



U.S. Fish & Wildlife Service - Midwest Region

Fisheries Program

fish lines

**Using Tech to Understand
Fish Behavior**

Hine's Emerald Dragonfly

R.O.A.R.

**Wisconsin Lake Superior
Basin Habitat**

**Lending a Hand to Help
Crawfish Frogs**





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April 30, 2015
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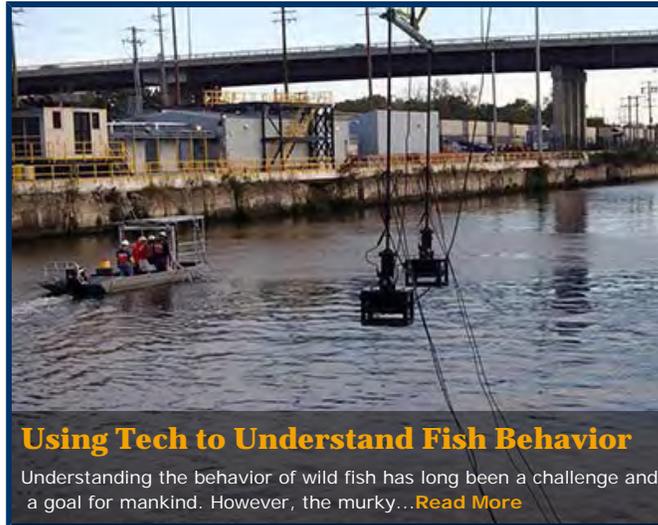
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Using Tech to Understand Fish Behavior

Understanding the behavior of wild fish has long been a challenge and a goal for mankind. However, the murky...[Read More](#)



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Lending a Hand to Help Crawfish Frogs

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.

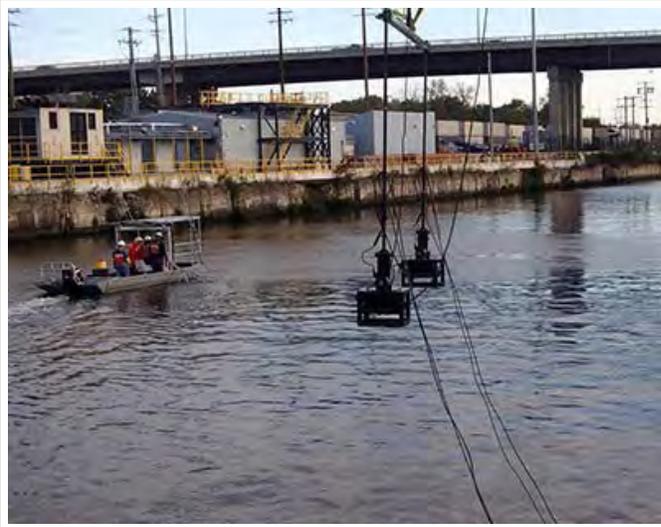
Field Notes

"**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.



Carterville Fish & Wildlife Conservation Office Employs State of the Art Technology to Better Understand Fish Behavior, Distribution and Abundance near Electrical Barrier

BY JEREMIAH DAVIS, CARTERVILLE FWCO



Two Dual-frequency Identification Sonar (DIDSON) units about to be lowered into the CSSC at the electric dispersal barrier with a boom lift crane while a crew from the Columbia FWCO conducts fish sampling with a Paupier trawl boat. Credit: Jeremiah J. Davis, USFWS

