and special concern species in Wisconsin, Michigan, Indiana, Pennsylvania, and New York during 2005. The federal and state-listed species included the bald eagle, dwarf lake iris, eastern massasauga rattlesnake, Houghton's goldenrod, Karner blue butterfly, Mitchell's satyr butterfly, piping plover and Pitcher's thistle. Six additional state-listed species also were described during the treatment permitting process in Wisconsin, Michigan, and Indiana: the common tern, Lake Huron tansy, lake sturgeon, northern brook lamprey, snuffbox mussel and spotted turtle.

Based on the federal reviews and state permits received, the Fish and Wildlife Service implemented a "Protocol to Protect and Avoid Disturbance to Federal and/or State-Listed Endangered, Threatened, Candidate, or Special Concern Species and Critical or Proposed Critical Habitats in or near Great

Lakes streams scheduled for lampricide treatments in the United States during 2005" to minimize the effects of treatments on 14 rare organisms in 27 of the 40 streams scheduled for treatments. The protocol included a list of stream treatments, known species locations, Geographic Information System maps, procedures to protect and avoid disturbance, and fact sheets for each listed species containing an image, description, and preferred habitat.

The sea lamprey program continues to work closely with partners to control populations of sea lampreys in tributaries of the Great Lakes to protect the fishery and related economic activities in the basin—an estimated benefit of \$4 to 6 billion per year to the region. The Fish and Wildlife Service delivers a program of integrated sea lamprey control in the U.S. waters of the Great Lakes as a contracted agent of the Great Lakes Fishery Commission. *John Weisser, Marquette Biological Station*



-USFWS

-photo by Dan Skean

The piping plover (left) and dwarf lake iris (right) are both federally endangered. The sea lamprey management program staff work with Ecological Services Field Offices prior to lampricide treatments, to minimize impacts on these and other federal and state listed species.

Pallid Sturgeon Recovery Team Considers Stocking Question

Project Leader Tracy Hill from the Columbia Fishery Resources Office (FRO) participated in a Pallid Sturgeon Recovery Team conference call to discuss the Middle Basin Workgroup's recommendation to stock approximately 9,800 hatchery reared, juvenile pallid sturgeon of Upper Basin origin into Recover-Priority Management Area (RPMA) 4 which extends from Gavins Pt. Dam to the mouth at St. Louis. The call was precipitated by the decision of the Montana Fish, Wildlife and Parks Fish Health Committee not to allow the 2004 year-class of pallid sturgeon from Garrison Dam National Fish Hatchery (NFH) or Gavins Point NFH to be stocked in Montana waters. Because of limited hatchery facility space and rapidly approaching 2005 brood stock collection and propagation efforts, the 2004 year class had to either be stocked or disposed of as excess propagated stock. After considering the information available, the recovery team concluded that it was willing to support the Middle Basin Workgroup's recommendation to stock Upper Basin Fish into RPMA 4. The team acknowledged that this was a decision made with great urgency as a result of unexpected circumstances. Greater attention will be given in the future to plan for such possible scenarios.

Tracy Hill, Columbia FRO

Group Considers Management Plan for Lake Superior's Chequamegon Bay

Scientists and resource managers from a variety of agencies met on the Northland College campus in Ashland, Wisconsin, to consider the feasibility of developing a habitat management plan for Chequamegon Bay, in the Wisconsin waters of Lake Superior. Mark Dryer and Lee Newman represented the Fish and Wildlife Service at the conference, which was organized by Northland College. The conference's primary goals were to establish a network for communicating with scientists and managers about the Bay, review post-settlement changes to the system, and brainstorm the need for and potential steps involved in developing a habitat management plan.

Conference attendees heard presentations on the unique biology, history, and function of Chequamegon Bay and its coastal wetlands, then discussed and cataloged the currently available information about the Bay. Participants then divided into small groups to brainstorm issues including: What do we know about the Bay ecosystem, what is the significance of Chequamegon Bay in Lake Superior and what benefits are there to a coordinated habitat management plan? The groups then re-assembled to discuss what would be needed to develop a comprehensive management plan for Chequamegon Bay and its coastal wetlands.

Lee Newman, Ashland FRO

Pallid Sturgeon Recovery Meeting Held

Neosho NFH Manager David Hendrix attended a recent Biological Opinion meeting on pallid sturgeon in Omaha, Nebraska, where participants gave station updates on pallid sturgeon recovery efforts. Hosted by the U.S. Army Corps of Engineers, the meeting included representatives from natural resource agencies in Missouri, North Dakota, South Dakota, Nebraska and Montana in addition to personnel from the Fish and Wildlife Service.

Roderick May, Neosho NFH



Pallid sturgeon are reared at the Neosho NFH in support of the Pallid Sturgeon Recovery Plan (above). The water temperature is carefully monitored when transporting the precious cargo of endangered pallid sturgeon to their new home in the Missouri River (below).



-USFWS photos

Taking a Walk with Some Friends

During the April meeting of the Friends of Iron River NFH, members and other interested people took a walking tour of the hatchery property. They sought ideas of how the hatchery could be developed for public use. During the walk, visions of cross country ski trails, hiking paths and outdoor education sites were dancing in their heads! The newly formed group is excited about having events to make people aware of the untapped resource of the hatchery property and using it to create a place for the public to get out and explore. Several new people attended who were interested in what the group will be doing. These newcomers added fresh ideas to the group's plans, and we hope we will be seeing them again!

Angela Baran, Iron River NFH

Bad River Watershed Association Recognizes Ashland FRO

During its annual fundraising event last month, the Bad River Watershed Association recognized the Ashland FRO, Bad River Band of Chippewa Indians, The Nature Conservancy, Inland Sea Society, and Northland College for their support. The association is a nonprofit citizen organization that works in partnership with agencies, educational institutions, conservation organizations and land owners to improve the health of Wisconsin's Bad River watershed for fish, wildlife, and people. The Ashland FRO has selected the Bad River watershed as a focus watershed for aquatic habitat work.

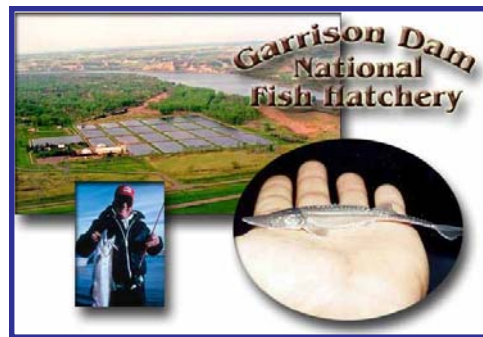
Mark Dryer, Ashland FRO

Aquatic Species Conservation and Management

Pallid Sturgeon Stocked in the Missouri River

The Fish and Wildlife Service and state partners stocked 4,891 endangered pallid sturgeon into the Missouri River during April. Upon final approval from involved states and Fish and Wildlife Service regions, biologists stocked 2,546 fish near Sioux City, Iowa, and 2,345 fish near Kansas City. Average length of these pallid sturgeon was 7.6 inches, with a total weight of 300 pounds. Twenty-one genetically different families were represented in the stocked fish, which were raised at Garrison Dam NFH in North Dakota. Biologists tagged them with Passive Integrated Transponder tags, coded-wire tags and red elastomer tags, which allow the fish to be identified as hatchery origin fish. Tracy Hill, project leader at the Columbia FRO, coordinated the hatchery stocking for the Fish and Wildlife Service with state agencies. Additional stocking is planned for late summer from Gavins Point and Neosho NFHs.

