



U.S. Fish & Wildlife Service - Midwest Region

## Fisheries Program

# fish lines

**Children & Nature  
Network Conference 2015**

**Crews Take On Sea Lamprey**

**2015 Field Collections  
Underway**

**Celebrate Earth Day**

**Reports of Lake Sturgeon  
Stocked by Genoa NFH and  
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**They're Doing Well!**





# Fish Lines

May 14, 2015  
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## Field Focus

### [Jordan River National Fish Hatchery](#)

Jordan River National Fish Hatchery (NFH) has over 50 years' experience in producing fish for restoration purposes in...[Read More](#)

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### Children & Nature Network Conference

It has been ten years since the first publication of Richard Louv's book, Last Child in the Woods. In his book, Louv...[Read More](#)



Children & Nature Network Conference



Crews Take On Sea Lamprey



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Celebrate Earth Day



They're Doing Well!

## Fish Tails

"**Fish Tails**" refers to articles that are submitted by field staff that do not appear as a feature in the current edition of Fish Lines. These articles provide examples of the diverse work that the Service's Midwest Fisheries Program and partners perform on behalf of our aquatic resources and for the benefit of the American public.

## Field Notes

"**Field Notes**" is an online searchable database that showcases hundreds of employee-written summaries of field activities and accomplishments of the U.S. Fish and Wildlife Service from across the nation.



## Investing in the Future: Children & Nature Network Conference 2015

BY HEIDI KEULER, LA CROSSE FWCO



Conference attendees had an opportunity to tag and release monarch butterflies.  
 Credit: USFWS

It has been ten years since the first publication of Richard Louv's book, *Last Child in the Woods*. In his book, Louv talked about "Nature-Deficit Disorder" and how children are not playing in nature like they once were. He pointed to evidence that the rise in child obesity, attention disorders, and depression were closely related to the shortage of nature in family life. In families that have spent time in nature, Louv and his colleagues have observed physical and emotional benefits of unstructured play.

After many people read Louv's book, they thought that there were just as many adults with the "disorder." So in 2012, he wrote, *The Nature Principle: Reconnection with Life in a Virtual Age*. In this book Louv explains that we can be immersed in both technology and nature and the effects of nature can be both a driving force for creativity and a healing therapy.

Although Richard Louv would tell you that many people have been working to connect kids to nature long before his first book was published; he has set off a major nature movement, called the "New Nature Movement." He has also initiated an organization called the Children & Nature Network: [childrenandnature.org](http://childrenandnature.org). The Children & Nature Network (CNN) is working to create a world where every child can play, learn and grow in nature. This past April the [Children & Nature Network Conference](#) was based on these topics:

- Create vibrant cities with lots of green space and areas to walk and bike,
- Grow healthy children – medical studies are showing the benefits of spending time in nature (References available)
- Build diverse, nature-smart leaders – focus on the next generation, building on our senses
- Transform education – increasing green schoolyards or creating more nature experiences
- Success stories from the field – inspiring grassroots action

Over 400 people attended including 22 – U.S. Fish and Wildlife Service employees from Headquarters, National Conservation Training Center, and USFWS Regions 1-8. Fortunately, I was able to attend as the representative from Region 3. At the conference I learned so many useful things that will help me not only in my profession, but also in my local school district, Parent Teacher Organization, community, family life and even personally. I came home from the conference rejuvenated and ready to put my ideas into action.

Highlights from the conference included talks given by Richard Louv, Juan Martinez – Director of Leadership Development in the Children & Nature Network, Guillermo Penalosa – Executive Director of [8-80 Cities](#), and Dr. Scott Sampson – Chief Curator of the Denver Museum of Nature & Science (also famous Paleontologist on *Dinosaur Train* -TV show on PBS) and three kids that talked about Biophilic Design on Minecraft, iNaturalist App research, and invasive species. Richard Louv and Dr. Scott Sampson both had book signings.

### Nature Apps for phones:

- Nature Passport
- iNaturalist
- Merlin Bird ID – The Cornell Lab
- National Parks – National Geographic

### Programs to check out:



Fish Biologist Heidi Keuler with La Crosse FWCO meets "Dr. Scott" during a break at

- Transforming Youth Outdoors – Outdoor programs for youth, books, guides and other resources
- Findyourpark.com
- Every Kid in a Park – Every 4th grader and their families (2015-16 school year) will get a free pass to public lands
- [Natural Leaders Network](#) -
- STEM – Science, Technology, Engineering, & Math education
- Plum Landing – PBS Kids/WGBH
- YMCA Bold & Gold Program

**Books to check out:**

Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder Richard Louv, (2005, 2008)

The Nature Principle Richard Louv (2012)

How to Raise a Wild Child Scott D. Sampson (2015)

Eco psychology: Science, Totems, and the Technological Species Patricia Hasbach, (2012)

Asphalt to Ecosystems Sharon Gamson Danks (2010)

During the conference USFWS employees met to discuss what they learned as well as share some of the great outreach projects they work on. This was a unique opportunity to network and learn how to connect kids with nature.