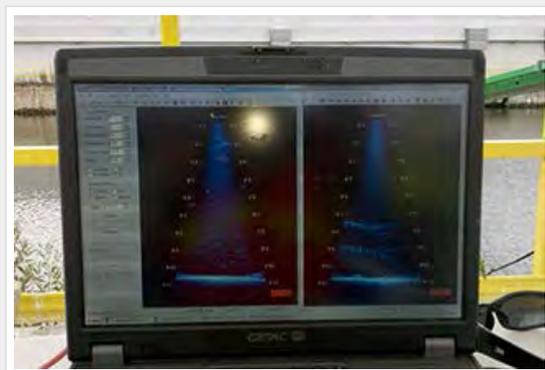
Understanding the behavior of wild fish has long been a challenge and a goal for mankind. However, the murky underwater world holds onto its secrets tightly. In the Chicago Sanitary Ship Canal (CSSC), where the Electric Fish Dispersal Barrier is located, the inherent difficulties with making underwater observations are magnified greatly. The canal is deep, has turbid water, and is constantly influenced by heavy commercial barge traffic. Regardless of the great challenges that are encountered in this system, there is a need to understand how fish are interacting with the electric barrier across a broad range of temporal and spatial scales. The Carterville Fish and Wildlife Conservation Office (FWCO) took on these great challenges and deployed state-of-the-art technology to gain a better understanding of the complex dynamics of fish behavior occurring near the electric barrier.

Technology in the realm of fisheries stock assessment and behavioral monitoring has grown exponentially in the last twenty years. Advances in the sophistication of survey equipment have taken place along with the development of powerful new software that can be used to analyze and make sense of the data. Many of these advances have

taken place in the world of underwater acoustic remote sensing. By bouncing sound waves off of objects that are located in the water you can determine how far away they are and what size they are without actually "seeing" them. This is the same principle behind the common fish finders you would find on a standard fishing boat... except taken to the next level.

The Carterville FWCO utilized a variety of different acoustic remote sensing gears to make their observations near the electric barrier this field season. One type of gear that was utilized was a powerful split-beam hydroacoustic echo sounder. This technology was deployed from their survey vessel the "Carpe See Um" and was used to scan the waters of the CSSC below the electric barrier. The split beam system projects a cone shaped beam of sound that is split into four regions like a crosshairs. When the sound bounces off of a fish multiple times the system can tell how big the fish is, which quadrant the fish was first detected in, which quadrant the fish moved into, and how fast the fish was moving. This allows the project biologists to determine not only where the fish are located but also which direction they are moving and how fast they are going.

Another high tech option the Carterville FWCO deployed this year was a Dual -frequency Identification Sonar (DIDSON) unit. This equipment is another type of echo sounder that utilizes multiple beams of sound to produce a higher resolution image. In fact, the DIDSON unit uses 96 beams of sound to create near video quality images of fish as they navigate the murky waters of the CSSC. Both of these technologies have their inherent strengths and weaknesses. For example, the DIDSON provides high resolution images but it has a limited range and is less reliable when it comes to determining fish length. The split beam echo sounder on the other hand provides very accurate fish lengths and has a great range (up to 200m!). This is why the two technologies were used to complement each other and focus the right tool on each of the many questions the project biologists are trying to answer.



Computer display of data collected with the Dual DIDSON multi-beam acoustic gear, Credit: Aaron Parker, USFWS

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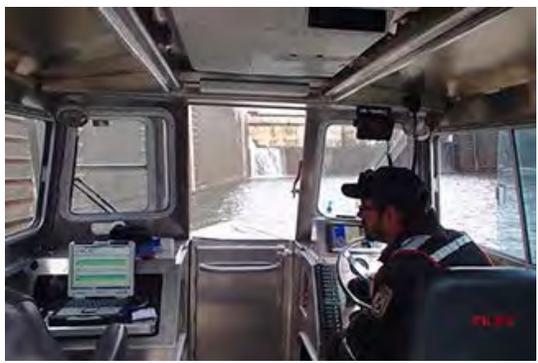
Carterville Fish & Wildlife Conservation Office Employs State of the Art Technology to Better Understand Fish Behavior, Distribution and Abundance near Electrical Barrier

BY JEREMIAH DAVIS, CARTERVILLE FWCO

Continued:

