

# 2014 Winnebago System Yellow Perch Fyke Net Survey

## *Post-Season Synopsis*

Ryan Koenigs, Winnebago Sturgeon and Panfish Biologist, 16 December 2014

The weather patterns during spring 2014 were fairly similar to 2013. Both springs brought colder than average temperatures and a more gradual warm up than normal. Due to these cooler conditions, ice out occurred a little later than normal. Water temperatures warmed slowly following ice out, which led to a delay in fish spawning activity.

Similar to methods utilized in 2012 and 2013, fyke nets were set shortly after ice out at Riverside Park on the Fox River in Oshkosh. A single net was deployed for the evenings of April 6-8, with minimal catches on April 6-7 (5 fish on April 6 and 12 fish on April 7). Catch rates increased on April 8 and a second net was deployed for the evenings of April 9-10. For the sake of comparing catch rates, we only include catch data from April 8-10 (5 total net nights) in this report. However, fish captured on April 6-7 are included when analyzing the size and age structure of the adult population. Overall, catch rates of yellow perch in 2014 (250.0 perch/net night) were similar to those observed in 2013 (236.5 perch/net night), but were well below the 1,439.0 perch/net captured in 2012. This trend has also been observed in results from fall bottom trawl surveys, where adult yellow catch rates have steadily declined since 2011 (Figure 1).

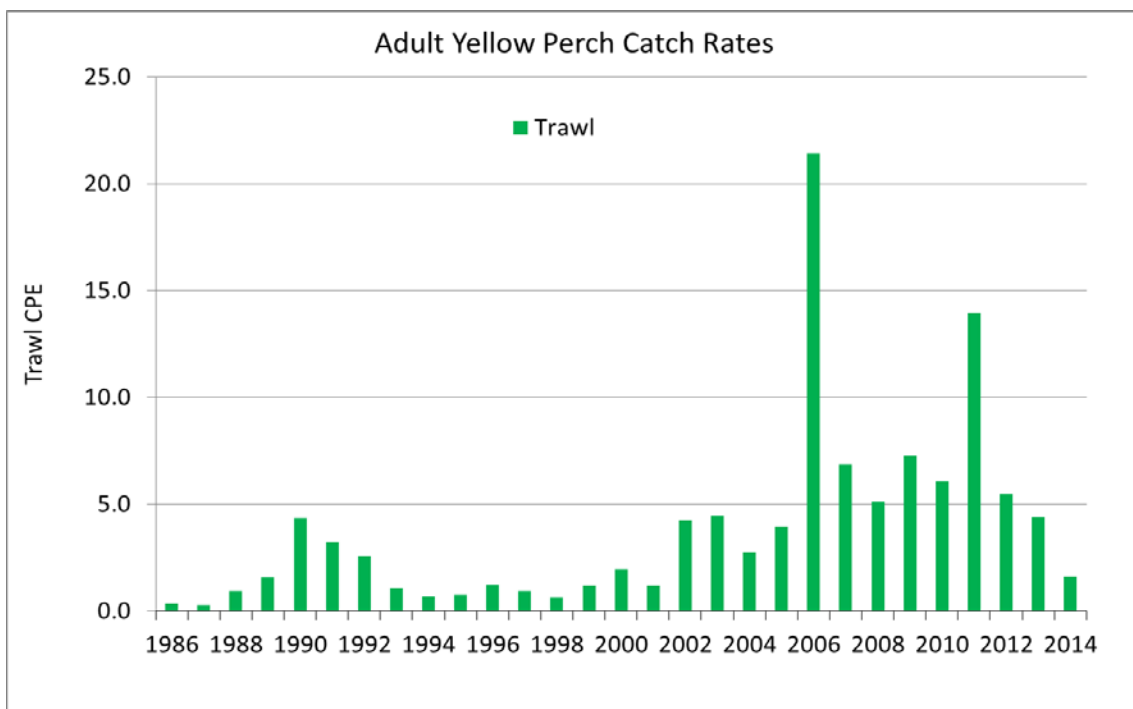


Figure 1. Displays the average catch per effort (CPE) of adult yellow perch captured during fall bottom trawl assessments conducted on Lake Winnebago (1986-2014).

Further, Figure 1 demonstrates that the 2014 catch rates of adult yellow perch observed during fall bottom trawl surveys were the lowest since 1999. It was in the early 2000s that yellow perch catch rates started to increase due to the rise in submergent aquatic vegetation within the Winnebago Pool Lakes. Average catch rates during the last 15 years have remained higher than those observed in the 1990s, but annual rates were still extremely variable (2006 and 2011 most notably). These data are indicative of a boom-bust yellow perch fishery where catch rates, and in turn fishing success, are highly driven by periodic strong year classes. Unfortunately we are currently in a bust cycle and waiting for the next 1-2 large year classes that will help the population rebound and restore the quality perch fishing that was observed just 2-3 years ago.

