WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2025 Lake Winnebago Bottom Trawling Assessment Report

Waterbody Code 131100

Image 1. DNR fisheries staff and volunteers with walleye and sauger captured in the 2025 trawl survey. Photo credit: Wisconsin DNR.

Angelo Cozzola
DNR Senior Fisheries Biologist
12/01/2025

Introduction

Image 2. Trawl net being emptied onto fish counting table during the 2025 trawl survey. Photo credit: WI DNR.

The Lake Winnebago bottom trawl survey celebrated its 40th anniversary in 2025. This survey is the longest standing and most insightful fisheries assessments on the system. The survey, in its modern capacity, dates back to 1986, providing a lengthy time series of catch data for comparison over the years. This allows readers to compare species abundance of the past and present, as well as the outlook for future years through the comparison of annual year class strengths. The main objectives of this survey include the assessment of year class strength, relative abundance, and general population trends for a multitude of species. The trawl survey is completed annually by a team of fisheries management staff, fisheries operations staff, and volunteer assistance. The interest in volunteering in 2025 continued to be impressive. The 46 available volunteer spots filled up in under 48-hours. Volunteers throughout the surrounding area continue to be a major asset to the Oshkosh fisheries crew in the completion of this survey.

Methods

Image 3. Fisheries Staff Jason Kohls and Nate Schimanski tending the net on a rainy day during the 2025 trawl survey. Photo credit: WI DNR.

The Lake Winnebago bottom trawling assessment has been conducted with the same standardized method for the last 40 years. This involves a total of 138 net pulls split up into three sampling events. There are 46 net pulls conducted during the first week of August, September, and October. An average day on the trawl consists of 10-12 net pulls (about eight hours on the boat). The 27-

foot-wide trawl net is deployed behind the boat and pulled along the bottom of the lake at four miles per hour (mph) for five minutes, which results in each pull covering roughly one acre. When the net is pulled in, the fish are emptied onto the counting table, and the trawling crew counts the fish and separates the gamefish into a holding tank. The gamefish are then measured and released. The long-term data set from the survey allows for the comparison of year class strength and adult fish relative abundance over the past 40 years, giving fisheries managers and interested anglers insight on the status of the Winnebago System fisheries.

Results

Catch data is separated into young of year (YOY) and adult categories. YOY fish are individuals that hatched in the spring of the same year the fall survey is conducted. YOY catch rates document year class strength, essentially indicating how successful the spawning effort was in a given year. The survey is most effective at capturing small fish, such as YOY and forage fish species, though adult fish catch rates can identify general population trends such as relative abundance and can also be used to observe the recruitment/persistence of previously documented year classes.

Image 4. DNR fisheries staff and volunteers counting fish captured in the 2025 trawl survey. Photo credit: WI DNR.

There was a total of 251,647 fish captured in the 2025 survey representing 23 different species. Total YOY catch was 216,917 individuals representing 12 species. Notable observations include near record catch rates of walleye and yellow perch, A second consecutive year of good white bass numbers, A measurable black crappie hatch, trout perch catch that broke the previous record by a wide margin, zero sauger observed, and the 9th consecutive year of low gizzard shad catch. Total adult catch was 34,730 with 23 different species present. Most notable adult catch observations include strong catch rates of yearling size walleye, an average catch rate for age-2+ walleye, the highest white bass catch observed in over a decade

that largely consisted of yearling sized fish from the 2024 year class, an increase in yellow perch catch primarily comprised of smaller individuals, persistence of the systems low-density sauger population, and the continuation of decreased freshwater drum catch that started in 2018.

WALLEYE

The Winnebago System continues to show high levels of walleye production with the 2025 survey documenting a near record catch rate of YOY walleye (Image 5 & Figure 2). The 2025 YOY catch rate was 16.0/trawl making it the 4th highest on record. This is the second observation of a near record year class in a span of four years.

Image 5. YOY walleye from a high catch pull in the 2025 trawl survey. Photo credit: WI DNR.

Water levels on the Wolf River in the spring of 2025 were favorable for walleye spawning. Spawning activity, indicated by the observation of post spawn females in the spring assessment, started to heat up on April 1st. On April 1st the river gauge height at New London surpassed 7-feet and it remained above 7-feet until May 12th (Appendix 1). In addition to the high sustained water, a favorable water temperature profile was observed. Water temperatures climbed gradually throughout the spawning and egg incubation period and showed relatively little fluctuation (Appendix 2). These favorable environmental conditions promoted a very successful spawn in 2025.