There is a lot to be learned about fish behavior, spatial distribution, and temporal abundance patterns near the electric barrier. The Carterville FWCO project biologists tackled a variety of questions this field season with their high tech tool kit. One project utilized the DIDSON gear to determine the behavior of fish as they approached the electrical barrier's area of highest electrical field strength. This was a difficult operation because there is no way to anchor a boat safely or steadily over the narrow array electrodes of the electric barrier. Instead, two DIDSON units were deployed from a boom lift crane positioned on shore next to the canal. The units were lowered into the water by the crane and biologists were then able to collect the data safely from shore while being sure that there would not be any movement of the units from the area of highest electrical field strength. These data collections provided important observations of fish behavior that were used to develop management recommendations for the US Army Corp of Engineers who operate the barrier. For further reading on the DIDSON deployment see:

<http://www.fws.gov/midwest/fisheries/carterville/didson-barge.html>



Carterville FWCO fish biologist Jeremiah Davis collecting split beam acoustic data inside the Brandon Road Lock chamber aboard the "Carpe See Um". Credit: Jeremiah J. Davis, USFWS

In addition to answering questions about fish behavior near the electric barrier, Carterville FWCO biologists are interested in understanding temporal patterns in fish abundance below the barriers so that they can provide information to the U.S. Army Corps about time periods when risk of fish presence below the barriers is lowest. This information allows the managers of the electric barrier to plan maintenance activities around low risk periods and assess risk in the case of an unintentional outage or change in operating parameters. In support of these objectives, the mobile split beam echo sounding technology was used this field season for a study that looked at fish abundance patterns near the barrier on a diel basis. Surveys were conducted around the clock in spring, summer, and fall to determine which times of day and seasons of the year pose the greatest and least risk of fish presence below the electric barrier. The preliminary results suggest that fish density below the barrier is greatest during the summer at nighttime while fish density is lowest during the winter in the daytime. Following those same lines of questioning, field crews also assessed the density and spatial distribution of fish

throughout the lower Lockport Pool of the CSSC where the electric barrier is located on a monthly basis to document changes in fish density and determine the times of year when fish are most likely to congregate below the barrier. Again, preliminary results suggested that fish challenge the barrier most during the summer when water temperatures are warmer.

Another research project being undertaken by Carterville FWCO biologists using their high tech acoustic remote sensing gear is looking at fish abundance and behavior in and around the lock chambers on the Upper Illinois River. The Asian carp population front expansion has stalled below the Brandon Road Lock and Dam. Scientists hypothesize that one reason for this may be that the only way for fish to move upstream of this structure is to travel through the lock chamber. This is difficult for fish because the locks are only opened to allow traffic through and the barge traffic that travels through the locks creates a great disturbance to fish. To gain a better understanding of how likely it is for fish to be able to move upstream through the structure mobile split beam echo sounding surveys were conducted both around the lock and within the lock chamber itself. Surprisingly, many fish were actually found within the lock chamber. This is an ongoing study and this spring crews will be back on the water at the lock installing a stationary acoustic system that can count how many fish are moving upstream and downstream through the lock during different times of the day.

The utilization of these new high tech tools is giving us a better understanding of fish behavior, movement, spatial distribution, and temporal abundance both near the electric fish barrier and throughout the Upper Illinois River. The new understanding we are gaining is allowing us to be well informed on risk levels and potential management strategies as we continue the fight to keep Asian carp out of the Great Lakes.



Read Outside and Relax R.O.A.R.

BY JORGE BUENING, GENOA NFH



R.O.A.R. emblem designed by Vicki Walley with Friends of the Upper Mississippi.
Credit: Submitted by Jorge Buening, USFWS

As our world continues to move at a faster and faster pace our youth become more and more fixated on instant gratification. They are becoming people that expect a control pad to instantly reward their repeated tapping with jumps, punches and fireballs or expect a return text on their phone as soon as they hit the send button. Our children are losing the ability to be an individual and think for themselves, to enjoy the warm sun on their faces, and simply notice what wonderful things are happening around them. It is for this reason that the Genoa National Fish Hatchery (NFH) is working to create the R.O.A.R. program.

