



**Introduction And Objectives**

Water clarity is one of the strongest predictors of lake sturgeon harvest in the Winnebago System during the spearing season. It is ultimately water clarity that determines where in the water column spearmen suspend their decoys. During years with water clarity 12 feet or greater on Lake Winnebago, the pre-set harvest caps are often reached prior to the full 16-day season causing shorter seasons.

Ice conditions are one of the main drivers of water clarity during the sturgeon spearing season. Shifting ice, snow covered ice, date the lake freezes over, thawing and refreezing events are all factors in water clarity under the ice.

Our objectives are to assess: 1) average water clarity around Lake Winnebago prior to the sturgeon spearing season and 2) how average water clarity effects the total Lake Winnebago harvest of Lake Sturgeon during the Winnebago spear fishery.

**DNR Contact**

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**Survey Method**

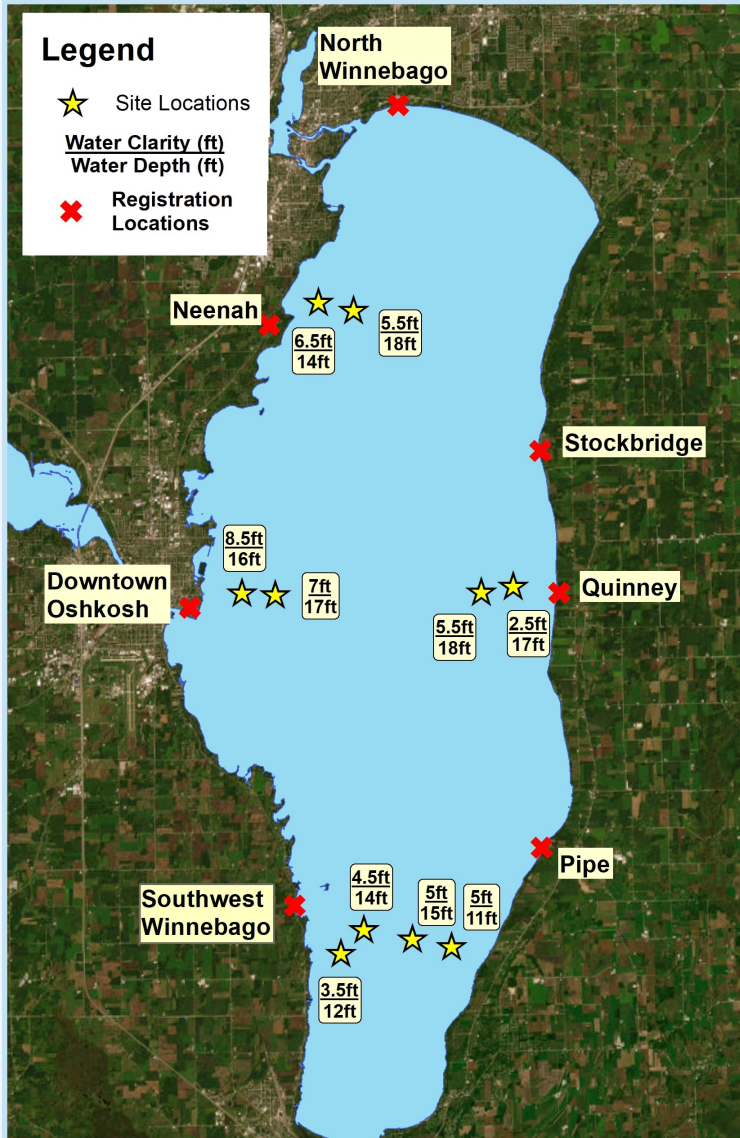
- Water clarity is taken through the ice using a secchi disk.
- 10 locations are tested around Lake Winnebago.
- Reading locations are dictated by both access and safety of travel conditions.
- Readings were taken the week of January 21st for 2025.

**Metric Descriptions**

**Average Water Clarity**- Two measurements are taken for each location: 1. when the secchi disk disappears when lowered through the ice hold and 2. when the secchi disk reappears when being raised from the bottom. Both measurements are averaged together.

**Legend**

- ★ Site Locations
- Water Clarity (ft)  
Water Depth (ft)
- ✘ Registration Locations



**Water Clarity Summary**

- The average water clarity around Lake Winnebago was 5.35 feet. Nowhere around Lake Winnebago was water clarity greater than 10 feet (Figure 1). Reports from anglers on the north shore of Lake Winnebago also indicate poor water clarity.
- While January of 2025 has been cold, there has not been a lot of snow. Snow usually insulates the ice and also prevents sunlight from penetrating into the water column. Without this barrier, sunlight is likely causing algal blooms throughout Lake Winnebago and having the biggest impact on water clarity.
- Water clarity readings were not conducted on the Upriver Lakes. Their shallower depths generally mean that water clarity is not as much of a factor when predicting Upriver Lake season length or success.
- In general, water clarity less than 12 feet tends to lead to a full 16-day harvest season on Lake Winnebago. And while in 2023, the last time we had average water clarity over 12 feet, the season still went 16-days (Figure 2). This was more likely due to ice conditions than water clarity as the number of spearmen taking to the lake was significantly less.
- Water clarity was not checked in 2024 due to ice conditions. The low harvest was a direct effect of extremely poor ice conditions compared to water clarity with only a small fraction of spearmen taking to the lakes.
- As always, check with the local fishing clubs for information on ice condition.

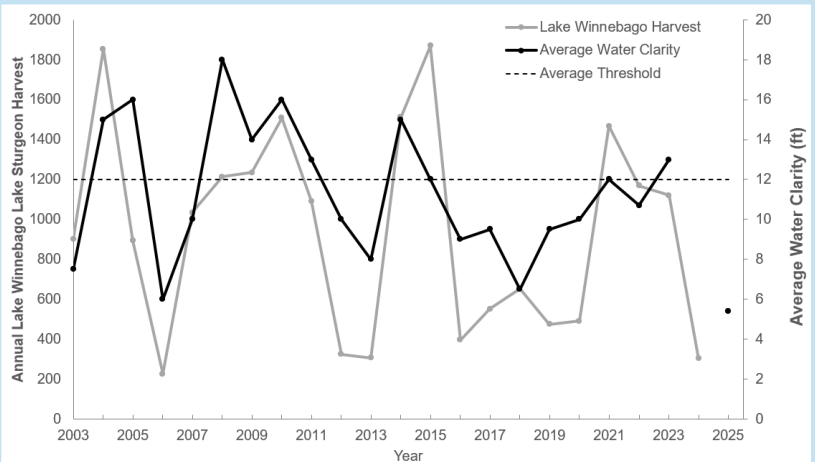


Figure 1. Water Clarity for Lake Winnebago. Stars indicate sample sites. The top value of the label is the water clarity at that site with the bottom value being the depth at that location.

Figure 2. Lake Winnebago average water clarity (black series; right y-axis) and total annual spear harvest (grey series; left y-axis). Dashed lined represents the 12-foot clarity threshold.