Following a strong year class in 2024 (9.7/trawl), a good catch rate of 4.6 yearling/trawl was observed in 2025 (Figure 2). This observation of recruitment to age-1 is a positive note for the population as the first year of life can be a critical time for the survival of any given year class to the adult spawning stock. We will hope to see the yearling catch rates in 2026 reflect the large year class observed in 2025. Age 2+ walleye catch rates were 3.2/trawl which is right around the average for the survey (Figure 2).

Image 6. Two walleye and a yellow perch captured in the 2025-trawl survey. Photo credit: Wisconsin DNR.

Overall, the trawl survey indicates that the walleye population of the Winnebago System is doing well, and the continuation of successful spawning provides a great outlook for the future. Walleye production over the last ten years has been elevated relative to the history of the survey. The average YOY catch for the entire 40-year-old data set is 5.3/trawl and the average for the last 10-years of the survey is 8.3/trawl. This consistent production has resulted in a robust walleye fishery and great angling opportunity. Age analysis from the 2025 spring survey shows impressive persistence of the 2016-year class with 9-year-old fish being the most abundant single year class comprising 23% of the total sample (Figure 1) which may provide opportunity for larger individuals (Image 7).

Image 7. Fisheries Biologists Angelo Cozzola (left) and Jason Kohls (right) with large Winnebago System walleye captured in the 2025 spring survey. Photo credit: WI DNR.

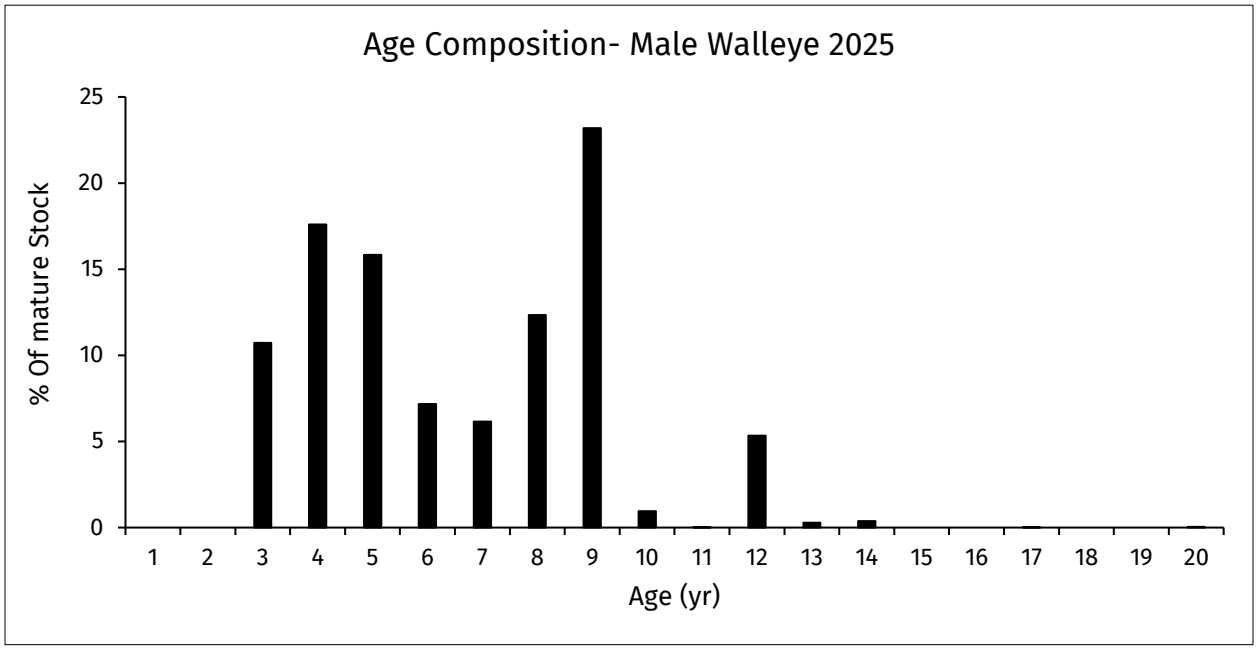


Figure 1. Age distribution of male walleye sampled on the Wolf River in 2025.