Tracy Hill, Columbia FRO



-USFWS

Garrison Dam NFH reared 4,891 federally endangered pallid sturgeon that were stocked into the Missouri River near Sioux City, Iowa and Kansas City.

Wild Pallid Sturgeon Captured

Biologists Corey Lee, Wyatt Doyle and Nick Frohnauer captured another wild pallid sturgeon near Overton Bottoms, Missouri, in April—the second wild pallid captured by the Columbia FRO in less than a month. Wild pallid collections for use as brood stock for the Lower Missouri River to preserve the genetic integrity of the species was deemed the highest priority for sampling during a recent Middle Basin Pallid Sturgeon Workgroup Meeting. Lower Missouri River brood stock are being kept at Gavins Point NFH where they may be used to produce future year classes of this endangered sturgeon.

Corey Lee, Columbia FRO

Yearling Coaster Brook Trout Stocked at Pictured Rocks

Genoa NFH crews delivered 7,500 yearling Tobin Harbor coaster brook trout to Michigan's Pictured Rocks National Lakeshore (Pictured Rocks) for stocking into the Hurricane River. Lora Loope from Pictured Rocks reports that "the coaster stocking went without a hitch." Dr. Jill Leonard from Northern Michigan University was on hand with a student crew that weighed, measured and Passive Integrated Transponder-tagged about 185 of the fish for a behavior study that will focus on movement of the tagged fish in and out of streams at Pictured Rocks. She also remarked on the size and condition of the fish and noted that a few were even bright with spawning coloration.

Coaster stocking at Pictured Rocks began in 1997 and supports a cooperative attempt by the

Ashland FRO, Michigan Department of Natural Resources and Pictured Rocks to reintroduce coaster brook trout to historic habitat. The work is done under provisions of "An Action Plan for Restoring Coaster Brook Trout to the Pictured Rocks National Lakeshore." Past stocking has primarily used fall fingerlings and has not produced high returns, possibly because of time of year stocked, lack of imprinting, or predation/competition from non-native salmonids. Stocking of advanced stage yearlings has only been done once previously, in 2004, and early results appear promising. Area fishermen were excited to see large numbers of the fish in the streams. The 2005 stocking will be the final stocking of any size of coasters at Pictured Rocks for an indefinite period while the National Park Service develops and reviews a genetic policy regarding rehabilitation stockings.

Lee Newman, Ashland FRO

La Crosse Fish Health Center Completes Spring Health Assessment of Pool 9 of the Upper Mississippi River

With assistance from Genoa NFH, the La Crosse Fish Health Center (FHC) completed its annual spring wild fish health assessment on Pool 9 of the Upper Mississippi River. The survey took place on April 7 while Genoa biologists were involved in their spring netting of walleye and northern pike. The FHC crew screened the wild brood stocks as part of the Wild Fish Health Survey and examined samples for any certifiable fish diseases to avoid spreading any diseases to the Hatchery, sampling up to thirty

fish from each species. Biologists took samples from 15 different species for a total of more than 360 fish. They took samples of kidney, spleen and sometimes swim bladder, depending on the species. These samples are used for the detection of viruses.

Gastrointestinal tracts were also collected from the common carp. These are screened for *Bothriocephalus acheilognathi*, commonly referred to as Asian tapeworm.

Corey Puzach, La Crosse FHC



-USFWS

John Whitney takes samples from northern pike as part of the Wild Fish Health Survey while Jan Beitlich records length/weight data. Samples were taken from 15 different species for a total of over 360 fish examined for the assessment on Pool 9 of the Mississippi River.

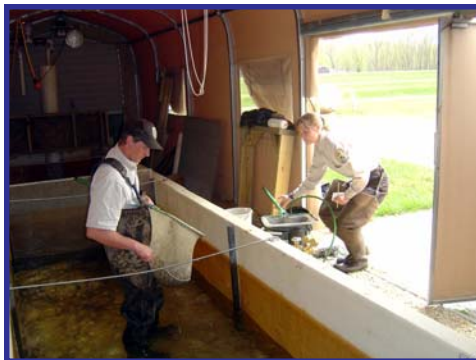
Biologists vaccinate Genoa NFH Salmonids

Biologists at Genoa NFH completed the annual vaccination of rainbow and coaster brook trout, intended to immunize the hatchery's salmonid stock against outbreaks of *Aeromonas salmonicida*, also known as furunculosis. Although *Aeromonas salmonicida* can be found in many species of fish, trout are especially susceptible. Symptoms of the disease include external pustules which may rupture to produce dermal lesions, and in acute cases, death. The disease occurs naturally in many lakes and rivers

throughout the world, and producing trout without this disease is vital to the Hatchery's mission because of the repercussions of transmitting the disease to uninfected watersheds.

Biologists accomplished the vaccination by immersing fish into a solution harboring the attenuated *Aeromonas salmonicida* for 60 seconds. The process is recommended on small fish, usually about 2 inches in length, and is repeated when they reach 2 ½ inches. Crews vaccinated 30,000 rainbow trout and 20,000 coaster brook trout this year. Once the young trout are vaccinated, they remain on the hatchery for another year, growing to 9 to 11 inches in length. Fish may be carriers of the disease without showing any clinical signs, which is why the La Crosse FHC periodically tests hatchery fish. Fortunately, *Aeromonas salmonicida* has not been detected at Genoa NFH since the inception of the vaccination process. The Fish and Wildlife Service stocks the certified "clean" trout with the cooperation of tribal and state governments from Wisconsin, Minnesota and Michigan.

Nick Starzl, Genoa NFH



-USFWS

Nick Starzl and Jenny Walker immunize Genoa NFH's salmonid stock. The vaccination is intended to protect against outbreaks of furunculosis. Furunculosis occurs naturally in many lakes and rivers, and trout are very susceptible.

Spring Health Inspection Completed at Genoa National Fish Hatchery

Eric Leis and Corey Puzach of the La Crosse FHC completed the annual spring inspection at Genoa NFH to screen for any harmful fish pathogens or diseases and to ensure that only disease-free fish are being released in the wild, transferred to other hatcheries, or used as brood stock.

The crew sampled two species of salmonids with a total of four lots. Each lot is screened separately for target pathogens. A kidney swab was taken to screen for the bacterial pathogens *Aeromonas salmonicida*, *Yersinia ruckeri* and *Citrobacter freundii*. A second kidney sample was taken to be later screened for *Renibacterium salmoninarum*, a causative agent of bacterial kidney disease. All of the species were screened for these pathogens. Next, the crew collected and screened kidney and spleen samples for viruses such as Infectious Pancreatic Necrosis, Oncorhynchus Masou Viruses, Viral Hemorrhagic Septicemia and Infectious Hematopoietic Necrosis Virus. A kidney sample was also taken for polymerase chain reaction confirmation of *Renibacterium salmoninarum*. The last sample was a combination of 60 heads from the salmonids. These heads will be crushed, digested and screened for *Myxobolus Cerebralis*, more commonly referred to as whirling disease.

