

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

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Winnebago System sturgeon spearers 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 spearers 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 spearers apply for a license on the Upriver Lakes and 500 applicants are awarded a

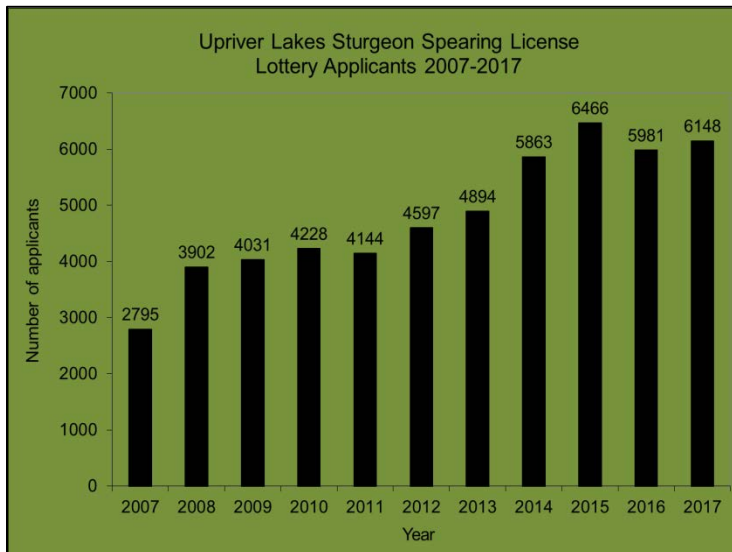


Figure 1. The number of applicants for the lottery sturgeon spear fishery offered on the Upriver Lakes (2007-2017).

permit to purchase an Upriver Lakes spearing license each season. All applicants not receiving a tag 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 in popularity by leaps and bounds 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 and 2017 seasons, but there were still close to 6,000 applicants each season.

The increased success rate relative to Lake Winnebago has been the main reason for the increased interest in the Upriver Lakes spear fishery. This season marked the 11th lottery fishery on the Upriver Lakes (2007-2017), and the average success rate for those seasons has been 61.0% of license holders harvesting a fish, compared to 9.4% on Lake Winnebago during that same time frame (Table 1). 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, thus spearing in shallower water is simply more favorable.

Year	Season Length (days)	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%
2017	16	6148	295	61.1%
Average	6.2	4819.8	297.2	61.0%

Table 1. Season length, number of applicants, number of sturgeon registered, and success rate during Upriver Lakes spearing seasons (2007-2017).

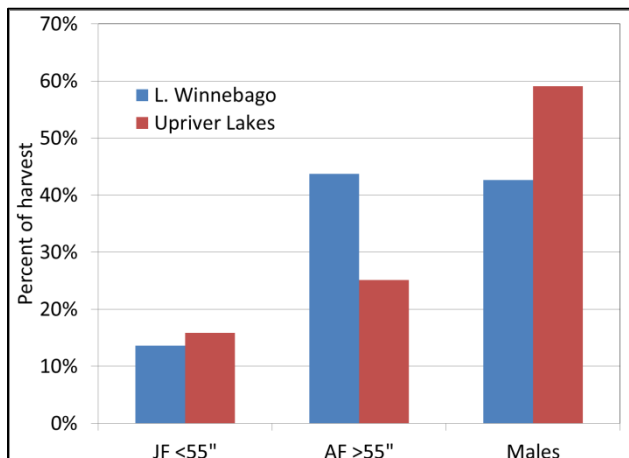


Figure 2. Percent of the sturgeon harvest from Lake Winnebago and the Upriver Lakes comprised of juvenile females, adult females, and males (2007-2017 data).

The Upriver Lakes also serves as overwintering grounds for gravid fish that would spawn that spring, while also being a nursery area for immature fish. Thus the Upriver Lakes harvest contains a higher percentage of smaller fish and adult fish with black eggs (females) or fully developed testes (males) relative to Lake Winnebago. Due to spawning periodicity (males every 1-2 years; females every 3-5), there is a higher concentration of adult males in the Upriver Lakes during winter months. Thus males contribute more to the Upriver Lakes harvest than the Lake Winnebago harvest (Figure 2).

The average season length on the Upriver Lakes since the lottery fishery was implemented in 2007 has also been quite a bit shorter than season length on Lake Winnebago (6.2 days on Upriver Lakes and 12.0 days on Lake Winnebago). The 2017 season marks the first season go the full 16 days, but success rates and the number of fish harvested were on par with long-term averages (Table 1). Coming into this season, the longest season was 10 days (2011) with a total harvest of 335 fish (68.4% success rate). That season included the highest contribution of males in the harvest, thus the long season as the adult female cap normally would have

been reached prior to that high of harvest. I was anticipating a long season on the Upriver Lakes in 2017 because the harvest caps had been increased 2 times in the last 3 seasons. Increasing the harvest caps without allocating more licenses to the fishery should increase season length as more spearers need to fill their tags to reach the caps. For reference the harvest of 76 adult females in 2017 would have resulted in a full season in 2015 and 2016, but a shortened season in every other year (4 days in 2007-2008, 5 days in 2009, 7 days in 2010, 9 days in 2011, and 10 days 2012-2014). Thus the increased harvest caps resulted in the longer season this year, not a reduction in the number of fish harvested.

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 provides! However, with the growing interest comes a longer wait between drawing licenses. Through the years, the seasons on the Upriver Lakes have been fairly short, but expect to see more of these longer seasons if harvest caps remain stable or increase for future spearing seasons.

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