



U.S. Fish & Wildlife Service

Fish Lines



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Region 3 - Great Lakes/Big Rivers

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Genoa National Fish Hatchery; Genoa, Wisconsin

(See the "Station Spotlight" on Page 5)



Series of photos depicting Genoa National Fish Hatchery activities: (Lt. to Rt.) (Top Row) Roger Gordon spawns a coaster brook trout; An aerial view of the Genoa National Fish Hatchery; Jeff Lockington holds a female northern pike captured from the Mississippi River as a source of production eggs; (Middle Row) Native mussel species (clockwise from the base of the thumb - Higgins' eye pearlshell, cylindrical papershell, giant floater, paper pondshell, white heelsplitter); Nick Starzl coded wire tags a lake sturgeon fingerling prior to release in support of a restoration plan; Kids with their dad enjoy the annual Fishing Derby; (Bottom Row) Roger Gordon stocks 7 inch walleye into Lake Greenwood at the Crane Naval Base, Indiana; Teaching a child from a local tour group the techniques used to spawn a northern pike; Building mussel cages as part of the Higgins' eye pearlshell recovery plan.

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

Conserving America's Fisheries

Fisheries Program Vision for the Future



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.

Strategic Plan Vision 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. 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.

4. 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.

5. 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.

6. 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.

7. 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.

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Click here to visit our Fisheries Web Site

Great Lakes - Big Rivers Region Fisheries Field Offices

National Fish Hatcheries

National Fish Hatcheries develop and maintain brood stocks of selected fish strains with our primary focus on native species such as lake trout, pallid sturgeon, lake sturgeon and brook trout. Hatcheries also provide technical assistance and sources of fish and eggs to cooperating agencies, provide fish and eggs for research, stock fish and eggs as part of native fish restoration programs, stock fish in fulfillment of federal mitigation obligations and assist with restoration and 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. This program is supported through funding from the State Department and administered through the Great Lakes Fishery Commission.

Fishery Resources Offices

Fishery Resources Offices perform key monitoring and control activities related to invasive aquatic species; survey and evaluate native fish stocks and aquatic habitats to identify restoration 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 Private Lands and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency databases; provide technical assistance 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.

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



Great Lakes - Big Rivers Regional Fisheries Program

Station Spotlight - Genoa National Fish Hatchery

Genoa National Fish Hatchery (NFH), established in 1932, is located on the eastern shore of the Mississippi River in west central Wisconsin. It is one of the few Fish and Wildlife Service hatcheries to be located on a National Wildlife Refuge. The station's current programs include threatened and endangered mussel recovery, restoration of native fish species (such as lake sturgeon, coaster brook trout, and lake trout), and fish production to meet fishery management needs on Federal and tribal lands. In FY2003, Genoa produced over 13.3 million fish and eyed eggs of 17 different species for 23 different federal, state, and tribal programs!

The hatchery is involved with many of the surrounding states and Federal natural resource agencies in efforts to recover the endangered Higgins' eye pearlymussel, one of the first aquatic species registered on the Endangered Species List. We also partner with state and tribal agencies to restore lake sturgeon and coaster brook trout, species of concern in the Midwest due to declines in its populations and range. The hatchery also provides sport fish obtained from its spring river netting operations to Federal (3), state (10), and tribal (10) partners to support ongoing management programs, and provide recreational fishing opportunities. In return, the partners assist the Fish and Wildlife Service with threatened and endangered species recovery efforts.



-USFWS

These endangered Higgins' eye pearlymussels were produced in cages. "Host fish" are inoculated with glochidia (mussel larvae) and put into cages. After this "parasitic" phase, the mussels drop off their host fish.



-USFWS

Genoa National Fish Hatchery Staff

Lt. to Rt. (Front Row) Dan Kumlin, Doug Aloisi, Tony Brady, Jenny Walker, Ashley Umberger, (Back Row) Nick Starzl, Jeff Lockington, Roger Gordon, Diane Zittel.

The station is also the first Fish and Wildlife Service office to staff a mussel biologist, to manage the station's mussel recovery programs. The stations programs have moved past the fish hatchery boundary to assist in stream mussel population surveys, assessments, and recovery planning. This will allow restoration plans to most accurately mesh with production capabilities and technologies currently available.

Genoa NFH also has a unique opportunity to provide a fully reimbursed rainbow trout fishery with the Fort McCoy Army Base in Sparta, Wisconsin. This year over 2,500 anglers spent 5,470 angler days fishing for 14,000 9-14 inch rainbow trout that were raised at the hatchery.

The Genoa NFH continues to be a national leader in science and technology development by researching the development of large scale production techniques for freshwater mussels. The hatchery also carries out trials to discover the most suitable fish species to serve as mussel hosts. This past year the hatchery partnered with the U.S. Geological Survey, Ecological Services, and several universities on multiple year investigations concerning mussel life history and propagation questions. The hatchery also supplies study information to support fishery drug registration efforts.

For more detailed information about the Genoa National Fish Hatchery, contact the office at (608) 689-2605 or visit their website at: <http://midwest.fws.gov/genoa/>

Partnerships and Accountability

Genoa National Fish Hatchery partners with the U.S. Geological Survey's Upper Midwest Environmental Science Center to Study Fish Therapeutants

Genoa National Fish Hatchery (NFH) annually produces 2 to 4 million juvenile mussels. The hatchery staff accomplishes this goal with an army of volunteers from other federal and state agencies. They inoculate fish produced at the hatchery with the parasitic stage of freshwater mussels called glochidia. After inoculation, the fish are held at the hatchery or in cages for up to three weeks until the parasitic life stage of the mussels is complete and they drop off the fish.

Prior to this study, culturists have been cautious about treating inoculated fish with therapeutants. Cultured fish occasionally need to be treated with therapeutants for various diseases or parasitic outbreaks which commonly occur during culture operations. By partnering with the U.S. Geological Survey's Upper Midwest Environmental Science Center, a lab was set up where a surrogate mussel species, the plains pocketbook, was used to inoculate 120 bass that were then divided into 12 aquaria. The first phase of this study tested the effects of copper (2 ppm), formalin (200 ppm), and chloramine-t (20 ppm). The initial results show no significant difference between any of the tested chemicals compared to a control group. The information gained in this study will help the hatchery staff to provide better care of host fish after inoculation. A second phase of the study will test the effects of salt and hydrogen peroxide.

Tony Brady, Genoa NFH



-USFWS

Staff from the Genoa National Fish Hatchery and the U. S. Geological Survey's Upper Midwest Environmental Science Center collect juvenile pocketbook mussels from inoculated fish. This initial study indicated that routine therapeutant treatments for common fish diseases did not affect the survival of mussel glochidia (larvae).

Binational Program Joint Project Newspaper Insert

As part of his Great Lakes Binational Program/Lake Superior Work Group duties, Ted Koehler from the Ashland Fishery Resources Office (FRO) completed an article for a newspaper insert to be circulated in local papers around Lake Superior. The newspaper insert is a joint project, conducted by the Lake Superior Binational Forum and the Lake Superior Work Group, that will focus on multiple topics including invasive species, fish and wildlife monitoring, coastal wetlands, chemical pollutants, green energy, and other Lake Superior issues.

