



U.S. Fish & Wildlife Service

# Inside Region 3 Fisheries Program

*Leadership in Conserving, Enhancing and Restoring  
Aquatic Ecosystems*

Special Edition  
January 2003

## *Inside this Special Edition*

*Regional Director's Message*

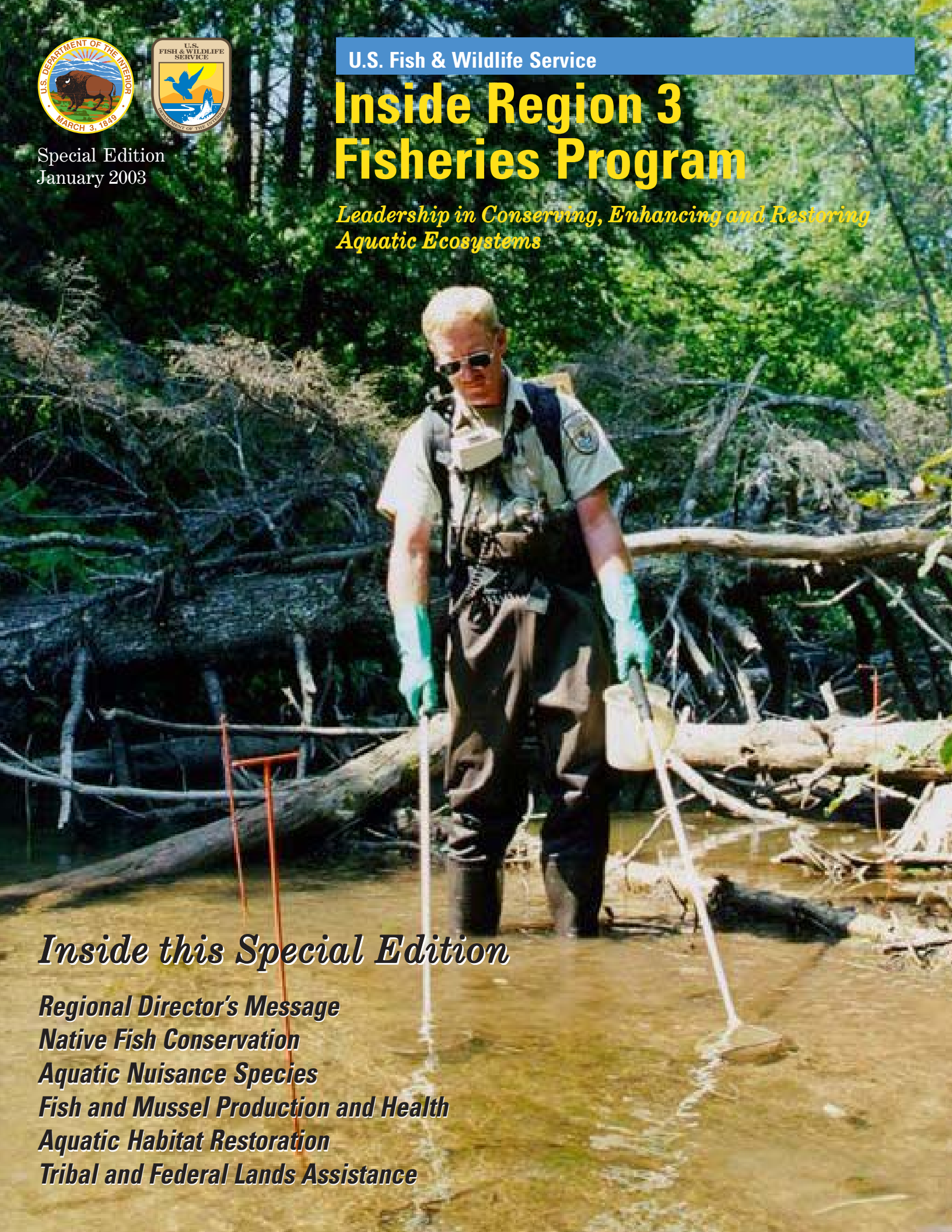
*Native Fish Conservation*

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# Great Lakes - Big Rivers Regional Fisheries Program

## *Superior Accomplishments and New Challenges*

Simply judging by our region's name, the Great Lakes – Big Rivers Region, it would be safe to say that water resources are an extremely important aspect of life here in the Midwest. According to the 2001 National Survey on Fishing, Hunting and Wildlife Recreation, 9.6 million people fished and spent more than \$7.8 billion in our region alone.

Our region contains significant portions of the most ecologically, culturally and economically important lake and river systems in the country. Because of this, it should be no surprise that the Great Lakes-Big Rivers Fisheries Program is a critical component of our overall mission.

The Great Lakes-Big Rivers Region includes four of the Great Lakes and most of the upper Mississippi River Basin, including portions of the Missouri and Ohio rivers. In all, the region encompasses 450,000 square miles and a population of more than 54 million people.

The vision of the Service's Fisheries Program is *working with part-*

*ners to restore and maintain fish and other aquatic resources at self-sustaining levels and support federal mitigation programs for the benefit of the American public.*

To accomplish this mission, the regional program focuses on restoration of interjurisdictional lake trout, brook trout, lake sturgeon and paddlefish; recovery of declining mussels; operation of national fish hatcheries; fish health operations; aquatic nuisance species management; Great Lakes sea lamprey control; fisheries conservation on national wildlife refuges; aquatic habitat restoration; and, implementation of Native American tribal trust responsibilities.

On-the-ground work within the region is accomplished by more than 295 fisheries professionals at five national fish hatcheries, six fishery resources offices, two fishery coordination offices, two sea lamprey control biological stations and one fish health center strategically located across the region.



**Regional Director Bill Hartwig**

The program has accomplished great things, including a 90-percent reduction in sea lamprey populations, reestablishment of self-sustaining populations of lake trout in Lake Superior and successfully raising endangered fish and mussels at national fish hatcheries.

Thanks to the hard work of our many dedicated employees, we will continue to improve on these accomplishments.

However, we also face new challenges. Threats from aquatic nuisance species such as zebra mussels, round gobies and the newest threat, Asian carp, will put great strains on our native fish and their habitats.

I am confident that by continuing to work with our state, tribal and nongovernmental partners, we can meet these new challenges and continue to maintain healthy native fish populations for ourselves and future generations.

This Special Edition of Inside Region 3 provides a brief overview of the accomplishments and on-going work of our dedicated fisheries staff.

**Bill Hartwig**  
**Regional Director**  
**Great Lakes - Big Rivers Region**



- USFWS photos

Service fishery biologists work in the early-morning hours to study interjurisdictional fish and other species of concern.

# Great Lakes - Big Rivers Regional 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 and coaster brook trout. Hatcheries also provide technical assistance and sources of fish and eggs to cooperating agencies in pursuit of their aquatic resource management goals, 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 of native mussels.

## Sea Lamprey Control Stations

Sea Lamprey Control Stations assess and control sea lamprey populations throughout the Great Lakes. This program is administered through funding from the State Department and 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 implement-

ing 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.

