

Sturgeon Making Comeback in Lake Ontario

The lake sturgeon is a living dinosaur of sorts. The origin of this interesting species can be traced back 200 million years, which is one heck of a long time ago, maintaining the same physical characteristics as its ancestors. To people associated with fish and fishing, they appeared to be a limitless resource here in New York and the Province of Ontario. Despite this longevity, our knowledge of these fish is amazingly limited. Tales of long stringers of sturgeons were backed up with photos and filled area bragging boards in the 19th and 20th centuries. Overfishing for meat and caviar combined with habitat degradation and pollution to whittle away population levels for this fish. In less than 200 years, lake sturgeon numbers were declining rapidly. It was feared that they would soon be going the way of the blue pike (now extinct) and sturgeon became a protected species.

"Thanks to improved equipment and technological advances, we are finding out more and more about the sturgeon."

Today, lake sturgeon in the Great Lakes are slowly making a comeback to the excitement of fisheries biologists like Dr. Dimitry Gorsky of the Lower Great Lakes Fish and Wildlife Conservation Office located in Basom, New York. Dr. Gorsky has been involved with a lake sturgeon study in the lower Niagara River and Lake Ontario for the last five years and the early results are certainly impressive to say the least. At the same time, he is compiling a long list of pertinent sturgeon information that will give him and his colleagues data on fish movement, prime spawning areas, diet and general health of these swimming marvels.



Sturgeon along the shoreline of the Niagara Gorge in May.

"We are trying to collect as much information as possible," says Gorsky, a U.S. Fish and Wildlife Service employee. "So far in five years of setting overnight setlines in the Niagara River, we have managed to catch, tag and release in excess of 800 lake sturgeons. The amazing thing is that we have had very few

Niagara River — with most of them being in the Niagara River. The receiver is anchored to the bottom of the river with a concrete block and picks up signals from the fish transmitter. When it comes time to collect the data, they simply scuba dive into the river or lake and pick up the information through the receiver. The researchers will be able to determine things like locations, depth and water temperature, all cross-referenced with the calendar and the fish from each receiver. When compiled, they will be able to get a cross-section of a particular fish for a specified amount of time — an important piece of their lifetime and a better understanding of these gray giants.

A big part of the study, which will be ongoing for another year or so, will be to collect information on reproductive behavior. Biologists are continuing to catch sexually mature fish throughout the study and that natural reproduction has been occurring from 1992 to 2005. In an earlier study of the same area, a total of 91 sturgeons were caught by using a total of 250 setlines. In 2013 alone, a total of 208 sturgeons were caught by using 157 setlines.

"We are starting to collect the acoustic receivers now," says Gorsky. "Unfortunately we are missing a

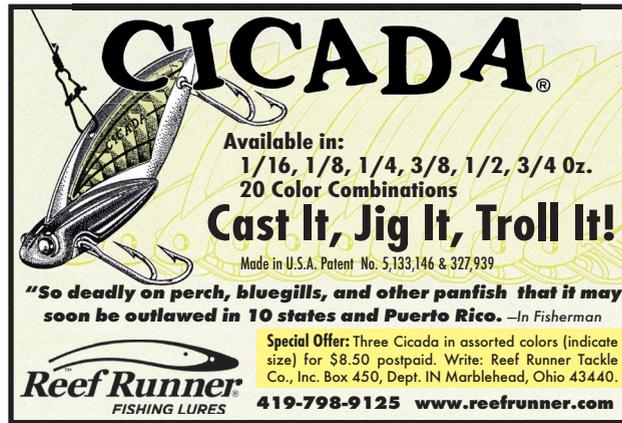
recaptures in our work which gives us a population estimate of around 5,000 fish in the lower Niagara River area alone. We've recaptured approximately 50 of those fish, giving us a recapture rate of about six percent." Each fish was outfitted with a Passive Integrated Transponder (PIT) tag so that they could keep track of individual fish.

In addition to every fish being tagged, a total of 30 fish were harnessed with radio acoutrements to help follow movements, locate preferred habitats and identify spawning areas. Some 39 receivers have been placed into the lower section of river — from Devil's Hole to the Niagara Bar off the mouth of the

few. So far we have found 23 of them, extremely valuable data for us. In one case there was a scuba diver who found a receiver and pulled it off, thinking he was doing someone a favor. When he found that this was part of a research study, he put it back, but in a little different place. We finally found it. We hope to collect all of the receivers by December of 2015 and then start compiling the data. Those results should be available by the summer of 2016. We can't get it soon enough, but it's a slow process and there is a tremendous amount of information."

Fisheries agencies are working together now to collect additional data by using the same style of equipment for its own research, and sharing information that may come through with any crossovers. "This is exciting to see everyone working together to collect information on a variety of fish species," says Gorsky. "DEC, U.S. Geological Survey and the Ontario Ministry of Natural Resources are utilizing the same receivers and when one of our tagged fish travels within the boundary of a receiver that they have, we are sent the information for our data base." OMNR has receivers at the Welland Canal just west of the Niagara River, as well as in Toronto Harbor across the lake. They also work together with funding and in-kind services through boats and personnel to allow for better management of the lake as a whole.

