

Lake Erie Lake Sturgeon Survey by Commercial Fishers



Emily C. Zollweg

U. S. Fish and Wildlife Service, Lower Great Lakes Fishery Resources Office
405 N. French Rd., Suite 120A, Amherst, NY 14228

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History

The Alpena FRO began working with a commercial fisher on Lake Erie in 1996. From 1996-1998 Gerry Penner, a Canadian commercial fisher, regularly recorded biological data and tagged lake sturgeon that were incidentally caught during his regular commercial fishing activities. This data proved to be of value to lake sturgeon studies on Lake Erie, particularly in an area where data were generally lacking. As a result, in 2001, several USFWS employees participated as crew aboard Capt. Penner's vessel, assisting in all regular fishing activities. The Lower Great Lakes Fishery Resources Office (Lower Great Lakes FRO) has worked to provide five Lake Erie commercial fishers with training and supplies to tag incidentally caught lake sturgeon. These five fishers carry tagging boxes on their boats and report biological data and tag information to the USFWS on an annual basis. They also collect samples for genetic analysis.

Methods

In 2003, Lower Great Lakes FRO personnel provided five Canadian commercial fishers with tagging equipment and instructions to independently collect information from incidentally caught lake sturgeon. Fishers used monofilament gill nets (2 5/16 to 5" mesh size) set on the bottom or kited 1-2 feet off the bottom.

Results

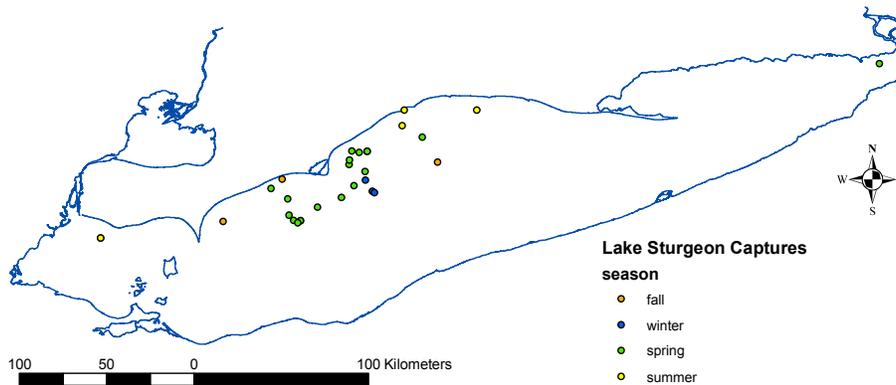


Figure 1. Locations of lake sturgeon caught and tagged in 2002 and 2003.

Twenty-four lake sturgeon were captured during the course of this study in 2003 (Figure 1). Total length ranged from 39.5 to 114 cm (Table 1, 2). Length frequency of fish caught in the central basin in 2002-2003 was similar, but slightly larger than length frequency of fish caught in the western basin in 1996-1998 (Figure 2, 3). Age structures are not collected by Lake Erie commercial fishers; therefore, no age information is presented here.

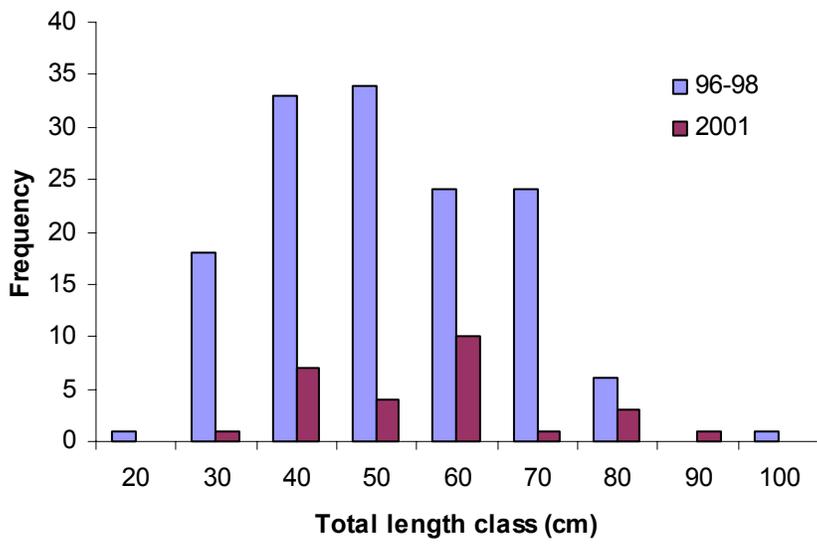


Figure 2. Length frequency of western Lake Erie lake sturgeon 1996 to 1998 compared to 2001.