Corey Puzach, La Crosse FHC

Lake Sturgeon Project on the Saginaw River

Biologists Scott Koproski, Adam Kowalski, James Boase, Aaron Woldt and Susan Wells, and Project Leader Jerry McClain from the Alpena FRO conducted a lake sturgeon project in the Saginaw River watershed. Steve Kahl, Ed DeVries and Jim Dastyck from the Shiawassee National Wildlife Refuge (NWR) provided invaluable assistance. This project is funded through the Saginaw Bay Watershed Initiative Network (WIN) and the National Fish and Wildlife Foundation (NFWF). Anecdotal evidence suggests that lake sturgeon use the Saginaw River watershed during the spring spawning season, but very little is known about the importance of this watershed to the lake sturgeon population of Lake Huron. The goal of this project is to document lake sturgeon use of the Saginaw River system. Partners include the Michigan Department of Natural Resources (DNR), DOW Chemical, the city of Frankenmuth, Michigan, WIN, and the refuge friends group, "Friends of the Shiawassee."

Beginning on April 11, Alpena FRO staff deployed and retrieved egg mats and set lines to document lake sturgeon use of the watershed. They deployed 24 egg mats on the Cass River at the Frankenmuth dam and 48 egg mats on the Tittabawassee River below the DOW dam. They fished two set lines at the confluence of the Saginaw and Tittabawassee rivers, and one set line at the confluence of the Saginaw and Cass rivers. The crew checked egg mats weekly and fished set lines daily. Upon retrieval, Alpena FRO staff examined the egg mats for the presence of lake sturgeon eggs. They found no lake sturgeon eggs in April, but non-target species

(suckers and walleye) had deposited eggs on the mats. In April, no sub-adult or adult lake sturgeon were caught using the set lines either, but a few non-target species were caught. Egg mats and set lines will be deployed in May until water temperatures consistently rise above 61° fahrenheit.

This project will continue in 2006 and 2007. Alpena FRO should be able to determine if lake sturgeon occupy and spawn in the Saginaw River watershed by 2007. *Scott Koproski, Alpena FRO*



-USFWS photo by Ed DeVries

Alpena FRO in cooperation with volunteers from Shiawassee NWR surveyed the Saginaw River watershed for spawning phase lake sturgeon and eggs. This project was funded by the Saginaw Bay Watershed Initiative Network and National Fish and Wildlife Foundation.

Coaster Brood Stock Grow Up at Genoa National Fish Hatchery

Genoa NFH successfully reared two strains of future coaster brook trout brood stock and sent them to the Iron River NFH to supplement its brood stock program. Genoa originally received 600 Tobin Harbor strain and 600 Siskiwit Bay strain eggs from Iron River NFH in December 2003. Genoa reared the two strains for approximately 15 months until they averaged 8 inches in length. This growth rate was better than Iron River could obtain as yearlings were reared at a constant

groundwater temperature of 52° fahrenheit throughout the winter and summer. Brook trout eggs will eventually be collected from the brood stock, then hatched and reared for restocking into areas of the Great Lakes.

The coaster brook trout is a strain of brook trout endemic to the Isle Royale region of Lake Superior. Though similar to the inland strains, coasters become larger, attaining weights of 4 to 10 lbs. Overfishing, pollution and sea lampreys all have contributed to the diminished number of coaster brook trout in the Great Lakes. The Genoa and Iron River NFHs, Ashland FRO and the states of Wisconsin and Michigan are working together to restore the coaster brook trout to its native range on the south shore of Lake Superior.

Nick Starzl, Genoa NFH



-USFWS

This is a yearling coaster brook trout reared at the Genoa NFH. Genoa is able to achieve excellent growth rates by rearing brook trout at a constant temperature of 52 degrees Fahrenheit.

Aquatic Invasive Species

Cormorant Study Underway at Grand Portage

Ashland FRO and Iron River ANFH are providing assistance to design and implement a double-crested cormorant study. The study responds to concerns of the Grand Portage Natural Resources Department regarding the ecological impact of a new and growing cormorant colony in Pigeon Bay on Lake Superior. Over the past 12 to 15 years, the cormorant colony at Grand Portage, Minnesota has virtually eliminated vegetation on the small islands, called the Boundary Islands, where they nest. The situation is further complicated by the fact that the nesting colony is actually in Canadian waters. Tribal concerns focus on the impact of cormorants on the vegetation of the adjacent Tribally owned Susie Islands, which support unique and fragile sub-arctic plant communities. The tribe is also concerned with possible impacts on the native walleye, northern pike, perch, lake sturgeon and coaster brook trout populations of the Pigeon River.

On behalf of Grand Portage, Lee Newman from the Ashland FRO contacted Ontario Ministry of Natural Resources personnel and they agreed to jointly explore the situation with the tribe. He also teamed up with Grand Portage Tribal Biologist Ben Whiting and developed an innovative plan to gather information on the impact of cormorants on native fish stocks. As part of the plan, biologist Steve Redman and the "clipper crew" from the Iron River NFH traveled to the Red Cliff Tribal Fish Hatchery to assist with adipose fin-clipping and coded-wire tagging 11,000 4-inch trout. The small wire tag, which is inserted

into the nose of the fish, contains information as when and where it originated. When the fish reached 6 inches, about a month after being clipped and tagged, they were released into the Pigeon River on the Grand Portage Tribal Reservation, about half a mile from the cormorant nesting colony. Tribal crews will monitor large islands that are known roosting sites for the cormorants. Equipped with hand held devices that detect coded-wire tags, crews will attempt to cover the entire island looking for the presence of tags.

Lee Newman, Ashland FRO

Steve Redman, Iron River NFH



-USFWS

A cormorant colony in Pigeon Bay on Lake Superior has increased in numbers and virtually eliminated vegetation on the small islands where they nest.



-USFWS

Iron River NFH and Red Cliff Tribal Fish Hatchery staff mark brook trout which will be stocked into the Pigeon River when they reach six inches in length. Tribal crews will then monitor cormorant nesting sites to determine the impact on stocked fish.

Spring Spawner Reduction Efforts Underway for Ruffe in the Thunder Bay River, Lake Huron

On April 12, Alpena FRO staff began removing spawning phase, adult Eurasian ruffe in the Thunder Bay River in Alpena, Michigan. Ruffe are an aquatic invasive fish species that are thought to compete with native species for food and habitat. They were first detected in the Thunder Bay River in 1995 and the area remains the only location where ruffe have been found within Lake Huron. Ruffe spawn in the spring at water temperatures of 41 to 61° fahrenheit.

Alpena FRO has been conducting reduction annually since 2002. Crews use small mesh gillnets to remove adult spawning phase ruffe prior to release of sex products. They captured and removed approximately 100 spawning phase ruffe in 2002, and a fraction of that number in 2003. No ruffe were captured in 2004 and efforts in 2005 will help determine whether ruffe are continuing to spawn and persist in the Thunder Bay area.

Anjanette Bowen, Alpena FRO



-USFWS

A small mesh gill net is being pulled from the Thunder Bay River as part of an effort by the Alpena FRO to remove spawning phase invasive Eurasian ruffe.