## Fishery Coordination Offices

Fishery Coordination Offices work with Canadian and state natural resource agencies, county, local and tribal governments and other public and private organizations to provide crucial facilitation and interagency coordination functions affecting the management of native fishes and aquatic habitats.

Great Lakes - Big Rivers Region Fisheries Field Offices



# Native Fish Conservation

*Providing Leadership to Conserve Nationally Significant Native Fish Stocks*

## Paddlefish

Paddlefish stock assessments on the Middle Mississippi drainage and restoration programs are continuing to be developed. More than 1.2 million hatchery-reared and 10,000 wild-ranging paddlefish have been coded-wire tagged and released.

Service facilities are monitoring the data collected from these tagged fish and are using the information to develop reports and plans that will help resource agencies improve their restoration planning.

The Service also produced 600,000 paddlefish eggs and fry as part of a restoration program for the Oolagah Federal Reservoir.



- USFWS Photo

**More than 1.2 million paddlefish have been tagged and are being monitored as they move throughout the Mississippi River drainage. This effort was made possible through long-standing, effective partnerships with state, federal and nongovernmental organizations.**

## Coaster Brook Trout

The coaster brook trout is an anadromous form of brook trout that spends part of its life in the nearshore waters of the upper Great Lakes. Once abundant and widespread, they are big, colorful, highly sought after sport fish willing to hit flies, live and artificial baits. Historically, most of Lake Superior's 3,000 miles of shoreline and tributary streams supported fishable coaster populations. In the mid-1800s, the fishery attracted

anglers from around the world, and unregulated fishing decimated coaster stocks. In-stream habitat loss due to wide-scale logging further reduced numbers and prevented stocks from recovering. By the mid-1900s only a handful of tiny remnant stocks still existed.

Service biologists worked with staff from resource agencies in Canada and the U.S. to develop the Brook Trout Rehabilitation Plan for Lake Superior. The plan calls for protection and rehabilitation of coasters in as many of their original habitats as possible. Resource agencies gather information from the remaining wild populations. To bring back the "little salmon of the springs" three approaches are being used: protection from overharvesting of remaining stocks; rehabilitation of spring-fed areas of streams; and, redesign or removal of dams blocking access to those streams.

**Coaster brook trout fry, raised from eggs collected off Isle Royle, are transferred from Iron River National Fish Hatchery and stocked at specific locations in Lake Superior.**

The Service has surveyed Isle Royale coaster populations since 1993. Much of the work has been conducted in association with egg collection from coaster populations in Tobin Harbor and Siskiwit Bay. Eggs are collected and brought to national fish hatcheries to serve as a "safety deposit box" and preserve the genetic material of remnant populations and for development of broodstocks. Service employees collected wild coaster eggs on Isle Royale National Park to develop captive spawning populations capable of restoring this species to Lake Superior waters.

In 2001, approximately 205,000 coasters were stocked in streams at Isle Royale and Pictured Rocks National Parks as well as on the Keweenaw Bay Indian Community.

Biologists are also coordinating with the U.S. Forest Service and the Michigan Department of Natural Resources to develop a sampling and analysis plan for coaster brook trout in northern Lake Michigan.



- USFWS photo

# Native Fish Conservation

*Providing Leadership to Conserve Nationally Significant Native Fish stocks*

## Lake Sturgeon

Native Americans revered the lake sturgeon as an important part of their culture that provided food, oil, leather and other staples. In the 1800s, the sturgeon's economic value was recognized and commercial fishing of sturgeon intensified.

By 1900, commercial catches declined as the population plummeted. Populations continued to decline through the 1970s.

Over-harvesting, habitat loss, damming of tributaries and pollution all contributed to population declines.

Many lake sturgeon populations are imperiled in its historic range. Lake sturgeon are now protected

with strict harvest regulations in most of the waters of the Great Lakes.

Service lake sturgeon restoration activities in the upper Great Lakes and tributaries have resulted in several hundred fish being captured to gather information such as age, growth and health of the sturgeon. These fish are then tagged and released to help us monitor movements and gain a better understanding of the sturgeon's life cycle.

One new spawning site was identified and successful reproduction was documented in the White River and Lake Superior.

In addition, approximately 40,000



- USFWS Photo

**A fisheries biologist prepares to place an external tracking tag on a lake sturgeon. These tags allow biologists to monitor sturgeon movement.**

lake sturgeon were stocked on the Menominee and White Earth Reservations to help reestablish two inland lake populations.

## Pallid Sturgeon

Pallid sturgeon were listed as an endangered species in 1990. The Service worked with states and other partners to complete a project in the middle basin of the Mississippi River and the lower Missouri River resulting in biological data collected from seven wild pallid sturgeon.

The Middle Basin Pallid Sturgeon Recovery Work Group was developed to evaluate and prioritize research and recovery goals. In

addition, the first stage of a three-year cooperative project between biologists from Nebraska, Iowa, Missouri, U.S. Army Corps of Engineers and the Service was completed on the Missouri River with data from eight young-of-the-year sturgeon collected.

Most recently, as part of the restoration plan, 165 hatchery-raised pallid sturgeon were stocked in the Missouri River.



- USFWS Photo

**The Service is now raising and stocking pallid sturgeon to help recover this endangered fish.**



- USFWS photo

## Lake Trout

The movement of sea lampreys into the Great Lakes took a devastating toll on the native population of lake trout.

Thanks to aggressive lamprey control and lake trout stocking programs, Service biologists are currently monitoring restored lake trout populations in Lake Superior.

In fiscal year 2001, approximately 3.8 million lake trout were stocked in

the Upper Great Lakes at 44 sites with high restoration potential.

In 2000, an historic agreement was signed by the 1836 Treaty Tribes, the United States and the state of Michigan, resolving a 25-year dispute over the allocation of Great Lakes fisheries and establishing a collaborative, partnership-based approach to lake trout rehabilitation within the Great Lakes.

**In 2001, 9.6 million people went fishing and spent more than \$7.8 million on fishing-related equipment and activities in the region.**

## Selected Native Fish Conservation Accomplishment Reports

### Lower Missouri River Pallid Sturgeon Monitoring and Assessment

The Columbia Fishery Resource Office completed the first year of a three-year proposal to monitor pallid sturgeon in the Lower Missouri River. The first annual report was completed by Wyatt Doyle, fishery biologist, and submitted to the Northwest Division of the U.S. Army Corps of Engineers. The contract between Columbia FRO and the Corps is a direct result of the need for sturgeon monitoring established in the Biological Opinion and ongoing consultation of Missouri River operations. Fisheries staff targeted six sampling reaches along 170 river miles. Sampling consisted primarily of trawling to target larval and juvenile sturgeon. More than 4,000 fish from 11 families were collected in the extensive sampling effort.

Although no adult pallid sturgeon were collected, 198 shovelnose sturgeon and two lake sturgeon

provided information about sturgeon habitat preferences. Fourteen young sturgeon were collected. Four were identified as shovelnose sturgeon. The 10 remaining young sturgeon will be sent to Colorado State University's larval fish laboratory to determine species level identification. If these fish are pallid sturgeon, information essential to species recovery and river management will have been collected. *Joanne Grady, Columbia FRO*

### Cartersville FRO Helps States Develop Ohio River Paddlefish Management Plan

The Cartersville Fishery Resources Office worked closely with several Ohio River state natural resources agencies during fiscal year 2001 to advance the status of paddlefish management. Greg Conover, fishery biologist stationed at CFRO, provided state biologists from the Ohio River Fisheries Management Team

### Fast Fish Facts For FY 2001

Neosho National Fish Hatchery started the region's first Hatchery Friends group.

