



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2025 Chironomid Assessment Report The Winnebago System

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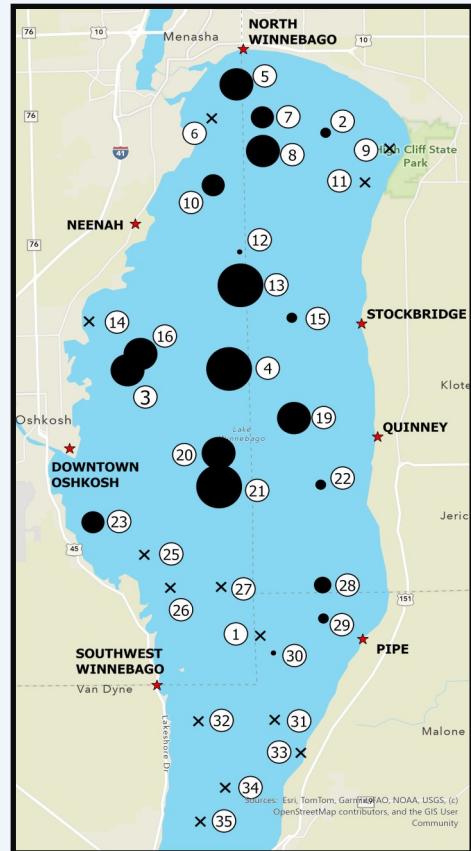


Figure 1: 2025 chironomid larvae relative abundance at the 32 sites on Lake Winnebago. The numbers in the white circles indicates the site location numbers. Catch Rates are relative to point size, with larger points indicating higher catch rates, an X indicates no chironomid caught.

Lake Winnebago Summary

- The 2025 assessment observed the highest relative abundance of chironomids on Lake Winnebago since 2019 (Figure 3).
- The average chironomid larvae per dredge sample for Lake Winnebago was 17.42, with the highest at site 21 with an average of 73 larvae per dredge sample (Figure 1).
- We have seen a “boom” in chironomid larvae relative abundance over the last 2 years, compared to the very low year we had in 2023 (Figure 3).
- Spatial distribution of larvae during the assessment show that the central sites of Lake Winnebago yielded the highest average catch rates of chironomid larvae (Figure 1).
- Lake Winnebago saw the highest chironomid density from sites 21, 4, and 13 respectively. (Figure 1).

Upriver Lakes Survey Summary

- The 2025 Upriver assessment showed an increased relative abundance, the highest since 2022.
- The 2025 average relative abundance for the Upriver lakes was 2.81.
- The highest chironomid densities were in Lake Butte des Morts, followed by Lake Winneconne, and then Lake Poygan respectively (Figure 4).
- The south shore of Lake Butte des Morts, yielded the highest relative abundance of chironomid larvae. Abundance in Lake Poygan and Winneconne did not show a distinct trend by location. (Figure 2).

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Lake Information

Winnebago: 131,939 acres
Butte des Morts: 8,581 acres
Poygan: 14,024 acres
Winneconne: 4,553 acres

Introduction

Chironomids, commonly referred to as “bloodworms” in their larval stage, are critical to the diet of lake sturgeon. In 2013, a standard assessment of chironomid larvae was initiated in Lake Winnebago, followed by an assessment of the Upriver Lakes in 2017. Chironomid assessments dating back to 1961 have provided one of the longest, although not continuous, records of lentic chironomid larvae abundance.

For more information on chironomids please see the [chironomid fact sheet](#).

Objectives

- Assess relative abundance.
- Assess spatial distribution of chironomid larvae within Lake Winnebago and the Upriver Lakes .

Metric Descriptions

Relative abundance describes population size and is estimated by the **number of 4th instar chironomid larvae per dredge drop**. The mean catch per dredge drop was used to calculate relative abundance for each lake.

Survey Method

- Substrate samples are collected in early August using an Eckman Dredge.
- The Eckman Dredge is dropped twice per site.
- Lake Winnebago has 32 sampling sites.
- Upriver Lakes has 34 sampling sites:
 - 12 on Lake Butte Des Morts
 - 8 on Lake Winneconne
 - 14 on Lake Poygan
- Substrate samples are filtered through a 541- μm sieve bucket and the remaining material is analyzed in the field for 4th instar chironomid larvae.
- Samples with high amounts of detritus are preserved in 96% Ethanol for analysis in the lab.
- 4th instar chironomid larvae are tallied for each dredge sample to track for relative abundance.