Aquatic Invasive Species Conference Targets Lake Associations and Resorts

Gary Czypinski of the Ashland FRO and Kelly Kearns of the Wisconsin Department of Natural Resources presented information about the effects in the Great Lakes Basin of invasive rusty crayfish, earthworms, and round goby at the Northwest Wisconsin Aquatic Invasive Species Conference held at the Lakewood's Resort in Cable, Wisconsin. They also discussed these species' biology, current distribution and identification. Sixty-four people representing lake associations, resorts, Native American tribes, environmental organizations, and federal/state resource management and education agencies attended the conference. It was sponsored by the University of Wisconsin- Extension. Aquatic invasive species are reducing or displacing populations of aquatic native species. Their range expansion is often unknowingly assisted by humans. Public education about aquatic invasive species is one tool used in preventing their further spread. *Gary Czypinski, Ashland FRO*

Fish and Wildlife Service Participates in Lake Sturgeon Work Group

Personnel from the Sea Lamprey Control Risk Management Team participated in a meeting of the Lake Sturgeon Work Group. The group was formed within the structure of the Great Lakes Fishery Commission's Lake Superior Committee to represent interests of the sea lamprey control program, present a summary of sea lamprey control activities related to lake sturgeon, and work with others to assess the

effects of lampricide applications on lake sturgeon. Since the "Protocol for Application of Lampricides to Streams with Populations of Young-of-Year Lake Sturgeon (*Acipenser fulvescens*)" was implemented in 1998, no mortality of lake sturgeon has been observed during lampricide applications in 34 state-designated U.S. lake sturgeon streams. The working group was charged with assessing the effects of sea lamprey control on lake sturgeon reproduction in Lake Superior to determine if chemical treatments to reduce sea lampreys in Lake Superior tributaries are having an effect on lake sturgeon reproduction and survival of young fish.

John Weisser, Marquette Biological Station



-USFWS

Young-of-the-Year Lake Sturgeon
Personnel from the Sea Lamprey Control program work with partners and stakeholders to assess the effects of lampricide applications on lake sturgeon.



Eurasian Ruffe



Round Goby



Asian Carp



Sea Lamprey

A Few of the Invaders in the Great Lakes/Big Rivers Region

Public Use

Hatchery Celebrates with Brook Trout “Retirement Party”

Staff from Iron River NFH recently stocked Wanoka and Perch lakes in northwestern Wisconsin with approximately 300 large, beautiful coaster brook trout averaging 3 pounds each. The need for brood stock reductions occasionally occur at the hatchery and stocking is beneficial both to the fish and to the local community providing a unique recreational fishing opportunity. Before release, each fish had a fin removed for hatchery identification. The stocking was performed because the brood stock rearing facility is filled and younger fish of the same strain are stepping up to take over their elders responsibilities.

Steve Redman, Iron River NFH



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Biologist Steve Redman releases coaster brook trout into Lake Wanoka, Wisconsin. The three pound fish were used as a source of eggs and milt for the brood stock program at the Iron River NFH before being replaced with younger fish.

Lake Taneycomo Mitigation Fulfilled

Neosho NFH stocked 15,243 rainbow trout—a total of 6,563 pounds’ worth—during April. More than 14,000 fish went to Lake Taneycomo as part of the Fish and Wildlife Service’s mitigation commitment, and the remainder went to Hickory and Capps Creeks.

Roderick May, Neosho NFH

Neosho Friends Group Strives to Keep Those Fish Happy

The Friends of the Neosho National Fish Hatchery purchased two fish food dispensers for the Neosho NFH. Fish food is already provided free to the public during work hours, but when we are not there, the dispensers allow visitors to get food to feed the fish after hours and weekends. A local welder donated the materials and the labor for stainless steel covers.

Roderick May, Neosho NFH

Walleye Raised for Lost Valley State Fish Hatchery

Neosho NFH has always had an excellent partnership with the Missouri Department of Conservation and usually produces a crop of walleyes for the state each spring. This year was no exception. The hatchery received about 100,000 walleye fry from Lost Valley State Fish Hatchery in Warsaw, Missouri. Although the fry did not appear to be healthy when they arrived, they were stocked into the newly renovated Pond 7 on April 7 and were harvested 40 to 45 days later. This was the first time that this pond was used since its renovation.

Roderick May, Neosho NFH

Neosho Holds Annual Open House

On April 17, Neosho NFH hosted its 4th annual Open House event coinciding with the City of Neosho’s Dogwood Tour, conducted each spring to show off the beautiful dogwood trees around Neosho. The hatchery is a stop on the tour and approximately 2,000 people toured the facility, checked out the booths and picked up free dogwood and white pine trees provided by the State Forestry Department. Booths included the Eastern Shawnee Tribe’s Environmental Department, Wild Turkey Federation, State Forestry Department, Friends of the Neosho National Fish Hatchery, Neosho Master Gardner Club, Neosho Recycling Center, MAKO Flyfishers, Naturalist Frank Martinez with live reptiles, and the U.S. Department of Agriculture. The Friends group provided homemade cookies and coffee and lunch until it was all gone. Lunch consisted of grilled hamburgers and hot dogs cooked in a smoker (yum, yum) with all the trimmings.

Roderick May, Neosho NFH

Mussels Foster Learning During Earth Week at Dakota Area Community School

Heidi Keuler from the La Crosse FRO visited the Dakota Area Community School in Dakota, Minnesota, to give a presentation at the Earth Day celebration. About 120 students visited the celebration to hear speakers from Minnesota Department of Natural Resources, U.S. Army Corps of Engineers, The Raptor Center from the University of Minnesota, and

several others. Children from ages five to 14 gained hands-on experience by counting the rings on the mussels to see how old they were, and by identifying the different mussel species. Keuler also discussed internal and external structure, the life cycle, the button and pearl industries, and propagation and advised the students on how they protect mussel habitat by leaving mussels in their natural environment, reducing the number of chemicals used in homes and on lawns, and by preventing the spread of invasive zebra mussels. The highlight of the day was when a 10-year-old boy very seriously said, "This was very interesting!"

Heidi Keuler, La Crosse FRO



-USFWS

Winged Mapleleaf Mussels

Most people know very little about native mussels. Students, especially, find mussel presentations fascinating and want to know what they can do to help protect mussels.

Trout Unlimited Holds Expo in Ashland

Ashland FRO, Whittlesey Creek NWR and Iron River NFH combined resources, displays and employee talents to present a Fish and Wildlife Service booth at a fund raising event for the Wild Rivers Chapter of Trout Unlimited (TU) in Ashland, Wisconsin. Nice weather didn't keep some determined fishermen and women from the fly-tying, an equipment

and artwork auction, chili and desserts! This annual event helps this local chapter of TU raise funds for local restoration projects and increases public awareness of local environmental issues.

Ashland FRO and Whittlesey Creek NWR conducted demonstrations where kids helped find hidden toy fish using radio telemetry equipment. Iron River NFH set up a booth with a contest to guess the number of fry in a tank, conducted a fish anatomy quiz, and displayed live yearlings and brood stock trout. The fry guessing contest stumped young and old alike as they looked at the tank of "baby" fish, trying to count or taking wild guesses as to how many fish were actually in the tank.

*Angela Baran, Iron River NFH
Mark Dryer, Ashland FRO*



-USFWS

Kids of all ages get their questions answered at the Wild Rivers Chapter of Trout Unlimited expo in Ashland, Wisconsin. Ashland FRO, Iron River NFH, and Whittlesey Creek NWR provided displays and staff for the expo.

Genoa NFH Participates in Riverfest

Genoa NFH participated in the Annual multi-agency outreach effort known as Riverfest. Students from Iowa, Wisconsin and Minnesota visited Pikes Peak State Park near McGregor, Iowa, for the event. Personnel from the Iowa DNR and Genoa NFH served as

instructors for the aquatic section of Riverfest, teaching middle school students about trumpeter swans, fish, aquatic insects and mussels located in and around the Upper Mississippi River. Genoa NFH staff instructed the students about the different fish programs ongoing at Genoa and how they relate and aid in the freshwater mussel program. A display pool gave the kids a chance to get their hands wet and dig around for some live mussels. Students were full of questions and very interested in all the information they received at Riverfest.

