

Winnebago System Sturgeon Spawning Assessments 2013

Post-Season Synopsis

Ryan Koenigs, Winnebago Sturgeon Biologist, May 29, 2013

The 2013 sturgeon spawning migration was met with expectations of a short, yet intense run. The ice broke loose on the Wolf River on April 6, which is two weeks after sturgeon began spawning in 2012, but air temperatures through the first few April weeks stayed cool and therefore water temperatures warmed very slowly. The slow warming led to sturgeon spawning later this year than on average, because spawning is strongly correlated to water temperature and peak spawning typically takes place at water temperatures of 54-60°F. The Wolf River reached this temperature range on the weekend of April 27, which cued spawning and the first sturgeon spawning activity was observed at the Sturgeon Trail in New London on the afternoon of April 28, 2013. Warm temperatures during that time period led to water temperatures throughout the Wolf River that were in the optimal spawning range and the fish responded. During the short period from April 28-May 1 there were sturgeon spawning simultaneously at spawning sites spread from New London to Leeman on the Wolf River with fish also being observed spawning in Berlin and Princeton on the upper Fox River and numerous sites along the Little Wolf and Embarrass Rivers. As expected, the spawning run went very fast and by the afternoon of May 2 (just 4 days following the onset of spawning) there was very little spawning activity taking place and the first run of the 2013 sturgeon spawning migration was completed.



Students from University of Wisconsin Stevens Point with an 82" lake sturgeon that was handled on the Wolf River below the Shawano Dam on May 1, 2013 (photo credit: Aaron Funseth).

As observed in most years, there was indeed a second spawning run of sturgeon documented on the Wolf River. Fish were observed spawning at Bamboo Bend in Shiocton on May 16 and at the Shawano Dam on the afternoon on May 17. Similar to most 2nd runs, this run did not contain nearly as many fish as the first run and likely was comprised of a hand full of late-spawning females at each site. When ripe females return the near shore rock habitat to spawn, the males pick up on the cues and will once again come back in and spawn with those females. Following spawning activity, males typically stay in deeper water adjacent to spawning sites until all prospects of spawning activity have diminished.

My crew and I did not venture out to tag sturgeon during the 2nd run, but we were very successful handling spawning fish during 4 days of the first run. In total we handled 208 females (150 newly tagged fish and 58 recaptures), 802 males (512 newly tagged fish and 290 recaptured males), and 2 fish of unknown sex. Our goal each spring is to handle and mark as many untagged fish as we can during spawning assessments, but our benchmark goal is 150 new female marks. Even with the shortened spawning run this spring we were able to meet this goal. We knew we were going to have a shortened window to tag spawning fish and thus worked longer hours to maximize our tagging opportunities.

Similar to what we have observed over the last 5-10 years, numerous “trophy” sized sturgeon were handled this year (length distribution of adult fish shown below). In fact, 19% of the adult females that we handled this spring were larger than 70”, with the largest fish being an 82” female that was handled below the Shawano Dam on May 1 (photo insert above).