More than 150,000 people visited Region 3 fisheries field offices

More than 24,000 volunteer hours were logged at fisheries field offices

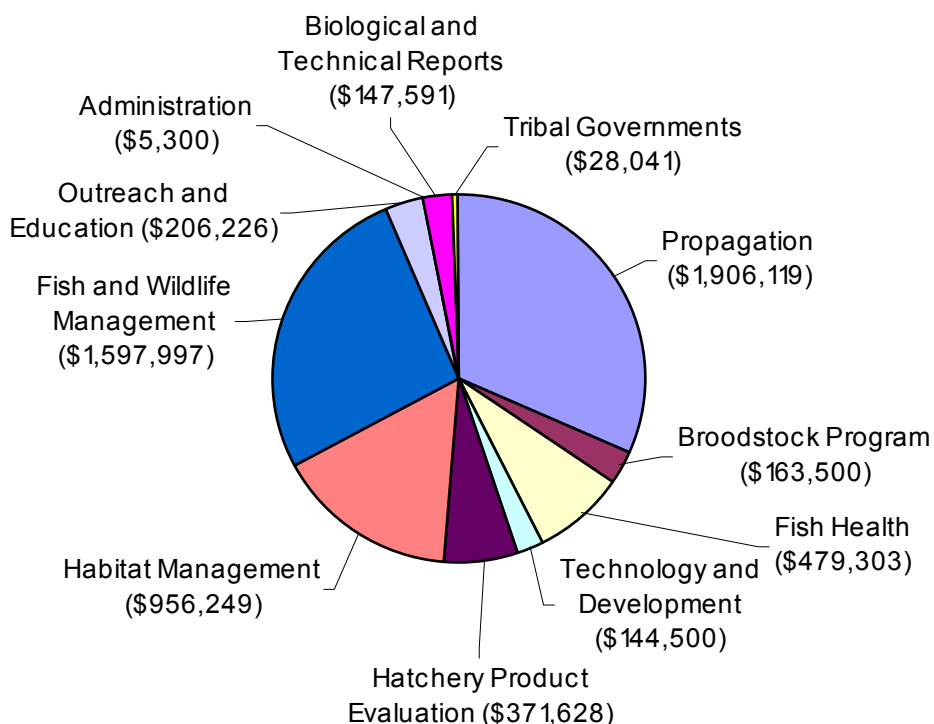
Region 3 hatcheries produced more than 11 million fish

(ORFMT) with a preliminary five-year data set of the Mississippi Interstate basin-wide paddlefish stock assessment.

CFRO worked closely with members of the ORFMT to help them use the database for making management decisions regarding the paddlefish population. This partnership has led to the development of a cooperative Paddlefish Management Plan for the Ohio River Basin. The document is a synopsis of past paddlefish management and a plan for cooperative management in the future.

This document will be used as a model for other Mississippi River Basin states to work in partnership to develop similar plans. Cartersville Fishery Resources Office will continue to provide comprehensive data sets and work with state biologists to understand this incredibly powerful tool. Successful management of paddlefish will be dependant upon these partnerships and basin-wide strategies and plans. *Chuck Surprenant, Cartersville FRO*

### Fiscal Year 2001 Expenditures by Activity



### Selected Native Fish Conservation Accomplishment Reports

## Service, Forest Service, DNR, and Lac Courte Oreilles Ojibwe Join Forces to Study Lake Sturgeon

On a cold and rainy day in early May, staff from the La Crosse Fishery Resource Office, assisted by the Forest Service and Wisconsin DNR, stood in the Chippewa flowage of northern Wisconsin searching for lake sturgeon.

Upstream from the Chippewa Flowage, a small hydropower dam on the East Fork of the Chippewa River blocks lake sturgeon from moving upstream into suitable spawning and nursery habitat. Lake sturgeon are known to inhabit the Chippewa Flowage downstream and reaches of the East Fork Chippewa River above the dam. However, little is known about habitat use, population status, or the effects of the dam on lake sturgeon. Area biologists are concerned that the inability of lake sturgeon to move upstream into additional habitat may limit reproduction and recruitment for this species of special concern.



A lake sturgeon with an external radio tag is displayed by (left to right), Wisconsin DNR biologist Jeff Scheirer, Forest Service hydrologist Jim Mineau, FWS fishery biologist Ann Runstrom and La Crosse FRO volunteer Don Schroeder.



- USFWS photos

Biologists prepare to attach an external radio tag through the dorsal scute of a lake sturgeon.

The La Crosse FRO, with funding from Region 3 Ecological Services, the U.S. Forest Service, Wisconsin Department of Natural Resources and Lac Courte Oreilles Band of Ojibwe, pooled resources and staff to implement a radio telemetry study and document habitat use and movement behavior of lake sturgeon in this reach of the Chippewa River system.

The team captured 22 lake sturgeon and tagged 14 with external radio tags. Lac Courte Oreilles Band personnel are currently tracking each fish and an automated data logger set up by La Crosse FRO is documenting the presence and absence of lake sturgeon at the tailwater of the dam. The Wisconsin DNR will analyze the data for use in the re-licensing process of the dam. *Ann Runstrom, LaCrosse FRO*

## Aquatic Nuisance Species

In fiscal year 2001, five fishery resources offices spent approximately \$400,000 monitoring and assessing aquatic nuisance species, with an emphasis on Eurasian ruffe and round goby in the Great Lakes Basin, Asian carp species in the Mississippi River Basin and zebra mussels throughout the region.

### Asian Carp

Because of their voracious appetites, grass carp were imported to control vegetation in commercial fish ponds. The species escaped and is a serious threat to native Mississippi River species.

Asian carp populations are being monitored at the Mark Twain National Wildlife Refuge and have been observed less than 22 miles from the electric barrier to Lake Michigan.

### Zebra Mussels

Unintentionally released in the Great Lakes from ballast water, zebra mussels moved into the Mississippi River system and are now moving into the St. Croix River.

To help protect the river, Service personnel participate in a Zebra Mussel Task Force organized to halt the spread of zebra mussels.

### Eurasian Ruffe

The Eurasian ruffe is another species unintentionally introduced into the Great Lakes. The Service implemented a control plan in the early 90s. Since 1996, this species has only recently expanded into Lake Michigan in limited numbers.

Sport licensing stations and live bait dealers contributed more than 2,300 volunteer hours providing anglers with aquatic nuisance species educational materials.



### Round Goby

Round goby were unintentionally introduced to the Great Lakes and have begun to move toward the Mississippi River through the Chicago Sanitary and Ship Canal system.

An experimental electrical barrier was placed in the Illinois River, downstream of the goby's location, to attempt halting the migration of this and other invasive species between the Mississippi and Great Lakes basins.