Tony Brady, Genoa NFH



-USFWS

Genoa NFH Mussel Biologist Tony Brady introduces native mussels and a white lake sturgeon named Fred to a group of 8th graders at Riverfest. This annual multi-agency outreach event is held at a different site each year with Pikes Peak State Park, Iowa having the honor for 2005.

Fisheries is Part of Earth Day Celebration in Lansing, Michigan

Live fish and the Fisheries program were a popular attraction at the second annual "Earth Day Celebration and Bring Your Child to Work Day" event on April 21 at Constitution Hall in Lansing, Michigan. This activity was a great opportunity to partner with state conservation programs to provide a unified approach and public education about aquatic invasive species. Hosted by the Michigan Department of

Environmental Quality (DEQ), Michigan Department of Agriculture and the Michigan DNR, the event highlighted the importance of the Earth's resources. The U.S. Geological Survey's Hammond Bay Biological Station provided sea lamprey for the event, and the Alpena FRO collected live native species including yellow perch, rock bass, pumpkinseed sunfish and bluegill. The Michigan DEQ sponsored the booth, which focused on aquatic invaders in the Great Lakes. Bob Kavetsky of the East Lansing Field Office and Anjanette Bowen of the Alpena FRO helped staff the booth. More than 500 children, some with parents and others with school groups, attended the event.

Public education is important to conserve and protect native species and information about invasives is important to slow and prevent their spread to new areas. *Anjanette Bowen, Alpena FRO*



-USFWS photo by Bob Kavetsky

Alpena FRO and East Lansing Field Office participated in the Earth Day Celebration in Lansing, Michigan which attracted over 500 children and adults. The event was hosted by the Michigan Department of Environmental Quality, Michigan Department of Agriculture, and Michigan DNR.

Columbia FRO on Display at Missouri's "A Day with Wildlife"

Biologist Nick Frohnauer and biological science technician Jennifer Johnson represented the Fish and Wildlife Service at Columbia, Missouri's, annual "A Day with Wildlife" celebration in April. The event was organized by the Missouri Department of Conservation and featured booths from government and nongovernment organizations. Popular activities included archery and marksmanship workshops and a children's fishing clinic. This free event provides local residents an opportunity to enjoy a fine spring day and explore the numerous outdoor activities Missouri has to offer.

The Columbia FRO used the event as a springboard to promote the goals and current activities of the Fisheries program. Nick and Jennifer displayed a workboat and various nets used in Missouri River fisheries projects. Children explored the boat and asked many questions about the velocity meter and other unique characteristics of the boat. The children also enjoyed playing in hoop and fyke nets and figuring out how the gillnet and otter trawls worked. The Fish and Wildlife Service's "Fishing ABC's" coloring books were a big hit. Nick and Jennifer fielded questions from visitors regarding current station activities such as the Pallid Sturgeon Recovery Project and mitigation efforts on the Big Muddy National Fish and Wildlife Refuge.

Nicholas Frohnauer, Columbia FRO



-USFWS photo by Nick Frohnauer

Jennifer Johnson from the Columbia FRO oversees children exploring a net boat at Columbia Missouri's annual "A Day with Wildlife" celebration (above). Children enjoyed playing in a hoop net at the event (below). The event was organized by the Missouri Department of Conservation and featured booths from both government and non-governmental organizations.



-USFWS photo by Nick Frohnauer

Cooperation with Native Americans

Lake Sturgeon Fin Clips Taken for Fish Health Analysis

Scott Yess from the La Crosse FRO traveled to Baudette, Minnesota, in April to collect 30 lake sturgeon fin clips for a fish health analysis, the first stage of the annual effort to restore lake sturgeon to the White Earth Reservation and the Red River watershed. A fisheries crew for the Minnesota DNR collected the 30 sturgeon from anglers and tagged the fish with Carlin tags in an effort to determine a population estimate. The fish were in a holding pen prior to tagging and fin clipping. Becky Lasee at the La Crosse FHC will test the fin clips for the Irido Virus. This test must be negative prior to transporting lake sturgeon eggs to Genoa NFH.

If the viral tests are negative, staff from the La Crosse FRO and White Earth DNR will assist Joe Hunter of Rainy River First Nations (Canada) with lake sturgeon spawning. The eggs will then be raised to fingerlings approximately 6 inches long at Genoa NFH and stocked on the White Earth Reservation.
Scott Yess, La Crosse FRO



-USFWS

Scott Yess, La Crosse FRO, works with Tom Heinrich, Minnesota DNR, to obtain a fin clip from a lake sturgeon to test for the irido virus. This test must be negative prior to transporting eggs to the Genoa NFH.

Ashland and La Crosse FROs Assist Great Lakes Indian Fish & Wildlife Commission with Spring Walleye Surveys

Staff from fishery resource offices in Ashland and La Crosse assisted the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) this spring with several walleye population surveys to estimate spawning populations of adult walleyes in Wisconsin lakes and collect fish for mercury testing from lakes in Northern Michigan. Walleye population estimates are used to set safe harvest levels, on which tribal harvest quotas are based.

Dave Wedan and Scott Yess of the La Crosse FRO and Frank Stone and Jonathan Pyatskowitz from the Ashland FRO assisted in Northern Wisconsin this year. Weather conditions were fairly good during the ten-day spawning run. The team, composed of four GLIFWC boats, two Fish and Wildlife Service boats and a St. Croix Biology Department boat, tagged several thousand walleye. The majority of the fish were males in the 10- to 18-inch range.
Frank Stone, Ashland FRO
Scott Yess, La Crosse FRO



-USFWS

Frank Stone (left) and crew prepare their boat for a night of electrofishing for walleyes. Information gathered from these surveys will be used to set walleye harvest quotas in Northern Wisconsin. The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) requested assistance from the La Crosse and Ashland FRO's for the survey.

Technical Fisheries Committee Submits Recommended Lake Trout Harvest Limits for 2005

The Technical Fisheries Committee (TFC) met twice during the month of April to produce lake trout harvest limits for 2005 tribal commercial and state recreational fisheries in 1836 Treaty waters of lakes Superior, Michigan and Huron. Alpena FRO Project Leader Jerry McClain (TFC chair) and Treaty Fisheries Unit Leader Aaron Woldt, Modeling Subcommittee (MSC) co-chair, attended the meetings. On April 6, the TFC met to review preliminary harvest limits produced by the MSC and discuss lake trout population trends in the respective lake trout management units. On April 27 the committee approved the final harvest limits for the upcoming season. Using the most current and statistically valid assessment and harvest data available, the MSC uses Statistical Catch at Age Modeling to produce recommended safe harvest limits for the upcoming fishing season. McClain mailed the final harvest limit recommendations to the Parties on May 11. Interagency participation in the Modeling Subcommittee and the Technical Fisheries Committee ensures cooperation and agreement for establishment of safe harvest limits for lake trout.