Although catch rates observed during spring netting were lower than years past, the population did boast a quality size structure (Figure 2). In fact, 40.9% of the females captured were 9" or larger and 18.9% were 10" or larger. The male catch on the other hand was dominated by 6-7.9" fish (69.5%). The largest female captured was 12.0", while the largest male measured 10.2". Overall, the size structure observed in 2014 boasts a much stronger contribution from larger fish than 2012 and 2013, which is normally a good sign. However, in this case I believe that the size structure shift towards larger fish is predominately due to a lack of strong year classes recruiting to the adult population. Thus the abundance of larger fish may be similar to years past, but comprise a larger percent of the overall adult population. The decreasing catch rates of adults in both bottom trawl and spring netting surveys reinforce this theory.

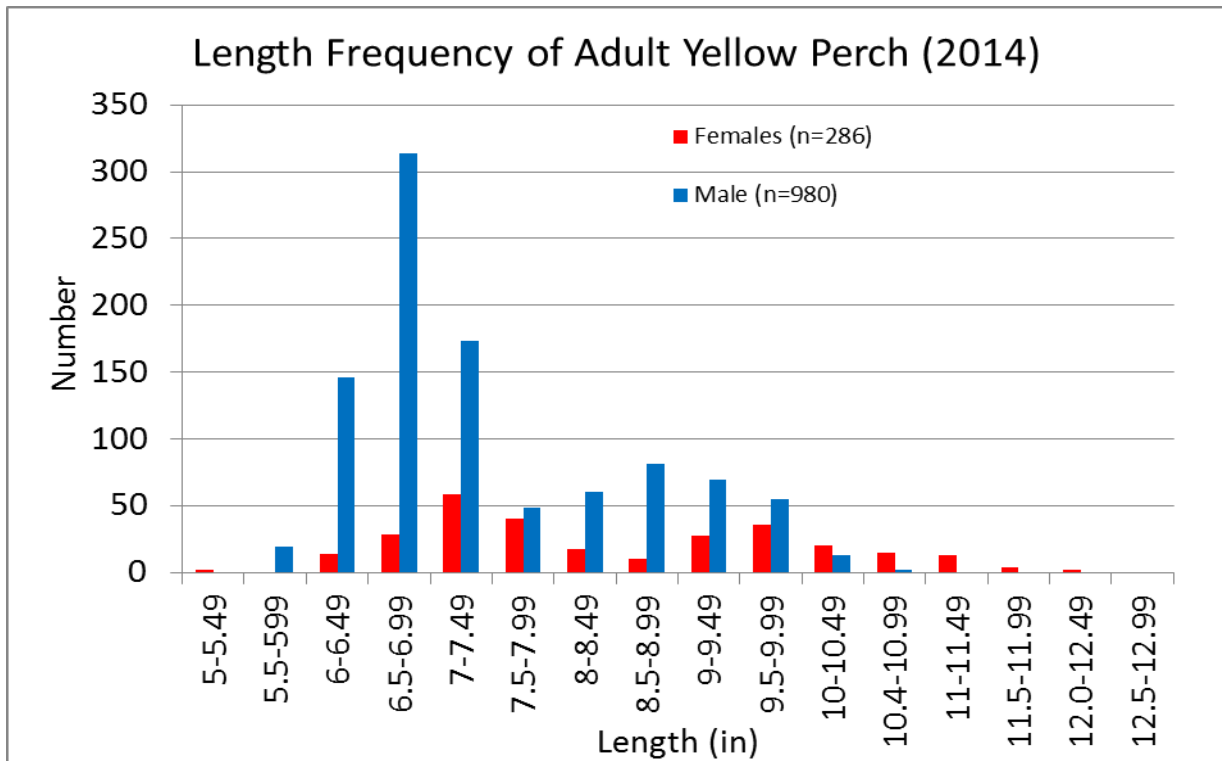


Figure 2. Displays the size structure of adult male and female yellow perch captured during 2014 spring fyke net surveys conducted at Riverside Park on the Fox River in Oshkosh.

The contribution of age classes to the adult population was assessed and, similar to years past, the population was predominantly composed of young, 2-3 year old fish (77.4% of females and 88.1% of males) (Figure 3). This is the third year in a row that this trend was observed, as greater than 99% of the adult male and female populations were 2-3 years old in 2012 and 93.3% of females and 96.1% of males were 2-3 years old in 2013. However, unlike 2012 and 2013, there was a stronger component of fish age-4 and older in the 2014 sample. This increase in older fish correlates with the improved size structure observed. Yellow perch in the Winnebago System exhibit fast growth rates (attaining 8" in 2-3 years and 10" in 4-5), meaning that a higher percentage of older fish results in a higher percentage of larger fish. Unfortunately, these data coupled with decreasing catch rates once again suggest that weaker year classes of younger 2-3 year old fish are recruiting to the population relative to past years.