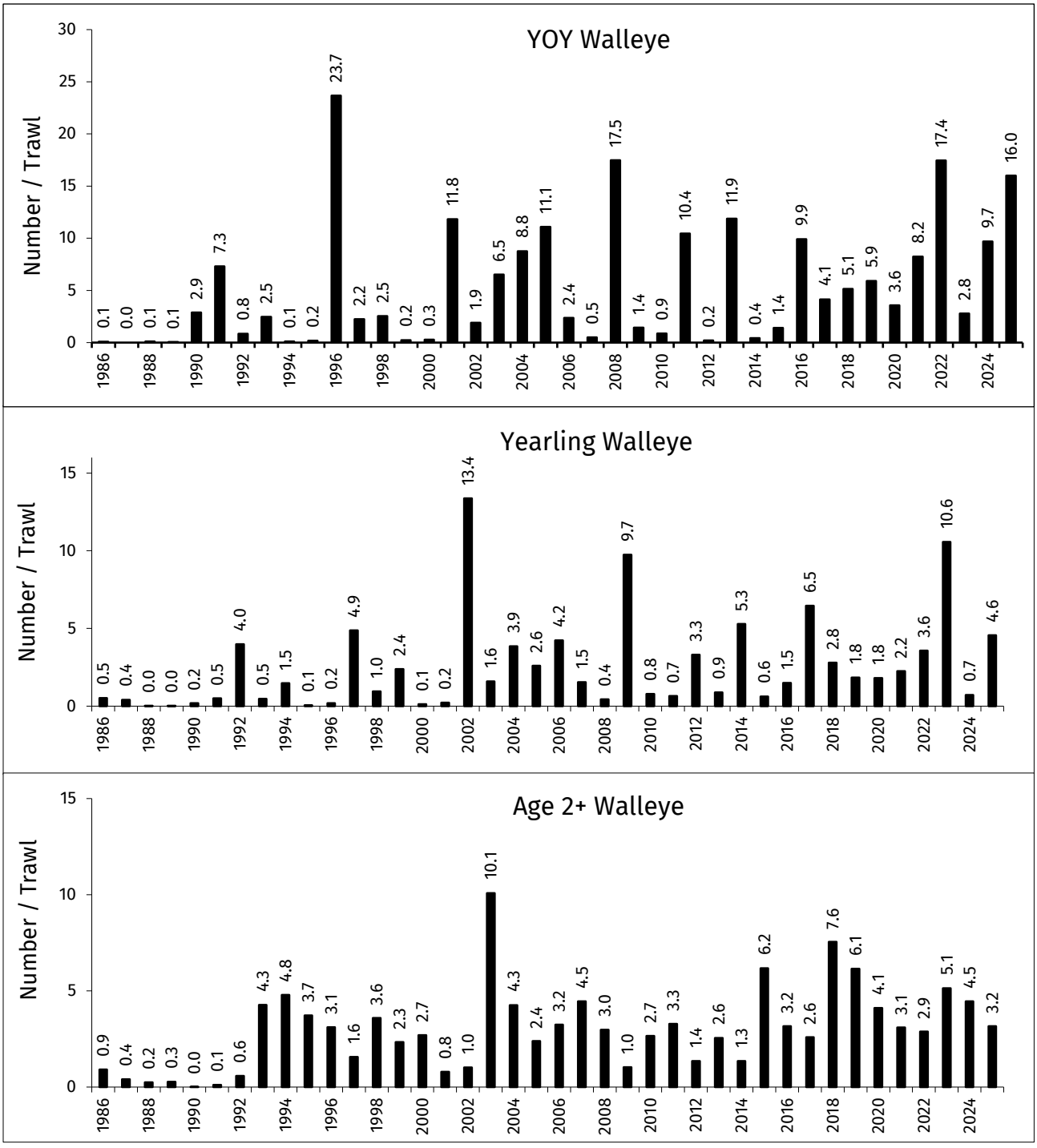


Figure 2. YOY (top), yearling (middle), and age 2+ (bottom) walleye catch rates in the Winnebago trawl survey from 1986 through 2025.

YELLOW PERCH

Winnebago System yellow perch anglers reported a general trend of decreased success compared to recent years. The 2024 trawl survey predicted this trend with a notable decrease in adult catch rates and low numbers of fish captured in the 4-to-7-inch size. The lack of smaller individuals led to concern for the abundance of fish moving into more preferable harvest size. This concern was reflected by anglers reports during the 2025 season. This being said, the 2025 survey provides some hopeful insight.

The 2025 survey documented a YOY catch rate of 15.8/trawl, which is the 2nd highest throughout the survey (Figure 3). The continuation of high yellow perch production is a positive note, though recent years of the survey have shown varied levels of survival to larger sizes. Adult catch rates increased comparatively to the 2024 survey and length distribution indicated good survival of the 2024-year class with fish in the 4–7-inch size showing up in good number (Figure 4).