Binational initiatives are currently dealing with invasive species in Lake Superior as well as throughout the Great Lakes basin. Agencies and Native American Tribes from the United States and Canada continue fish surveillance surveys to document the range expansion of ruffe and detect other invasive species from Thunder Bay, Ontario to Sault Ste. Marie, Michigan. In 2003, round goby and

white perch were discovered and confirmed in Thunder Bay Harbor, Ontario. Fish community surveys continue in the St. Louis River and four other south shore rivers to monitor fish community structure in tributaries colonized by ruffe and other invasives. Thousands of acres are being treated annually to control the spread of invasive plant species by governmental and non-governmental organizations.

Educational materials such as pocket guides, signage at boat landings, brochures, and videos continue to be produced by Sea Grant, the Binational Program partners, and others. These materials are distributed throughout the Lake Superior basin to prevent the introduction and reduce the spread of invasive species.

Ted Koehler, Ashland FRO

What can you do to help stop the invasion? A few simple actions will help prevent the spread of invasive species: inspect your boat and trailer and remove any plants and animals before leaving the water body; drain water from the motor, live well, bilge, and transom before leaving the water body; never release live bait fish in the water or live earthworms on the land or water; when planning landscaping or gardening activities use only plants native to the region; consult with professional garden centers and landscape planners on the best native plants for your area; and learn what non-native species look like and additional prevention tips by contacting your local natural resource management agency.

Distribution of Largemouth Bass Virus in Missouri's Inland Waters

For the past four years, the La Crosse Fish Health Center (FHC) has worked cooperatively with the Missouri Department of Conservation to assess the distribution of Largemouth Bass Virus (LMBV) in Missouri's inland waters. LMBV is an iridovirus that was first reported from bass from the Santee-Cooper reservoir in South Carolina in 1995. The virus now has a range that extends from Florida west into Texas, primarily affecting bass in the southern states. Bass kills attributed to this virus occur most often in the summer months when water temperatures are the highest. Largemouth bass are the only species in which disease develops; however, numerous species can serve as carriers. Infected fish may show no obvious disease signs or may float from bloated abdomens and may have red lesions on the skin due to secondary bacterial infections. Because LMBV specifically attacks the swim bladder, samples for virus screening must include a small portion of the swim bladder as well as kidney and spleen tissues. Samples are brought back to the La Crosse FHC and initially screened for viruses by tissue cell culture methods using the Bluegill Fry cell line. Positive tissue cell culture results are then confirmed using molecular assays (Polymerase Chain Reaction or PCR).

The FHC received 11 largemouth bass samples and 16 white crappie samples in April from the Harry S. Truman Reservoir in Missouri. LMBV was detected in the largemouth bass, but not the white crappie. The virus was not detected from Harry S. Truman Reservoir bass tested in

spring of 2003, but was found in bass tested in 2001 and 2002. In addition, 5 of 7 lakes in Missouri tested positive for presence of LMBV.

Becky Lasee, La Crosse FHC

Big Coaster Day at Pictured Rocks!

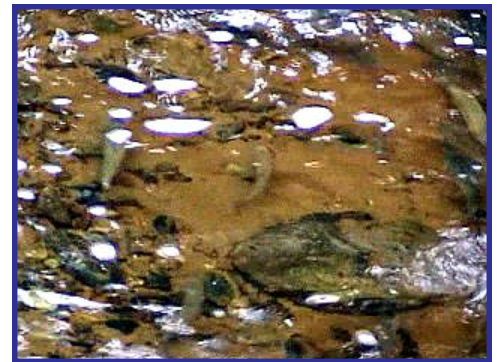
The mouth of the Hurricane River in Michigan was a busy spot this past week as crews from Ashland Fishery Resources Office (FRO), Pictured Rocks National Lakeshore, Genoa National Fish Hatchery (NFH), Iron River NFH, and Northern Michigan University (NMU) converged to kick off a new approach to coaster brook trout rehabilitation. A total of 7,500 yearlings, Tobin Harbor Strain brook trout ranging from 7 to 12 inches in length, were stocked into the plunge pool below Hurricane River Falls. Hopes are high among partner members that stocking of these larger fish will result in much improved survival and return over that found with previous years of stocking of fall fingerlings.

The fish were reared at the Genoa NFH and arrived after the 9 hour trip in outstanding condition. The coasters were originally hatched at the Iron River NFH 19 months earlier. By January of 2003 the little "brookies" were approximately 1" and then transferred to Genoa for advanced rearing. Genoa is able to achieve better growth rates by rearing the yearling fish on its constant groundwater temperature of 52° F throughout the winter and summer with growth averaging almost ¾" per month.

Volunteers from the community assisted with stocking by forming a bucket brigade to move fish from the hatchery trucks to the river, while Dr. Jill Leonard of NMU led

her graduate student crew in installing PIT (Passive Integrated Transponder) tags in 280 of the fish. The tagging is a part of an evaluation and follow up study on the coaster reintroduction here and designed to evaluate habitat use of stocked fish. Dr. Leonard's crew will sample the stream habitats throughout the year while stationary scanning systems record movement of the fish in or out of the mouths of three streams. Early results have shown that most of the fish have entered Lake Superior and that they are moving along the shoreline. Eight of the 280 fish tagged were located in the lower part of Seven Mile Creek (about 5 shoreline miles from Hurricane River) within three days of the stocking.

*Lee Newman, Ashland FRO
Nick Starzl, Genoa NFH*



-USFWS

Coaster brook trout ranging from 7 to 12 inches were stocked into a plunge pool below the Hurricane River Falls at the Pictured Rocks National Lakeshore. Hopes are high that the 7,500 yearlings will pave the way toward coaster brook trout rehabilitation in this area of Lake Superior. This was a cooperative effort by Ashland Fishery Resources Office, Pictured Rocks National Lakeshore, Genoa National Fish Hatchery (NFH), Iron River NFH, and Northern Michigan University.

Aquatic Species Conservation and Management

Jordan River National Fish Hatchery marks 1.45 Million Native Lake Trout

On April 8, marking of the 2003 brood year of lake trout at the Jordan River National Fish Hatchery (NFH) was completed. A grand total of approximately 1.45 million fish were marked with a combination left pectoral/right ventral fin clip from February 24 through April 8. This mark identifies fish as hatchery-origin lake trout to researchers who may later collect some of them while doing biological surveys. The total cost of this year's marking operation was \$33,390. This covered the wages of both the fin clipping crew and the hatchery staff involved in the operation. The size of the fin clipping crew ranged daily from 7 to 15 people, but averaged 12. Most of these people are permanent-intermittent employees, but 3 additional people were hired on a 30-day term emergency basis to expedite this important task.

Wayne Talo, Jordan River NFH



-USFWS

Employees work each spring at the Jordan River National Fish Hatchery to mark lake trout fingerlings by removing a certain fin(s). Approximately 1.45 million fish were marked by this method this year. This mark or fin clip identifies these fish as hatchery origin to researchers who may later collect some of the fish during surveys.

Reduction Efforts initiated on a Lake Huron Invasive Eurasian Ruffe Population

Alpena Fishery Resources Office (FRO) initiated efforts to reduce the only known population of Eurasian ruffe (ruffe) in Lake Huron, located in the Thunder Bay River near Alpena, Michigan. The ruffe is an invasive species native to the Black and Caspian Seas of Eurasia. It gained access to the Great Lakes area of the United States from the ballast waters of ocean going vessels that enter the Great Lakes via the Welland Canal. Ruffe are thought to compete with yellow perch and other native species for food and habitat resources. Reduction efforts are targeted at removing spawning phase adults prior to reproduction in the spring. Small mesh gillnets are used to remove the ruffe. This marks the third year of this effort that targets the reproductive cycle of this invasive species. Efforts will continue through the end of May. Biological data will be collected on all captured ruffe, including length, weight, and age (from scales, dorsal spines, and otoliths). Efforts to address the threats to aquatic species and provide effective conservation and management are important components of the Fisheries Strategic Vision.