R.O.A.R is an incentive program that urges children to go outside and read. Through this process we hope the children will relax and see what is going on around them and learn about the environment and their community. The plan for this project is for the U.S. Fish and Wildlife Service (FWS), Friends of the Upper Mississippi, La Crosse Parks Department, and the La Crosse Public Libraries to come together and provide outdoor reading locations. Between the various offices and parks eight locations will be

designated as R.O.A.R sites and participants must go to these places and read. While there they will be able to receive a mark on a passport or guide book stating that this achievement has been met. Upon completion of reading at all of the sites participants will receive a coupon thanks to a donation through Courtesy Corporation-McDonalds that awards them a free desert at an area restaurant.

The Friends of the Upper Mississippi are also getting involved by equipping some of the R.O.A.R. sites with reading benches. Genoa NFH is looking at installing a few of these benches around the Sense of Wonder Wetland walking path to provide a place to read or simply sit and observe the outdoors. As another bonus the friends are also looking at potentially dedicating these benches to past friends members as a way of remembering their contributions to the organization.

This project is in conjunction with the USFWS's Connecting People with Nature and the Department of Interior Engaging the Next Generation initiatives. Genoa NFH plans to incorporate outdoor reading into the outdoor classroom and sturgeon in the classroom programs as we strive to connect children with nature.



Benefits to Brook Trout and Migratory Birds Permanent Protection for Strategic Wisconsin Lake Superior Basin Habitat

BY TED KOEHLER, ASHLAND FWCO & JANE ANKLAM, WEST WISCONSIN LAND TRUST

For the last five years the U.S. Fish and Wildlife Service's (Service) Ashland Fish and Wildlife Conservation Office (FWCO) has been working with the West Wisconsin Land Trust (WWLT) to protect land and waterways of strategically selected Lake Superior brook trout tributaries. Utilizing funding through the Service's Coastal Program – Great Lakes, the WWLT and Ashland FWCO staff have worked together to complete 5 land protection projects which forever protect 4,911 acres of Wisconsin's Lake Superior basin. Funding in the amount of \$40,000.00 from the U.S. Fish and Wildlife Service Coastal Program – Great Lakes was used to cover portions of project-related land acquisition costs. Matching funds contributed by the West Wisconsin Land Trust and other partners totaled \$3,755,157.00. The waters protected provide important habitat for native brook trout and other fish, while the riparian forest and shore-land protected provides important breeding and migratory stopover habitat for many species of migratory birds including Canada warbler, wood ducks, American woodcock, and the federally endangered piping plover.



Stream habitat protected on the Amnicon River. Credit: West Wisconsin Land Trust

The Nemadji River Acquisition: This 3,995 acre project was a complex partnership that included WWLT, the Conservation Fund, Wisconsin Department of Natural Resources (DNR), Douglas County, Wausau Paper Company, and the Wisconsin Department of Administration - Coastal Management Program. The project protects over six miles of pristine frontage on the Nemadji River and accommodates six miles of the North Country National Scenic Trail. The property protects water quality entering the St. Louis River estuary and Lake Superior, providing invaluable flood control in the St. Louis River's upper watersheds. In addition to the water quality and recreational benefits of the project, the area provides significant wildlife habitat for several State of Wisconsin endangered species including bald eagle, Canada lynx (also federally threatened), LeConte's sparrow, Blanding's turtle, wood turtle and the floating marsh marigold. The site protected in this acquisition encompassed multiple Nemadji tributaries containing native brook trout habitat. Overall, the Nemadji River and its tributaries provide 40% of western Lake Superior's spawning habitat for migratory trout, as well as habitat for 40 other species of fish.



