ALPENA FWCO NEWSLETTER

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Fish Passage Project on Sucker Creek Road-Black River Completed!

By Andrea Ania

Since The Sucker Creek Road crossing on the Black River (Alcona County, MI) was completed this November (2012). The project involved removing the old culverts and replacing them with a timber bridge. The new bridge provides unrestricted passage of all aquatic organisms that reside within the system and migratory species that move seasonally upstream from Lake Huron. This small coastal system in northeast Michigan supports a variety of migratory fish species, including a run of sizeable brook trout.

The existing perched and undersized culverts at the road-stream crossing were blocking fish and aquatic organism passage. The culverts were also having some negative impacts on natural stream processes and causing streambank erosion downstream of the road-stream crossing. Additionally, this site had been identified as the number one source of sediment entering the watershed due to long, steep road approaches that continuously washed into the stream and created a maintenance issue for the Alcona County Road Commission.

Migratory fish now have access to an additional 28 river miles of spawning, nursery, and feeding habitat. The road and ditch improvements will prevent 63 tons of sediment from entering the river each year. The new 30-foot spanning bridge and approach work improves the river's ability to transport sediment, reduces sediment input, and improves fish habitat, which may provide better fishing opportunities.

Partners that made this project a reality include: U.S. Forest Service, Huron Pines, Great Lakes Fishery Trust, and U.S. Fish & Wildlife Service's National Fish Passage Program.

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Top Left: Before – View from downstream of the twin, undersized and perched culverts. Photo credit: Andrea Ania. Top Right: After – View from downstream of the newly constructed bridge, which provides unimpeded aquatic organism passage. Photo credit: Andrea Ania. Bottom: Project location in northeastern Michigan. Image credit: Google Earth © 2012 Cnes/Spot Image, Image © 2012 Terra Metrics, Image NOAA.

Alpena FWCO Completes Annual Survey to Detect Invasive Eurasian Ruffe in Lake Huron and the St. Marys River

By Anjanette Bowen

Staff During fall 2012, the U.S. Fish and Wildlife Service (USFWS) Alpena Fish and Wildlife Conservation Office (FWCO) completed an annual survey to detect populations of Eurasian ruffe (ruffe) in Lake Huron and the St. Marys River. Bottom trawling gear was used to conduct the survey at eight nearshore locations in U.S. waters of Lake Huron and six locations in the St. Marys River. Ruffe were not captured during sampling. This effort is part of a coordinated search for new ruffe populations on the periphery of their range in Lake Huron, Lake Erie, and Lake Ontario. Sampling in Lakes Erie and Ontario is conducted by the USFWS Lower Great Lakes FWCO.

Ruffe are thought to compete with native species for habitat and food resources. They have been found in Lake Superior (Thunder Bay, Ontario south and east along the south shore to the Tahquamenon River), Lake Michigan (Green Bay), and Lake Huron (Thunder Bay area).

Within Lake Huron, ruffe were captured from the Thunder Bay area starting in 1995 and were abundant in bottom trawls by fall 1999. Their catch rates declined from 1999 to 2003 and ruffe have not been captured from the area since spring 2003. Anecdotal sightings of ruffe have been reported from the Trout River in Rogers City during spring 2008 and the Cheboygan River in Cheboygan during spring 2011. Alpena FWCO conducted additional spring and fall sampling in Alpena, Rogers City, and Cheboygan targeting areas were ruffe were reported using electrofishing gear and trap nets. Ruffe were not captured.

An otter trawl is lifted by Alpena FWCO staff during surveillance for invasive Eurasian ruffe. Image credit: USFWS.

A biological marker for ruffe was developed by Dr. Andy Mahon at Central Michigan University in collaboration with scientists from The Nature Conservancy and the University of Notre Dame. The marker can be used to detect the presence of ruffe DNA in water (environmental DNA – eDNA). Water sampling for genetic analysis and detection of ruffe eDNA is scheduled for late 2012 and will be conducted in areas where ruffe have been reported in Lakes Huron and Michigan.