At this time, it is uncertain if the barrier will work. However, it is certain that goby populations are increasing.

**The round goby (left) is one of the aquatic nuisance species the Service is monitoring in order to develop effective ways to control their populations before they cause serious damage to native ecosystems.**



- Great Lakes Fishery Commission photo

**Sea lampreys feed on lake trout and other native fish, slowly killing them. With no predators in the Great Lakes, sea lamprey were able to quickly establish large populations and began to decimate native fish. Aggressive control techniques reduced sea lamprey numbers allowing lake trout populations to recover.**

### Sea Lamprey

Sea lampreys were introduced into the Great Lakes in the 1930s and decimated the native lake trout populations. The Service began sea lamprey assessment and control activities in the Great Lakes Basin through a cooperative program administered through the State Department and the Great Lakes Fishery Commission.

Through the combined efforts of the U.S. Fish and Wildlife Service, U.S. Geological Survey and Canadian Department of Fisheries and Oceans, sea lamprey populations have been reduced to about 10 percent of pre-treatment levels.

Continued control of sea lampreys is crucial to maintaining the \$4-6 billion annual commercial and sport fishery harvest in the Great Lakes.



## Selected Aquatic Nuisance Species Accomplishment Reports

### Integrated Sea Lamprey Control in the St. Marys River During 2001

The Marquette Biological Station conducted a program of lampricide and alternative control technologies in the St. Marys River to aid in the rehabilitation of lake trout and other fish to northern Lakes Huron and Michigan. During 1998-1999, the lampricide granular Bayluscide was applied to about 2,200 acres of the river in the U.S. and Canada - areas of dense populations of sea lamprey larvae. Assessments during 1999-2000 showed these applications removed about 45 percent of the population of larvae in the river. An additional 110 acres were treated in Canadian waters in 2001. Assessments to evaluate the success of the treatments are ongoing.

During 2001, alternative control technologies reduced the reproductive potential of the spawning population of adult sea lampreys in the river by about 90 percent. Traps at hydroelectric facilities in the U.S. and Canada captured and removed

about 45 percent of the spawning adults (11,000 of 25,000). In addition, about 31,000 sterilized male sea lampreys captured from 18 tributaries of Lakes Superior, Michigan and Huron were released into the river for an additional suppression of about 45 percent of the reproduction potential.

The international sea lamprey control program aids rehabilitation of the Great Lakes commercial and recreational fisheries, valued at more than \$4 billion annually. *John Heinrich, Marquette Biological Station*

### Zebra Mussel Monitoring on the St. Croix River

The Twin Cities Ecological Service Field Office, in cooperation with the LaCrosse, Wis., Fishery Resource Office, conducted three weeks of zebra mussel monitoring dives on the St. Croix River in cooperation with the National Park Service and the Great Lakes Indian Fish and Wildlife Commission. Dives were done during the weeks of



- Great Lakes Fishery Commission photo

Zebra mussels can attach themselves to native mussels and compete for food and habitat.

June 18, August 6 and September 24 on the lower 28 miles of the river.

Results showed a marked decrease in the abundance of both adult and reproductive size zebra mussels since the previous year. This reduces the threat of zebra mussels to both the winged mapleleaf mussel and the Higgins' eye pearly mussel in the St. Croix River. *Richard Rowse, Twin Cities FO*

## Historical Museum Invasive Species Display Helps Educate Public



- USFWS Photo

Sea Lampreys are one of the invasive species the Service provided the Bay County Museum for an educational display.

The Alpena Fishery Resources Office provided aquatic invasive species for a display in the Maritime Exhibit at the Historical Museum of Bay County in Bay City, Mich.

Species provided for display included sea lamprey, Eurasian ruffe, round goby, zebra mussels and rusty crayfish, all of which are found in nearby Lake Huron.

The exhibit, titled "Bay City: Sea Port to the World" features the ecology and history of the Saginaw River. The display will be part of the "Uses and abuses of the Saginaw River" program that focuses on reaching students and will run during April and May 2002, then

become a permanent part of the museum's collection.

The museum receives approximately 60,000 visitors annually for special events. Fishery Biologist Anjanette Bowen met with volunteers who will be staffing the exhibit to provide information on the invasives.

Public education is an important means of preventing the spread of invasive species. *Anjanette Bowen, Alpena FRO*

## Selected Aquatic Nuisance Species Accomplishment Reports

### Asian Carp Invade Mark Twain National Wildlife Refuge

Staff at Carterville Fishery Resources Office investigated a fish kill at Wilkinson Island on Mark Twain National Wildlife Refuge during late October and early November 1999. Wilkinson Island is located between Mississippi River mile 88 and 94 on the east side of the Mississippi River, approximately 20 miles south of Chester, Ill. The reason for the kill is still unknown, however, the inspection revealed the majority of fish were Asian carp with few native species present.

To obtain an estimate of species composition, a single pool approximately 12-feet by 40-feet was selected, and all individuals within the pool were identified and counted. Biologists found 157 silver carp, 30 common carp, 18 bighead carp, nine grass carp and five native fish representing four species.

The new Asian invaders, bighead, silver, and grass carp have the potential to cause major biological

damage to the aquatic ecosystems of the United States. Silver carp can reach a weight of five to six pounds in a single year enabling them to out compete native species and evade predators from an early age. Thousands of silver carp between 1.5 and 3 pounds, possibly this year's spawn, were examined at the Wilkinson Island fish kill. Reproduction and growth at this level represents a significant threat to the native species within the Mississippi River. If other backwater areas on the river support similar populations of Asian carp, the fish composition within the Mississippi River is going to change considerably. *Chad Stinson, Carterville FRO*

### Winter Diet of Chequamegon Bay Ruffe Identified, Will Help to Better Understand Invasive Species

Northland College biology students under the direction of Dr. Derek H. Ogle identified the stomach contents of seven large adult ruffe caught by anglers through the ice in Chequamegon Bay and a Red Cliff tribal commercial fisherman operating off the Bayfield Peninsula, Lake Superior waters.

The major diet components consisted primarily of scuds (Amphipoda) and larvae from midge flies (chironomidae). This is the first information relating to the winter diet of Eurasian ruffe in North America.

In the St. Louis River Estuary, 110 kilometers east of Chequamegon Bay, USGS technician Lori Evrard identified midge flies, scuds and fingernail clams (Pelecypoda) as the major diet for spring and fall large adult ruffe there. Overall, midge flies seem to be the preferred diet item of large adult ruffe year round. The anglers caught their ruffe using small minnows and waxies (fly larvae) for bait.

Ruffe are opportunistic feeders and if the availability of midge flies was limited, hypothetically it is likely that ruffe would just transition to a different benthic component. This was a cooperative study between Ashland FRO, Northland College, and the Red Cliff Tribal Natural Resources Department. *Gary Czypinski, Ashland FRO*

### Sea Lamprey Control Program Evaluates Environmental Risk

Staff at the Marquette and Ludington Biological Stations conducted environmental risk assessments to determine the effects of control and assessment actions on the environment during 2001. Duties focused on compliance with the Environmental Protection Agency Section 6 (a) (2) of the Federal Insecticide, Fungicide and Rodenticide Act; regulatory agency permits to apply lampricides; and, protection of federally listed endangered, threatened, candidate and special concern species.