Brook Trout. Credit: USFWS

Camp Amnicon Conservation Easement: The 503-acre Camp Amnicon Conservation Easement protects over two miles of Amnicon River frontage at its confluence with Lake Superior. The project was a partnership that included WWLT, the Camp Amnicon Foundation, Enbridge, and the Wisconsin Stopover Initiative. In addition to protecting important migratory bird habitat near and along the Lake Superior coast, the property will continue to function as wilderness retreat camp, educating youths about the importance of natural resources protection and appreciation. The conservation easement guarantees access for future migratory bird research and monitoring for the Wisconsin Stopover Initiative and its collaborators. Camp Amnicon has many features important to migratory birds. These features include Lake Superior shoreline, the mouth of the Amnicon River, and a combination of forested habitats. The federally endangered piping plover stops over on the sites shoreline and one of its main food sources, the dune tiger beetle, calls the site home. The conservation easement assures the fragile clay bluffs towering nearly 100 feet over Lake Superior and the Amnicon River remain intact regardless of property ownership. This is important to trout and other fish since

soil erosion from these bluffs covers important habitat features such as submerged wood and can cover spawning beds, suffocating eggs of the next generation. Also, fish such as small mouth bass and walleye use the drowned river mouth for spawning as part of their coastal dependent Lake Superior life cycle.

Klessig Conservation Easement: On this project totaling 80 acres we worked in partnership with the Bayfield Regional Conservancy (BRC). The property is within the Bad River watershed and includes approximately 40 acres of undeveloped northern hardwood and coniferous forest of white cedar, hemlock, white pine, and red pine. The associated high priority natural communities occurring on the property are northern mesic and northern wet-mesic forest, ephemeral ponds and cold water streams. These habitat types are critically important to the areas native brook trout and migratory bird populations. Protection of the property contributes to the overall ecological viability of the natural communities in the area. The Brunsweller River and Mineral Lake State Natural Area and Cooper Falls State Park are within close proximity. This easement enhances the overall connectivity of these state properties, enhancing the ecological value of each for fish and wildlife.



Piping Plover. Credit: Ted Koehler, USFWS

North Pikes Creek Acquisition: The WWLT and Service again worked with the BRC on the 280-acre North Pikes Creek Wetlands Community Forest project with the assistance of WWLT and the South Shore Streams grant. The project also involved a diverse group of partners including Futurewood Corporation, the Wisconsin DNR, the U.S. Forest Service Community Forest Program and the Town of Russell. The headwaters of North Pikes Creek are located near the tip of the Bayfield Peninsula and flows into



Protected coastal area of the Camp Amnicon Easement. Credit: West Wisconsin Land Trust

Chequamegon Bay of Lake Superior. The property is characterized by low-lying wetland terrain along North Pikes Creek. It includes approximately 1.6 miles of frontage on both banks of the creek. North Pikes is considered a Wisconsin Outstanding Resource Water, and a Class I trout stream that produces a self-sustaining population of brook trout. The extensive and varied wetland habitats on the property constitute a biologically rich environment which is home to a variety of plants and animals. The wetlands serve as an important breeding site for a number of priority species, including the American woodcock and golden-winged warbler.

Amnicon River Conservation Easement (2): This second project on the Amnicon River protects 53 acres of fish and wildlife habitat and includes 2,600 feet of frontage two miles from Lake Superior. This beautiful stretch of the river is home to many types of migratory birds and fish and adds an additional layer to lands already protected in the watershed. The clay bluffs which the easement protects are the youngest landscape still forming and stabilizing as they "spring back" from the weight of the glacial retreat. A micro climate for insects and vegetation unique to the northwoods is the result, thus providing excellent habitat for migratory birds and fish. The pressure to build on these fragile slopes can accelerate what nature must complete at its own pace. Protecting these slopes and river-way insures a sustainable future for coastal Lake Superior and our globally important migratory species.

Overall this partnership between the West Wisconsin Land Trust and the U.S. Fish and Wildlife Services Coastal Program – Great Lakes has permanently protected nearly 5,000 acres of fish and wildlife habitat. The many willing landowners and partners we have worked with along the way deserve much of the credit, especially the landowners, who rightfully deserve the lion's share. Because of their generosity and concern for Lake Superior basin natural resources they set these areas aside for the benefit of all. These sites all had areas with development potential, but now with protections in place these wild landscapes will remain forever the domain of fin and feather.



