WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2022 Winnebago System Lake Sturgeon Spearing Season

Post-Season Synopsis

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The 2022 spearing season was another one for the books. Cold weather before the season allowed for favorable ice conditions throughout most of the season. Even with a winter squall during the middle of the season, many spearers filled their tags successfully. We appreciate all the spearers flexibility as the Wisconsin Department of Natural Resources (DNR) continued to navigate pandemic protocols. The modified drive-through registration went well, and we were able to obtain all necessary data and register fish, all the while staying safe.

Scott Ranta, Chris Bergstrom, Gavin Bergstrom, Aaron Jones, and Jerry Bormes celebrate a successful opening day on Lake Poygan. Photo Credit: Chris Bergstrom.

The harvest caps for the 2022 spearing season were determined using the 2021 abundance estimates for the Winnebago System Lake Sturgeon population. We set harvest caps at 5% of the abundance estimates, and in 2021, we estimated there were 25,500 adult males and 15,000 adult females. The 2022 system-wide harvest caps were 400 juvenile females (<55”), 875 adult females (>55”) and 1,200 males. The Upriver Lakes fishery was allocated 10% (88 fish) of the adult female harvest cap and 20% of the juvenile female (80 fish) and male (240 fish) harvest caps. The remaining fish within the harvest caps were allocated to the Lake Winnebago fishery.

During the 2022 season, spearers harvested 1,519 sturgeon from the entire Winnebago System. Of these fish, 1,169 sturgeon were harvested from Lake Winnebago, resulting in a success rate of 9.6%, making it the second highest success rate in seven years.

Water clarity is the best predictor of sturgeon spearing success for the Lake Winnebago sturgeon spear fishery. Clarity for the 2022 season was variable with greater than 12’ of visibility in some areas of the lake, while other locations had less than 10’ of visibility. The average water clarity was 10.7’, which is below the 12’ water clarity threshold that is typical during years when harvest caps are reached. Low visibility around the southern part of the lake most likely played a role in area 5 of Lake Winnebago having the lowest harvest of all six areas of Lake Winnebago with only 65 total fish harvested (Table 1). All other areas of Lake Winnebago had about 200 fish harvested during the season. The low, variable water clarity on Lake Winnebago also likely contributed to the full 16-day season, marking the 7th consecutive full-length season.

Table 1. Lake Winnebago and Upriver Lakes harvest values for juvenile female, adult female, male and total Lake Sturgeon for individual areas.

	JUV FEM	ADULT FEM	MALE	TOTAL
L. Winnebago Area 1	30	103	121	254
L. Winnebago Area 2	32	79	61	172
L. Winnebago Area 3	19	134	85	238
L. Winnebago Area 4	35	106	75	216
L. Winnebago Area 5	10	18	37	65
L. Winnebago Area 6	33	94	95	222
L. Winnebago Total	**159**	**536**	**474**	**1,169**
L. Butte des Morts	4	5	6	15
L. Poygan	40	81	209	330
L. Winneconne	0	2	2	4
Upriver Lakes Total	**44**	**88**	**217**	**349**
Totals	**204**	**624**	**691**	**1,519**

The 2022 spearing season on the Upriver Lakes lasted four days. This is the shortest season since 2018. The Upriver Lakes are collectively much shallower than Lake Winnebago; therefore, water clarity does not have the same impact on spearing success. This, along with the favorable ice conditions that allowed access to just about all areas of the Upriver Lakes, likely played a role in the incredible spearing season. The 349 fish registered during the season (72.7% success rate) was higher than the

average harvest of 306 fish per season since 2007. For the season, 45 juvenile females, 88 adult females and 216 males were harvested. The adult female 90% harvest cap trigger was hit on the 3rd day.