## Crews Take On Sea Lamprey in the 2015 Field Season

BY JOANNA GILKESON, EXTERNAL AFFAIRS-REGIONAL OFFICE



Biological Science Technician Tiffany Opalka-Myers helps out with a sea lamprey treatment on the St. Mary's River in Michigan's Upper Peninsula. Credit: Joanna Gilkeson, USFWS

The 2015 Sea Lamprey Control treatment field season officially began on April 6. The U.S. Fish and Wildlife Service's Sea Lamprey Control Program is the U.S. entity responsible for sea lamprey control working in close partnership with their Canadian counterpart, the Department of Fisheries and Oceans, Canada. In case you're wondering what a sea lamprey is, it is a voracious invasive species with a large appetite for important fish species, such as lake trout and pacific salmon, which are vital to the ecosystem and economy of the Great Lakes.

On April 6, the Service's program will begin a two-week period of strenuous safety training to prepare for the upcoming field season. Meanwhile, the Department of Fisheries and Oceans staff will begin treating streams in western New York to control sea lampreys in Lake Erie.

Sea lampreys, native to the Atlantic Ocean, invaded the Great Lakes through manmade shipping canals. The first recorded observation of a sea lamprey in the Great Lakes was in 1835 in Lake Ontario. Historically, Niagara Falls served as a natural barrier

to entry and sea lamprey were confined to Lake Ontario. Improvements to the Welland Canal, which bypasses Niagara Falls and provides a shipping connection between Lake Ontario and Lake Erie, allowed sea lampreys quick access to the rest of the Great Lakes in the early 1900s.

Sea lampreys parasitize many species of fish, such as lake trout, lake sturgeon and salmon, often killing the host fish. Sea lampreys became so abundant that they ultimately decimated the Great Lakes fisheries and local economies in the area by the 1950s. See graphical representation of lake trout abundance after sea lamprey invasion in the 1930s.

During 2014 we worked with our Canadian counterparts to apply lampricides at 85 Great Lakes locations to reduce sea lamprey numbers. These treatments require staff to work around-the-clock in 5 to 6 day shifts.

2014 in a nutshell:

- Treated 85 streams and lentic areas in the Great Lakes
- Detected and determined the extent of sea lamprey larval infestations in 549 streams.
- Operated and maintained 34 barriers to block spawning runs of adult sea lampreys.
- Fished traps at 55 sites to estimate abundance of adult sea lampreys.
- Adult sea lamprey abundance levels were within or below targets in 4 of 5 Great Lakes.



Lake trout with severe sea lamprey wounds. Credit: Ted Treska, USFWS

Lake Erie is the exception. Lakes Superior, Michigan, Huron and Ontario are within or below sea lamprey abundance target levels. In response, we have been paying careful attention to Lake Erie since 2010 and will continue to do so.

The question we are currently trying to answer is "where are the sea lamprey in Lake Erie coming from?" Recent assessments show that sea lamprey adult abundance in Lake Erie tributaries are still elevated, but have decreased substantially since 2009. In efforts to bring down sea lamprey levels in Lake Erie, we are monitoring the St. Clair River population, treating new areas identified as contributing to the Erie population and searching for new sea lamprey producing streams in the basin.

To restore the Great Lakes ecosystem and revive the fisheries, the U.S. and Canada have been treating Great Lakes tributaries with lampricides since the late 1950s, which we rely on to kill the sea lamprey before it reaches its parasitic life phase. In addition to lampricides, other control mechanisms are incorporated into our toolbox including barriers, larval and adult assessments, and ongoing research to help us combat this invasive predator. Thanks to these tools and a strong international partnership, we have been successful in reducing sea lampreys by about 90% from historic highs.

The Sea Lamprey Control Program carried out by our staff and Canadian partners is administered by the Great Lakes Fishery Commission, operating under the Convention on Great Lakes Fisheries, a treaty between the US and Canada, since 1955. Stay tuned for updates to learn more about our 2015 field season and accomplishments in sea lamprey control.