Alpena Fish and Wildlife Conservation Office Field Tests Custom Designed Mobile eDNA Filtering Trailer

By Chris Olds

With the expected implementation of an environmental DNA (eDNA) program for the Great Lakes by 2014, Alpena Fish and Wildlife Conservation Office (FWCO) began exploring options during 2011 for field-based filtration of water samples. Biologist Chris Olds suggested a mobile filtering unit similar to the Lake Sturgeon Stream-Side Rearing Units employed by Genoa National Fish Hatchery. The concept was a self-sufficient trailer designed for use at remote sampling locations along Lake Huron that maintained the ability to utilize a plug-in power source if facilities were available. Brainstorming and design considerations

started in October 2011. The final trailer concept was shared with the Regional Safety Department and the La Crosse Fish Health Center Staff in late 2011 to ensure that it would meet all safety requirements and quality assurance standards for the water filtering procedures.

The trailer contract was awarded to Featherlite Inc. on July 3, 2012, who then worked with Alpena FWCO to ensure that the internal trailer components would meet all of the filtering needs both at remote sampling locations and when hooked up to shore power. The trailer design included wet lab area and dry lab areas, two large entry doors, a built-in vacuum system (with backup) capable of running all six filter stations in the trailer, and a built-in heating and A/C system. The trailer design also included a fresh water tank and an on-demand de-ionized water system. With trailer design and specifications complete, Featherlite Inc. went to work building the unit. Upon completion the trailer was then transported from Cresco, IA to Alpena, MI for final inspection by FWCO biological staff.

The trailer arrived at Alpena FWCO the week of October 22, 2012 and was outfitted with all necessary gear and field tested in late November, 2012. The mobile filtering unit exceeded all expectations and was able to handle all necessary functions concurrently. The dry lab is 8 feet in length, while the wet lab is 14 feet in length. The wet lab has stainless steel countertops that run the length of the trailer on the outside walls and two sinks located at the front and back of the wet lab. There are seven vacuum line valves to accommodate the filter manifolds, with the vacuum pumps located below the bottom shelves in the dry lab area. The dry lab has floor-to-ceiling lockable cabinets that can store all necessary filtering consumables and enough 2-liter bottles to collect over 300 water samples. The trailer's capabilities are endless-it can be utilized as a mobile eDNA filtering lab, a mobile field station, or even a mobile classroom. Alpena FWCO is very pleased with their new trailer and is anxious to use it in the spring collecting water samples.

Total Length	26'
Total Width	8' 6"
Height Inside the Lab	8'
Fresh Water Tank Capacity	54 gallons
Grey Water Holding Tanks	3-35 gallon tanks
Power Source	110v shore power or 7.5 kilowatt diesel generator

eDNA Mobile Filtering Unit Specifications.

The eDNA Mobile Filtering Unit. Photo credit: Featherlite Inc.

Biologist Chris Olds setting up a filtering station to test out all the systems. Photo credit: USFWS.

Wet lab of trailer with ultraviolet light system Photo credit: USFWS.

Eurasian Ruffe eDNA Sampling Conducted in Northeastern Michigan

By Anjanette Bowen

The Alpena Fish and Wildlife Conservation Office (FWCO) coordinated with staff from The Nature Conservancy and Notre Dame's Environmental Change Initiative to collect and filter water samples from northeastern Michigan that will be processed in an effort to detect the presence of Eurasian ruffe (ruffe) genetic material or environmental DNA (eDNA).

The ruffe is an invasive fish species that was legally designated as an aquatic nuisance species in 1992 by the Aquatic Nuisance Species Task Force. They are thought to compete with native species for habitat and food resources. Ruffe were first captured in northeastern Michigan in 1995 from the Thunder Bay River in Alpena, MI. Other sightings have been reported from the Rogers City and Cheboygan areas in recent years. Despite continued traditional sampling targeting the species, they have not been captured from the Thunder Bay area since 2003 nor detected in other locations where they were reported. The presence or absence of eDNA is another tool that can be used to help determine the status of ruffe in specific areas of northeastern Michigan.