Anjanette Bowen, Alpena FRO



-USFWS

Alpena Fishery Resources Office staff use smallmesh gillnets to remove spawning phase invasive Eurasian ruffe from the Thunder Bay River near Alpena, Michigan. It is hoped that this netting effort will minimize range expansion of ruffe in Lake Huron. This photo compares an adult ruffe to a yearling yellow perch.

Fish Distribution Season begins with an Emergency Shore Stocking

Jordan River National Fish Hatchery (NFH) raises lake trout for rehabilitation programs in the upper Great Lakes. During the last week of April, dissolved oxygen (D.O.) concentrations dipped to critical levels in some of the most downstream raceways. These raceways are supplied with reuse water that has passed through several tanks and raceway series. D.O.s at the downstream ends of some D ponds fell below 4 mg/l, 1 mg/l below the minimum recommended. Dedicated hatchery staff stayed on site on April 29 and deployed bottled oxygen and air stones to prevent fish kills in the lower raceway series. It is at this time that fish loads are at their annual peak, and it is not unusual that problems like this occur just prior to the fish distribution season.

Loads in ponds were reduced by stocking 22,000 lake trout into Lake Michigan on April 30 at the

Maritime Academy pier in Traverse City, Michigan. The average size of these fish was 13.75 fish per pound, or about 6.2 inches. These fish were initially slated for off-shore release from the Fish and Wildlife Service stocking vessel, M/V Togue, in the northern refuge of Lake Michigan. The remaining inventory of this raceway will be released later in the distribution season into southern Lake Michigan.
Wayne Talo, Jordan River NFH



-USFWS

Fish pumps are used at Regional lake trout stations to load distribution trucks. Fish can be loaded quickly by a smaller staff compared to the past labor intensive method of dip-netting fish into the tanks.

Get Ready to Fish!

A cooperative effort between Iron River National Fish Hatchery (NFH), Genoa NFH, Ashland Fishery Resources Office, and the Wisconsin Department of Natural Resources resulted in a recreational stocking of coaster brook trout. These yearlings were approximately 8-10 inches in length, having been raised in warmer waters at Genoa NFH. Changes in the distribution plans for 5,000 of the yearling coaster brook trout allowed for stocking three local Wisconsin lakes; Winoka Lake, Anderson Lake, and Perch Lake. At Winoka Lake, interested onlookers followed the Iron River NFH staff and vehicles

to the stocking site and were thrilled to assist in transporting coolers of fish from the truck to the lake.

Angela Baran, Iron River NFH



-USFWS

Denise Johnston and Dale Bast from the Iron River National Fish Hatchery (NFH) stock yearling coaster brook trout into Perch Lake. This stocking was a result of a cooperative effort between Iron River NFH, Genoa NFH, Ashland Fishery Resources Office, and the Wisconsin Department of Natural Resources.

Sturgeon Season commences at the Genoa National Fish Hatchery

Springtime is here again, and that means lake sturgeon are looking for a helping hand to continue their survival. As the water temperatures warm to 52 degrees each spring, sturgeon migrate to historic spawning sites to lay their eggs. These sites usually occur over rocky substrate on the sides of swift moving rivers and streams. They are vulnerable to capture at this time of year as they congregate, and sturgeon biologists collect adults with long handled dip nets and remove a small number of eggs from multiple females for culture programs. The adults are then released unharmed to naturally spawn.

The Genoa National Fish Hatchery (NFH) recently received funding in the 2004 budget to expand an existing sturgeon

program to include work on 3 additional restoration programs. Eggs were collected from the Wolf and Wisconsin rivers in Wisconsin and the Rainy River in Canada for these new projects in hopes of continued restoration of lake sturgeon throughout the Midwest. The resulting eggs and fry from these 3 populations of sturgeon will be reared to 6-8 inches and released in the fall. The hope is to restore populations of lake sturgeon to levels where they can maintain themselves. Lake sturgeon are very long lived and reach sexual maturity very slowly. A female sturgeon is usually 18-22 years old before she lays her eggs for the first time, and often does not produce eggs annually even after reaching maturity making restoration of this native species a long-term effort.

Doug Aloisi, Genoa NFH



-USFWS

Look carefully and you will see thousands of lake sturgeon fry in this tank. This native fish is being reared at the Genoa National Fish Hatchery for rehabilitation programs throughout the Midwest.

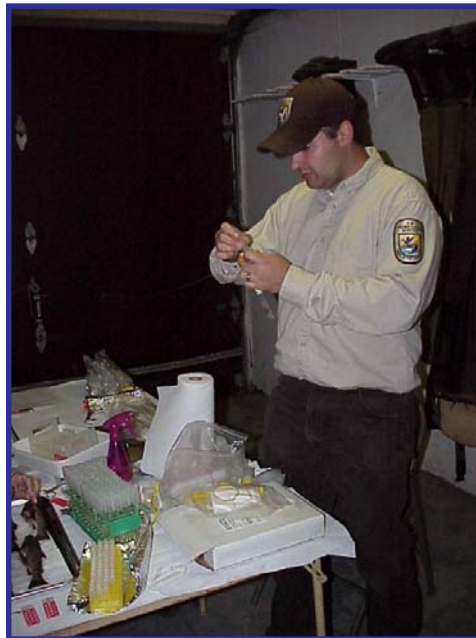
Fish Health Staff completes Spring Fish Health Inspection at the Genoa National Fish Hatchery

La Crosse Fish Health Center (FHC) staff completed the annual spring fish health inspection at the Genoa National Fish Hatchery in April. The purpose of the inspection is to screen fish for presence of certifiable pathogens. FHC staff sampled eight species for a total of thirteen lots. The species sampled included brook trout, lake trout, rainbow trout, smallmouth bass, lake sturgeon, channel catfish, fat head minnows, and walleye. Each lot is screened separately for pathogens.

A kidney swab was taken to screen for the bacterial pathogens *Aeromonas salmonicida*, *Yersinia ruckeri*, and *Edwardsiella ictaluri*. An additional kidney sample was collected and later used to screen for *Renibacterium salmoninarum*, the causative agent of Bacterial Kidney Disease. Kidney and spleen samples were collected and used to screen for certifiable viruses including Infectious Pancreatic Necrosis Virus (IPNV), Oncorhynchus Masou Viruses (OMV), Viral Hemorrhagic Septicemia (VHS), and Infectious Hematopoietic Necrosis Virus (IHN) in salmonids. Walleye and fat head minnows were screened for Largemouth Bass Virus (LMBV) and IPNV, and catfish were screened for Channel Catfish Virus (CCV) and IPNV. The smallmouth bass were screened for LMBV and IPNV. The lake sturgeon were screened for sturgeon viruses and IPNV.

