

ALPENA FWCO NEWSLETTER

May - June 2014
Volume 4, Issue 3



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Studying Lake Sturgeon Movements in the St. Clair– Detroit River System

By Justin Chiotti

For the past three years, fish biologists from the Alpena Fish and Wildlife Conservation Office have been implanting lake sturgeon with acoustic transmitters to assess movement throughout the St. Clair – Detroit River System (SCDRS). The SCDRS is home to nearly 40,000 lake sturgeon inhabiting the Detroit River, St. Clair River, and Southern Lake Huron. While genetically, the lake sturgeon population in the SCDRS is considered one population, the movement data collected as a result of this study investigates behavioral patterns that may be unique to the different spawning stocks. Using existing infrastructure through the Great Lakes Acoustic Telemetry Observation System (GLATOS), the sturgeon implanted in this study can be tracked throughout the Great Lakes for up to 10 years.

Lake sturgeon are captured on setlines during the spring spawning season and biological information such as total length, girth, and weight, is recorded from each fish. Adult lake sturgeon, those typically > 1300 mm are implanted with an acoustic transmitter. The transmitter emits a signal unique to each fish and when that fish passes a receiver submerged in the water (see image), the date and time is recorded. The information can then be used to describe movement between males and females and make comparisons between fish collected from different areas. This year, a total of 40 adult lake sturgeon were implanted in the Detroit River and 57 more in Southern Lake Huron. Over the past three years more than 275 lake sturgeon have been implanted with transmitters as part of this project, making this the largest lake sturgeon telemetry project to date.

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Lake sturgeon captured during setline assessments on the Detroit River, 2014. Photo credit: USFWS.

This project is part of a multi-faceted effort to learn more about lake sturgeon in the SCDRS. In addition to studying the movements of lake sturgeon, mark-recapture information is used to determine population demographics such as population size and survival. This project is conducted in cooperation with the U.S. Geological Survey, Michigan Department of Natural Resources, Ontario Ministry of Natural Resources, Great Lakes Fishery Commission, West Virginia University, University of Windsor, and Purdy Fisheries. For more information about lake sturgeon work in the SCDRS please visit the following websites: <http://www.huron-erie.org/>; <http://data.glos.us/glatos/>.



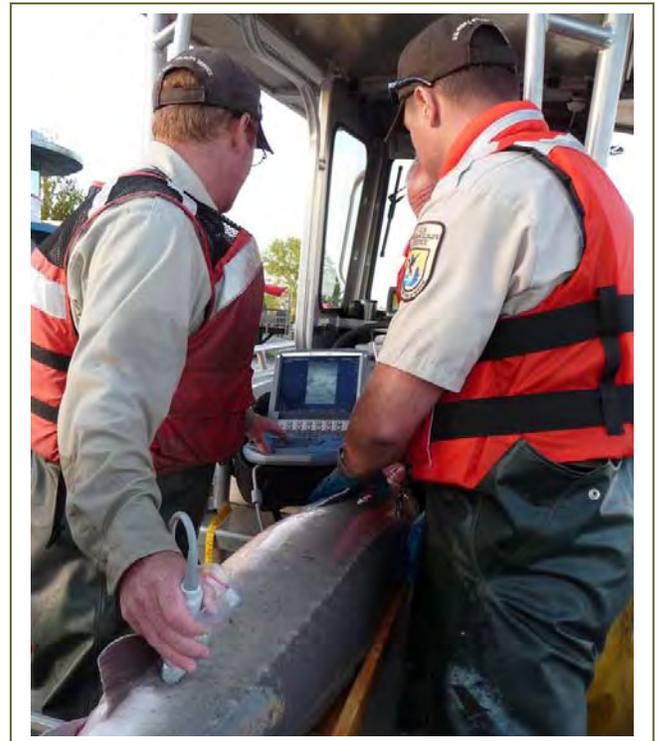
Left: Vemco VR2W Receiver. Photo credit: Vemco. Right: Fish biologist James Boase inserts an acoustic transmitter into an adult lake sturgeon. Photo credits: USFWS.

Ultrasound... What do you use that for?

