

## History of the Upriver Lakes Sturgeon Spear Fishery and Trends in the Modern Era

Winnebago System sturgeon spearkers may be aware of the current lottery fishery held annually on the Upriver Lakes (Lakes Butte des Morts, Winneconne, and Poygan), but may not know the history behind the fishery and events that transpired to create the fishery that we enjoy today. There has been an annual sturgeon spearing season on Lake Winnebago since the winter of 1931-1932, but it wasn't until 1952 that the first spearing season occurred on the Upriver Lakes (harvest of 200 fish). There was a setline fishery that preceded the spear fishery from 1932-1951; however, that season was abandoned due to concerns of illegal harvest contributing to overharvest of the stock, particularly younger, immature fish.

Annual spear fisheries on the Upriver Lakes took place from 1952-1957 with harvests ranging from 200-879 fish per year (average of 578 fish). Spearing seasons were then periodically held every 2-5 years between 1958-2005. The current harvest cap system was implemented in 1999 establishing system-wide harvest caps for the first time. The 2000 spearing season was the first trial run at an Upriver Lakes season under the harvest cap system, with the season only lasting two days and a total harvest of 2,516 sturgeon (347 from Lake Winnebago and 2,169 from the Upriver Lakes). Due to the high harvest in 2000, a 1 day season was set for the Upriver Lakes in 2005, a season in which spearkers harvested 345 fish. 2005 was the last spearing season on the Upriver Lakes before the lottery fishery was implemented in 2007.

The lottery fishery on the Upriver Lakes was designed to offer an annual spearing season, while still maintaining harvest rates at or below sustainable levels. Interested spearkers apply for a license on the Upriver Lakes and 500 applicants are awarded a

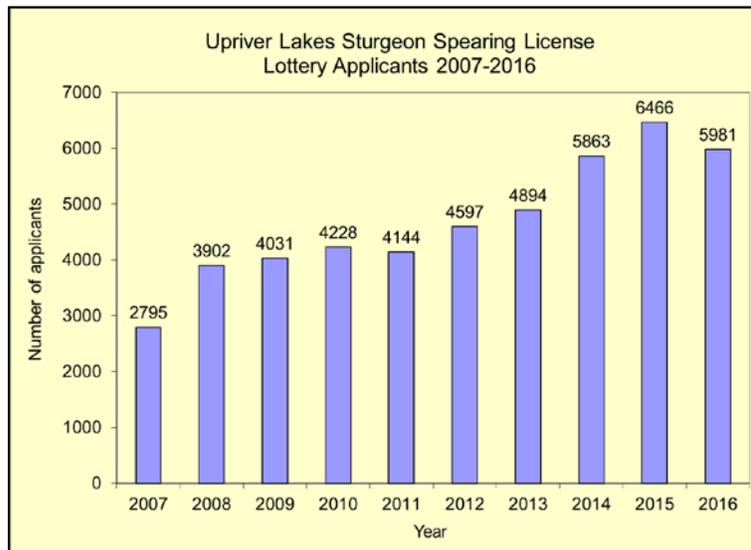


Figure 1. Displays the number of applicants for the lottery sturgeon spear fishery offered on the Upriver Lakes (2007-2015).

permit to purchase an Upriver Lakes spearing license each year. All applicants that did not receive tags gain a preference point, which better their chance to draw a tag the following year. Since the inception of the lottery fishery in 2007, the fishery has grown leaps and bounds in popularity from 2,795 applicants in 2007 to 6,466 applicants in 2015 (131% increase in 8 years) (Figure 1). Interest decreased slightly for the 2016 season, but there were still close to 6,000 applicants.

The increased success rate relative to Lake Winnebago has been the reason driving the increased interest in the Upriver Lakes spear fishery. This season marked the 10<sup>th</sup> lottery fishery on the Upriver Lakes (2007-2016), and the average success rate for those seasons has been 61.1% of license holders harvesting a fish, compared to 10.7% on Lake Winnebago. The average season length on the Upriver Lakes has been much shorter during this time period as well (5.2 days on Upriver Lakes and 11.2 days on Lake Winnebago).