A total of sixty head samples were also collected and used for screening for the spores of the protozoan parasite, *Myxobolus cerebralis*. *M. cerebralis* causes Whirling Disease in salmon and

trout. Spores of this parasite are found in the cartilaginous tissues of the head. Head samples are treated with digestive enzymes in order to remove soft tissues and to break down the cartilage. The distinctive spore, if present, can then be observed in wet mount slides using phase microscopy. Whirling Disease has never been detected in Regional Federal Fish Hatcheries. Results of laboratory tests are pending at this time.
Corey Puzach, La Crosse FHC



-USFWS

Corey Puzach from the La Crosse Fish Health Center is shown preparing virology samples from fish at the Genoa National Fish Hatchery. The purpose of health inspections are to screen fish for presence of certifiable pathogens(fish diseases).

New Trawling Vessel Arrives at the Alpena Fishery Resources Office

On April 13, Fishery Biologist Scott Koproski traveled to American MetalCraft Marine, Inc. (AMCM) in Clayton, New York to pick up the Alpena Fishery Resources Office's (FRO) new vessel. Koproski also conducted sea trials and tested the trawling apparatus with personnel from AMCM to ensure the new vessel will meet station needs. The new vessel, christened the R/V Sentinel, will be primarily used to monitor the introduction and expansion of aquatic nuisance species (ANS) in Lake Huron, but it will also be used on other projects. In 2003, the Boston Whaler was retired due to safety concerns.

The R/V Sentinel is a 26 ft. aluminum vessel with a center console and is powered by twin 100 hp Johnson motors. The trawling boom and winch from the old vessel were fit onto the Sentinel by AMCM. AMCM also modified the power source for the winch, enabling it to be powered by the vessel batteries which are charged by the Johnson motors. These improvements eliminated the need for an onboard generator to charge batteries to power the winch and resulted in more usable deck space. AMCM also installed a charging system that can be plugged into any 110 outlet to charge vessel batteries. This new system eliminates the problems associated with the charging system on the retired vessel and thus increases sampling efficiency.

The R/V Sentinel's maiden cruise will be during the month of May on the St. Clair River. Alpena FRO staff will be attempting to capture lake sturgeon in the St. Clair River using set-lines. Staff

will also be monitoring lake sturgeon movement and habitat preferences using telemetry equipment. The new vessel will also be primarily used for aquatic nuisance species surveillance. ANS pose a serious threat to native fish species. ANS species typically out-compete native fish for food and preferred habitat, and in the absence of native predators their abundance can grow very quickly. The R/V Sentinel will allow staff at the Alpena FRO to monitor the expansion and document the introduction of ANS species in Lake Huron. This work helps fulfill the Fish and Wildlife Service's goal of preventing and reducing the establishment and spread of aquatic nuisance species.

Scott Koproski, Alpena FRO



-USFWS

This new vessel, R/V Sentinel, will be used by the Alpena Fishery Resources Office to monitor the introduction and expansion of invasive species in Lake Huron.

Jordan River National Fish Hatchery receives Results of Annual Fish Health Inspections

John Whitney of the Lacrosse Fish Health Center (FHC) sampled the 2003 and 2004 year classes of lake trout being reared at Jordan National Fish Hatchery (NFH). Ages of the fish were 15 months and 3 months, respectively, at the time of sampling. Typically, 60 fish are sampled from each of 12 lots during the inspection. Results for all but two lots of lake trout were negative or free from the pathogens for which they were tested. One lot of the Lewis Lake strain and one lot of the Green Lake strain yearlings were verified positive for *Renibacterium salmoninarum* (Rs). Rs is the bacteria which is present when hatchery or feral salmonids experience outbreaks of Bacterial Kidney Disease (BKD). Polymerase Chain Reaction Assay was used by the FHC to verify the presence of Rs in these two lots of yearlings. Lake trout are one of the salmonids that do not experience clinical signs when infected with BKD. Even so, this type of data is critical to the annual and daily decision making processes made at Jordan River NFH during the fish production and distribution cycle to minimize the potential spread of diseases to other facilities.

In addition to pathogen screening done by personnel from the LaCrosse FHC, Biological Technician Paul Haver performed a qualitative and quantitative assessment of fish condition called the Goede's Fish Health Assessment. The purpose of this screening is to use a numerical rating system to describe the general condition of a population of fish. Paul does this every year in preparation for fish distribution.

He has been doing this work since the early '90s and is one of this Region's most experienced and well respected people in this area. This year's data indicated that the lake trout are in good condition.

Timothy Smigielski, Jordan River NFH

Wayne Talo, Jordan River NFH

Hard Hats Required!

Construction has started at the Iron River National Fish Hatchery (NFH)! Boldt Construction arrived on site and jumped right into work deflating the brood stock dome and preparing the site for a new building. The dome was deflated and the material is being used to temporarily cover the fish. Excess material was cut up to be surplus and crews have demolished the existing concrete walls to ground level. As things progress, the production dome, which houses 1.2 million lake trout yearlings from July to May, will also be removed.

The domes are air-supported structures originally built in 1989 to protect production fish and captive adults from predators and the disease organisms they can accidentally introduce. The new buildings that will replace these domes will better withstand the snow loads during the long Wisconsin winters!

Angela Baran, Iron River NFH

Public Use

Local School Group gets their Hands Wet at the Genoa National Fish Hatchery

Members of the Vernon, LaCrosse, and Monroe County Home School Association took the bull by the horns, so to speak, and participated in some hands-on northern pike egg collection and fertilization. Local youth from the ages of 8-12 received a tour of the station and its ongoing programs and then took turns in stripping northern pike females of roughly 250,000 eggs. Students were then shown techniques for fertilizing and caring for the eggs. Afterwards, they were given a presentation on freshwater mussels and their importance in the Upper Mississippi River ecosystem.

The Genoa National Fish Hatchery (NFH) is a popular place for school groups in the springtime, with northern pike and walleye spawning in high gear. Fish spawning demonstrations are put on for approximately 25-30 school groups each spring. The Genoa NFH collects 1-2 million northern pike eggs and 10-20 million walleye eggs every spring. The resulting production from these eggs are used in tribal, state, and federal fish restoration and management programs. A percentage is also returned to their collection points in the upper Mississippi River to ensure healthy fish populations. The Genoa NFH is in a very strategic location, directly on the Mississippi River. The station is one of a very few hatcheries that maintains the capability to collect and utilize wild cool and warm water fish stocks for brood stock can perform responsible collections for ongoing research projects.
Doug Aloisi, Genoa NFH



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A young lady from a local school group assists with spawning a northern pike at the Genoa National Fish Hatchery.

Have Fish will Travel!

For the second year, Iron River National Fish Hatchery (NFH), Ashland Fishery Resources Office (FRO), and Whittlesey Creek National Wildlife Refuge attended the Trout Unlimited Fishing Expo with fish in tow! Trout Unlimited held their annual Fishing Expo in Ashland, Wisconsin on April 10th. The auction, chili and bake sale, and various information, art booths, and Agency Fair drew a crowd of sportsmen and women. This annual event helps the local chapter of Trout Unlimited raise funds for projects such as habitat restoration.