By Justin Chiotti

Typically when we pull out the ultrasound unit on our boat, the question we get is “What do you use that for?” An ultrasound unit is not something that you commonly see on a boat, but a lake sturgeon telemetry project in the St. Clair-Detroit River System (SCDRS) has provided fish biologists from the Alpena Fish and Wildlife Conservation Office with a unique opportunity to evaluate the use of a portable ultrasound to determine the sex of lake sturgeon.

Sex determination of fish species in the field is difficult to assess when sexual dimorphism and gametes are not apparent. For threatened and endangered fish species such as lake sturgeon, unobtrusive techniques are needed to minimize stress and the potential for mortality. Some of the more common techniques used to determine sex of lake sturgeon include: gonadal biopsy, endoscopy, blood plasma, and ultrasound. All of these techniques have their pros and cons, however collecting images using ultrasound may be done in the field and results can be obtained immediately.



Fish biologist Justin Chiotti and contaminants specialist Jeremy Moore collect ultrasound images from a lake sturgeon captured in Southern Lake Huron, 2014. Photo credit: USFWS.



Left: An ultrasound image collected from a male lake sturgeon during the spawning season in the Detroit River, 2014. Right: An ultrasound image collected from a female lake sturgeon during the spawning season in the Detroit River, 2014. Photo credits: USFWS.

Lake sturgeon are captured on setlines during the spring spawning season and biological information such as total length, girth, and weight, is recorded from each fish. Adult lake sturgeon, those typically > 1300 mm are implanted with an acoustic transmitter. The small incision used to insert the transmitter allows us to visually determine the sex of the lake sturgeon. Ultrasound images are then collected at six different locations along the body of the fish. Back in the office, the sex and maturity status of each lake sturgeon is assigned based on the ultrasound images and compared to the information we obtained in the field by visually determining the sex through the incision. If our data

suggests we can determine the sex and maturity with little error, ultrasound images will be collected from all lake sturgeon in the future to assign sex and maturity status even when gametes are not apparent.

This project is conducted in cooperation with the U.S. Geological Survey, Michigan Department of Natural Resources, and Ontario Ministry of Natural Resources. For more information about lake sturgeon work in the SCDRS please visit the following websites:
<http://www.fws.gov/midwest/alpena/> ;
<http://www.huron-erie.org/>.



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The Friends of the Lake Huron Watershed group holds their monthly meeting on the third Wednesday of each month at 4:30 pm. The group meets at the U.S. Fish and Wildlife Service office at 480 W. Fletcher Street in Alpena, Michigan. All are welcome to attend!

Fish Biologists “Cowboy Up” at the Grand American Fish Rodeo

By Andrew Briggs

Fish Biologists Andrew Briggs and Justin Chiotti of the Alpena Fish and Wildlife Conservation Office – Waterford Substation attended the 2014 Grand American Fish Rodeo. The event took place June 12th – 14th in Lansing, Michigan, with Andrew and Justin attending on June 13th. The Fish Rodeo was advertised as “a celebration of Michigan waterways and a chance to be a little weird.” There were many exhibits, contests, and events during the Fish Rodeo, including a fish tattoo contest, a fishing tournament, a rubber ducky derby, canoe and kayak racing, country music performances, and an education tent. Attendees had the chance to learn about the importance of their nearby waterways, partake in the many contests, ride a mechanical bull, and just kick back and grab some refreshments at “the watering hole.”

Andrew and Justin were in the education tent at the Fish Rodeo where they educated roughly 150 attendees on lake sturgeon and aquatic invasive species. They also brought a live juvenile lake sturgeon in a fish tank, which was a hit since most people had never seen a lake sturgeon before. Attendees were particularly amazed at the sizes that lake sturgeon could reach. Upon seeing a picture of a six foot adult lake sturgeon caught in the Detroit River this year, one child exclaimed, “you’re gonna need a bigger tank!” Other exhibits in the education tent included a tank with live sea lamprey presented by the U.S. Fish and Wildlife Service (Service) Ludington Biological Station, hands on activities with the Michigan Department of Natural Resources, and a demonstration of why “Pollution Isn’t pretty” by the Middle Grand River Organization of Watersheds.

The 2014 Grand American Fish Rodeo marked the first time the event was held. The event allowed the Service to team up with many partners to communicate to the public the importance of our natural resources and why they are worth conserving. Building and maintaining partnerships and inspiring an appreciation for the environment are both important goals of the Fisheries and Aquatic Resources Program of the Service.



