

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

Winnebago System sturgeon spearers and sturgeon enthusiasts 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 transpired to create the fishery that we enjoy today. The first modern sturgeon spearing season on Lake Winnebago occurred during 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). Preceding the spear fishery, there was a set line fishery on the Upriver Lakes from 1932-1951. The setline fishery 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 sturgeon). Spearing seasons were then held every 2-5 years between the years of 1958-2005 with multiple regulation changes being implemented during this time period. The current harvest cap system was implemented in 1999 to help maintain harvest rates at or below sustainable levels. System-wide harvest caps combining the harvest of the Upriver Lakes and Lake Winnebago were set for the 2000 sturgeon spear season, and this season only lasted two days with a total harvest of 2,516 sturgeon (347 from Lake Winnebago and 2,169 from the Upriver Lakes). Due to the excessive harvest in 2000, there was only a 1 day season 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

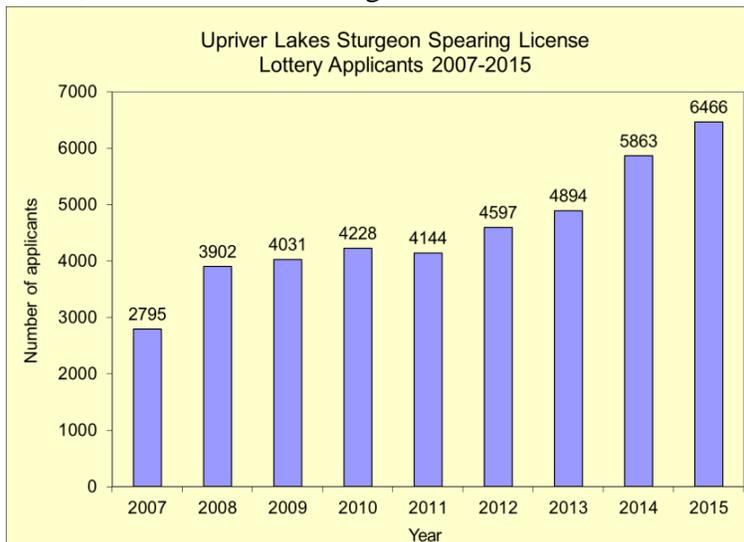


Figure 1. Displays the number of applicants for the lottery sturgeon spear fishery offered on the Upriver Lakes (2007-2015).

spearers apply for a license on the Upriver Lakes and 500 applicants are awarded a 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).

The main reason for the growing popularity in the Upriver Lakes lottery fishery is the higher spearing success rates relative to Lake Winnebago. Since the lottery fishery began (2007-2015), 60.9% of spearers on the Upriver Lakes have harvested a fish compared to 10.2% on Lake Winnebago. The average season length on the Upriver Lakes has been much shorter during this time period as well (5.0 days on Upriver Lakes and 11.0 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	59.5%

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 parts up the lake being deeper. Harvest in these shallow water lakes is not as affected by poor water clarity as the fishery on Lake Winnebago, which is comprised mostly of deeper water habitat (12+ feet of water). The nature of sturgeon spearing is you can't spear a fish that you can't see and spearing in shallower water lakes is simply more favorable. The Upriver Lakes are also rearing habitat for juvenile fish and thus the fishery there contains a higher percentage of smaller, immature fish (MV and FV) than Lake Winnebago (Figure 2). Lastly, the Upriver Lakes are an overwinter staging area for migrant adult sturgeon that will make spawning migrations up the Upper Fox and Wolf Rivers in spring. Therefore, the Upriver Lakes spear fishery contains a higher concentration of gravid fish (M2 males and F4 females) that would have spawned that spring (Figure 2). Whereas the Lake Winnebago harvest contains a higher percentage of fish that are in between spawning cycles (F1, F2, and F6 females; and M1 males) relative to the Upriver Lakes (Figure 2).

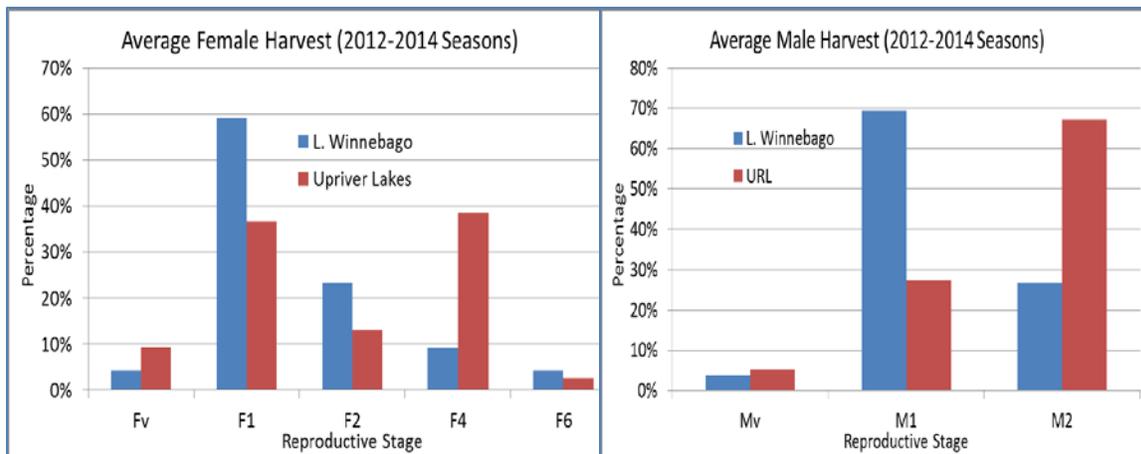


Figure 2. Displays the distribution (percentage) of reproductive stages of sturgeon harvested from the Lake Winnebago and Upriver Lakes spear fisheries (2012-2014)

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.