The yellow perch population of the system experiences natural fluctuations that are related to many factors. The most apparent cause for the decline in trawl catch rates and angler success is the lack of recruitment observed for the 2023-year class indicated by the low catch rates of fish in the 4–7-inch range in the 2024 survey. Many factors can affect recruitment, but one stand out observation in the trawl data is the abundance of predators in the system indicated by the record catch rate of age 1+ walleye in 2023. Walleye-yellow perch predator-prey relations is a well investigated topic in the Greats Lakes region and limitations on yellow perch recruitment related to walleye abundance has been observed. The large walleye year class observed in this year's survey may provide further evidence of this trend if yellow perch recruitment is limited in the 2026 survey.

Image 8. Trawl volunteer Matt Crawford with a large yellow perch captured in the 2025 trawl survey. Photo credit: WI DNR.

The yellow perch population of the Winnebago System has persisted through periods of much lower abundance and the perceived angling struggles may be induced by recency bias with three consecutive years of near record adult catch rates in the trawl survey from 2021-2023 (Figure 3). Overall yellow perch remain one of the most abundant panfish species on the system being commonly observed in abundance during fisheries surveys. Moving forward we will hope to see good recruitment of the 2025-year class and the persistence of the 2024-year class in order to provide improved angling opportunity.

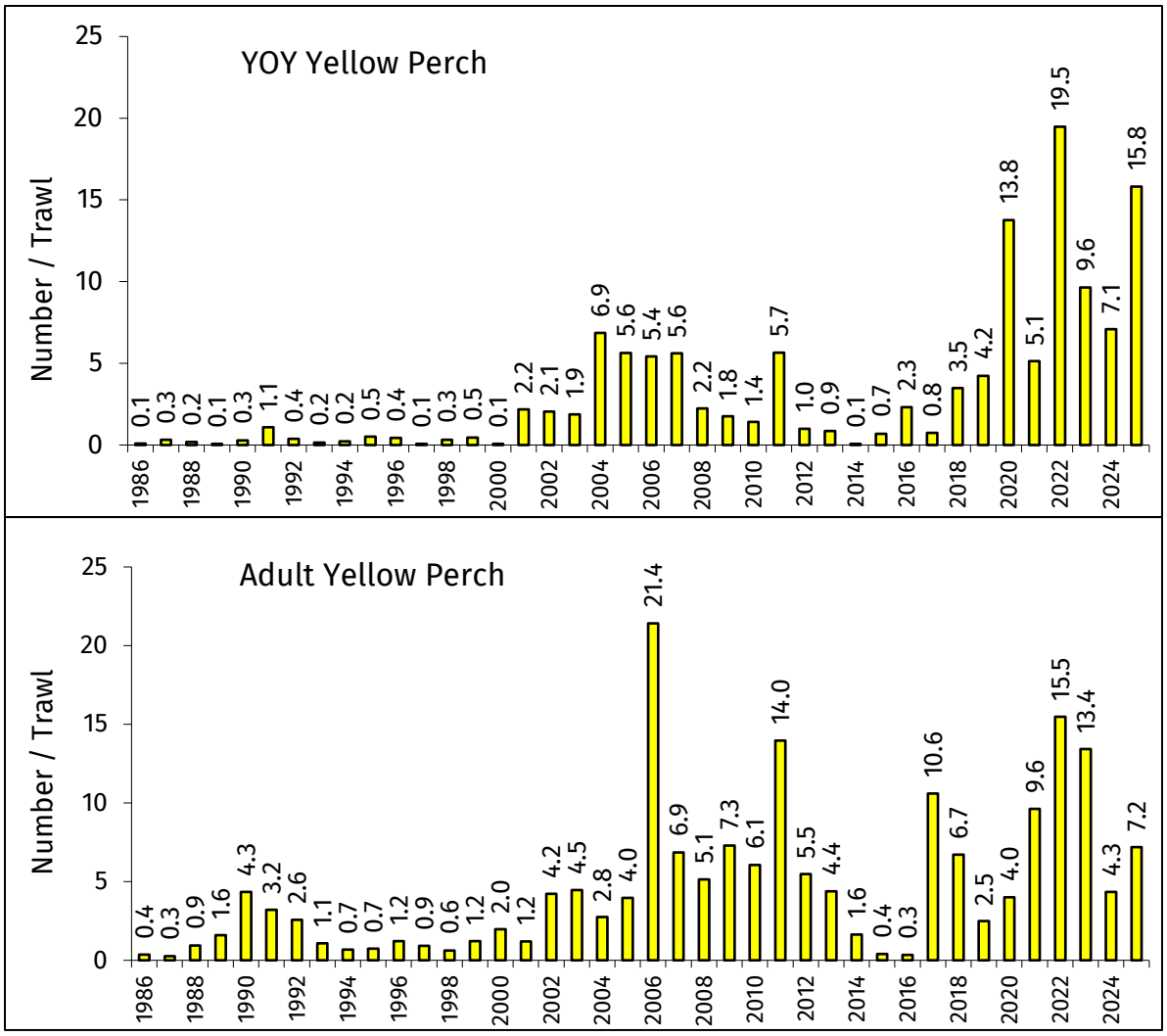


Figure 3. YOY (top) and adult (bottom) yellow perch catch rates in the Winnebago trawl survey from 1986 through 2025.