## Great Lakes Fish Tag and Recovery Laboratory 2015 Mass Marking Program Field Collections Underway

BY KEVIN PANKOW, GREEN BAY FWCO



Fish Biologist/Data Analyst Matt Kornis (left) trains bio-technicians Amanda Duncan (center) and David Darrow (right) on proper sampling protocols at Michigan City, Indiana. Credit: Kevin Pankow, USFWS

The Great Lakes Fish Tag and Recovery Laboratory, headquartered at the Green Bay Fish and Wildlife Conservation Office (FWCO), began its fourth season assisting state agencies around Lakes Michigan and Huron in recovering coded-wire tags (CWT) and collecting biological data on sport-caught salmon and trout. The data and tag recovery efforts are part of the Great Lakes Mass Marking program, a multi-agency collaboration designed to determine levels natural reproduction, movement patterns, and the relative contributions of salmon and trout stocked at different locations to the fishery.

Through this program, the Great Lakes Fish Tag and Recovery Lab operates four automated tagging trailers at state and federal hatcheries to ensure all Chinook salmon and lake trout stocked into Lakes Michigan and Huron receive an adipose fin clip and a CWT injected into the snout. Each CWT is a 1.1 mm long piece of stainless steel wire with a laser etched numerical code specific to a group of fish (i.e., specific hatchery origin, strain, year class, and stocking location). The missing adipose fin identifies fish of hatchery origin and signifies fish that contain a CWT.

Each year, the Great Lakes Fish Tag and Recovery Lab hires 11 bio-technicians to assist state partners in recovering CWTs and collecting biological data on fish landed from April to October at boat landings, cleaning stations, fishing tournaments and weirs. In 2014 alone, Service bio-technicians collected data on nearly 22,000 fish, including about 12,450 Chinook salmon and 4,400 lake trout. The Lab coordinates data collection efforts and advises biological technicians assisting Departments of Natural Resources in Indiana (Michigan City), Wisconsin (Sturgeon Bay and Milwaukee), Illinois (Zion) and Michigan (Charlevoix and Alpena).

The 2015 field season began in Michigan City, Indiana on April 17 and 18 when Fish Biologist/Data Analyst Matthew Kornis and Fish Biologist Kevin Pankow trained two bio-technicians on proper protocol for Mass Marking Program field collections. The biological technicians received hands-on instruction in identifying different salmon and trout species, collecting basic biological data (e.g., fish length, weight, sex and maturity), collecting aging structures (i.e., otoliths and scales), determining the presence or absence of CWTs and various fin clips, and identifying different types of sea lamprey wounds. Throughout the summer and fall, snouts containing CWTs will be collected and sent to the Great Lakes Fish Tag and Recovery Lab, where CWTs are extracted and read. The information contained in the CWTs are then coupled with the biological data collected by the bio-technicians and stored in a database for analysis.

In addition to the core objectives being collected this season, the Mass Marking Program will use its lake-wide sampling network to collaborate on two additional studies focused on tissues collected from Lake Michigan salmonines (Chinook salmon, Lake trout, Steelhead, Brown trout and Coho salmon). The Great Lakes Fish Tag and Recovery Lab has partnered with scientists at the University of Notre Dame to collect and analyze dorsal muscle tissue to better understand how trophic structure mediates bioaccumulation of mercury. In addition, a partnership with the Illinois Natural History Survey will use collections of dorsal muscle tissue, belly flaps and stomachs for use in stable isotope and fatty acid analyses aimed at describing diet and niche overlap of Great Lakes predatory fish.



Bio-Technician duty stations (red stars; same in 2015) and sampling locations (blue circles) on Lakes Michigan and Huron from previous year. Credit: Matt Kornis, USFWS



## La Crosse Garden Club and Summit Environmental School Celebrate Earth Day

BY DOUG ALOISI, GENOA NFH

The La Crosse Wisconsin Garden Club and Summit Environmental School of La Crosse Wisconsin commemorated Earth Day this April 22nd by renovating the Genoa National Fish Hatchery's pollinator garden for the coming season. For the last several years the Garden Club has been the driving force to ensure that the station has had not only an attractive garden display located by our entry sign, but also plants and species present that will attract and benefit pollinator species. This has become doubly important with the crash of Monarch butterfly populations nationwide. Another positive aspect of this project is including local Summit Environmental School children in the project as part of their Outdoor Classroom Curriculum at the hatchery, and to celebrate Earth Day by performing environmental volunteerism. The project hopes to lay a foundation for the children by demonstrating that people of all ages can make a positive impact in our daily lives, and we that all have a responsibility to be good conservation stewards. The project also fulfills the schools mission statement of providing students with a solid educational foundation in the core academic areas with an environmental focus integrated throughout the curriculum. Staff biologist Jorge Buening coordinated the project with the Garden Club and teachers from the school to make this a meaningful and significant Earth Day 2015. The hatchery hopes to include more cooperative conservation projects in the future whether it be in the field of fish and mussel conservation, or involving prairie and pollinator restoration on some of the hatchery's acreage that was once considered borderline pastureland.