Permission to use lampricides was secured from the following tribal nations: the Red Cliff Band of Chippewa Indians, Bad River Band of Lake Superior Tribe of Chippewa Indians and Seneca Nation of Indians; and, the states of Minnesota, Wisconsin, Michigan, Pennsylvania and New York.

Staff also served in international working groups with other agencies to assess and develop rehabilitation plans for lake sturgeon in the Great Lakes, and walleye and brook trout in Lake Superior. *John Heinrich, Marquette Biological Station*



- USFWS photo

Fish kills on the Wilkinsin Island Unit of the Mark Twain National Wildlife Refuge alerted refuge staff to a major problem. After sampling the composition of the fish, it was determined 98 percent of the population were non-native invasive Asian carp.

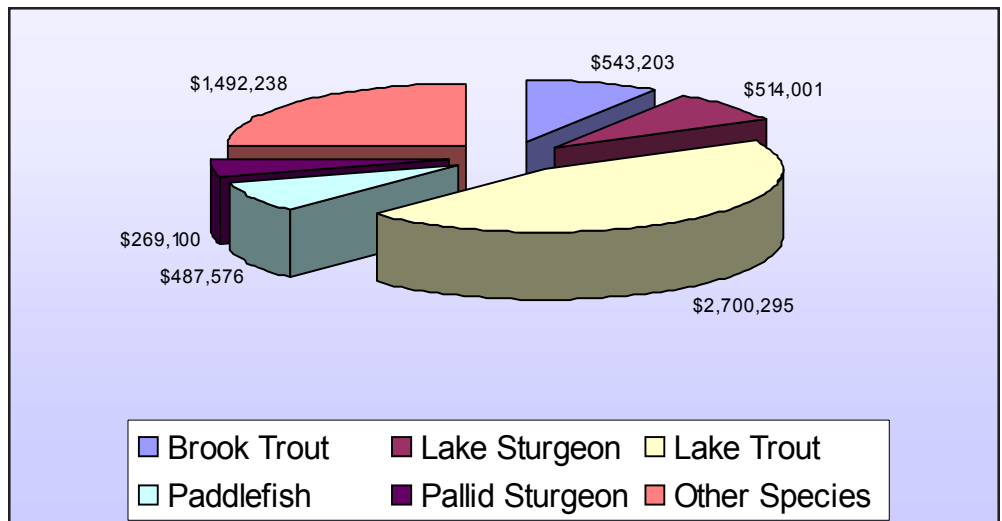
# Fish and Mussel Production and Health

## Fish Production

The five National Fish Hatcheries in Region 3 raised 13 species of fish and one species of freshwater mussel. Production exceeded 11 million fish (426,000 pounds) and 20 million eggs during 2001.

Regional hatcheries manage eight lake trout and two coaster brook trout brood stocks as a source of genetically diverse eggs for restoration programs. Isolation of fish from wild lake trout and brook trout stocks continued at Genoa National Fish Hatchery in Wisconsin and through a cooperative program with the Keweenaw Bay Indian community.

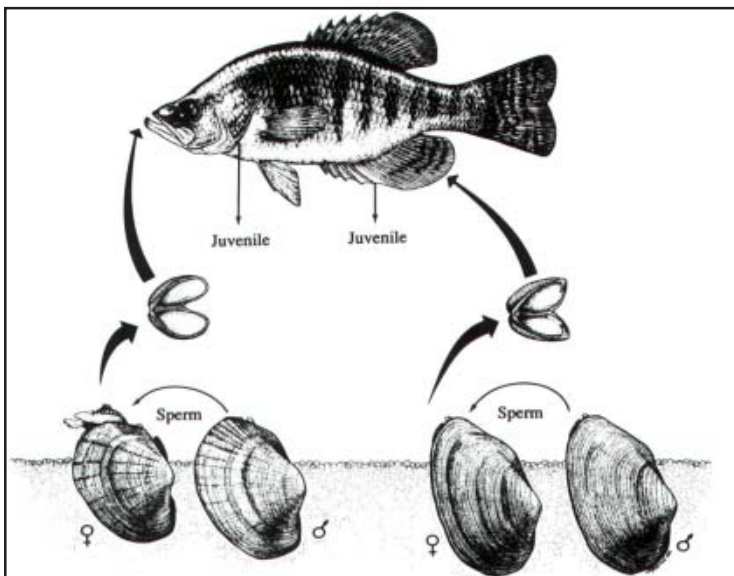
## Fiscal Year 2001 Expenditures by Species



The region stocked more than 11 million fish in 2001, the majority for restoration and special conservation activities. Special conservation activities include, but are not limited to, propagating and monitoring of aquatic species, enhancing outreach, education, law enforcement and other activities which may not be directly related to the harvest of fish.

## Mussel Production

The Genoa National Fish Hatchery has developed a captive propagation program for the federally endangered Higgins' eye pearl mussel in response to increasing displacement of native mussels by zebra mussels within the Mississippi River. Neosho and Genoa National Fish Hatcheries produced host fish to facilitate restoration of native mussels. More than 3,800 fish of three host fish species were infected with mussel larvae resulting in an estimated 250,000 endangered juvenile mussels being released into the wild.



- Illustration from "Field Guide to Mussels of the Midwest," Kevin S. Cummings and Christine A. Mayer

Most larval mussels (glochidia) must attach to a host fish to survive. After a few weeks of growth, the juvenile mussels drop from the fish and are able to continue their life cycle. Without host fish, mussels can not propagate and survive.

## Fish Health

Fish health is monitored at national fish hatcheries, isolation facilities and three tribal fish hatcheries. Fish health status is

annually determined on more than 2.5 million fish prior to stocking. During these fish health inspections, biologists examine fish populations for parasite pathogens, viral agents and bacterial agents.



Service biologists inspect more than 2.5 million fish annually to ensure only healthy fish are stocked in our nation's waters.

- USFWS photo

## Selected Fish and Mussel Production and Health Accomplishment Reports

# Winnebago Sturgeon Spearers Aid Service's Fish Health Survey

Lake Winnebago in east-central Wisconsin is the largest inland lake in the state and is inhabited by part of the largest naturally sustaining lake sturgeon population in the world. Due to their great abundance, Lake Winnebago-strain lake sturgeon are used as an egg source for lake sturgeon re-introduction and rehabilitation projects throughout this species' historical North American range.

Lake sturgeon are also harvested from Lake Winnebago during a popular mid-winter spear fishing season that began in the early 1930's and has been held for more than 70 consecutive years. The total number of state-licensed spearers participating in the event has grown dramatically in recent years as more people seem willing to travel greater distances to participate in what has become a unique recreational fishing event.

Given the ecological significance of this fish population and the local

cultural and economic importance of the spear fishery it sustains, the health status of the Lake Winnebago lake sturgeon population is of interest to fish managers throughout the region. Therefore, Service staff from the La Crosse Fishery Resource Office and La Crosse Fish Health Center teamed with Wisconsin Department of Natural Resources personnel to collect tissue samples from lake sturgeon harvested Feb. 9, the opening day of the 2002 spear fishing season, near Stockbridge, Wis.