Jerry McClain, Alpena FRO

Leadership in Science and Technology

Columbia FRO Leads in Trawl and Net Design

Columbia FRO has been working for three years to develop trawling techniques and has led other agencies in boat design and trawl use for pallid sturgeon collection. The office hosted Master Net Designer Greg Faulkner from Innovative Net Systems to explore new trawling capabilities on the Missouri River. Faulkner has worldwide trawling experience and has spent his life solving trawling problems and designing trawling nets. New challenges—including assessment of dike modifications, evaluation of U.S. Army Corps of Engineers mitigation projects and pallid sturgeon monitoring on the Missouri River—have created a need to explore new techniques for sampling in big rivers. Columbia FRO contracted with Faulkner to train the staff as well as other state and federal collaborating agencies on trawling techniques, and to use his oceanic expertise to introduce innovative sampling gears for the Missouri River. Faulkner's visit will take him across 600 miles of the Missouri River, talking to at least six participating agencies about new ideas relevant to each state's unique habitat types.

Faulkner's involvement in trawl design in India enabled our programs to be among the first to use a newly invented net material being produced in that country that is the latest durable net material on the market today. His innovation and our understanding of our sampling needs set the stage for the leadership of this station in big river trawling on the Missouri River. Leadership in big river trawling technology will advance

our efficiency, allow us to sample specific habitats and increase our ability to evaluate aquatic habitats crucial to recovering pallid sturgeon populations and assessing other fish communities.

Wyatt Doyle, Columbia FRO



-USFWS photo by Jeff Finley

Master Net Designer Greg Faulkner from Innovative Net Systems discusses the finer points of tuning otter boards for stern trawling on the Missouri River. Columbia FRO has been working with the company to develop trawling techniques for pallid sturgeon.

Shovelnose Sturgeon Collected for Telemetry Study

Columbia FRO collected more than 30 egg-bearing (gravid) shovelnose sturgeon for a 2005 tagging study. This represents our second year helping to collect and recapture fish for this study. The U.S. Geological Survey Columbia Environmental Resource Center (USGS) is embarking on a telemetry project to provide answers about sturgeon spawning cues in over 400 miles of the Lower Missouri River. The USGS lab will evaluate spawning cues, reproductive viability, movement and hormonal responses to temperature in these fish. Columbia FRO will continue assisting the lab in its efforts to recapture these fish shortly after they spawn.

Through these partnerships we can begin answering questions in large systems such as the Missouri River. By combining our expertise in fish sampling with technology we hope to propel our understanding of sturgeon species as they relate to water flow and spawning habitat.

Wyatt Doyle, Columbia FRO

Cages are Ready for Production of the Endangered Winged Mapleleaf Mussels

The Upper St. Croix River is the home to the last known reproducing population of the endangered winged mapleleaf mussel. In the fall of 2004, biologists from the Fish and Wildlife Service, Minnesota and Wisconsin Departments of Natural Resources, Macalaster College, and the National Park Service began a yearlong process to propagate and culture the winged mapleleaf for recovery efforts.

In September 2004, divers collected the larvae, or glochidia, from two female winged mapleleaf mussels and sent them to Genoa NFH. Biologists then introduced the glochidia to channel catfish, the host species for the parasitic larva. The hatchery held the catfish all winter in a chilled recirculating tank, and as river temperatures began to rise this spring, the water in the recirculating tank was warmed to stimulate the glochidia to complete their transformation to free living mussels. In early May, before this transformation was completed, biologists from Genoa NFH and cooperating state and Federal agencies placed the catfish in production cages located in the Lower St. Croix.

As the glochidia complete their transformation, biologists hope

they will drop off the fish and settle to the bottom of the cages where they will be harvested this fall. All mussels collected from the cages will be cultured for an additional year or two to allow the winged mapleleaf mussel to grow to a size where they can avoid predation when they are finally released in future recovery efforts.

Tony Brady, Genoa NFH



-USFWS

Divers take a cage of infested channel catfish to the bottom of the St. Croix River. The catfish serve as a host to federally endangered winged mapleleaf mussels. Transformed mussels will drop off the fish and settle to the bottom of the cage. They will be collected this fall and cultured for an additional year or two prior to release in the wild.

Study on the Distribution of Lake Huron Lake Whitefish Completed in 2004

Biologist Aaron Woldt compiled lake whitefish tagging data from the Fish and Wildlife Service and partner agencies in a shared database as part of a Great Lakes Fish and Wildlife Restoration Act-funded project on lake whitefish distribution in Lake Huron. The goals of this study are to determine the spatial distribution and movement patterns of eight selected lake whitefish stocks in Lake Huron, and the contribution of each stock to commercial fishery yields. The Fish and Wildlife Service will serve as database manager for this study. The data

will allow for better harvest management and protection of lake whitefish stocks.

The eight stocks selected for this study are Detour, Alpena (Middle Island and Thunder Bay), Saginaw Bay, Burnt Island, South Bay mouth, the Fishing Islands, Douglas Point and Sarnia. Partners for this study include the Fish and Wildlife Service, Chippewa Ottawa Resource Authority, Michigan DNR, Bruce Power, Chippewas of Nawash, Saugeen First Nation, and Ontario Ministry of Natural Resources.

In the fall of 2004, seven partner agencies tagged more than 12,000 lake whitefish across all sampling sites. Each agency entered data into a standard database Woldt designed, and sent the data to Alpena FRO for inclusion in a central study database. Woldt provided each agency with data collection protocols and database formats prior to starting the study. He has been working with agency data representatives to ensure data accuracy and timely entry. To date, three agencies have entered data. Once all data has been entered, Woldt will distribute copies of the central database to all partners. The full database is needed to accurately process tag returns and issue rewards. Each tag carries a \$5 reward as an incentive to return tags.

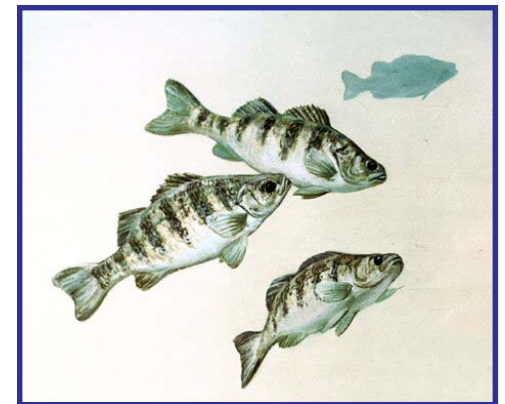
Aaron Woldt, Alpena FRO

Genetic Samples Collected From Yellow Perch for University of Toledo Study

Alpena FRO collected genetic samples from yellow perch for research conducted by Dr. Carol Stepien at the University of Toledo. Fish were captured from Thunder Bay in Lake Huron as by-catch during spring efforts to remove invasive Eurasian ruffe from the Thunder Bay River. Biologists removed a portion of the pectoral fin of incidentally captured yellow perch and preserved it in alcohol for the genetic analysis, and recorded biological data including length, sex, and capture location.

Dr. Stepien is collecting genetic samples from native yellow perch and walleye in each of the Great Lakes and will be using the samples to develop a high-resolution, low cost DNA database for analyzing fish stock structure in the Great Lakes. The study is funded by Sea Grant.

Anjanette Bowen, Alpena FRO



-USFWS

Yellow Perch

Alpena FRO collected genetic samples from yellow perch for research conducted by Dr. Carol Stepien at the University of Toledo. She will be using the samples to develop a high-resolution, low cost DNA data base for analyzing fish stock structure in the Great Lakes.