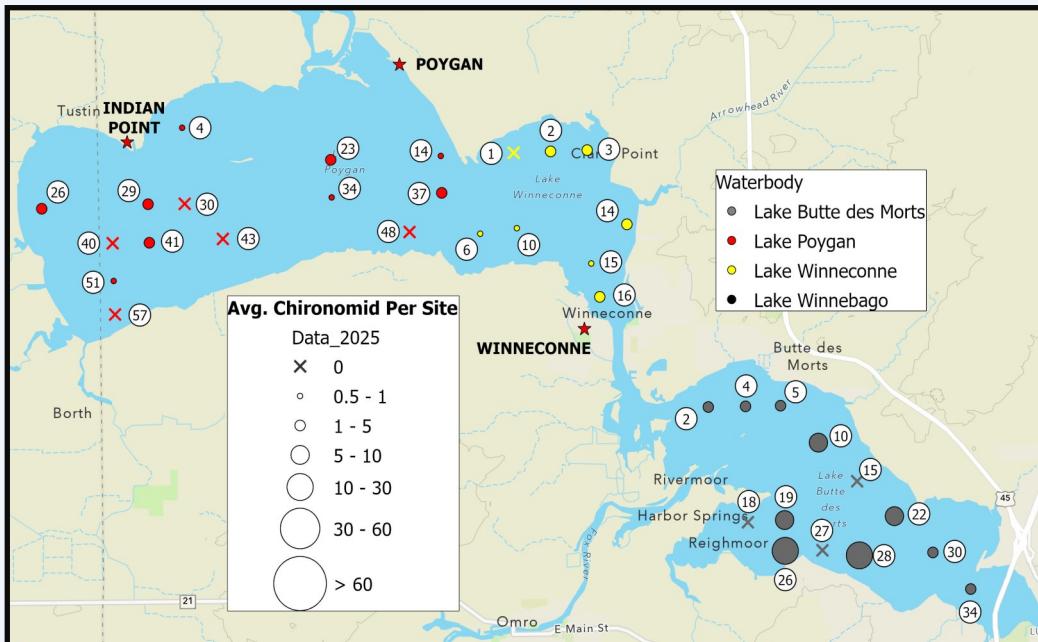


Figure 2: 2025 4th instar chironomid larvae relative abundance at the 34 sites on the Upriver Lakes on the Winnebago System. The numbers in the white circles indicates the site location numbers. Catch rates are relative to point size, with larger points indicating higher catch rates, an X indicates no chironomid caught.



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Image 1: DNR staff using the sieve to remove sediment from the dredge sample to asses chironomid larvae. Photo credit: WI

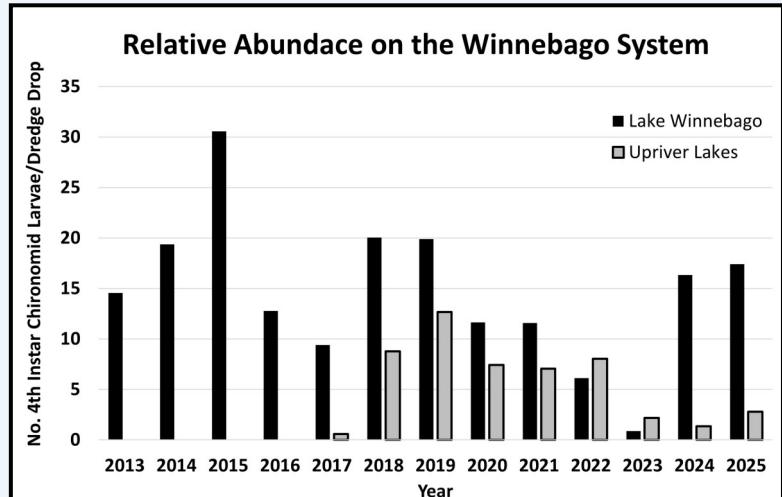


Figure 3: The average relative abundance of 4th instar chironomid larvae from the standar-dized locations on Lake Winnebago and Upriver Lakes from 2014-2025, Upriver Lakes