Iron River NFH set up a booth with information about the hatchery, fishing and stocking, as well as lake and brook trout fry, fingerlings, and brood fish. People were drawn to the "sleeping" fish that were given an anesthetic. The anesthetic helped to lessen the stress of the event on the fish and allowed people to get a closer look at them. The favorite attraction to the Iron River NFH booth was the fry guessing contest. Young and old were making guesses as to how many fry were in the bags to win a fishing prize package! Ashland

FRO highlighted the Fish Passage Program and presented interpretive material on fish passage problems and provided examples of area projects through photographs and a video tape.
Angela Baran, Iron River NFH
Mark Dryer, Ashland FRO

Students held Captive by River Fauna

The wandering minds of elementary school students suffering from spring fever were briefly held captive by a diverse variety of aquatic fauna that were exhibited by La Crosse Fishery Resources Office (FRO) Biologist Mark Steingraeber at "River Days" celebrations held in Galesville and La Crosse, Wisconsin. During the course of one day, over 120 Galesville students learned more about the life history, ecology, cultural significance, and economic importance of native freshwater mussels (America's Hidden Treasure) than they had ever imagined. Many of these students were also more than happy to personally immerse themselves in this subject (as well as the surrounding water) while collecting and scrutinizing a variety of live specimens brought in for close examination. On the following day, the creative imaginations of 60 La Crosse students, deemed "Champions of Learning", were captured by several small vials containing live water fleas and walleye larvae that were passed among the group during a brief discussion on aquatic food webs. This was followed by two action-packed videos featuring native paddlefish and exotic Asian carp, which led to concluding discussions of how these species

compete with one another for food resources and other negative impacts of aquatic nuisance species. As a result of these educational “celebrations”, more than 180 school children and their teachers will have a greater appreciation for the wide variety of life teeming below the surface of area rivers that they may visit during the summer while enjoying a well deserved vacation.

Mark Steingraeber, La Crosse FRO

The End of the Rainbow found at Fort McCoy Army Base

The Fort McCoy Army Base, located near La Crosse, Wisconsin, and the Genoa National Fish Hatchery (NFH) worked together to provide a tremendous recreational fishery for rainbow trout on the Fort McCoy Army Base this spring. Though the Fish and Wildlife Service and the Department of Army have cooperated for decades, due to shrinking budgets and changing priorities in the Fish and Wildlife Service’s Fisheries Program, the Department of the Army was forced to contract out its fish stocking program. After a few years of being supplied rainbow trout through local fish farms, quality control and a reliable supply of fish each spring proved inadequate.

As a result, the Department of the Army approached the Fish and Wildlife Service and asked if fish production could be resumed through a reimbursable agreement. Due to some recent modifications at the Genoa NFH, some coldwater rearing facilities were made available without impacting ongoing fish restoration programs. This April over 14,000 10 inch rainbow trout were distributed to 5 local ponds on the base.

Hundreds of outdoor enthusiasts fish for trout on the base, and hundreds of trout tags are sold through the Fort McCoy’s licensing program. Through this cooperative effort between two Federal agencies, the Fish and Wildlife Service is meeting its goal of building and fostering partnerships to increase recreational fishing opportunities on federal lands.

Doug Aloisi, Genoa NFH

Adopt-a-Highway Cleanup near the Jordan River National Fish Hatchery

On April 22, Jordan River National Fish Hatchery (NFH) did a springtime Adopt-a-Highway cleanup. After picking up trash from both sides of two miles of Highway 131, 26 trash bags were filled for later pickup by the Michigan Department of Transportation. This program provides an opportunity to reach the local community through the road signs that declare our commitment to environmental stewardship. We owe a special thanks to 6 eighth and ninth grade students from Concord Academy of Antrim County, Michigan who volunteered to help us: Brittany Carpenter, Amy Churchill, Donald Dubay, Nicole Malbouef, Amanda VanBlooy, and Laura Vasher.

Wayne Talo, Jordan River NFH

Fisheries Friends Group host Kids Fishing Day at the Genoa National Fish Hatchery

The Friends of the Upper Mississippi Fishery Services and the 3 upper Mississippi River Fish and Wildlife Service fisheries field stations (Genoa National Fish Hatchery (NFH), La Crosse Fishery Resources Office, La Crosse Fish Health Center)

teamed up to host its annual kids fishing day at the Genoa NFH. A total of 75 kids and their parents arrived on a beautiful Wisconsin spring day to learn more about fish and fishing. They also got a chance to try their luck in a hatchery pond stocked with 650 rainbow trout raised on site.

The kids were first sent through learning stations where they experienced jig tying sponsored by a local fishing club, fish identification and fish habits, and then participated in a casting contest. After an hour of learning, new found skills were put into practice in the fishing pond. A total of 125 trout between 9 and 14 inches were caught. A light lunch and door prizes was provided by local and national sponsors. No child left without something to remember the day by, and plenty had new stories to tell of the one that didn’t get away!

Doug Aloisi, Genoa NFH



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A happy angler shows off her catch at the Kids Fishing Day event at Genoa National Fish Hatchery which was hosted by the Friends of the Upper Mississippi Fishery Services.

Cooperation with Native Americans

Red Cliff Band of Lake Superior Chippewa Indians approves Plan for Sea Lamprey Control in Red Cliff Creek

Personnel from the Fish and Wildlife Service's Sea Lamprey Management Program, located in Marquette, Michigan, presented an integrated management plan for controlling sea lampreys in Red Cliff Creek, at the April 20 Tribal Council meeting of the Red Cliff Band of Lake Superior Chippewa Indians. The Red Cliff Tribal Council approved the plan which included: 1) a lampricide treatment in June 2004, 2) intensified trapping of spawning-phase adults in spring 2004, 3) eventual elimination of "mark-recapture" efficiency studies during spring trapping operations, and 4) a draft letter from the Tribal Department of Natural Resources to the Great Lakes Fishery Commission expressing an interest in having a sea lamprey barrier constructed on Red Cliff Creek.

Terry Morse, Marquette Biological Station



-GLFC

Invasive, parasitic sea lamprey are attached to this native lake trout. Sea lamprey control staff recently presented a plan to the Red Cliff Band of Lake Superior Chippewa Indians to treat Red Cliff Creek for lampreys.

Technical Fisheries Committee provides Final Harvest Limits for Lake Whitefish and Lake Trout

On April 28, the Technical Fisheries Committee (TFC) agreed on final lake trout harvest limits for 1836 Treaty waters of lakes Superior, Michigan and Huron. This action completed a primary role of the TFC and its Modeling Sub-Committee (MSC), the annual development of recommended safe harvest limits for State and Tribal lake whitefish and lake trout fisheries in these Great Lakes waters. 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. The interagency TFC reviews the recommendations of the MSC and approves the numbers, then provides the recommended limits to the parties of the 2000 Consent Decree. Final recommended harvest limits for lake whitefish were provided to the Parties on December 15, 2003. Alpena Fishery Resources Office (FRO) Project Leader Jerry McClain Chairs the TFC and Treaty Fisheries Unit Leader Aaron Woldt Co-chairs the MSC. Interagency participation in the Modeling Sub-Committee and the Technical Fisheries Committee ensures cooperation and agreement for establishment of safe harvest limits for lake whitefish and lake trout. The effort fulfills the Fish and Wildlife Service trust responsibilities to the Great Lakes natural resources (lake trout rehabilitation effort) and to the 1836 Treaty Tribes.

Jerry McClain, Alpena FRO



Lake whitefish (above) and lake trout (below) are important fisheries in the 1836 Treaty Waters of lakes Superior, Michigan, and Huron. The interagency Technical Fisheries Committee provides recommended safe harvest limits to the parties of the 2000 Consent Decree.



