Winnebago System Yellow Perch Fyke Net Survey 2012

Post-Season Synopsis

Ryan Koenigs, Winnebago Sturgeon Biologist, 6 August 2013

The Winnebago System is home to multiple exceptional fisheries, lake sturgeon and walleye most notably, but another fishery has also emerged over the last decade. That fishery of course is the yellow perch fishery, which has benefitted from improving water quality and the increase in emergent vegetation. The trend of increasing perch reproduction has been observed in data collected during fall bottom trawl assessments that clearly demonstrate substantial increases in reproduction beginning in 2001 (Figure 1). This increase in perch abundance has led to a growth in popularity of the summer perch fishery, and in turn our DNR fisheries management crew sought to collect more data to better understand the dynamics of the population.

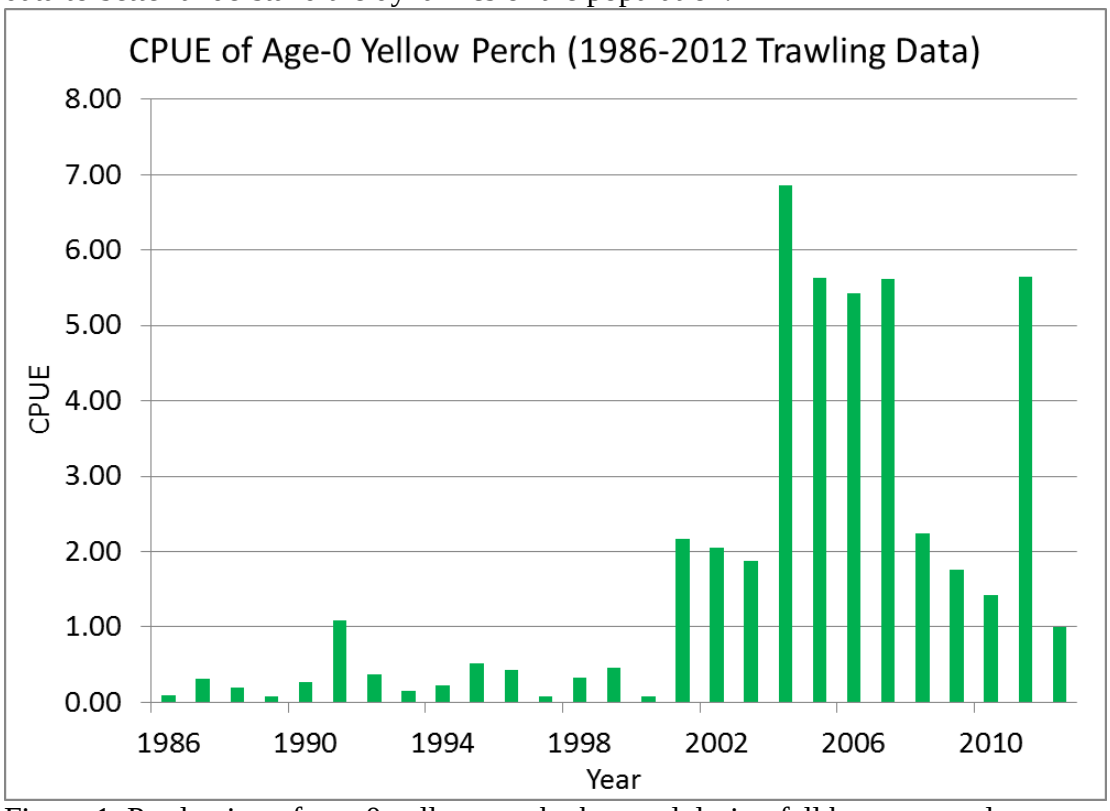

Figure 1. Production of age-0 yellow perch observed during fall bottom trawl assessments conducted on Lake Winnebago (1986-2012); CPUE is catch per unit effort or the mean number of perch caught per trawl.

Setting fyke nets during spring 2012 was the first step taken to learn more about the perch population within the Winnebago System. Nets were set in two locations (Fox River in Oshkosh near Riverside Park and Asylum Bay on Lake Winnebago's west shore) shortly after ice out to target spawning yellow perch. Due to abnormally warm air temperatures in early-to-mid March, ice cover melted quickly and nets were set in the

Fox River on March 13, 2012. The results of the first net night were quite astonishing, as the first net lift yielded 1,439 adult yellow perch (565 females and 874 males). Nets were also set for one night in Asylum Bay, but catch rates were not as high as observed in the Fox River (37 females and 146 males). In both samples, the adult population was dominated by smaller fish, with 79% of the females and 93% of the males being less than 8" (Figure 2). Females up to 11.5" and males up to 10.3" were encountered during the survey, but fish larger than 10" were very rare.