Carterville Fish & Wildlife Conservation Office Lending a Hand to Help Crawfish Frogs

BY PHILIP ROGERS, CARTERVILLE FWCO



Fish Biologists Jeff Stewart and Brian Bartos seine a small pond to detect the presence of fish. Credit: Brad Roger, USFWS

refuge. All the ponds surveyed were in areas that provided good habitat for the crawfish frog, but weren't critical for any particular species of fish. In order to make it even better habitat for the frogs, all fish found in these ponds will need to be eradicated. It turns out that several of these ponds won't need much work. We sampled seven ponds and found that only three of them had fish. We collected adult crawfish frogs in two of the ponds and there was evidence of frogs in two others. We also observed many large egg masses that were thought to be crawfish frog eggs.

Throughout the day we were able to teach the refuge folks a little bit about fish biology, ecology, and sampling. In turn they were able to refresh us on our amphibians and informed us about their plans to improve habitat for the crawfish frog on the refuge. Both offices also have several new employees and this was a timely cross-training opportunity. We all met new people and were able to catch up with some of the veterans. Carterville FWCO staff looks forward to working with Crab Orchard NWR on this project and others in the future. The next steps for the crawfish frog project will be eradicating fish from the ponds in the fall. We plan to work closely with the refuge on this activity and potentially salvage fish from one of the ponds before it is treated.

Late this winter the Carterville Fish and Wildlife Conservation Office (FWCO) was approached by staff from Crab Orchard National Wildlife Refuge (NWR) requesting assistance on a project that would expand the range of crawfish frogs on the refuge. Crawfish frogs are a species that has been declining throughout much of its range and has been extirpated from many regions. They are typically found in prairie and grassland habitats but can also be found in pastures, as was the case on Crab Orchard. The crawfish frog gets its name because of where it lives the majority of its life. Throughout most of the year these critters can be found in or near crawfish burrows. They use these burrows to avoid predators, access water, and to overwinter. In spring the frogs seek out breeding ponds and wetlands that are void of fish.

The fish crew at Carterville FWCO and the wildlife folks at Crab Orchard NWR don't often cross paths throughout the year. This project provided the perfect opportunity to join forces and work together. In mid-March we came together to survey for the presence of fish in several small ponds on the



A Crawfish Frog that was captured while sampling for fish in a small pond on Crab Orchard National Wildlife Refuge. Credit: Brad Rogers, USFWS



Welcome...Carterville FWCO-Wilmington, Illinois Substation: New Fisheries Office Goes to Work in the Fight Against Invasive Species!

BY SAM FINNEY, CARTERVILLE FWCOR



New Wilmington IL sub-office employees stand proudly next to the hydroacoustics vessel the "Carpe-See-Um" at the Midewin National Tall Grass Prairie- their new office. From left to right are Jimmie Garth, Jenna Merry, Jeremiah Davis, Trevor Cyphers, and Kyle Fronte. Not pictured: Joe Wagner. Credit: USFWS

Prairie. Using a "Service First" agreement, the US Fish and Wildlife Service (FWS) and the USFS are working together in harmony to do good things albeit different things for natural resources. Furthermore, already well established relationships with Illinois Department of Natural Resources, the US Army Corps of Engineers, and others are already blossoming, due to geographic proximity alone. Just being accessible to jump in a boat and help out our fellow biologists on a moment's notice is extremely helpful!

The staff is almost completely assembled as of this writing. One more fisheries technician and a full time permanent station lead are still working their way to the location. As of now, two fish biologists and three fisheries technicians are already out on the water and working hard. The staff comes from a variety of backgrounds, some from in the USFWS, both in the Midwest Region and beyond, and from other governmental agencies. Specific projects that the crew will be working on include; barge/fish interaction studies, hydroacoustic and DIDSON monitoring of fish populations around the barrier and in the upper pools of the Illinois River, eDNA sampling, fish population monitoring, and intensive sampling for Asian carp.