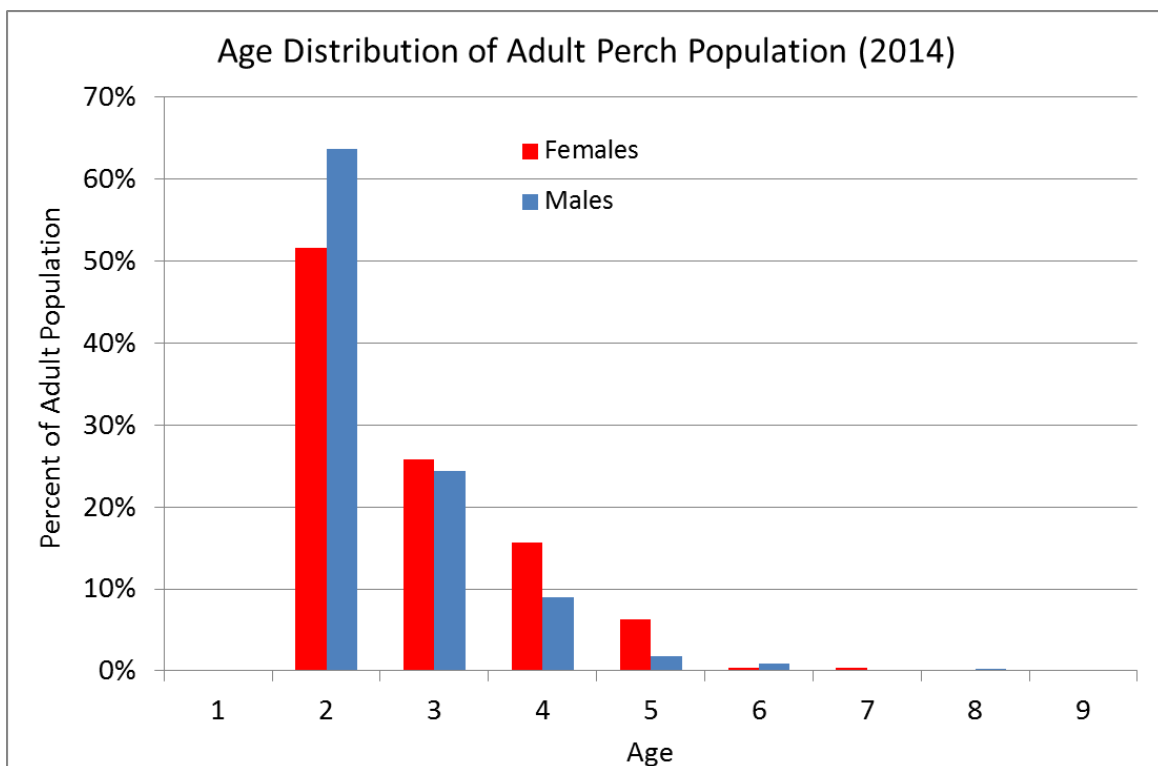


Figure 3. Displays the estimated age structure of the adult male and female yellow perch population observed during 2014 spring fyke net surveys conducted at Riverside Park on the Fox River in Oshkosh.

The results presented in this report likely are not surprising to hard core panfish anglers who fish the Winnebago System. I had the opportunity to talk to many fishermen over the course of the last summer, and most of them told the same story of not catching many perch but the ones that were caught being big. The data presented in this report confirm that observation. Catch rates have been decreasing over the last couple of years, while older, larger fish contributed more to the sample collected in 2014. Age data collected over the last few years indicate that our yellow perch are exposed to very high mortality rates (65-75% annual mortality of the adult population). This mortality

estimate includes both harvest and natural mortality. We don't currently have data to indicate what percentage of mortality is attributable to harvest, but results of a partial creel survey conducted in 2012 suggest that harvest can be substantial. We are currently considering a project to tag yellow perch with anchor tags, similar to the external tags used to mark walleye, to gain insight into harvest dynamics within the perch fishery. All tags would contain a unique number sequence, and we would request that anglers notify us of any tagged fish they would harvest. We may look to start this project as early as 2015, and I will be sure to send out emails notifying people of proper ways to report the harvest of tagged fish if we decide to conduct the project. We would also use other methods such as social media, newspaper articles, outreach at boat landings, and presenting at local club meetings to provide outreach regarding the perch tagging project.

To many this report may have been discouraging to read, or it may have reinforced perceptions from last year's fishing. The good news is that perch fishing was likely tough for most anglers last season so you can rest more easily regarding your perch fishing techniques. In addition, we have learned a great deal about our perch population and fishery over the last few years. We have confirmed that we have a boom-bust fishery where fishing can be exceptional when strong year classes of 2-3 year old fish persist (2012 for example), while fishing will be tough when weaker year classes of young fish are present. Another encouraging fact is that yellow perch grow very fast in the Winnebago System. Thus it won't take long for the next strong year class to recruit to the fishery. Unfortunately, high mortality rates accompany fast growth rates. We may have answered many questions over the last few years, but, like any other research project, more questions have come up in the process. Hopefully that next strong year class will come along in 2015 and provide anglers with some exceptional perch fishing opportunities in the years to follow!

Stay tuned for more updates about fisheries work taking place on the Winnebago System. We have a lot of great projects in the hopper for the upcoming years and we will do our best to keep anglers informed. Tight lines this ice fishing season!

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