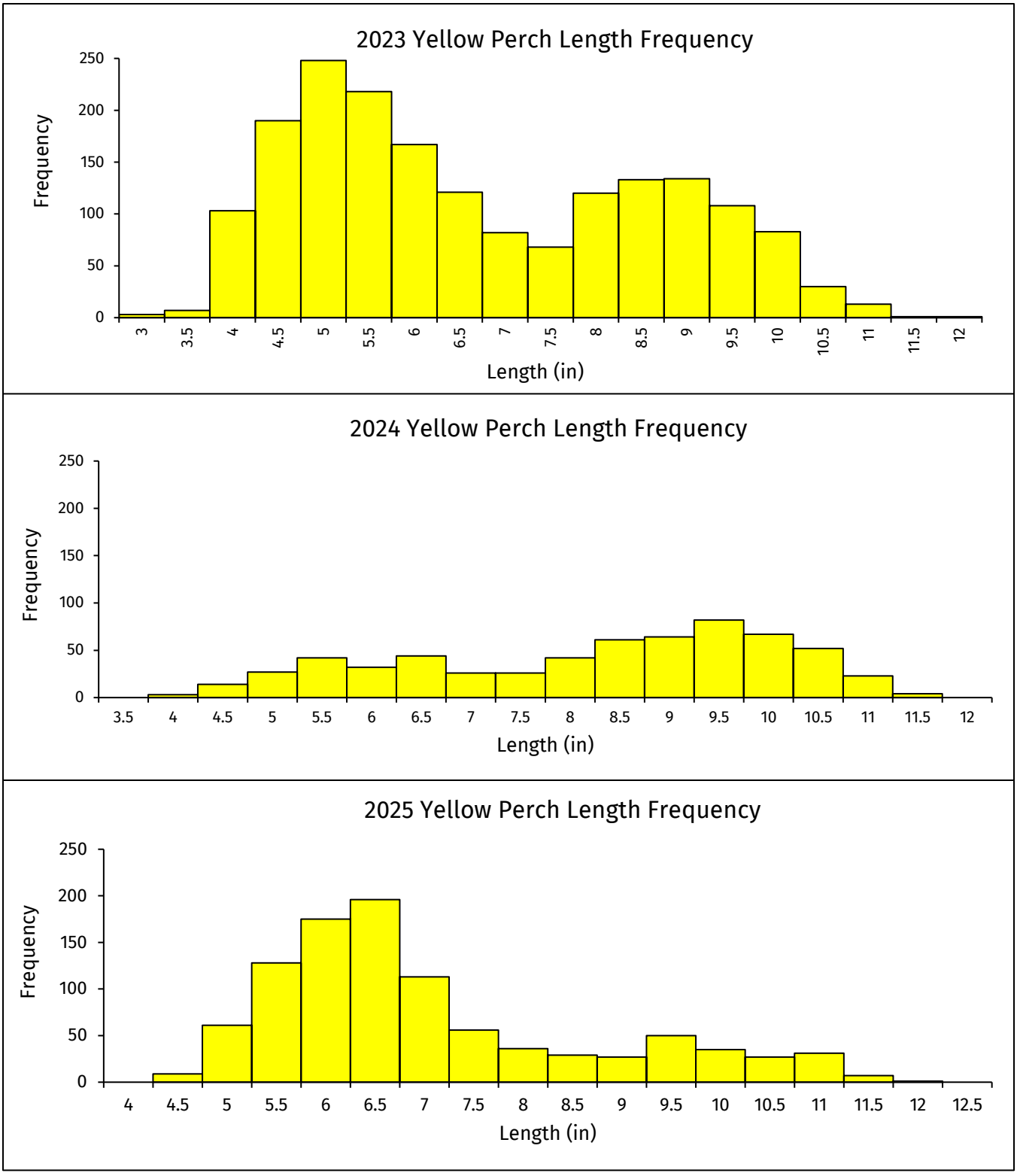


Figure 4. Length frequency of yellow perch captured in 2023 (top), 2024 (middle), and 2025 (bottom) in the trawl survey.