Top: Fish Biologist Andrew Briggs displays a live juvenile lake sturgeon to a group of children at the 2014 Grand American Fish Rodeo in Lansing, Michigan. Bottom: “Gill the Fish” at the 2014 Grand American Fish Rodeo in Lansing, Michigan. “Gill” is composed entirely of recycled materials and over 3,000 LED lights. Photo credits: Justin Chiotti, USFWS.

BaySail Partnership: A Win-Win Effort for Conservation and Education

By Anjanette Bowen

Since 2009, the Alpena Fish and Wildlife Conservation Office (FWCO) has partnered with BaySail's Appledore Tallships based in Bay City, Michigan to enhance educational experiences of youth during BaySail's Great Lakes Freshwater Ecology Voyages in the upper Great Lakes. The voyages provide youth a hands-on introduction to the Great Lakes, environmental issues, and field sampling. Students learn to develop scientific habits through data collection and exploration.

The voyages take the students to a variety of locations across the upper Great Lakes. We were able to partner with BaySail to have students minnow trap for round gobies and rusty crayfish at set locations during their voyages. The effort teaches students how to follow sampling protocols and use sampling gear to collect scientific data. The information on round goby and rusty crayfish presence/absence and relative abundance within Lake Huron is useful to the aquatic invasive species program at the Alpena FWCO. The partnership provides a win-win effort for conservation and education.

In addition to Freshwater Ecology Voyages, BaySail also fosters public education about environmental issues in the Great Lakes and Saginaw Bay through other public cruises. Alpena FWCO has provided preserved invasive species specimens to the program, which allows cruise visitors to view invasive species up close. Invasive species WATCH identification cards are also provided to cruise visitors, helping them recognize and report any invasive species they may encounter.

For more information about BaySail's environmental stewardship efforts or to learn more about their cruises, visit their website at <http://www.baysailbaycity.org/>.



Top: Students aboard the BaySail Great Lakes Freshwater Ecology Voyage prepare traps to sample for invasive round goby and rusty crayfish. Bottom: Students collect information on round gobies that are captured during the voyage. Invasive information collected during the sail is provided to the US Fish & Wildlife Service. Photo credits: David Leanza, BaySail.

4th Annual Detroit River Kids Fishing Festival

By Justin Chiotti

The weather cleared up for the 4th Annual Detroit River Kids Fishing Festival held at Milliken State Park and Harbor along the Detroit River Walk. This year, the event was held on June 8th during Michigan's Free Fishing Weekend. Fish biologists from the Alpena Fish and Wildlife Conservation Office – Waterford Substation and staff from the Detroit River International Wildlife Refuge were present to introduce children and adults in the Detroit Metropolitan Area to fishing and to promote aquatic stewardship. Over the past three years nearly 2,000 children have fished along the Detroit River during this event.

Children were taught “fishing basics” by instructors from the Michigan State Parks Explorers Program, staff from the United States Coast Guard was on hand to teach children about boating safety, and Michigan Sea Grant educated children about invasive species in the Great Lakes. This year a trophy was given out to the largest fish captured in both girl and boy divisions. While many fish were captured, a silver redhorse and koi took home the trophies.

The Detroit River Kids Fishing Festival gives the youth in the Detroit Metropolitan Area an opportunity to connect with the outdoors. The list of volunteers and supporters for the event grows each year and it's not hard to understand why after seeing the joyful smile of a child catching a fish for the first time. The Detroit River is designated as an Area of Concern in the Great Lakes, but is undergoing a transformation before our eyes. Funding through the Great Lakes Restoration Initiative is restoring fish and wildlife habitat all along the Detroit River and the children attending the Detroit River Kids Fishing Festival are reaping the benefits.

This year the event was presented by PNC Bank and the Detroit RiverFront Conservancy in support with the U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, Rivertown Detroit Association, Concentra, Wayne County Parks, Sierra Club, IHOP, and Michigan State University Extension.



Top: A family prepares to fish during the 4th Annual Detroit River Kids Fishing Festival. Middle: A white bass caught during the 4th Annual Detroit River Kids Fishing Festival. Bottom: Staff from the Alpena FWCO – Waterford substation with the winner of the “largest fish” category in the boys division. Photo credits: Detroit RiverFront Conservancy.