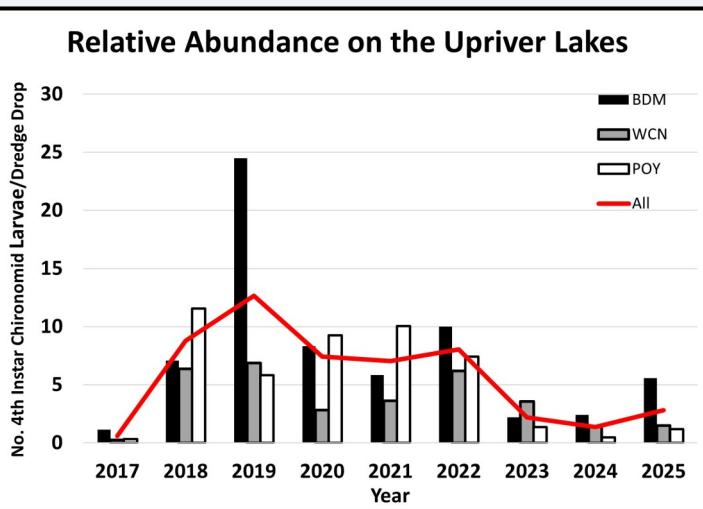


Figure 4: The relative abundance of 4th instar chironomid larvae from the 34 standar-dized locations on the Upriver Lake in the Winnebago System from 2017-2025.

Species Assessment Summary

- This is the third time since paired sampling data were available that the relative abundance in the Upriver Lakes and Lake Winnebago both increased from the previous year (Figures 3).
- Although the Upriver Lakes has seen fewer chironomid larvae over the past few years, the relative abundance in Lake Butte des Morts increased over 2.5 times what it was in 2023.
- Chironomids have a boom and bust population cycle, as is apparent in the Lake Winnebago population over the last 5 years, where upward and downward trends in our long term data set are observed on the Winnebago System (Figure 3 and 4).
- Chironomid larvae remain a critical part of the food web within the Lake Winnebago System
- We will continue to monitor the chironomid abundance within the Winnebago System, as forage assessments are integral to helping explain body condition in lake sturgeon.

2025 Assessment Trawl - YOY Gizzard Shad

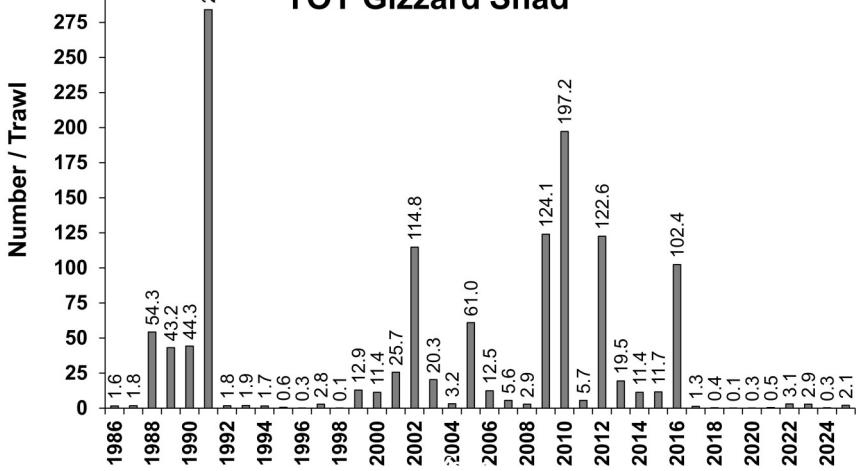


Figure 5: The average number of young of year (YOY) gizzard shad per trawl on Lake Winnebago from August-October from 1986-2025.

Gizzard Shad And Chironomids

- When chironomid abundance is low, lake sturgeon have the ability to feed on zebra mussels, crayfish and a variety of fish. One of the preferred food sources for lake sturgeon is gizzard shad.
- Young of year (YOY) gizzard shad make up the majority size class consumed by lake sturgeon.
- The Lake Winnebago gizzard shad population is monitored annually with a trawling survey to assess population trends.
- The 2025 Young of year (YOY) gizzard shad catch on Lake Winnebago has been low. This year there were 2.1 fish/trawl this year.
- Gizzard shad, like chironomids, have shown boom and bust year classes on Lake Winnebago (Figure 5). There have been multiple ten year periods where abundance is low. This shows that the boom and bust cycle tends to be over a longer time period compared to chironomids.