SAUGER

There were zero YOY sauger captured in the 2025 survey. Natural reproduction on the system remains limited. There were a total of 75 age 1+ sauger captured. This equates to a catch rate of 0.6 fish/trawl, which is consistent with the previous three years of the survey. Length frequency of trawl captured sauger showed some survival of the small year class observed in 2024 (Figure 6). The low-density adult population and intermittent observation of natural reproduction (YOY catch) has been the recent status quo for Winnebago System sauger.

Image 9. An adult sauger captured in the 2025 trawl survey. Photo credit WI DNR.

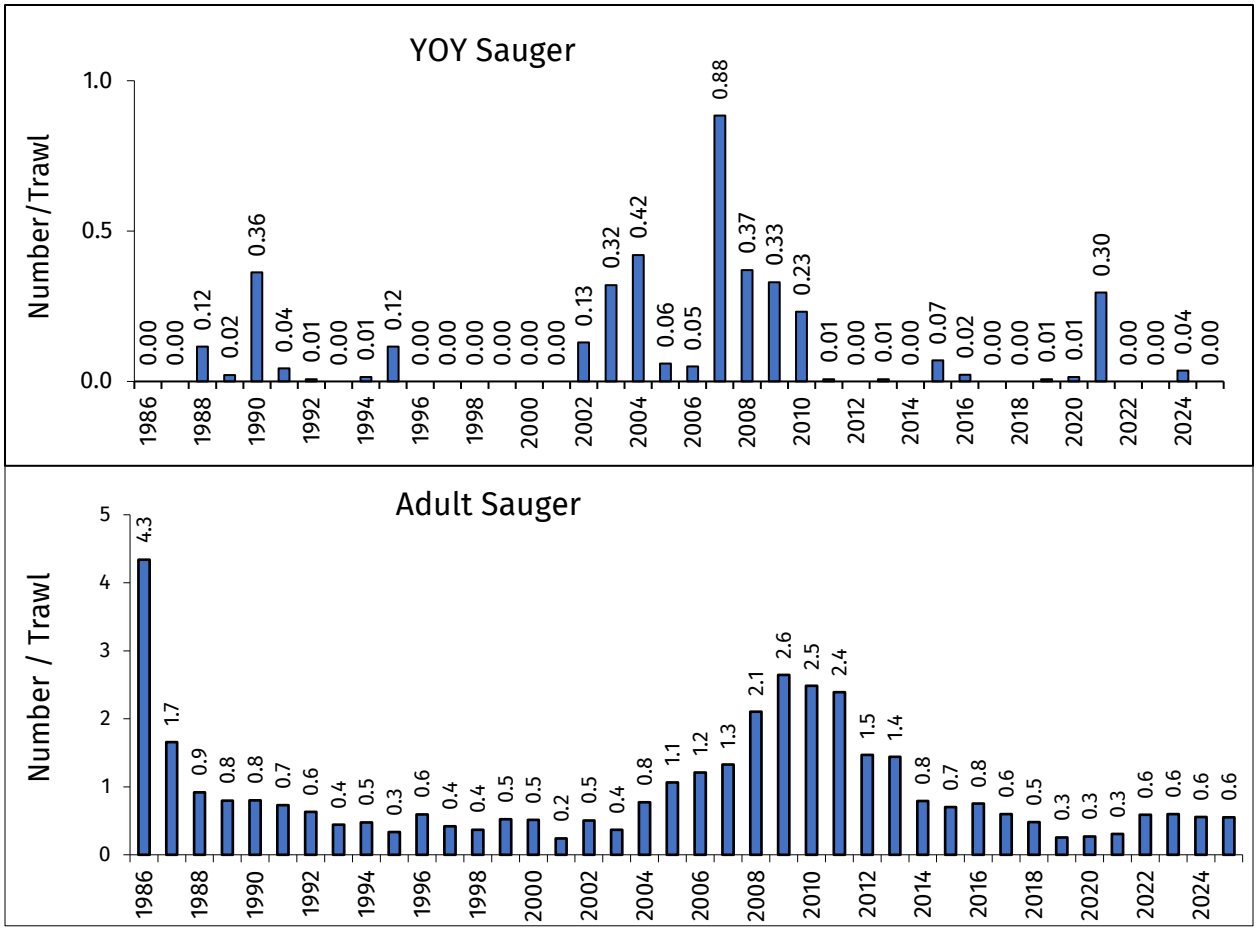


Figure 5. YOY (top) and adult (bottom), sauger catch rates in the Winnebago trawl survey from 1986 through 2025.