Carterville FWCO and the Midwest Region Fisheries program take pride in this new station, and welcome the newly assembled crew to the program!

Take that carp! We will win, you will lose. And now we have another set of weapons in the fight...

This spring, a substation of the Carterville Fish and Wildlife Conservation Office (FWCO) opened in Wilmington, Illinois on the southern outskirts of metro Chicago. The new station will continue the work of the Carterville FWCO; we will simply have local "boots on the ground". The mission of the new station and its staff is clear and simple: Keep carp out of the Great Lakes!

In all actuality, the mission is a bit more complex. While Asian carp are important species to focus on, the Wilmington station will also be involved in the Great Lakes Mississippi River Basin (GLMRIS) studies as well. This involvement will expand the mission to keep all aquatic invasive species from transferring in either direction between the two basins (Great Lakes and the Mississippi River) that are connected near the Wilmington Office.

The opening and formation of this new office is a great example of interagency cooperation in many ways. The office is co-located with the U.S. Forest Service's (USFS) Midewin National Tallgrass



Fish Tails

Articles submitted by field staff that do not appear as a feature within Fish Lines. These articles provide examples of the diverse work that is performed on behalf of aquatic resources.

Green Bay FWCO Staff Attends UW-Stevens Point College Career Fair

BY BETSY GALBRAITH, GREEN BAY FWCO

Green Bay Fish and Wildlife Conservation Office (FWCO) Fisheries biologist Ted Treska and Ecological Services biologist Betsy Galbraith staffed and organized a booth at the College of Natural Resources annual job fair at the University of Wisconsin – Stevens Point on February 19, 2015. The job fair drew over 200 students interested in natural resources jobs and internships and provided opportunities for those students to meet and talk to over 55 potential employers who were at the job fair. Betsy and Ted answered questions about potential career opportunities with the Service including the Pathways and Directorate Fellowship Programs, summer technician positions, and the possibility of full time employment after graduation. Region 3 Human Resources provided outreach materials and arranged a display booth for the event. Green Bay Field Office Special Agent Steve Stoinski also provided eye-catching wildlife displays. Here's to hoping to run into some of those eager students down the road in their professional careers!

Kalamazoo River Streamside Rearing Trailer Ready for Fish

BY DOUG ALOISI, GENOA NFH

After an eventful winter, the Kalamazoo River Streamside Rearing Facility is now deployed at its Allegan, Michigan riverside location ready to receive lake sturgeon eggs and fry. This winter the trailer was put through its paces deployed as a holding station in the U.S. Fish and Wildlife Service's Green Bay Fish and Wildlife Conservation (FWCO) office garage. Lake Michigan water was recycled through its systems in an attempt to hold a rare deepwater cisco in efforts to allow the small whitefish to mature and successfully spawn.

Then the trailer came back to Genoa National Fish Hatchery (NFH) to receive some much needed renovations. This was also a great opportunity for the 2015 trailer staff to really get a grasp of trailer systems and capabilities before the 2015 lake sturgeon production season. The trailer was then hauled over to Michigan and set up streamside and field tested.

Lake sturgeon have begun their spawning migration up the river, indicated by radio tagged fish being detected at various upstream locations. This indicates that within a matter of days adult lake sturgeon weighing as much as 150 pounds will be gathered at the spawning grounds. Egg traps will be set at the site, with the eggs being gathered and brought into the trailer for rearing. Lake sturgeon will be reared from eggs to 8 inches and released in early fall, so they can complete their migration back to Lake Michigan. There they will eat and grow for 16 to 22 years, when they will be old enough to make the return trip up the Kalamazoo River to reproduce.

The project has successfully reared three year classes of juvenile lake sturgeon, and strives to ensure that every year class produced can be represented in future spawning runs to perpetuate this river-specific population of lake sturgeon. This cooperative effort is made possible due to the help of our partners, the Michigan DNR, Green Bay FWCO, the Gun Lake Tribe, Allegan County Parks Department and Kalamazoo Chapter of Sturgeon for Tomorrow.



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.



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