Year	Season Length	Lottery Applicants	Registered Sturgeon Harvest	Spearer Success Rate
2007	6	2,795	313	64.5%
2008	4	3,902	300	62.0%
2009	5	4,031	275	56.1%
2010	6	4,228	312	63.2%
2011	10	4,114	335	68.0%
2012	2	4,597	242	48.6%
2013	4	4,893	261	53.2%
2014	3	5,863	341	72.7%
2015	5	6,466	288	58.5%
2016	7	5981	307	63.4%

One reason for the higher success rate is the shallower water on the Upriver Lakes. Lakes Butte des Morts, Poygan, and Winneconne are composed mostly of shallow water habitat 4-7 feet deep with some areas being slightly deeper. Therefore, water clarity does not play as much of a factor in these shallower lakes relative to Lake Winnebago which is deeper. The nature of sturgeon spearing is you can't spear a fish that you can't see (see yesterday's vignettes) and spearing in shallower water lakes is simply more favorable.

Overall, the 2016 spearing season on the Upriver Lakes went as anticipated. Water clarity coming into the season was a consistent 7', which is clear enough to see bottom in most areas. The average season length had been 5 days, but I anticipated the season to go a bit longer due to the bump in the adult female harvest cap. That was indeed the case as the increase from 88 to 95 adult females added one more day onto this season. In total there were 307 fish harvested during the 2016 spear season on the Upriver Lakes, which ranks this season as the 5<sup>th</sup> highest harvest (out of 10 seasons) since the lottery fishery was implemented in 2007.

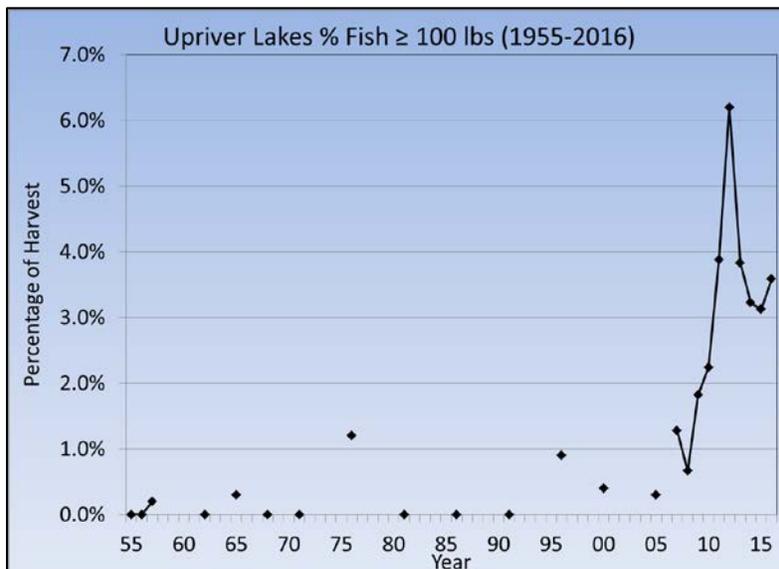


Figure 2. Percentage of fish 100 pounds or larger in the Upriver Lakes spear fishery (1955-2016).

The conclusion of the Upriver Lakes fishery provides the first insight into the condition (plumpness) of the sturgeon within the population. We have been tracking the percentage of fish larger than 100 pounds for decades. The percentage of 100+ pound fish harvested from the Upriver Lakes peaked in 2012 and has been declining every year since. This season there were 11 fish (3.58%) harvested from the Upriver

Lakes that topped the scales at 100 pounds or larger, which is a slight increase over each of the last two years. These data support visual observations at registration stations that the fish appear to be in better condition this year compared to last. We have collected dozens of stomachs from fish harvested throughout the system and will look through those in the coming weeks. However, we won't know to what degree fish condition changed this year until all of the harvest data are entered and analyzed. So stay tuned.

Hopefully this information sheds some light on the history that has brought us to the current spear fishery format on the Upriver Lakes. This fishery continues to grow in popularity due to the unique harvest opportunity that it offers! However, with the growing interest comes a longer wait between drawing licenses.