Diagnostic tests were conducted on these lake sturgeon samples to determine the incidence of certain bacterial and viral pathogens that could compromise the health of this globally significant sturgeon population and lead to disease outbreaks in a wide variety of other fish species.

Test results will be entered into the Service's National Wild Fish Health Survey database to plot the



-USFWS Photo

**Service biologists work cooperatively to collect data that will help keep Lake Winnebago and other sturgeon populations healthy.**

distribution of these and other fish pathogens across the country. This fish health information system provides a national perspective that is used by the Service and its partners to improve their efforts in protecting, restoring and managing fish populations across the country. *Mark Steingraeber, LaCrosse FRO*

### Mussel Recovery Team assembles host fish cages for spring season

Members of the interagency Endangered Higgins' eye pearlymussel Recovery Team recently gathered at the Genoa National Fish Hatchery in an effort to assist station personnel in assembling host fish cages.

Team members from the U.S. Fish and Wildlife Service's Fisheries and Ecological Services programs, as well as the states of Illinois and Minnesota, worked together to frame and wire the cages. These cages are vital to the Higgins' eye pearlymussel recovery effort, as they will be the temporary homes for host fish that will be placed into the Mississippi

River and its larger tributaries.

These rivers are part of the historic range of Higgins' eye pearlymussel and have been selected as part of a long-term restoration effort by state and federal agencies.

The fish will be artificially infested this spring with larval mussels which attach and parasitize their gills. Young mussels require a fish host to supply them with food in their early life stages, until they are developed enough to drop off to the riverbed and feed on their own. These fish also supply a free ride to the young mussels, ensuring they are dispersed over a wide range of available habitats.

Results from this year's program

will be evaluated in the fall of 2002 when the cages are removed and juvenile Higgins' eyes are harvested by project workers. Results from operations carried out in the summer of 2001 show hundreds of juvenile mussels produced.

Higgins' eye pearlymussels are on the federal endangered species list, as they have been eliminated or suffered significant population reductions over much of their native range. The factors leading to their decline include zebra mussel infestations on adults, changes in suitable habitats and marginal water quality. *Doug Aloisi, Genoa NFH*

## Selected Fish and Mussel Production and Health Accomplishment Reports Continued

### Whirling Disease Survey in Michigan

The LaCrosse Fish Health Center, through a reimbursable agreement with the Michigan Department of Natural Resources, began a state wide survey in June, 1999 of all Michigan inland trout waters for *Myxobolus cerebralis*, the myxosporean parasite that causes whirling disease.

Salmonid whirling disease is a chronic parasitic infection of cultured and wild salmonids. The microscopic parasite has a selective tropism for cartilage of the fish and causes deformities of the axial skeleton and neural damage that results in the caudal peduncle area turning black. Fish pathologists named the disease "whirling," because of the erratic, tail-chasing behavior observed in young fish when startled. Heavy infections of the parasite in young fish can result in high mortalities or unmarketable fillets.

The parasite was first reported in 1903 in central Europe and was accidentally introduced into the United States around 1955.

However, concern for this myxosporean parasite grew when Montana fishery management biologists discovered the parasite in the mid to late 1990's in rainbow trout of the famed Madison River. Fishery biologists confirmed that as much as 90 percent of the wild rainbow trout population in a 50-mile stretch of the Madison had been destroyed by the parasite. At roughly the same time, New York fishery biologists announced that whirling disease had also been detected in four upstate trout and salmon fish hatcheries. Very quickly other states like Michigan became aware of the social, political and economic impact this parasite was having on the trout fishery in the intermountain west and east and initiated their own survey.

More than 4,856 rainbow, brook and brown trout have been shipped to the fish health laboratory since the initial shipment of trout were received from the Anna River. All trout have been captured by electrocution from 95 streams,

involving 224 sites in both the Upper and Lower Peninsulas of Michigan.

Staff from the fish health lab working on the whirling disease survey are students from the University of Wisconsin-La Crosse and Marquette University. When a box of specimens arrive at the lab it is immediately opened up and the processing begins with recording information on stream surveyed, county, species of fish and numbers, etc. A method using heat and enzyme digestion to dissolve away the flesh and cartilage surrounding the parasitic spores makes the spores more visible to the diagnostician when using a microscope to view the tissue samples.

Whirling disease is just one of a handful of fish disease pathogens that has made an impact on fishery programs in the United States. Other fish pathogens which are being examined include largemouth bass virus, bacterial kidney disease, white sturgeon herpesvirus and the white sturgeon iridovirus.  
*Terrence Ott, LaCrosse FHC*

## Service Stocks Pallid Sturgeon in Lower Missouri River - First Attempt Since 1997



- USFWS photo

Columbia FRO Project Leader Jim Milligan tests the passive integrated transponder (PIT) tags in the pallid sturgeons before the fish are released into the Missouri River.

U.S. Fish and Wildlife Service staff stocked 165 pallid sturgeon into the Missouri River at on May 2, 2002. This is the first time pallids have been stocked in the river since a 1997 release by the Missouri Department of Conservation.

The 16-to-24-inch-long pallid sturgeon were released near New Franklin, Mo. These fish were spawned in 1999 from upper basin broodstock collected near the mouth of the Yellowstone River and reared at the Gavins Point Hatchery in South Dakota. Staff from Neosho

National Fish Hatchery transported the fish to Missouri.

Fifteen volunteers from the local community were on-site to assist Service personnel from the Columbia Fisheries Resource Office and Neosho NFH. It was an excellent opportunity for the volunteers to get a rare glimpse of the endangered pallid sturgeon.

Biologists in Missouri have had limited success collecting adult fish in the lower river for the last several years. *David Hendrix, Neosho NFH and Joanne Grady, Columbia FRO*

# Aquatic Habitat Restoration

## Coastal Restoration

In fiscal year 2000, the Service initiated a Coastal Program in the Great Lakes Region that focuses on island habitat restoration, monitoring, invasive species control, erosion prevention along tributaries and education. The fishery office in Ashland, Wis., and the East Lansing Field Office in Michigan administer the program regionally. Twelve projects were funded and as a result more than 700 acres of coastal fish and wildlife habitat were restored or protected, three miles of riparian habitat was protected and four miles restored and one fish passage barrier in a Lake Superior tributary was removed, resulting in three miles of stream reopened to allow passage of anadromous fish.

## Stream and Wetland Restoration

In addition to coastal programs, fishery staff worked with partners, including tribal governments, to develop habitat restoration plans and restore or improve 40 miles of streams and 120 acres of wetlands.



- USFWS photo

The Service works to keep streams and wetlands healthy and clean for fish and people.