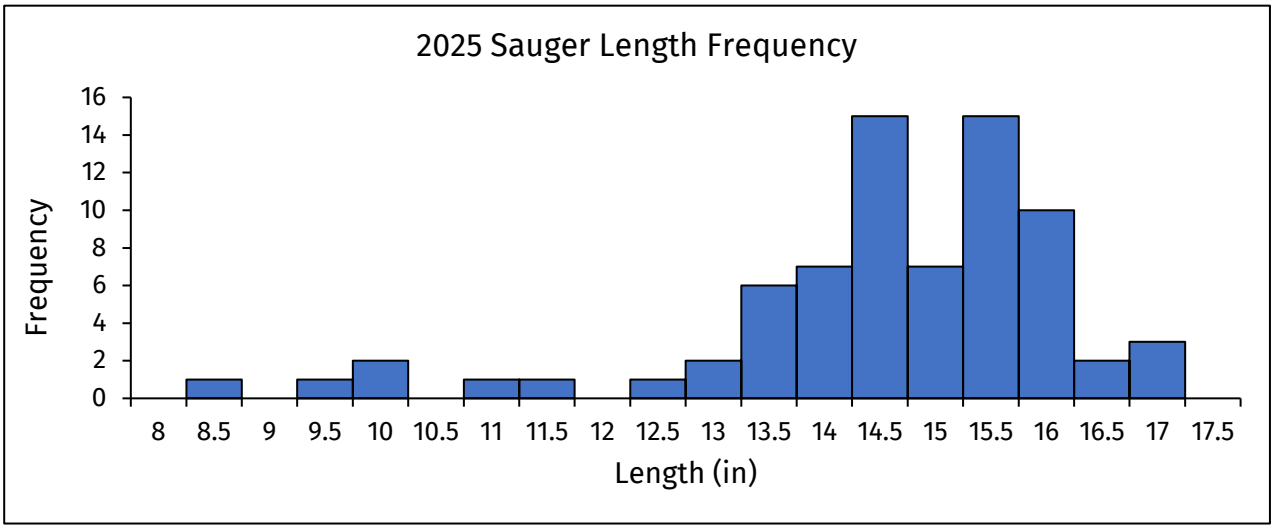


Figure 6. Length frequency of sauger captured in the 2025 Winnebago trawl survey.

WHITE BASS

The trawl survey has recorded a measurable white bass hatch in the past two consecutive years. YOY catch rate in 2025 was 29.3/trawl (Figure 7 and Image 10). This is the highest catch rate observed in the survey for over a decade. While the YOY catch rates have not reached highs observed throughout the history of the survey, it is promising to see consecutive years of measurable production following over a decade of decreased YOY catch rates. Adult catch rates were also good with solid recruitment of the 2024-year class showing up in the 2025 survey. Adult white bass catch was 7.0/trawl (Figure 7) and was largely comprised of fish in the 7.5-11-inch range comprising 66.8% of the sample (Figure 8). Several net pulls had impressive numbers of these yearling size fish which has not been common in the survey in over

Image 10. YOY white bass captured in the August event of the 2025 trawl survey (left) and Oshkosh fisheries staff Nate Schimanski with YOY white bass captured in the October event of 2025 trawl survey (right). Photo credit: Wisconsin DNR

a decade. (Image 11). Similar to YOY catch the adult catch is the highest observed in over a decade. Last year's adult catch rate was the lowest ever recorded in the survey so the rebound in catch in 2025 was great to see. Good recruitment of the observed 2025-year class should further contribute and white bass anglers may find more success in future years.

Image 11. A netful of yearling size white bass captured in the 2025 trawl survey. Photo credit: Matt Crawford.

The Winnebago System Fisheries Management Team is conducting a tagging project on white bass. The tags for this project were purchased using the financial contributions from Quinney Fishing Club, The Battle on Bago Organization, and Lake Poygan Sportsmen Club. This project was initiated by frequent public concern for excessive harvest of white bass and the decrease observed in trawl survey catch rates. The primary objective of the study is to better understand angler harvest rates of white bass for the consideration of the establishment of a daily bag limit on Winnebago System white bass. Additional data collected includes population characteristics and dynamics such as length distribution, age distribution, and growth. Angler reported capture location of tagged fish will provide interesting, though limited, information on fish movement.

Table 1. Harvest estimates for Winnebago System white bass using 33% tag reporting rate for 2024 and 2025 (2025 updated as of 10/20/2025).