-USFWS photos

Ashland Fishery Resources Office assists with processing Tribal Grants

Frank Stone from the Ashland Fishery Resources Office (FRO) was recently assigned to a ten day project at the Great Lakes/Big Rivers Regional Office to assist with the processing of 21 Tribal Wildlife (TWG) and Tribal Landowner Incentive Program (TLIP) grants. Most of his time was devoted to contacting the tribal representatives that needed to submit additional compliance information. These forms and project statements were then

organized and a check off list was developed to prepare the grants for additional review by the Division of Federal Aid. During Frank's short detail, significant accomplishments were made in the processing of 12 of the 21 total grants.

The 2003 grant programs have tribal dedicated funds and are similar to other programs to assist partners to undertake fish and wildlife conservation projects. TWGs awarded to tribes in Region 3 included 17 awards totaling \$2,425,586 that had in-kind non Federal match of \$691,285 for a total value of these projects of \$3,116,871. TLIP Grants awarded to tribes included 4 awards totaling \$556,413 and included an in-kind non Federal match of \$694,491 for a total value of these projects of \$1,250,904.

Frank Stone, Ashland FRO

Tribal Wildlife Grants awarded to tribes in Region 3 included 17 awards totaling \$2,425,586 that had in-kind non Federal match of \$691,285 for a total value of these projects of \$3,116,871. Tribal Landowner Incentive Program Grants awarded to tribes included 4 awards totaling \$556,413 and included an in-kind non Federal match of \$694,491 for a total value of these projects of \$1,250,904.

Fish and Wildlife Service continues Assistance With Mille Lacs Walleye Marking Study

On Mille Lacs Lake, Minnesota, the Fish and Wildlife Service continued assistance with a multi-year cooperative walleye marking study between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Minnesota Department of Natural Resources. Five electro-fishing boats participated in the study, two from GLIFWC, one from the Fond du Lac tribe, one from LaCrosse Fishery Resources Office (FRO), and one from Ashland FRO. A total of 14,000 adult walleye were tagged in 9 nights during walleye spawning in late April. The objectives of the study are: 1) obtain an independent estimate of the adult walleye population and mortality to supplement state and tribal population modeling; 2) determine angling and netting size selectivity; 3) determine if walleye return to the same spawning site each year, and if so, to what extent; 4) identify harvest impacts on spawning sites; 5) determine seasonal movements and spatial distribution of adult walleyes; and 6) identify walleye mortality by area. Electrofishing crews have tagged a total of 46,000 walleyes in Mille Lacs Lake since the study began in 2002.

Gary Czypinski, Ashland FRO



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This walleye is being tagged as part of a marking study on Mille Lacs Lake in Minnesota conducted by the Fish and Wildlife Service, Great Lakes Indian Fish and Wildlife Commission, and the Minnesota Department of Natural Resources.

Lake Whitefish Scales aged and entered into a Database for the Bay Mills Indian Community under the 1836 Treaty Fishery Assistance Program

Under the 1836 Treaty Fishery Assistance Program, staff at the Ashland Fishery Resources Office (FRO) aged approximately 1,200 lake whitefish scale samples and entered the information into a database. Samples were collected from tribal commercial fishers by staff of the Bay Mills Indian Community Natural Resources Department. Scales were aged and entered into a database with corresponding biological information. This information will be used to determine growth, size, and age structure of lake whitefish populations. Information from these samples is used to model the lake whitefish populations and aid to allocate the resource between tribal and state commercial fishers.

Jonathan Pyatskowitz, Ashland FRO

Leadership in Science and Technology

Clamming around at Genoa National Fish Hatchery helps recover an Endangered Species

In Wisconsin, signs of spring include leaves and dandelions exploding into life, and at Genoa National Fish Hatchery (NFH) another sign of spring is people buzzing around the hatchery's Clam Palace with buckets of fish during the annual Higgins' eye pearlymussel infestation week. This time of year is when volunteers from other federal and state agencies assist the Genoa staff by being part of the bucket patrol. Being a bucket patroller consists of monitoring buckets of fish that have received a high concentration of mussel larvae called glochidia.

Large air stones are used to keep the glochidia suspended in the bucket to allow them to attach to the fish's gills as the fish breathes. While attached to the fish's gills, the glochidia receive nutrients needed to complete their metamorphoses into free living juvenile mussels. Over 70 adult Higgins' eye pearlymussels were collected from three sites, one site on the St. Croix River and two sites on the Mississippi River. These mussels were collected a week prior to the infestation when SCUBA divers from Genoa NFH, Minnesota Department of Natural Resources (DNR), and Illinois DNR scoured the bottoms of the St. Croix and the Mississippi rivers for gravid (egg bearing) females.

Over 8,400 fish were infested with glochidia at a target rate of 250 glochidia per fish. Over 2 million potential juveniles could be produced this summer from the "hosts". A portion of these fish will be released into Mississippi River tributaries in Wisconsin and Iowa.

The remaining fish will be placed in cages in pools 4, 11, 12, and 16 of the Mississippi River. Placing fish in cages helps provide the Higgins' eye pearlymussels protection from predators such as carp and suckers, and provides the mussel team an opportunity to quantify their success. This fall the cages will be monitored for juvenile production. The Higgins' eye pearlymussel cage propagation effort produced over 7,000 juveniles in 2003.

Tony Brady, Genoa NFH



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A bucket patrol works hard to inoculate 8,400 fish with Higgins' eye pearlymussel glochidia (mussel larvae) at the Genoa National Fish Hatchery. Part of the life cycle of native mussels is a parasitic phase where mussel larvae attach to the gills of certain "host" fish where they receive nutrients needed to complete this part of their life cycle.

Results of Study to evaluate Survival of Enhanced Quality Lake Trout Presented

Fishery Biologist Aaron Woldt, Project Leader Jerry McClain, and Assistant Project Leader Tracy Hill of the Alpena FRO attended the Great Lakes Fishery Commission Upper Lakes Meeting from March 22-25 in Ypsilanti, Michigan. Woldt presented results from the Lake Huron Enhanced Quality Study, which compared coded-wire-tag (CWT) returns of

standard and enhanced quality Lewis Lake strain lake trout yearlings reared at Jordan River National Fish Hatchery (NFH), to the Lake Huron Committee. For this study, paired plantings of standard quality (approx. 20 per pound) and enhanced quality (approx. 10 per pound) CWT lake trout were planted at each of four sites in both 1996 (1995 year class) and 1998 (1997 year class). The four sites stocked with experimental lake trout from north to south were Adams Point, Middle Island, Sturgeon Point, and Point Au Barques. For each year class, approximately 30,000 standard quality and 30,000 enhanced quality lake trout yearlings were planted at each stocking site.

Since 1996, these CWT lake trout have been captured in survey, commercial (gill-net and trap-net), and recreational gears. Woldt showed two types of analyses: 1) an effort independent analysis using Chi Square methods to analyze returns from all sources and 2) an effort dependent analysis using the Wilcoxon Test for Matched Pairs to analyze only survey caught fish. Both analyses used return data through 2003. Woldt discussed the pros and cons of the two analysis techniques and compared results of the Lake Huron Study to those of the Lake Michigan Study. Overall, the results of the Lake Huron study using either analysis technique showed that the enhanced quality fish survived significantly better than the standard quality fish, although significant differences in survival were not detected for each site and each year class using the Wilcoxon Test for Matched Pairs. Woldt stressed that the Lake Huron study results only pertain to Lewis Lake fish reared

at Jordan River NFH. A manuscript summarizing the results of the Lake Huron Enhanced Quality Study is currently being prepared. Evaluating the effects of hatchery rearing procedures allows the Fish and Wildlife Service to better support lake trout restoration efforts by providing the best quality hatchery product possible. This outcome is consistent with the Fish and Wildlife Service's goal of building and maintaining self-sustaining populations of native fish species.

