"Living the Good Old Days for Big Fish"

For more than a decade Winnebago System biologists (Ron Bruch and Ryan Koenigs) have been talking about the era of big fish on the Lake Winnebago System. Since 1955, the average harvest from Lake Winnebago has had 1.6% of the fish harvested be 100 pounds or larger. Between 1955-2008 there were only 3 seasons (1965, 1966, and 1983) where more than 2% of the fish harvested from Lake Winnebago were larger than 100 pounds (Figure 1). In comparison, each of the last 11 spearing seasons have met this criterion. Further, we are on our way to making the 2019 spearing season the 12th straight as 5.2% of the fish harvested through the first 5 days have been larger than 100 pounds.

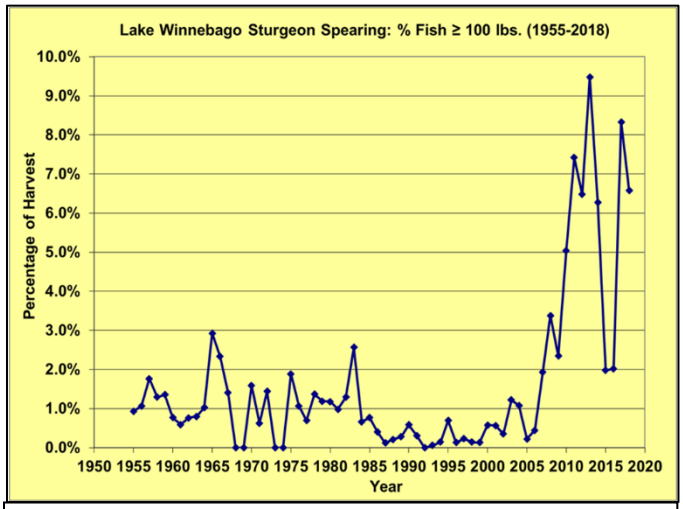

Figure 1. Percent of the Lake Winnebago sturgeon harvest that was larger than 100 pounds for the 1955-2018 spearing seasons.

The trend of increasing numbers of large fish in the Winnebago System sturgeon population has also been observed during spring spawning assessments. Each spring the DNR conducts a spawning stock assessment on the Winnebago System tributaries. Sturgeon are captured with large dip nets and important biological data are collected. Fish are not weighed during this assessment, but each fish is measured. Typically, a 70" fish will weigh around 100 pounds and we have observed a steady increase in the prevalence of 70+" female lake sturgeon during spring assessments dating back to 1991 (Figure 2).

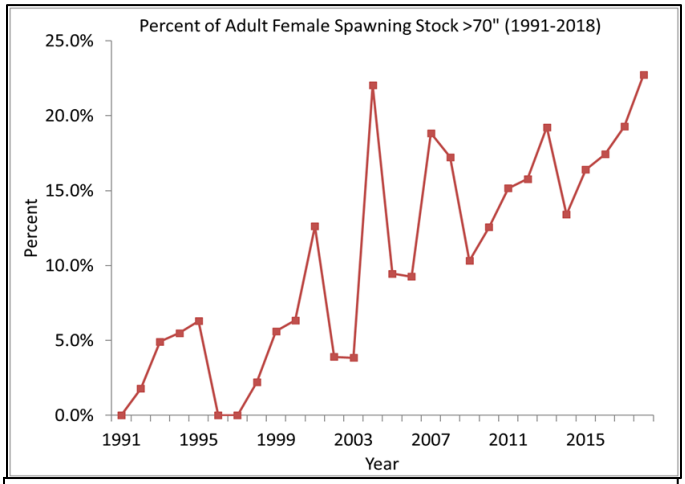

Figure 2. Percent of female lake sturgeon handled during spring spawning stock assessments that were larger than 70".