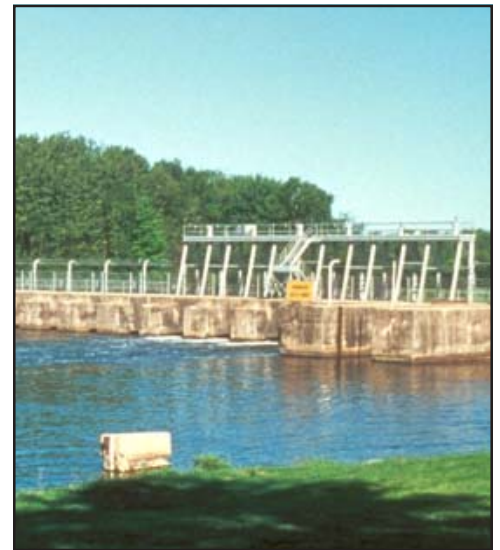
- USFWS Photo

This restoration project on Oak Island, part of the Apostle Islands National Lake Shore, will help restore the ecological integrity of this island's unique landscape. The project is a partnership effort between the U.S. Fish and Wildlife Service, National Park Service, Natural Resources Conservation Service and Northland College (Ashland, Wis.). Pictured from left to right are: Ted Koehler - USFWS, Julie VanStappen - NPS, Tony Bush - NRCS and Northland College students working at the restoration site.

## Fish Passage

In 1999, the Service initiated the National Fish Passage Program to address structures built on rivers and their effects on fish and other aquatic species. Service employees work with local communities and partner agencies to restore natural flows and fish migration by removing or bypassing barriers.

In fiscal year 2001, three Region 3 fish passage projects were funded. Seventeen miles of spawning, nursery and rearing habitat in three streams in Michigan and Minnesota were made available to native brook trout. Existing locks on the Pelican River in the Red River Drainage were replaced to restore passage and will aid lake sturgeon recovery.



- USACOE photo

Dams and other artificial barriers can interfere with the historical movement patterns of fish. The Service works to develop passage systems that allow fish to bypass these obstacles.

**Selected Aquatic Habitat Restoration Accomplishment Reports**

**Coastal Program Helps Restore and Protect Great Lakes**

The Service's Ashland Fishery Resources Office has organized many successful partnerships to restore, protect and manage coastal habitats in the Lake Superior basin through the Service's Coastal Program. In fiscal year 2001, restoration, land use, planning, aquatic nuisance species prevention and control, as well as outreach and education projects were funded.

Restoration projects resulted in more than 700 acres of coastal fish and wildlife habitat restored and protected. The Coastal Program features non-regulatory, partnership-based efforts that restore and protect habitats, enhance fish passage and control invasive species. The program focuses resources on sensitive coastal areas by applying Service funding and technical expertise to local projects and leveraging the participation of other groups. *Ted Koehler, Ashland FRO*



- USFWS photos



As part of fish passage projects, perched culverts (left), are replaced by boxed (right) or other similar culverts that allow the free movement of fish and other aquatic species.

**Fish Passage on Graveyard Creek**

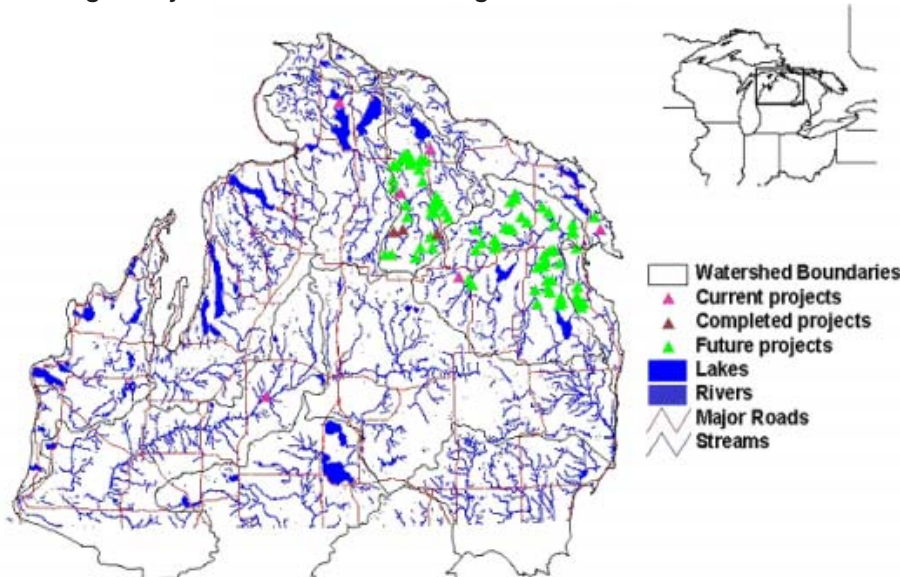
Great Lakes Coastal Program funding assisted the Bad River Band to restore fish passage on Graveyard Creek. The project area is located within the Bad River Indian Reservation boundaries (Ashland and Iron counties) in northern Wisconsin. In the mid-1980's, Bad River Natural Resources Department (BRNRD) personnel observed coaster brook trout spawning in Graveyard Creek along with coho salmon, brown trout and

steelhead. However, due to a massive logjam that developed at the mouth of the creek, fish were no longer able to migrate to/from Lake Superior. Great Lakes Coastal Program grant dollars were used in fiscal year 2000 to remove the debris dam at the mouth of Graveyard Creek, again allowing passage of anadromous trout and salmon.

With assistance from the Natural Resources Conservation Service and additional Coastal Program funding in fiscal year 2001, another 30 smaller barriers were removed as well as instream and riparian restoration work.

Three miles of stream were opened for fish migration and stabilization of the stream banks was conducted to prevent erosion. In the next several years, instream structures will also be used to restore stream flows into the historic channel, which will improve coaster brook trout habitat. The BRNRD has been a major cooperator and believes that with a minimal amount of effort, anadromous coaster brook trout can be restored once again to Graveyard Creek. *Ted Koehler, Ashland FRO*

**Fish Passage Projects in Northern Michigan**



Created August 8, 2001 by Emily Zollweg and Heather Enterline  
U. S. Fish and Wildlife Service Alpena Fishery Resources Office

# Native American and Federal Lands Assistance

## Tribal Lands

The U.S. Fish and Wildlife Service strives to fulfill federal trust responsibilities to Native American tribes. Fisheries employees work with the tribes to conserve and manage fish and wildlife resources on tribal lands and ceded territories. Dozens of fishery assessment surveys, projects and consultations were completed in cooperation with tribal government members. Cooperative agreements, mandated by provisions of the U.S. v. Michigan Consent Decree, which allocates tribal and state managed sport and commercial fisheries, were developed with five Great Lakes tribes. An experimental aerial imaging project to identify ground water upwellings at the Grand Portage Indian Reservation was demonstrated as an effective management tool.

**Tribal biologist Doug Cox and La Crosse FRO fishery biologist Heidi Roesler remove lake sturgeon and northern pike from a gill net set in Legend Lake on the Menominee Indian Reservation.**



- USFWS photos

**Fishery Biologists are working with Whittlesey Creek National Wildlife Refuge to assess, monitor and restore self-sustaining populations of coaster brook trout in Whittlesey Creek.**

## Federal Lands

Fishery biologists also work with National Wildlife Refuge System employees to manage fisheries and aquatic resources on refuges and provide technical expertise to manage fish and wildlife on military lands under provisions of the Sike's Act. Fishery resource office biologists and technicians provide expertise with fishery surveys, fish passage and habitat restoration projects, long-term community health monitoring and technical advice at 14 national wildlife refuges.