Aaron Woldt, Alpena FRO

Protocol implemented to minimize the Effects of Lampricide Treatments on Rare Organisms

Risk management staff completed the "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 2004." The protocol was based on consultations with personnel of the Fish and Wildlife Service's Endangered Species Program and state jurisdictional agencies during the treatment permit process. The protocol included a summary of streams scheduled for treatments; details of known locations of listed species, GIS map, procedures to protect and avoid disturbance; and an appendix with fact sheets that contained an image, description, and preferred habitat of the listed species in Minnesota, Wisconsin, Michigan, and New York.

The protocol was distributed to 50 field crews to minimize the risk to 16 federal and/or state-listed

endangered, threatened, candidate and special concern species in or near 25 of the 47 streams scheduled for treatments. All 9 federal and state-listed species were designated in Michigan and included the bald eagle, dwarf lake iris, eastern massasauga rattlesnake, Houghton's goldenrod, Karner blue butterfly, Kirtland's warbler, Michigan monkey-flower, piping plover, and Pitcher's thistle. An additional 7 state-listed species also were designated in Michigan and included the Blanding's turtle, channel darter, common loon, common tern, eastern box turtle, lake sturgeon, and wood turtle.

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 \$4-6 billion/year to the region). The Fish and Wildlife Service delivers a program of integrated sea lamprey control in the United States waters of the Great Lakes as a contracted agent of the Great Lakes Fishery Commission.

John Weisser, Marquette Biological Station

Experimental Assessment Gill Net Construction

Beginning in March, Biologists Scott Koproski and Adam Kowalski of the Alpena Fishery Resources Office (FRO) began building experimental assessment nets that will be used during the 2004 independent lake whitefish survey in 1836 Treaty waters. These nets are slightly different than standard assessment nets that have been used in past whitefish assessments.

The standard assessment nets have lead weights secured directly to the frame of the nets. With

leads attached to the frame, the standard assessment nets fish the bottom 6 feet of the water column. Most gill net surveys fish in this manner. Due to high abundances of lake trout in northern Lake Huron, significant numbers of lake trout are captured in standard bottom net sets. To reduce lake trout by-catch, the experimental nets do not have leads attached directly to the frame of the net. Instead, they have a three foot dropper line from the bottom of the frame that is tied to a continuous piece of lead core rope. This results in a "mesh free" area at the bottom 3 feet of the water column. The reason for having this "mesh free" area is that lake trout typically orient themselves directly on the bottom. By suspending the nets 3 feet from the bottom we hope to avoid unnecessary lake trout captures during whitefish assessments. Both lake trout and whitefish are native fish species of the Great Lakes. The Alpena FRO is responsible for fulfilling the Fish and Wildlife Service's obligations as a signatory of the 2000 Consent Decree which requires the Fish and Wildlife Service to obtain lake whitefish population data for stock assessment models. The experimental gill nets have been built in order to obtain whitefish data without adversely affecting efforts to rehabilitate lake trout in Lake Huron. Both the standard and experimental nets will be fished during 2004 stock assessment activities for comparison.

Scott Koproski, Alpena FRO

Aquatic Habitat Conservation and Management

Nicholls/Koshak Wildlife Habitat Restoration Completed

Construction is complete on the Nicholls/Koshak Wetland Project. This Partners for Fish and Wildlife project involved two separate landowners and consists of one wetland restoration site totaling one wetland acre. In addition, the agreement includes protection of 1,000 feet of stream and 7.2 acres of riparian corridor. The wetland portion of the project took place in an area that was once a beaver pond that drained after the beavers ate themselves out of house and home. The site was overtaken by reed canary grass and the landowners were interested in reducing the abundance of this invasive species. The nearby stream remained untouched by the wetland restoration and will benefit from the control of the reed canary grass upstream, an additional sediment basin during runoff, and the 10 years of protection provided by the Partners for Fish and Wildlife Habitat Development Agreement.

Tom Nicholls, owner and operator of the Fifield Nature Center (Center), will use the site in educational programs. The area will be used as part of the Center's program to help teach people the importance of wetlands, wildlife ponds, and the governmental processes that must be followed to preserve and protect them. It will also be used as a research area by scientists and students to study the value of habitat restoration and conservation. The project will provide habitat for a variety of wildlife including waterfowl, song birds, deer, swallows, kingfishers, herons, salamanders, snakes, and muskrats. In addition, several

species of frogs such as the wood, chorus, green, tree, and spring peepers will benefit from the wetland, stream, and riparian sites. Partners in the project were Tom Nicholls and Alan Koshak (landowners), Price County Land Conservation District, Natural Resources Conservation Service, Wisconsin Department of Natural Resources, and the Fish and Wildlife Service.

Ted Koehler, Ashland FRO



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The Nicholls/Koshak Wetland Project has been completed which restores 1 wetland acre and protects 1,000 feet of stream and 7.2 acres of riparian corridor. Partners in this Price County, Wisconsin project includes landowners Tom Nicholls and Alan Koshak, Price County Land Conservation District, Natural Resources Conservation Service, Wisconsin Department of Natural Resources, and the Fish and Wildlife Service.

Polander Lake Fishery Survey

La Crosse Fishery Resources Office (FRO) surveyed Polander Lake on the Upper Mississippi Wildlife and Fish Refuge - Winona District. The study is designed to determine fish usage in Polander Lake's new island complex. These islands were constructed as part of the Habitat Rehabilitation and Enhancement Project (HREP) on the Upper Mississippi River. Several HREP's have islands as a feature built into the project. The purpose of the

islands is to help break up wind fetch which should reduce suspended sediments. The islands also create slack water habitat which promotes vegetation growth which provides food and cover for both fish and wildlife and also nesting habitat for waterfowl and turtles. Fishery monitoring will be repeated during the summer and fall, which will help determine seasonal use. Both electro-fishing and trap netting is being conducted at fourteen sites. The fish collected are weighed, measured and released. This project is a great follow up to the paddlefish work that was conducted last year.

Scott Yess, La Crosse FRO

Lost Lake Woods Association Wetland Restoration

Biologist Heather Enterline met with Jim Hazelman (East Lansing Private Lands Office), contractors Sharboneau & Son, and Lost Lake Woods Association manager, committee member, and maintenance crew to review final plans for two large wetland restoration projects scheduled for construction in June. The partnership between the Fish and Wildlife Service, Ducks Unlimited, and Lost Lake Woods was re-affirmed and logistical matters was discussed. The two projects will restore 313 acres of wetlands in Alcona County, Michigan. Wetland dependant species such as some migratory birds, threatened and endangered species, reptiles, and amphibians will all benefit from these large wetland restorations. Located in isolated, forested lands on a 10,000 acre parcel of property, these restorations should provide quiet nesting and rearing habitat for waterfowl.