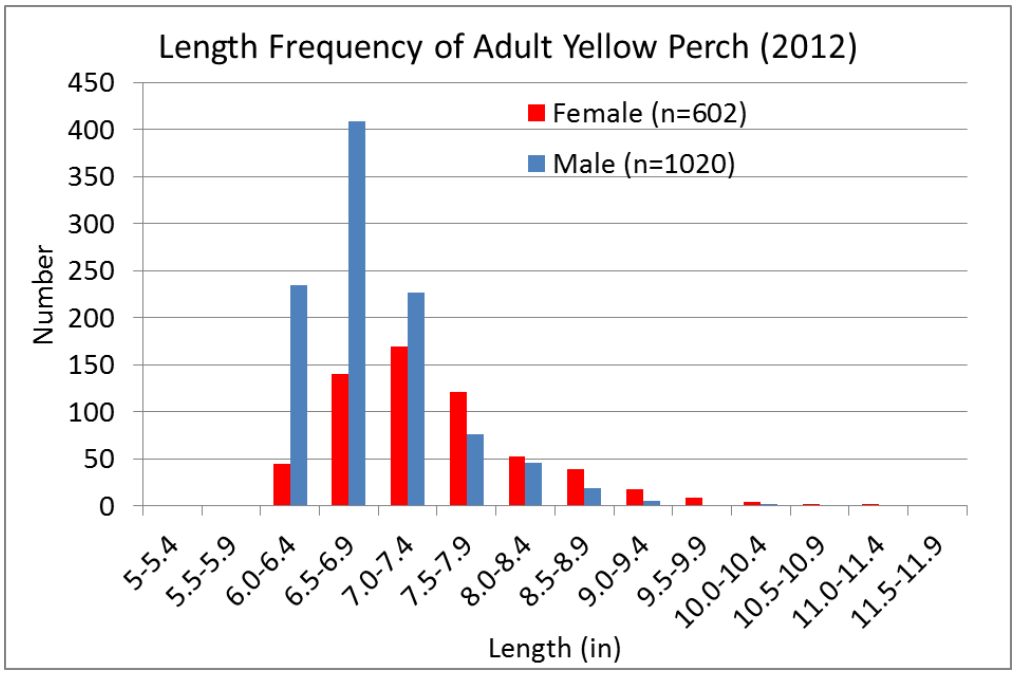

Figure 2. Length frequency of adult yellow perch sampled during stock assessments conducted during spring 2012.

Aging structures were also collected to determine age composition of the adult population and to determine growth rates. Age estimates indicated that both the adult male and female populations were dominated by young fish, with 98.3% of the adult female and 99.5% of the adult male population being fish 3 years of age and younger, and that the oldest fish within the population were 7 years of age (Table 1). These results signify that the population is dominated by smaller fish as a result of being composed of mostly young fish, rather than stunting. In fact, fish in the population are growing quite rapidly with males reaching 8" at age 3 and 10" at 5-6 years of age, while females reach 8.5" in 3 years and 10"

Age	% of Females	% of Males
1		
2	73.63%	77.04%
3	24.71%	22.47%
4	0.66%	0.20%
5	0.66%	0.20%
6	0.17%	0.00%
7	0.17%	0.10%

Table 1. Age distribution of adult yellow perch population observed during 2012 spawning stock assessments.

in 4-5 years. The age data collected during this survey also indicate that the population is dominated by younger fish due to high mortality rates (from both natural mortality and harvest) and that a small portion of fish are reaching older ages and in turn larger sizes. These high mortality rates are evident because we expected to observe a higher percentage of 5-8 year old fish (2004-2007 year classes) than we did because these year classes were 2-3 times larger than the 2-3 year olds (2009-2010 year classes) that dominated the population (Figure 1). However, these strong year classes contributed little to the adult population and thus must have experienced high mortality rates. Even with the high mortality rates within the population, there are still some very nice perch caught from Lake Winnebago each year (photo insert).

The results from this survey went a long way to increasing the understanding of the dynamics that drive the yellow perch population and fishery on the Winnebago System. The next steps are to continue annual stock assessments to monitor the trends in size and age structure of the adult population, while also collecting harvest data to provide insight into how harvest dynamics may affect the population.

"Jumbo" 11" perch harvested from Lake Winnebago during the winter of 2011-2012.

Good luck fishing out there!

Ryan Koenigs

Ryan Koenigs
Winnebago Sturgeon Biologist