Summit students and garden club members hard at work in the pollinator garden.  
Credit: USFWS

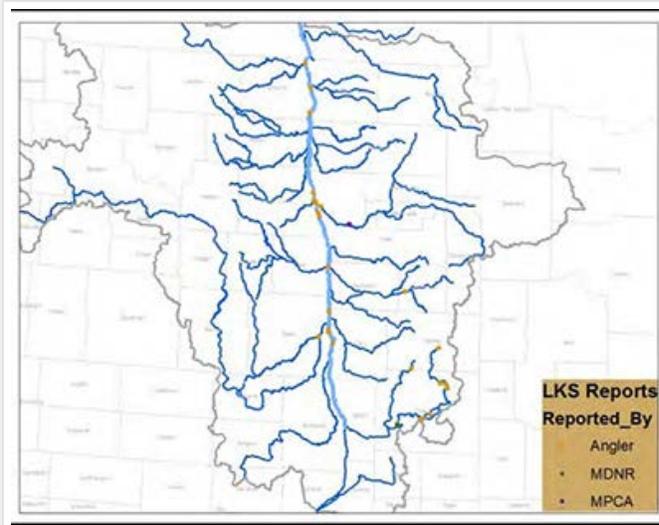


Class and garden club members gather during the Earth Day activity at Genoa NFH. Credit: USFWS



## Reports of Lake Sturgeon Stocked by Genoa NFH and Partners... They're Doing Well!

BY OREY ECKES, GENOA NFH



Red River Lake sturgeon catches reported by (Minnesota DNR)

have revealed capture locations of lake sturgeon in lakes and streams within the Red River Basin. Fish stocked in 2007 are reported to be between 45-50 inches. Since female lake sturgeon sexual mature between 20-25 years of age and males between 12-15 years they should start reproducing in the near future. Reports of these large fish are encouraging to hear. It's exciting to know that fish stocked from the Genoa NFH are surviving and doing well in the wild.

As spring progresses, lake sturgeon begin their migration from larger bodies of water to natal spawning grounds. In the months of April-June hatchery staff will begin collecting sturgeon eggs from natural spawning adults. Eggs will be collected from four river systems (Wolf River, Rainy River, Wisconsin River, and St. Lawrence River) for culture at Genoa National Fish Hatchery (NFH). Sturgeon will be reared at Genoa NFH for approximately four months before they are released in support of lake sturgeon restoration for federal, state, and tribal partners.

Prior to release, lake sturgeon are coded wire tagged for future assessment of survival, growth, and migration patterns. As part of the restoration goal it is essential to monitor the success of stocking efforts. For example, sturgeon stocked over the past 15 years from Genoa NFH and released within the Red River Basin have been monitored by US Fish and Wildlife Service, Minnesota Department of Natural Resources (DNR), and tribal partners.

Fisheries reports by Minnesota DNR and anglers



## Midwest Region Fisheries Divisions

### National Fish Hatcheries

The Region's National Fish Hatcheries (NFH) focus on native species recovery and restoration. Primary species include: lake trout, endangered pallid sturgeon, and endangered, threatened, and native mussels. Other major programs include coaster brook trout and lake sturgeon restoration, fulfilling tribal trust responsibilities for native aquatic species, and cost reimbursed rainbow trout production for recreational fishing. Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, and develop and maintain brood stocks of various species and strains.



### Fish and Wildlife Conservation Offices

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

### Sea Lamprey Biological Stations

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

### Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to federal, state and tribal hatcheries in the region; conducts extensive monitoring and evaluation of wild fish health; examines and certifies the health of captive hatchery stocks; and, performs a wide range of special services helping to coordinate fishery program offices and partner organizations. The Whitney Genetics Lab serves as a leading edge genetics laboratory and conducts environmental DNA (eDNA) sample processing for early detection of invasive species.

### Whitney Genetics Lab

The Whitney Genetics lab provides environmental DNA (eDNA) surveillance for the early detection of invasive Silver and Bighead carp as part of the Asian Carp Regional Coordinating Committee's plans to detect, monitor, and respond to the threat of invasive carp in the Great Lakes. The lab also provides analysis for determining the ploidy of wild-caught Black and Grass carp, two more invasive carp species.



## Midwest Region Fisheries Contacts

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