Restoring lake sturgeon

A story of curiosity, passion, and serendipity leading to hope for this ancient species

By Nancy A. Auer, Research Professor Emeritus, Michigan Technological University

I BELIEVE that engaging the science-policy nexus can only spring out of diligent research. It results from addressing a scientific question and then going on the quest for answers. Some answers can impact policy decisions, but my research was driven by a passion to understand and hopefully impact the future of a fish. It was also based on serendipity.

When I helped develop and publish the *Atlas for Identification of Larval Fishes of the Great Lakes* in 1982, I had visited a hatchery full of baby lake sturgeon (*Acipenser fulvescens*) reared at the University of Wisconsin, Milwaukee. Viewing those tiny fish marked me for life. When I moved to upper Michigan, I inquired at the Baraga Michigan Department of Natural Resources office if there were sturgeon in the river named Sturgeon that hundreds of people cross daily on their way to Houghton. I was told there were lake sturgeon in that river, but nobody had investigated them; I was given permission to try. I wrote a Nongame Wildlife Grant, received funding, and the rest is history.

In the 1980s few people worked on lake sturgeon populations as most were believed to be remnant or lost, but I started tagging and tracking them in 1987. Unbeknownst to me, a hydropower facility operating in a peaking mode and impacting flow regimes was due to be relicensed in 1990. My early research was on basic population biology. We found spawning fish stranded for long



periods, spawned eggs left high and dry when water levels fell, and few females were to be seen. The data collected were used in FERC relicensing, and the facility changed to Near-Run-of-River (ROR) operation after 1990. Dramatic differences were noted in the sturgeon population after that as the same amount of water coming into the reservoir had to be released 24/7 and a minimum flow was imposed to make sure fewer spawned eggs were exposed. The ROR flows brought larger fish (often females) into the spawning area, fish spawned and left quickly, and eggs had more stable flow and temperature conditions.

During my early years of sturgeon work, I often wondered about effects of sea lamprey treatments as they were being done at the same time newly hatched lake sturgeon drifted downstream after hatching. I inquired of the U.S. Fish and Wildlife Service, but they had no data on possible impacts to sturgeon. So one year they set up a trailer onsite and used Sturgeon River water and hatchery-raised sturgeon in tanks to test the possible effect of typical treatment. Much to the dismay of all, it became clear that lake sturgeon youngsters were sensitive and there was enough mortality to change treatment protocols for later in the year when drift would be over. They now treat in late summer or fall in rivers known to have both sturgeon populations and water chemistry conditions that require attention.

Research scientists in other systems also began to see successes. But I am proud to say some of my work was used to reshape policy that improved conditions for and helped increase a population of lake sturgeon that range widely across all of southern Lake Superior after 30 years of effort for the species.



Photos courtesy of MTU