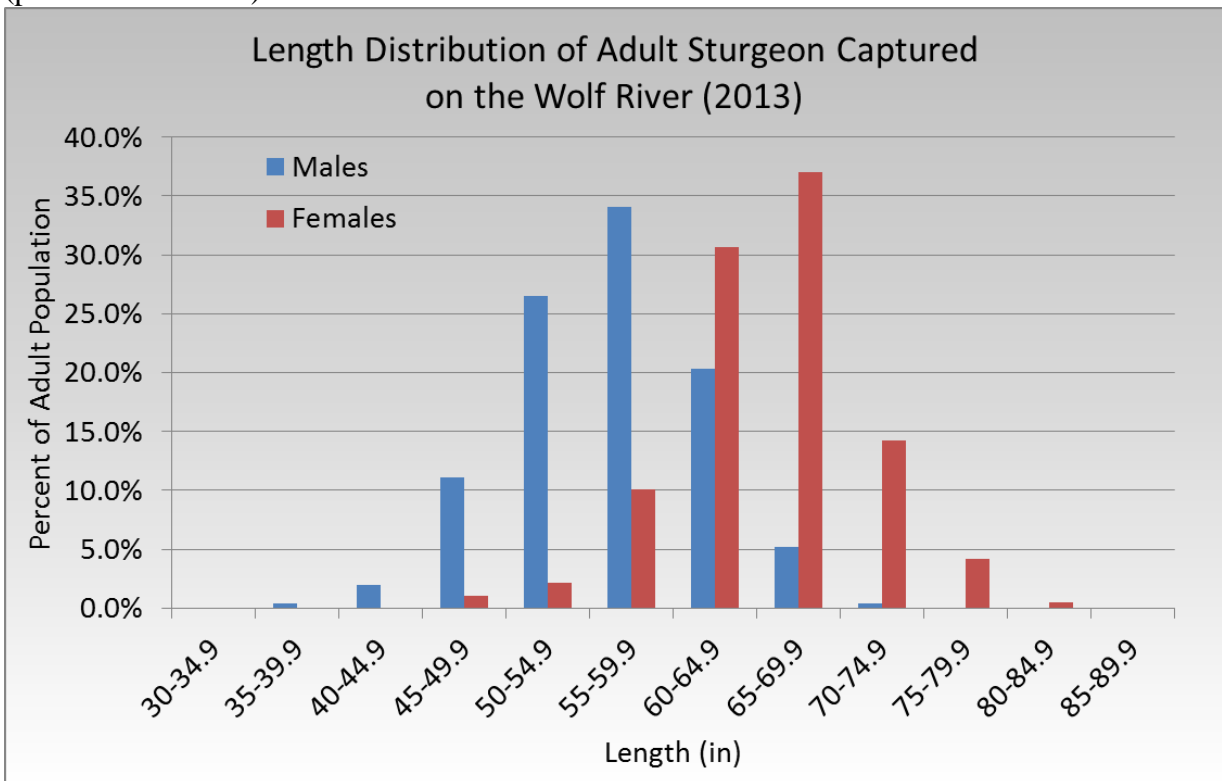


Figure 1. Displays the length distribution of adult male and female lake sturgeon handled during 2013 spawning assessments conducted on the Wolf River.

The most significant highlight of the 2013 spring field season for sturgeon was the progress that has been made in our Menominee sturgeon restoration project. The WDNR and the Menominee Indian Tribe are currently involved in a 10-year agreement to restore spawning and resident sturgeon to the upper Wolf River within the Menominee Reservation. To meet these objectives, 100 sturgeon per year are being captured from the lower Wolf River below the Shawano Dam and transferred to the upper Wolf River within the Reservation. This spring completed the 2nd year of transfers, and preliminary results have been very promising. Sturgeon were observed spawning below Keshena Falls on the upper Wolf River in both years, and our crew (working with representatives from the Menominee Tribe and the United States Fish and Wildlife Service) was able to capture larval sturgeon on May 21 (photo insert below). The capture of these larval sturgeon indicate that not only are fish spawning, but they are also successfully creating young sturgeon. We suspect that larval sturgeon were also produced following the 2012 sturgeon transfers, and these two instances represent the first spawning activity to take place below Keshena Falls in more than a century.



Larval lake sturgeon captured on the upper Wolf River below Keshena Falls on May 21, 2013. Larvae are approximately 10 days old.

One question we hear quite often at sturgeon spawning sites is what are you all doing to that fish and why do you need to tag them? Well to start off with, during our spring spawning assessments we document the length, sex, and tagging history of each

fish that we handle. These fish are actively spawning and thus we can determine sex because the males are actively ejaculating sperm. We have also been marking fish on an annual basis since the mid-to-late 1970s (metal tags attached to the dorsal fin were exclusively used up to 1999, metal and PIT tags were used in combination from 1999-2003, and PIT tags have exclusively been used since then), and we observe every fish to



Top: injecting a PIT tag into an adult fish; Right: what a PIT tag looks like Photos by Bob Rashid



determine whether or not it has a metal tag or a PIT tag. PIT tags are little chips (photo insert; left) that we inject underneath the skin of the fish and each tag has a unique 10 digit number that identifies that fish for the remainder of the fish's life. These tags can be used to mark cats and dogs and have far greater retention rates than the metal tags that were used years ago. By tagging fish each spring, we know how many tagged fish are in the population and we then look for these tagged fish in the harvest during the winter spear fishery. The mark data from spring spawning assessments in combination with the recapture data collected during the winter spear fishery are used to estimate how many adult male and female sturgeon are present in the population. These

population estimates are then used to set sustainable harvest caps for the spear fishery. Harvest caps are set to regulate the harvest of juvenile females, adult females, and male sturgeon to ensure that <5% of the population is harvested in that year (a harvest of <5% results is sustainable, while harvests >5% increase the risk of over-harvest).

We currently have the largest naturally reproducing lake sturgeon population in the world as a result from the management program that we currently have. The data that we collect during spawning and harvest assessments are the focus of this program and allow us to make sound management decisions based on accurate biological data. I have always enjoyed working during our sturgeon spawning assessments, as I get to work with a magnificent resource with a very skilled staff that take great pride and enjoyment in their work. I am already looking forward to the 2014 sturgeon spawning assessments!

Good luck fishing!

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