Another important component of the study is to determine what these fish eat. Its torpedo-shaped body has a mouth that is perfect for this bottom feeder, resembling a vacuum cleaner. It makes sense that the study so far has revealed that amphipods (bottom crustaceans) account for 91 percent of all prey items. Round gobies make up 87 percent of the wet mass. That said, they will also feed on crayfish,



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Fish are held in tanks to allow for biologists to record length and take a genetic sample.

way to spot a sturgeon seeking out a spawning area. I have seen sturgeons act like a Cape Canaveral rocket — exploding upwards completely out of the water and crashing on their bellies. Whether it's a spring mating ritual, a way to loosen eggs before spawning or just something they do for fun, no one quite knows for sure of its purpose. It sure is amazing and very special to experience.

Natural reproduction is also an important component as biologists struggle to learn more about these mysterious fish. The fish is long-lived — up to 60 years for males; up to 150 years for females. Males will become sexually mature at 8 to 12 years of age; females 14 to 33 years of age. The problem for the speedy recovery of these fish in the Great Lakes is the frequency with which they spawn. “Only about 10 to 20 percent of mature adults spawn in any given year,” says Gorsky. “While we have detectable levels of recruitment observed for year classes between 1995 and 2000, there is a definite lack of young and old-age classes as far as our studies are concerned.” But is there a lack of younger year classes?

“We need to come up with a better testing method for younger fish,” says Gorsky. “We would like to see more evidence of younger year classes. They may be hanging out in different sections of the river or the lake. While we would like to see angler involvement, we don't want to encourage anyone to try and target these fish. They are a protected species.” The state's Department of Environmental Conservation (DEC) put out a press release a few years ago reminding anglers that it was illegal to target sturgeons and catch them on purpose. There were some fishermen that were attempting to circumvent the regulations by claiming that they were fishing for other fish species in the Buffalo harbor



Weighing a sturgeon near the water to minimize time out of the river.

shiners, worms and will hit just about anything an angler will toss into the water. Sturgeons have been caught on treated egg skein, spoons, spinners, tube jigs and a long list of other terminal tackle. A favorite fishing hole for salmon fishermen in the Niagara River is the Devil's Hole area, located in the Niagara Gorge in and around some serious current. It's also a favorite area of sturgeons. Each year, 20 to 30 sturgeons (or

more) are caught by fishermen targeting kings. Because these fish are a threatened species, sturgeons must be immediately released back into the water. In fact, it is recommended that you don't even take the fish out of the water. Remove the hooks as quickly as possible without touching them. If a sturgeon happens to ingest the hook, cut the line. Walking along the shoreline in the gorge in the spring is a good



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The fish are released back into the river, outfitted with a PIT tag.

area above Niagara Falls. However, the equipment that they used was better suited for much bigger fish than walleye or bass. It appeared that the area holding the sturgeons was a prime spawning area in the spring and since then more research has been conducted there, too.

St. Lawrence River Studies

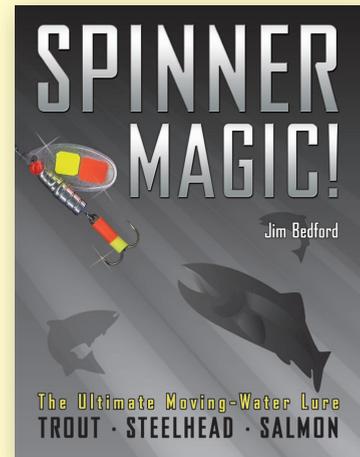
At the extreme eastern end of Lake Ontario in the St. Lawrence River system, similar studies are being conducted by DEC and the U.S. Fish and Wildlife Service. Last year (2014) was the final year of a five-year study. Fisheries biologists captured a total of 245 lake sturgeons throughout the designated sampling area, again given dorsal fin jewelry with Passive Integrated Transponder (PIT) tags if the fish was not tagged previously. Here, too, more than 800 unique sturgeon have been

tagged for research purposes. There have also been a limited number of recaptures. One fish in particular traveled a total of 92 miles — from Oneida Lake inland to Black River Bay in Lake Ontario. That fish had to navigate through the state's canal system to make it from point A to point B. The future appears hopeful for sturgeons in the St. Lawrence and eastern Lake Ontario as well. Populations have been recovering for decades.

Thanks to improved equipment and technological advances, we are finding out more and more about the sturgeon. Don't be surprised if one day these tags have some type of a scanning code for Smart phones that can be uploaded through cell phone networks. The sky is the limit, as the saying goes. Maybe it will be a little higher than that before it's all said and done.

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