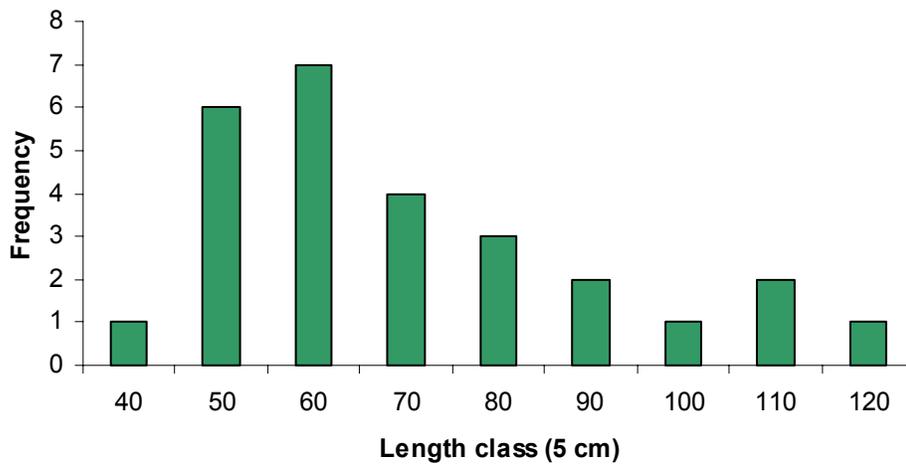


Figure 3. Length frequency of central Lake Erie lake sturgeon, 2002-2003.



Length and other biostatistics indicate that this is a population of juvenile and sub-adult fish. In 1996-1998, 26 lake sturgeon less than 420 mm were captured, in the spring of 2001 only one lake sturgeon less than 420 mm was captured, in 2002 no lake sturgeon less than 420 mm were captured, and in spring 2003 only one lake sturgeon less than 420 mm was captured. The smallest juvenile fish are no longer represented in significant numbers in our sampling efforts. These lake sturgeon would have been spawned in the last 1-5 years. There is a need to determine spawning periodicity and factors affecting survival of the smallest juvenile lake sturgeon including climatic and other environmental events. The adults in this stock may reside in the eastern basin or may be too large for the gear. Further investigation will determine these factors.

Table 1. Biostatistics on lake sturgeon caught and tagged in 2001 in the western basin of Lake Erie.

	Girth (cm)	Total Length (cm)	Weight (kg)
Mean	23.7	61.1	1.53
Minimum	11.5	32.0	0.06
Maximum	39.0	97.0	5.00

Table 2. Biostatistics on lake sturgeon caught and tagged in 2002-2003 in the central and eastern basins of Lake Erie.

	Girth (cm)	Total Length (cm)	Weight (kg)
Mean	26.8	66.9	2.4
Minimum	16.0	39.5	0.15
Maximum	47.0	114.0	10.00



In general, established commercial fisher assistance programs in the upper Great Lakes have shown that spring fishing yields higher numbers of by-caught lake sturgeon, providing valuable data for managers. This pattern of higher sturgeon catches in the spring can now be seen on Lake Erie as well. Likewise, with these five commercial fishers now trained and equipped to process incidentally caught lake sturgeon, an increase in the amount biological data available for Lake Erie fish can be expected. As more fish are tagged and as these fish are recaptured in future years, we will be able to determine where the Lake Erie lake sturgeon are spawning and whether or not they migrate out of the area (Figure 1). This information will be invaluable in protecting this stock and others throughout the Great Lakes.

Acknowledgements

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