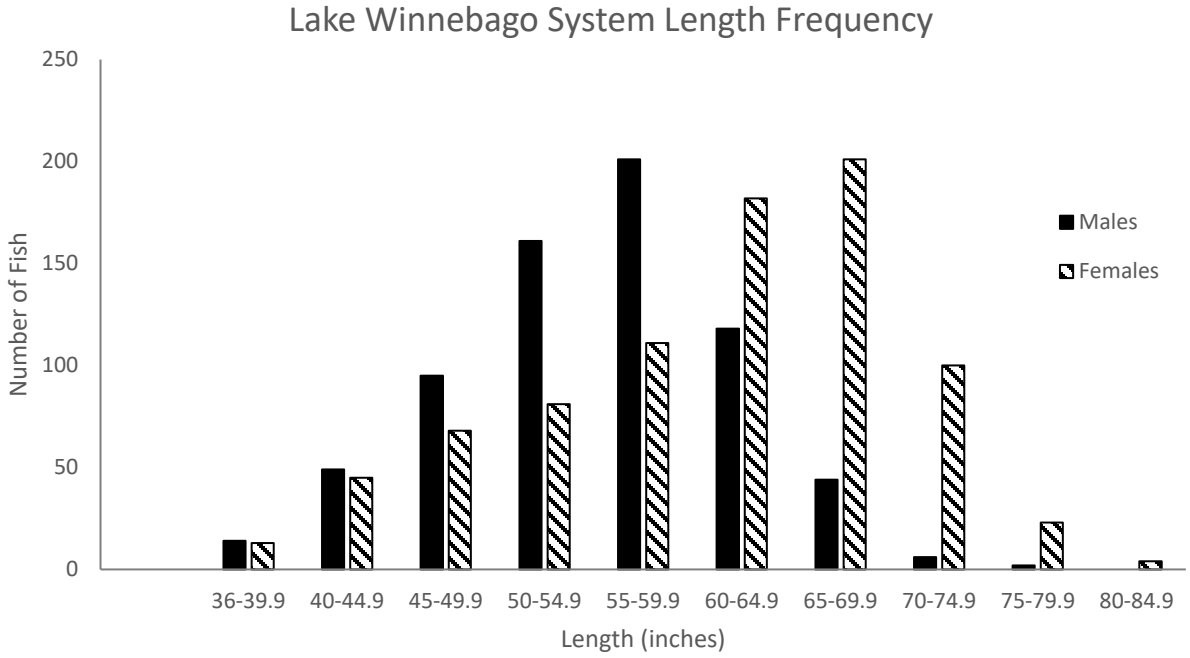
Harvest rates were comparable between the eastern (areas 2, 4 and 6) and western shores (areas 1, 3 and 5) of Lake Winnebago with 52.2% and 47.7% of the harvest, respectively. Stockbridge Harbor registered the highest number of fish with 348 fish. This is 100+ more fish than every other station (Table 2). Harvest from the Upriver Lakes fishery was driven by Lake Poygan as 94.6% of the fish registered came from this waterbody. Fish were registered fairly evenly between the three Upper River registration stations (Table 2).

Table 2. The number of Lake Sturgeon registered at the DNR stations during the 2022 spearing season on the Winnebago System.

	JUV FEM	ADULT FEM	MALE	TOTAL
Harrison Town Hall	10	35	41	86
Stockbridge	61	170	117	348
Jim & Linda's/Cal Harbor	37	94	99	230
Black Wolf Boat Launch	20	82	84	186
Oshkosh Amphitheater	5	64	30	99
Grundman Lane Boat Launch	27	91	103	221
Marble Park	18	31	63	112
Indian Point	18	21	82	121
Poygan Landing	8	36	72	116

The average length and weight of fish harvested from Lake Winnebago were 59.0" and 49.6 pounds. In comparison, the averages for the Upriver Lakes fishery were 56.1" and 44.1 pounds. Both Lake Winnebago and the Upper River Lakes length and weight averages are comparable to recent spearing years. Males between 50-59.9" were most commonly represented in the harvest, while females 60-69.9" were most frequently observed (Figure 1).

Figure 1. Length frequency histogram of female (dashed bars) and male (black bar) Lake Sturgeon harvested on the Lake Winnebago system during the 2022 spearing season. Each vertical bar represents the total number of fish harvested (values found on the y-axis) within a specified length bin (found along the x-axis).



There were 12,694 sturgeon spearing licenses purchased for the 2022 sturgeon spearing season (Lake Winnebago = 12,214; Upriver lakes = 480). This has been consistent with the number of licenses purchased in the last few years. The limited entry fishery on the Upriver Lakes was implemented in 2007, and the number of applicants has steadily increased to 8,655 for the 2022 season. Applicants with eight or more preference points were awarded a spearing permit in 2022. Only 419 of 666 applicants with eight preference points were drawn for Upriver Lakes spearing permits (Table 3).