Heather Enterline, Alpena FRO

Workforce Management

Job Shadowing at Mississippi River Fishery Stations

Natasha Nelson, a member of the junior class at Bangor High School in Wisconsin with a keen interest in biology, spent a long anticipated and enjoyable day on a job-shadow assignment to learn what fishery biologists do on a typical spring day. Natasha spent her day at the Genoa National Fish Hatchery (NFH) amidst biologists from the Genoa NFH, La Crosse Fishery Resources Office (FRO), Twin Cities Field Office, Wisconsin Department of Natural Resources (DNR), and Minnesota DNR and played an active, fun-filled, and wet role in helping to inoculate thousands of host fish with Higgins' eye pearl mussel glochidia (larvae) — a task she thoroughly enjoyed! Another highlight of her day was listening to the biologists' lunchtime discussion of strategies to begin propagation efforts for the Endangered winged mapleleaf mussel in 2004. As Natasha described it, "It was so unlike high school because everyone listened to what everyone else had to say." Natasha was so enthusiastic about her experiences at the hatchery that by day's end, she was inquiring about Fish and Wildlife Service employment opportunities for this summer. With career exploration experiences like this, it will not be as difficult to fill the big shoes (or long shadows) of dedicated biologists in the years to come.

Mark Steingraeber, La Crosse FRO



-USFWS photo by Mark Steingraeber

Natasha Nelson, a Bangor High School student, inoculates host fish with Endangered Higgins' eye pearl mussel glochidia (mussel larvae) at the Genoa National Fish Hatchery during a job-shadow assignment.

Ashland Fishery Resources Office participates in Junior High Mentoring Program

Ashland Fishery Resources Office (FRO) had the opportunity to host junior high students James Grahek and Bobby Stephenson on a job-shadowing experience. Students from Mr. Bebeau's eighth grade class had the opportunity to shadow adults performing their job duties, and these two students wanted exposure to the natural resources field. James was able to assist Fishery Biologist Glenn Miller and Student Temporary Employment Program student Jessica Krajniak, along with Wisconsin Department of Natural Resources Fisheries Technician Bill Blust, on Whittlesey Creek searching for coaster brook trout fry that were planted in artificial redds and astroturf bundles in December of '03 and January of '04. This egg plant is part of a rehabilitation project aimed at restoring coaster brook trout to the Whittlesey Creek watershed, along with the Chequamegon Bay and Lake Superior area. On this particular day the crew was able to find fry

throughout Whittlesey Creek and the North Fork of Whittlesey Creek, giving the crew and partners involved a glimmer of hope in seeing good returns on this project.

Bobby assisted Project Leader Mark Dryer and Biologist Jonathan Pyatskowitz with spring lake sturgeon assessments on the Bad and White rivers. He was able to help handle lake sturgeon that were captured with large mesh gill nets as they made their spawning run up the river. Fish were captured, measured, weighed, tagged with Floy and PIT tags, and then released. Tagged fish that are subsequently captured on their way back down river after spawning are used to estimate spawning population size using a mark-recapture population estimate. It was a positive experience with 15 sturgeon being captured. Bobby was awed at the size of the fish and it was the first time that he had seen a sturgeon. The FRO was very happy to participate in this program and the employees are looking forward to future outings with students in the Ashland, Wisconsin area.

Glenn Miller, Ashland FRO



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Job-shadow student Bobby Stephenson is in awe when he sees this large sturgeon captured during an assessment on the Bad River in Wisconsin. Ashland Fishery Resources Office staff enjoy participating in this program.

Conservation Career Diversity Intern coming to La Crosse Fishery Resources Office

The Conservation Career Diversity Intern program is a cooperative agreement between the Fish and Wildlife Service and the Environmental Careers Organization (ECO) that provides internship opportunities for students and recent graduates, particularly those from culturally diverse backgrounds, to experience environmental conservation. The mission of the ECO is to protect and enhance the environment through the development of diverse leaders, the promotion of careers, and the inspiration of individual actions. ECO has been a national leader since its inception in 1972 in diversifying the environmental field, and creating a long-term impact and permanent change on the nation's environmental community. This is the inaugural year of the Fish and Wildlife Service/ECO partnership to enhance the diversity in our workforce. Some of the other agencies working with ECO include: U.S. Environmental Protection Agency, Bureau of Land Management, U.S. Geological Survey, National Oceanic and Atmospheric Administration, Yale University, and numerous non-governmental organizations.

Over 300 talented undergraduate students from dozens of institutions spanning the country applied for the 30 positions available this summer. Because of this extremely competitive situation, we received the names of very high caliber students to interview. The internships are for twelve weeks and the associates receive a stipend from ECO of \$300 per week. The interviews are complete and we are waiting for acceptance of the selected

candidate. Other Region 3 Fishery Offices involved in this program are the La Crosse Fish Health Center, Genoa National Fish Hatchery (NFH), and Neosho NFH. We are all anxious to welcome the interns to our offices and share our conservation experiences with these future leaders.

Pam Thiel, La Crosse FRO

New Volunteer for the Jordan River National Fish Hatchery

Andrea Sanders began volunteering in April at the Jordan River National Fish Hatchery (NFH). She has been doing excellent work helping with fish culture duties. She brings with her some previous experience in aquaculture, having been raised around private fish hatcheries managed by her father. Andrea plans to attend North Central Michigan University this fall and will be majoring in a two-year transfer program called Natural Resources Management. After finishing her two-year degree, she hopes to transfer to a four-year institution to earn a Bachelors degree in Fisheries Management. The NFH benefits tremendously from full time volunteers like Andrea that may donate hundreds of hours of volunteer service.

Wayne Talo, Jordan River NFH



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Andrea Sanders is the new long-term volunteer at the Jordan River National Fish Hatchery.

Enlighten the Shadows

As fishery and wildlife biologists that work for the Fish and Wildlife Service, we sometimes take our exciting careers for granted. It is when we see the faces of younger generations light up at the discovery of the type of work we perform, that we truly appreciate the impact we have on the world we live. As part of the Junior Achievement Program at La Crescent Middle School in La Crescent, Minnesota, 6 eighth grade students job shadowed three different Fish and Wildlife Offices on April 16th for half a day. The La Crosse Fishery Resource Office (FRO), La Crosse Fish Health Center (FHC) and La Crosse District of the Upper Mississippi National Wildlife and Fish Refuge revealed what it was like to work as fishery and wildlife biologists. The eager students viewed equipment such as taggers, nets, boats, microscopes in the laboratories, offices, and garages of the Fish and Wildlife Service Resource Center in Onalaska, Wisconsin. Students peered into microscopes to learn what healthy fish cells looked like compared to fish cells that had been infected with a virus in the Virology Lab. A live electroshocking demonstration was provided by the La Crosse FRO to give students an idea how fish are sampled. Interested "future biologists" were encouraged to contact the Fish and Wildlife Service in the summer months to gain hands-on experiences by volunteering.

Heidi Keuler, La Crosse FRO

Great Lakes - Big Rivers Regional Fisheries Offices

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Fish Lines

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Questions or comments concerning *Fish Lines* can be addressed to Dave Radloff, 612/713-5158 or email at david_radloff@fws.gov



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A Glimpse into our Proud Past

Bud Mundsack, Genoa NFH, empties a hoop net during the spring spawning run on the upper Mississippi River. For cool water fish species, such as walleye and northern pike, the hatchery's production program is dependent on wild brood stock. (03/1986)

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