Aquatic Habitat Conservation and Management

Missouri River Fish and Wildlife Mitigation Program Initiated for 2005

Columbia FRO, in cooperation with the U.S. Army Corps of Engineers and state natural resource agencies of Iowa, Kansas, Missouri and Nebraska, initiated the 2005 monitoring and evaluation season for the Missouri River Fish and Wildlife Mitigation Program. The goal of this program is “to understand the physical and biological responses to Mitigation Project actions within an adaptive management context.” Information gathered from these efforts will assist river managers in making habitat improvement recommendations and provide base line data.

Columbia FRO collects fish, biological, and ecological data from two Missouri mitigation sites, Tate Island near Portland and Overton Bottoms near Rocheport. Gear types used in this plan include bow operated otter trawls, large (3 foot) hoop nets set in singles and tandem, and electrofishing. Nets are fished overnight in random locations inside and adjacent to the mitigation sights and moved daily for three consecutive days. Trawling takes place in eight random locations throughout the site and eight 15-minute electrofishing runs are made as well. These efforts will be repeated monthly throughout July. *Jeff Finley, Columbia FRO*



-USFWS

This project is part of the Missouri River Fish and Wildlife Mitigation program. Columbia FRO in cooperation with the U.S. Army Corps of Engineers and state natural resource agencies from Iowa, Kansas, Missouri, and Nebraska have initiated the 2005 monitoring and evaluation season.

Road Crossings in the Rifle River Watershed

In April, Biologist Susan Wells toured stream road crossing sites in the Rifle River Watershed in Ogemaw County, Michigan. Representatives of the U.S. Department of Agriculture, Huron Pines Resource Conservation and Development (RC&D), the Ogemaw County Road Commission (OCRC), and the Fish and Wildlife Service looked at 10 road crossing sites for potential funding through the Fish and Wildlife Service’s Fish Passage and Fish Habitat Restoration programs. Three perched culvert projects have been identified as fish passage barriers that prohibit movement of native brook trout into the upper reaches of the Rifle River watershed. Biological data concerning the barriers are available through Michigan Department of Natural Resources (DNR), which is actively involved with projects within the Rifle River watershed and supports projects identified during the tour. Cost estimates for each of the three sites have been requested from the OCRC. Huron

Pines RC&D will be requesting funding from the Fish and Wildlife Service and other organizations once estimates are complete.

Susan Wells, Alpena FRO



-USFWS photo by Susan Wells

Alpena FRO and partner agencies visited 10 road stream crossings with degraded fish passage - including perched culverts such as the one in this photo. Candidate projects will be submitted for potential funding through the Fish Passage or Fish Habitat Restoration programs.

New Habitat Coding System Being Developed for Corps of Engineers Projects

A new habitat coding system is being developed for all U.S. Army Corps of Engineers projects on the Missouri River to allow for a more detailed habitat analysis. The objective is to create a system that is easy to use in the field, simplifies data analysis and queries, and has the flexibility to be modified to meet future needs. By converting the habitat codes to a numeric system, data analysis and data queries are simplified when using statistical programs.

The skeleton of the code is based on systems used by the Benthic Fishes Project and the Long Term Resource Monitoring Project on the Mississippi River. The current coding system consists of three layers: macro-, meso- and microhabitats. This system has been used for several years by the Sturgeon Monitoring Project, yet lacked an intuitive and clear system of coding habitats at the micro level. Current work will extend the microhabitat coding to a minimum of six digits and may be extended up to nine digits to meet the needs of the Habitat Assessment Project. The first three digits will describe the habitat complex, or the general area being sampled, such as a sand bar or wing dike complex. The next three digits will describe the precise area within the habitat complex where the sampling gear was deployed.

Andrew Starostka, Columbia FRO

Canoe Livery Requests Partners for Fish and Wildlife Assistance

In April, Biologist Heather Enterline of the Alpena FRO and Donna Hardies of the Montmorency Conservation District visited an erosion site along the Thunder Bay River in Atlanta, Michigan, to assist some unique partners. The landowners had recently purchased the property and are re-opening the Atlanta Canoe Livery this summer. Erosion on their property has been caused by the combination of foot traffic, storm water discharge from the Village of Atlanta, and the discharge from a dam on the main branch of the Thunder Bay River. The Thunder Bay River/Black River Work Crew may be able to address the erosion on this site if proper permits can be obtained in a timely manner. The

site will be repaired with a combination of biologs, whole log revetments, access stairs and vegetative plantings. The Fish and Wildlife Service's Fish Habitat Restoration Program will provide some funding, the Montmorency Conservation District will supply administrative and logistical support, and the landowners will supply some materials and labor. Repair of this 500-foot erosion site will reduce the sediment load into the Thunder Bay River improving the quality of aquatic life within the watershed

Heather Enterline, Alpena FRO

Wood Duck Boxes Installed on Partners Program Projects

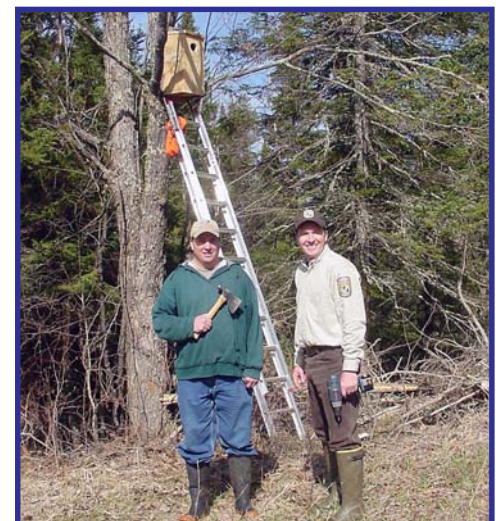
Thanks to the hard work of the Washburn, Wisconsin, Ducks Unlimited (DU) chapter, which secured materials, and Washburn Boy Scout Troop 344, which provided labor, some 25 wood duck boxes were constructed over the winter and installed on Partners for Fish and Wildlife Program wetland restoration sites near Ashland, Wisconsin. These houses will benefit wood ducks and other cavity nesting waterfowl such as common goldeneyes and hooded mergansers. The project is the result of a partnership among DU, Boy Scouts of America, Ashland, Bayfield, Douglas, and Iron Counties Land Conservation Department (LCD), and local landowners.

Ashland FRO and LCD staffs have begun to install the boxes at suitable locations. The wetland sites have been restored in partnership with the Northern Wisconsin Wetland Team comprising the LCD, Wisconsin DNR, Natural Resource Conservation Service, DU, Sigurd Olson Environmental Institute, and the Fish and Wildlife Service.

Wood ducks nest in tree cavities, but will readily accept artificial nest structures. They also have a high tendency to return to the same nesting area year after year. Wood ducks currently nest in the area and the additional nest sites will benefit the local nesting population. As a result of past clearing, many of these restored wetlands have few trees with cavities big enough to support wood ducks, so the addition of wood duck boxes will significantly benefit this once rare species.

Wood ducks were possibly the most abundant duck east of the Mississippi River before European settlement, but clearing of mature forests, market hunting and year-round shooting led to drastic declines in the population. Regulation, habitat restoration and management projects such as wood duck box programs have helped the wood duck make a great comeback over much of its range. The wood duck box partnership in the Ashland/Washburn area is a small but important part in the overall return of this beautiful and unique species.