After 26 years of spearing, a moment of celebration after spearing his first fish on Lake Poygan. Photo credit: Zac Peterson

Favorable ice conditions this year also contributed to a successful season on the Upriver Lakes as well on Lake Winnebago. This year 5,986 shacks were counted on opening weekend on Lake Winnebago, with another 502 on the Upriver Lakes.

Table 3. Number of applicants at each preference point level for the 2022 Lake Sturgeon spearing season. Some of the applicants with >8 points were not selected in the drawing as they had applied in a group with a group member having fewer preference points.

# OF PREFERENCE POINTS	# OF APPLICANTS	# WINNERS	# PURCHASED PREFERENCE POINTS
12	1	0	2
11	0	0	4
10	11	10	8
9	80	71	42
8	521	419	145
7	581	0	226
6	396	0	457
5	361	0	548
4	349	0	775
3	284	0	836
2	274	0	877
1	434	0	1,443
Total	**3,292**	**500**	**5,363**

During this spearing season, two fish were registered over 170 pounds within a day of each other. Jared Guelig caught the first fish caught on Feb. 17, 2022. It was a 174.3-pound, 82.4 inch female. The next day, Isaac Bond speared a 171.1 pound, 83.2 inch female. Jared Guelig's 174.3-pound female is the 6th heaviest fish ever harvested in the modern Lake Winnebago spear fishery while Isaac Bond's was the 13th heaviest (Figure 2). Both fish were recently tagged during previous spawning runs. Jarod's fish was first tagged in New London during the 2017 spawning run. During this time, the fish measured 81.0 inches. Issac's fish was first tagged three years ago in 2019 at the Shawano dam. At that time, the fish was 82.7-inches. Because female sturgeon spawn every three to four years, it is not uncommon for two large females such as these to avoid capture and tagging by the DNR until later in life.

Marisa Salaja celebrating her sturgeon on the ice of Lake Winnebago. Photo credit: Lonny Ziemer

Figure 2. Top 14 heaviest Lake Sturgeon (≥170 pounds) on record as harvested from the Lake Winnebago System during the sturgeon spearing seasons dating back to 1941.

"Heavy Hitters Club"

STURGEON

Largest on Lake Winnebago System

1941 to Present

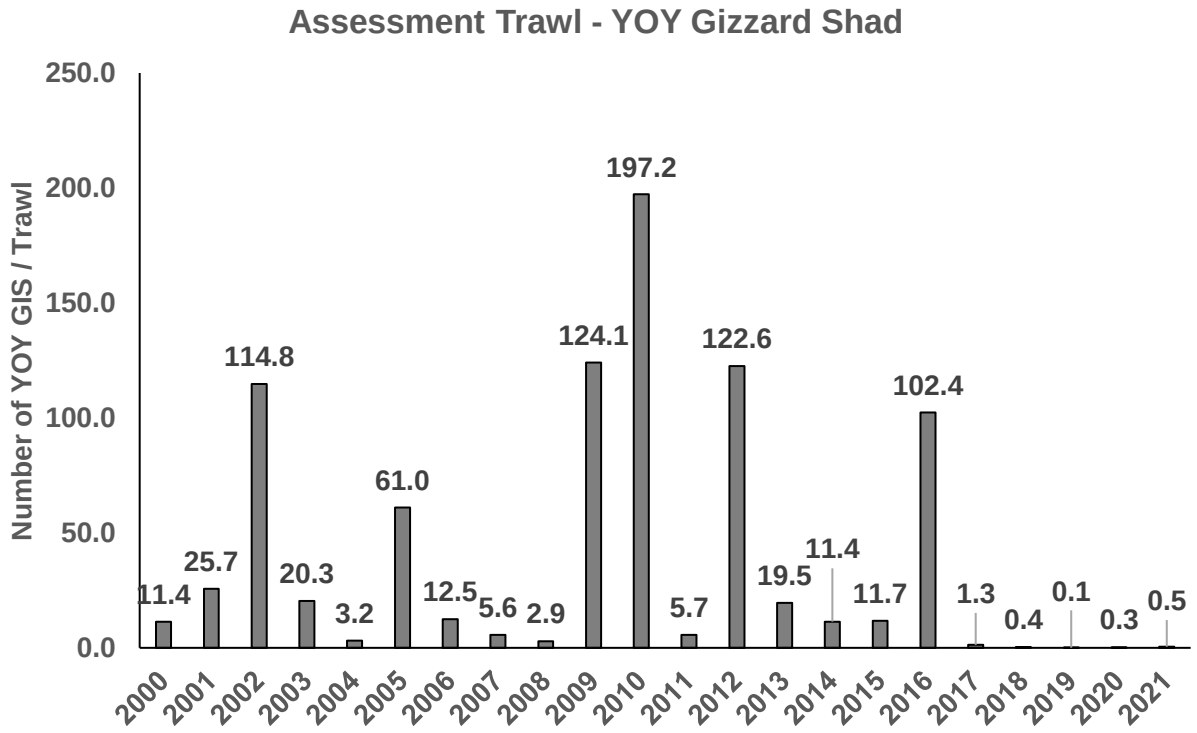
(170 lbs & over)