Fishery management plan obligations were performed at Scott Air Force Base, Crane Naval Weapons Support Center, Iowa Army Ammunition Plant and Fort McCoy.



## Selected Native American and Federal Lands Assistance Accomplishment Reports

### Service Helping Red Lake Tribe's Walleye Restoration Effort

The Ashland Fishery Resources Office (FRO) is continuing to work with the Red Lake Band of Chippewa, Minnesota Department of Natural Resources and staff from the University of Minnesota to restore a naturally spawning population of walleye in the Red Lakes.

During a meeting with the Red Lake Task Force, Frank Stone from Ashland FRO discussed the 2002 walleye stocking program, performance indicators and law enforcement components of this long-term restoration effort. The committee reconfirmed its desire to rehabilitate the walleye population in the Red Lakes and to ensure that fish stocks are conserved for the cultural, recreational, social and economic benefit of all.

Several key elements were discussed at this meeting. The two previous walleye fry stockings have successfully recruited into this fishery. Fry stocking will not be conducted in 2002 due to a possible suppression effect on the previous year classes but will most likely occur in 2003. The Red Lake DNR may want to continue spring trawling efforts to assess forage fish abundance, and the Minnesota DNR has enacted a regulation change that will make it illegal to fish for walleye within the Red Lakes.

Historically, the Red Lakes have provided food, recreation, cultural pursuits and income to many people. If this restoration effort succeeds, it may well be the single most successful natural resource event ever accomplished within Minnesota.

Government leadership, cooperation and coordination have been paramount throughout this process. All parties have demonstrated a willingness to provide leadership by example to achieve the community



- USFWS illustration

**Fisheries staff are working on and around Isle Royale National Park to assess and restore native populations of coaster brook trout.**

support and involvement required to reach the goals of the Red Lake recovery effort. *Frank Stone, Ashland FRO*

### Exploratory Survey for Coaster Brook Trout Conducted on North Shore of Isle Royale National Park

An electrofishing survey for coaster brook trout on the North shore of Isle Royale, Mich., was conducted by the Ashland Fishery Resources Office (FRO) and the USGS Lake Superior Biological Station. Early in the morning, the 20-foot USFWS electrofishing boat was hoisted onto the aft deck of the KIYI and she then proceeded to Duncan Harbor on the northeast tip of Isle Royale. From there, crews from the two agencies conducted electrofishing surveys at night for coaster brook trout and conducted habitat surveys during the day at selected sites.

The surveys were conducted at Duncan Harbor, Five Finger Bay (including Stockly Bay) and Robinson Bay (including Lane Cove and Pickerel Cove). A total of 73 kilometers of shoreline was electrofished and 75 habitat surveys were conducted.

No coaster brook trout were surveyed, but habitat with the

potential to hold coaster brook trout was noted for future surveys.

This survey is part of a four year study to assess the coaster brook trout at Isle Royale National Park. This multi-agency cooperative assessment includes the following five objectives:

- 1) Document presence or absence of coaster brook trout at Isle Royale harbors and streams;
- 2) Estimate coaster brook trout population age, size and sex in all known or identified populations;
- 3) Compare the Isle Royale populations with each other, and to other, Lake Superior populations (including Canada) through the use of genetic analysis and morphological characteristics;
- 4) Identify and describe coaster spawning sites and determine spawning habitat requirements which will enable site specific protection of these critical areas; and,
- 5) Initiate standardized coaster surveys in Tobin Harbor to survey adult/juvenile populations and predict natural recruitment into the population.

Surveys of McCargo Cove, Todd and Little Todd Harbors are planned for 2002 along with work in Tobin Harbor. *Glenn Miller, Ashland FRO*

### Selected Native American and Federal Lands Assistance Accomplishment Reports Continued

#### 6,000 Lake Sturgeon Stocked on the White Earth Reservation

It has been many years since lake sturgeon have been seen on the White Earth Reservation, but that should change after a stocking at Round Lake in Becker County. Approximately 6,000 fingerling lake sturgeon were stocked into Round Lake Sept. 11, 2001 by the White Earth Natural Resources Department and the LaCrosse Fishery Resources Office.

The fingerlings traveled a long way to reach Round Lake. The effort began in May at the Rainy River First Nations Hatchery in Canada. Randy Zortman, John Annette and Tom McCully from White Earth Natural Resources Department, along with Service fishery biologists Scott Yess, Todd Turner and Dan Kumlin, assisted Joe Hunter and his staff at the First Nations Hatchery with spawning over 50 adult lake sturgeon. Fin clips and ovarian fluid were also sent to Terry Ott at the LaCrosse Fish Health Center for

disease inspections. The eggs were then flown by Bob Foster to Neosho NFH in late May.

The staff at Neosho did a fantastic job raising more than 18,000 lake sturgeon to fingerling size (6 inches) of which the first 6,000 were stocked into Round Lake. The remaining 12,000 lake sturgeon will be stocked into White Earth Lake in late September. A short ceremony was held and the lake sturgeon were blessed by Tribal Spiritual Leader Joe Bush. This effort is in coordination with the Minnesota Department of Natural Resource's efforts to reestablish lake sturgeon within the Red River Drainage.

This stocking is the beginning of a major effort to reestablish lake sturgeon populations onto the White Earth Reservation and in the Red River Drainage. Lake sturgeon are spiritually significant to the Native American community and also served as a major food source. *Scott Yess, LaCrosse FRO*

#### Carterville FRO Supports Fishing on Navy Base

For more than 30 years, the Service's Fishery Program has worked with the Naval Weapons Support Center at Crane, Ind., completing fish community surveys, preparing fishery management plans and making recommendations for recreational fishing programs.

During fiscal year 2001, we surveyed Lake Greenwood, Seedtick Lake and Lake Oberlin. Lake Greenwood contains excellent populations of game fish such as largemouth bass, bluegill and channel catfish.

Seedtick Lake will be restocked with game fish during 2001 and 2002.

Fishing provides a welcome break from duties for sailors, Department of Defense civilian employees and the public at NWSC-Crane. *Chuck Surprenant, Carterville FRO*

#### Stream Restoration on Trout Creek in the Oneida Nation Reservation.

The Green Bay Fishery Resources Office is working with the Oneida Tribe of Indians of Wisconsin to develop a restoration plan for Trout Creek. Trout Creek is located within the reservation and has been severely impacted by agricultural practices. A geofluvial morphological survey of the entire stream was completed in 2001 and will provide valuable information on present and historic instream conditions.

Information obtained from the survey will be used to develop restoration projects. The Green Bay FRO distributed funds for restoration work within the stream corridor. Several sections along Trout Creek will be restored during 2002, with additional areas being considered in the future. *Stewart Cogswell, Green Bay FRO*



- USFWS photo

The Service partners with multi-tribal commissions, individual tribes and their state counterparts to assess, monitor, maintain and restore fisheries. Although most work is done with interjurisdictional fish, the Service also provides equipment and expertise to help manage shared tribal and public fisheries, such as the walleye fishery in Minnesota's Mille Lacs.

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