Water samples were collected from three areas in northeastern Michigan (Alpena area, Rogers City, and Cheboygan) where ruffe have been reported or are suspect. Within the Alpena area, 52 samples were taken from the Thunder Bay River at 9th Street to the river mouth, Thunder Bay Shores Marina, Bare Point canals, Partridge Point Marina, Squaw Bay, and the Devils River in Ossineke, MI. In Rogers City, 14 samples were collected from the Trout River at the barrier in the Herman Vogler Conservation Area and downstream. In Cheboygan, 44 samples were collected from the Cheboygan River at the Cheboygan River Lock and downstream to the river mouth.

Andrew Tucker (right) with The Nature Conservancy collects a water sample from the Cheboygan River in northeastern Michigan while Lindsay Chadderton (left) records locational information. The water samples will be analyzed for the presence of Eurasian ruffe environmental DNA (eDNA). Photo credit: USFWS.

The water samples were filtered at the Alpena FWCO laboratory. The filtered samples will be processed by late February 2013 to determine the presence or absence of ruffe eDNA. Additional water sampling for ruffe eDNA will be conducted during spring 2013 targeting new and previously sampled locations within northeastern Michigan.

The next Friends of the Lake Huron Watershed meeting
will be held at the USFWS–Alpena office
on Wednesday, January 16 at 6:00 p.m.

All are welcome to attend!

Alpena FWCO Receives New Treaty-Unit Vessel

By Adam Kowalski

After two months of design and two month of construction, the Alpena Fish and Wildlife Conservation Office (Alpena) finally received their new treaty unit vessel in late November 2012. This vessel was custom designed by Alpena staff to meet all the needs and safety requirements for conducting gill-net surveys on the Great Lakes.

The primary function of this vessel will be to conduct gill-net surveys for lake trout and lake whitefish in the 1836 Treaty waters of Lake Huron. These surveys are used to estimate the abundance of these two important species, a necessary component for establishing harvest limits in 1836 treaty waters. Taking its purpose into consideration, the vessel was designed to lift gillnets from the bow and set nets over the stern. To accommodate this, the vessel was built out of aluminum (lighter than fiber glass) with a three sided center console. It has twin 225 Evinrude E-Tec motors, a 150 gallon fuel capacity, and state-of-the-art electronics for the safety of the crew. The electronics are all interfaced, including a radar overlay on the chart plotter and a marine radio connected to the GPS in case of an emergency.

Alpena's new gill net vessel. Photo credit: Adam Kowalski.

This Vessel is larger and more stable than the one it replaced. It offers more seating, and a safer work environment. This vessel will allow Alpena staff to more efficiently and safely conduct its annual gillnet surveys.

Initial Data Collected for a Restoration Project on the Shiawassee National Wildlife Refuge

By Joseph Gerbyshak

In early December, Alpena Fish and Wildlife Conservation Office (FWCO) biologist Joseph Gerbyshak assisted Shiawassee National Wildlife Refuge (NWR) biologists Eric Dunton and Michelle Vander Haar with collecting preliminary data needed for a restoration project on Shiawassee NWR. Gerbyshak operated Alpena FWCO's RiverSurveyor, an acoustic Doppler profiler (ADP). The ADP unit is mounted on a small boat and pulled across the river perpendicular to the flow. Along the transect, the ADP measures velocities throughout the water column, collects bathymetry data, and calculates discharge. The data will be used by engineers to design water control structures for the restoration project.

Shiawassee National Wildlife Refuge Biologist Eric Dunton pulls the acoustic Doppler profiler across Spaulding Drain to collect preliminary data for a wetland restoration project on a sunny December day. Photo credit: USFWS.

The restoration project will restore a more natural flow regime to refuge wetlands by installing water control

structures in the banks of the Spaulding Drain. Currently water is managed in wetlands adjacent to the Spaulding Drain via spillways and pumps located on the banks of the drain. The restoration project will consist of installing water control structures, giving refuge staff increased management capabilities. The structures will allow peak flow from the Spaulding Drain into Ferguson Bayou (former Flint River) and managed wetlands. This, more natural option, is better than the alternative of using expensive, hydraulic pumps to manage the water in the wetlands. The increased control of water throughout refuge wetlands will improve habitat quality primarily for waterfowl, but other terrestrial and aquatic species should benefit as well. Refuge biologists are excited to get this project underway and hope to initiate construction during 2013.

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