Ted Koehler, Ashland FRO



-USFWS

Mike Pero from the Land Conservation Department and Ted Koehler (Fish and Wildlife Service) pose under a completed wood duck nesting box.

Workforce Management

Columbia FRO Welcomes New Biologist

Biologist Cliff Wilson joined the staff of the Columbia FRO on April 4 after working at the station in an emergency hire position and then logging more than 330 hours as a full-time volunteer. Cliff received his B.S. degree from the University of Missouri-Columbia, majoring in Fisheries and Wildlife Biology with a minor in Biological Sciences. Before coming to Columbia FRO, he worked as a scientific aide for U.S. Geological Survey's Columbia Environmental Research Center, where he assisted with water bath exposure studies, examining the effects of atrazine on the reproductive success of medaka and fat-head minnows. Wilson was also involved in reproductive studies with black carp, grass carp and shovelnose sturgeon.

Cliff Wilson, Columbia FRO



-USFWS photo by Louise Mauldin

A fishery biologist, Cliff Wilson, joined the staff of the Columbia FRO in April. Cliff is holding a blue catfish caught in Lisbon Chute of the Lisbon Unit of the Big Muddy National Fish and Wildlife Refuge.

Maintenance Worker Gives Hatchery Staff a Little Lift

As maintenance worker John Anttila rapidly approaches his retirement date, the staff at Iron River NFH are trying to soak up 20 years worth of knowledge! As a certified heavy equipment trainer, John helped to get the staff up to speed on using forklifts, tractors and other equipment at the hatchery. For some it was a refresher, but for others it was all new. Staff watched videos on safety to prepare us for what not to do while operating the equipment. Then John went over the basic maintenance and proper use of the equipment. John was on the construction crew that built the hatchery more than 20 years ago and was hired on as soon as it was completed, so his knowledge has been irreplaceable, especially during construction of our new buildings. We will soon be finding out just how much we don't know about this place!

Angela Baran, Iron River NFH

"Train the Trainers" Session Deemed a Success

Biologists and technicians from the Sea Lamprey Management Program's Marquette and Ludington Biological Stations recently met for a day along the riverbanks of a Northern Michigan stream with counterparts from the Department of Fisheries and Oceans Canada. The group successfully conducted a "train the trainers" session on how to identify and inventory larval sea lamprey habitats. In what is becoming an annual event, this cadre of experts came together to challenge each other on how best to apply quantitative techniques to

inventory larval sea lamprey habitat. The session is held prior to hiring and training several dozen temporary employees for the season, who ultimately will survey hundreds of lamprey producing streams during 2005. Consistently applied techniques that assure good observer agreement during 2005 are critical for ranking sea lamprey producing streams for subsequent lampricide treatments during 2006. Training the many temporary technicians occurred during the more seasonable month of May, while surveys will be conducted across the Great Lakes basin until early October. The sea lamprey management program continues to work closely with partners to control populations of sea lampreys in tributaries of the Great Lakes. The goal is to protect the fishery and related economic activities in the basin—an estimated annual benefit of \$4 billion to \$6 billion per year to the region. The Fish and Wildlife Service delivers a program of integrated sea lamprey control in United States waters of the Great Lakes as a contracted agent of the Great Lakes Fishery Commission. *Gary Klar, Marquette Biological Station*



-GLFC

Biologists and technicians from the Sea Lamprey Management Program met for a day in a northern Michigan stream with their Canadian counterparts to conduct a "train the trainers" session on how to identify and inventory larval sea lamprey habitats.

The Best Careers: Your Hands Are Wet, and Boots Dirty

La Crescent, Minnesota students not only got their hands wet by handling the endangered Higgins' eye pearl mussels, but also got their boots dirty viewing a bald eagle nest during their Annual Junior Achievement Day. Five students shadowed biologist Calvin Gehri from the Upper Mississippi River National Wildlife and Fish Refuge – La Crosse District on April 29, and 10 students shadowed biologists Heidi Keuler and Dave Wedan from La Crosse FRO. Students learned about equipment used by the Fish and Wildlife Service, the job atmosphere—such as the hours worked and the projects worked on—and what kind of education is needed to have a career with the Fish and Wildlife Service. Gehri took students into the field to explain boat landing maintenance work and waterfowl parasites, and to find a new eagle's nest. Keuler and Wedan took students to the Genoa NFH to infest largemouth bass with Higgins' eye pearl mussel larva (glochidia). The young biologists learned about the mussel cycle and the importance of mussels in the Mississippi River, and saw other species of mussels, lake sturgeon and walleye fry, and rainbow and coaster brook trout. Interested "future biologists" were encouraged to volunteer for the Fish and Wildlife Service.

As biologists who work for the Fish and Wildlife Service, we sometimes take our exciting careers for granted. It is when we see faces of younger generations light up at discovery of the type of work we perform, that we truly appreciate the impact we have on our world.

Heidi Keuler, La Crosse FRO



-USFWS

La Crescent, Minnesota eighth grade students received a "hands on" experience in the field where they learned about waterfowl parasites, eagle nests, and native fish and mussels.

Employees Volunteer Time and Talents for Community Causes

The "Ashland FRO Station Operation Plan" challenges employees to contribute their personal time and talents to community causes. We believe that outreach is more than just us talking to the community about our mission, but is also about developing relationships and being part of the community. Project Leader Mark Dryer recently asked staff to identify community service they conduct outside their jobs. The list is impressive and worth sharing: elementary school volunteer; recreational league football coach; senior hockey league referee coordinator; youth hockey coach and skate chaperone; kinship mentor to high school student; Ashwabay Outdoor Educational Foundation volunteer; Big Top Chattaqua volunteer; Nordic and alpine ski race volunteer; Chequamegon Area Youth Soccer referee; Chequamegon Symphony violinist and volunteer; foreign exchange program volunteer and host family "Uncle" to host families of Chilean, Bolivian, Italian, and Brazilian students, and host to Japanese student; Honoring Our Children - Daddy Boot Camp Project

Instructor; serve on committees of local chapters, student chapters, or parent organizations for Trout Unlimited, American Fisheries Society, Audubon Society, Ducks Unlimited, and Freshwater Mollusk Conservation Society; On panel to review and award high school student scholarships; Town of Lincoln Land Use Planning Committee chair and Town of Pilsen Land Use Committee member; trail groomer for Ashland Nordic ski trail; Unitarian Universalist Fellowship volunteer; Washburn Area Historical Society and Washburn Museum volunteer; Washburn Tennis Association grounds maintenance; Washburn Tennis Association treasurer; White River Citizens Involvement Committee member; and Whistlestop marathon and half marathon volunteer. *Whew!*

Mark Dryer, Ashland FRO

The Fish and Wildlife Service's Stepping Up To Leadership Development Program

The Stepping Up to Leadership program (SUTL) graduated its ninth class on April 8, and three Region 3 employees were among the newly minted future leaders. SUTL is a six-month leadership development program offering Fish and Wildlife Service employees at the GS 11 and 12 level the chance to improve their leadership skills through assessments, coaching, self-paced and group exercises, and developmental assignments.

Region 3 was allotted three slots for the program and the region's representatives for SUTL were Forest Clark from the Bloomington Field Office, Kris Lah from the Chicago Field Office, and Ted Koehler from the Ashland FRO.

Ted Koehler, Ashland FRO

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Windows in time

A Glimpse into our Proud Past

*Oden State Fish Hatchery, Michigan
 (circa 1940's)*

-Michigan DNR website

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