So you might be questioning why there has been such an increase in the number of large fish in the system? The answer is fairly complicated as there are many contributing factors. However, the protection of the population from illegal and legal overharvest is the main reason. Illegal harvest, particularly during spring spawning periods, was a big concern up until the 1980s. That was the justification for establishing the sturgeon guard program in the late 1970s, which along with a more conservation ethic has significantly reduced

illegal harvest. Timely regulations, in particular creation of a harvest cap system, shortened spearing days, and the lottery fishery on the Upriver Lakes, have all protected the population from legal overharvest during the spear fishery. These actions have all protected fish from overharvest, allowing them to reach older ages and larger sizes. The emergence of gizzard shad on the system has also played a large role, particularly in relation to fish weights. Shad exploded on the Winnebago System in the late 1980s and provide a fatty food source that lake sturgeon historically did not have. Shad exhibit boom-bust recruitment cycles and experience large die offs during the winter months, providing an abundant food source to sturgeon. Much of the variability from year to year in the percentage of 100+ pound fish in recent years has been due to shad abundance (Figure 3).

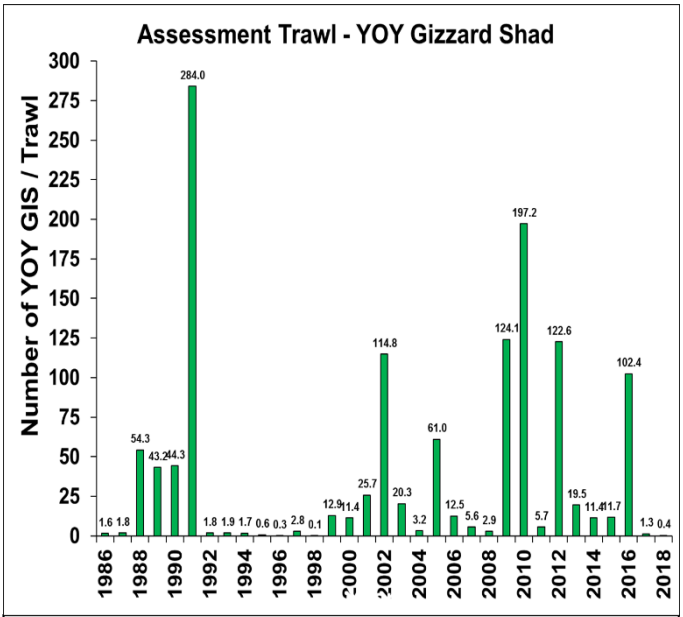

Figure 3. Catch rate of young of year (YOY) gizzard shad observed during fall bottom trawling assessments conducted on Lake Winnebago.

In yesterday's vignette I mentioned that the sturgeon record books had been rewritten between the 2004-2013 spearing seasons (Figure 4). When looking closer at the data, 8 of the top 11 heaviest fish harvested during the 78-year period dating back to 1941 were registered during the 2010-2013 seasons. The strong gizzard shad hatches of 2009, 2010, and 2012 strongly contributed to the impressive weights of fish harvested during these seasons (Figure 3). The 171.0 pound sturgeon registered by Jonathan Heider on opening day represents the 3rd fish harvested during the past three seasons that was longer than 83". None of these fish crack the top 11 heaviest fish on record, but they represent the potential of fish currently residing in this population. I anticipate that the record books will experience a significant shake up the next time we have back to back strong shad hatches or several strong hatches within a 3-4 year period.

"Heavy Hitters Club"

STURGEON

Largest on Lake Winnebago System

1941 to Present

(170 lbs & over)

	Weight	Length	Year
1st	212.2	84.2	2010
2nd	188	79.5	2004
3rd	185	80.2	2011
4th	180	79	1953
5th	179.8	79.6	2012
6th	179.0	80.0	2013
7th	175.3	78.5	2012
8th	172.7	76.9	2011
9th	172	78	2008
10th	171.3	83.0	2010
11th	171.3	75.6	2011

Figure 4. Length, weight and harvest year for the top 11 heaviest fish on record of being harvested from the Winnebago System since 1941.

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