	Weight	Length	Year
1st	212.2	84.2	2010
2nd	188.0	79.5	2004
3rd	185.0	80.2	2011
4th	180.0	79.0	1953
5th	179.8	79.6	2012
6th	179.0	80.0	2013
7th	175.3	78.5	2012
8th	174.3	82.4	2022
9th	172.7	76.9	2011
10th	172.0	78.0	2008
11th	171.3	83.0	2010
12th	171.3	75.6	2011
13th	171.1	83.2	2022
14th	171.0	85.5	2019

Additionally, Nick Schaus speared a male sturgeon that was over 100 pounds. It was a 75.3-inch male weighing 106.4-pounds. Incredibly, this male was not preparing to spawn (M1 status indicating a male is not ready to spawn in the spring of 2022) and did not have the excess weight of reproductive organs ready for spawning to carry the weight. It is not uncommon to see females reach greater than 100 pounds, there were 87 in 2022. However, it is rare to see a male reach this size, particularly when they are preparing to spawn in the spring. This male was also a recaptured fish. He was originally tagged in 2011 during the spawning season at the Diemel's spawning location along the Wolf River. At that time the fish measure 73.3 inches.

All three fish are impressive considering low Gizzard Shad availability within the last few years. Gizzard Shad are a fatty food source that exhibit boom or bust year classes and experience large die offs during Wisconsin winters. Lake Sturgeon in the Winnebago System opportunistically feed on these dead or dying shad and sturgeon conditions can be strongly improved by a strong year class strength of Gizzard Shad. Gizzard Shad hatches in the last five years have been very weak (Figure 3).

Figure 3. Year class strength of Gizzard Shad observed during fall (August-October) bottom assessments conducted on Lake Winnebago (1986-2022).



As a first-time observer of the sturgeon spearing season, I can honestly say it was exhilarating and awe-inspiring being part of the process. Watching the number of people take advantage of an opportunity to participate in a tradition that dates back centuries was exciting, but also overwhelming. I have never seen so many ice shanties in one location in my life. I was also amazed to realize that this tradition extends to those who aren't even spearing or on the ice. This amount of engagement is not something I have experienced in the other fisheries I have worked in throughout the United States. Seeing the community come together to celebrate their friends and neighbor's success at the registration shack was truly humbling. I know I have only scratched the surface of the rich history and passion the spearers and this community have for this resource. This resource truly is unique and special, just as those who participate and celebrate in the spearing season are. I look forward to many years to come and hopefully to try my hand in future years.

Families and kids check out sturgeon that are registered around Lake Winnebago. Photo credit: Jeff Theisen.

In conclusion, the 2022 saw success for many spearers as well as another chance for the DNR to collect a tremendous amount of data from harvested fish which will help effectively manage this population in the future. Congratulations to those successful spearers. Thank you to everyone for making the 2022 spearing season a safe and successful season.

Beautiful morning for spearing. Photo credit: Brady W..