Year	Total	Male	Female
2024	9.4%	9.1%	9.7%
2025	14.7%	16.2%	8.8%

2025 was the second year of the white bass project. Between the two years of study there have been a total of 2,362 white bass tagged. Tag loss and tag reporting rates used in the calculation of harvest estimates were the same values that have been evaluated/established for walleye on the system. Exploitation estimates for 2024 were 9.4% for all fish, 9.1% for male fish, and 9.7% for female fish. 2025 exploitation estimates (updated as of October 2025) were 14.7% for all fish, 16.2% for male fish, and 8.8% for female fish (Table 1). The preliminary results from the white bass study thus far indicate that angler harvest is relatively low. The study will continue throughout at least the 2026 season and potentially 2027 depending on tag supply.

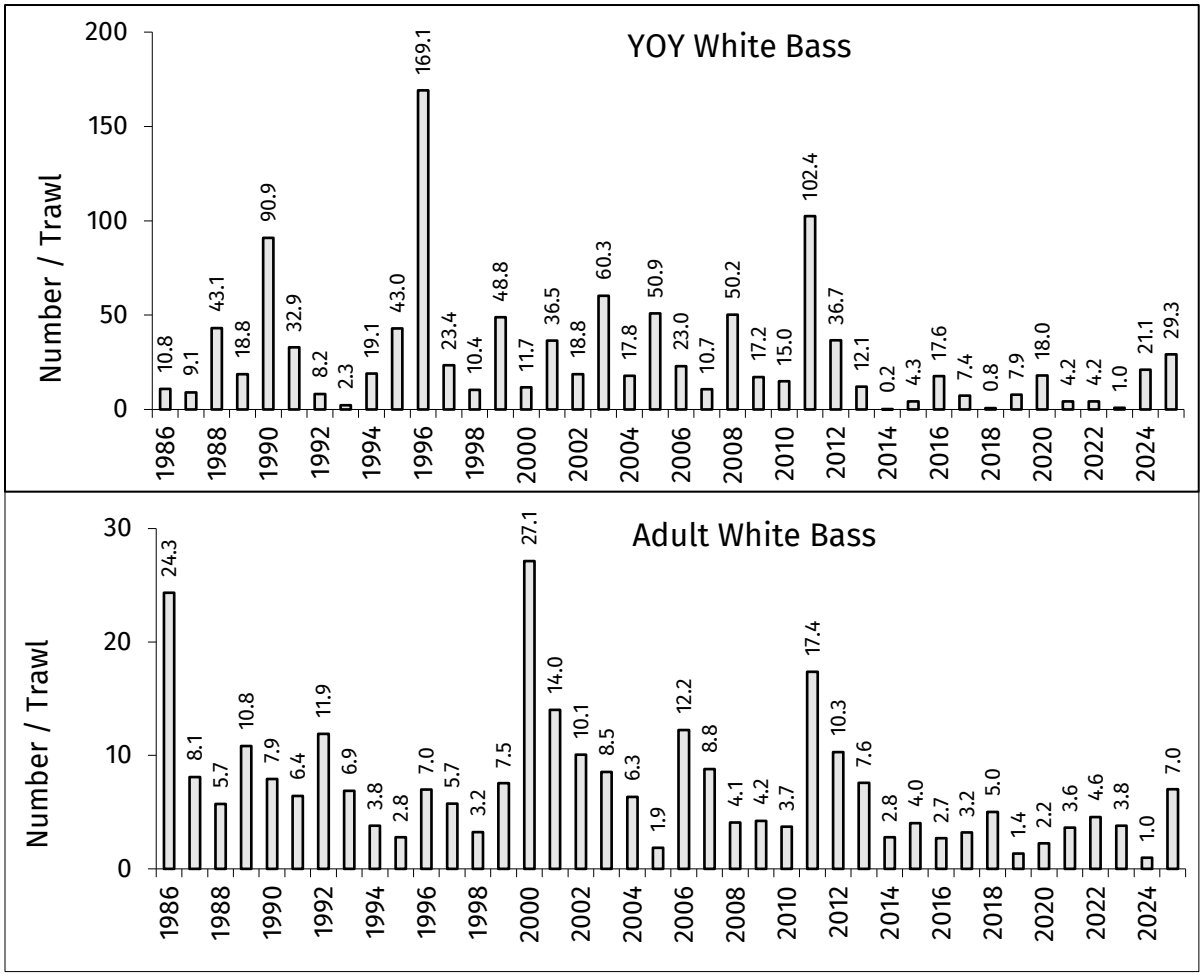


Figure 7. YOY (top) and adult (bottom), white bass catch rates in the Winnebago trawl survey from 1986 through 2025.

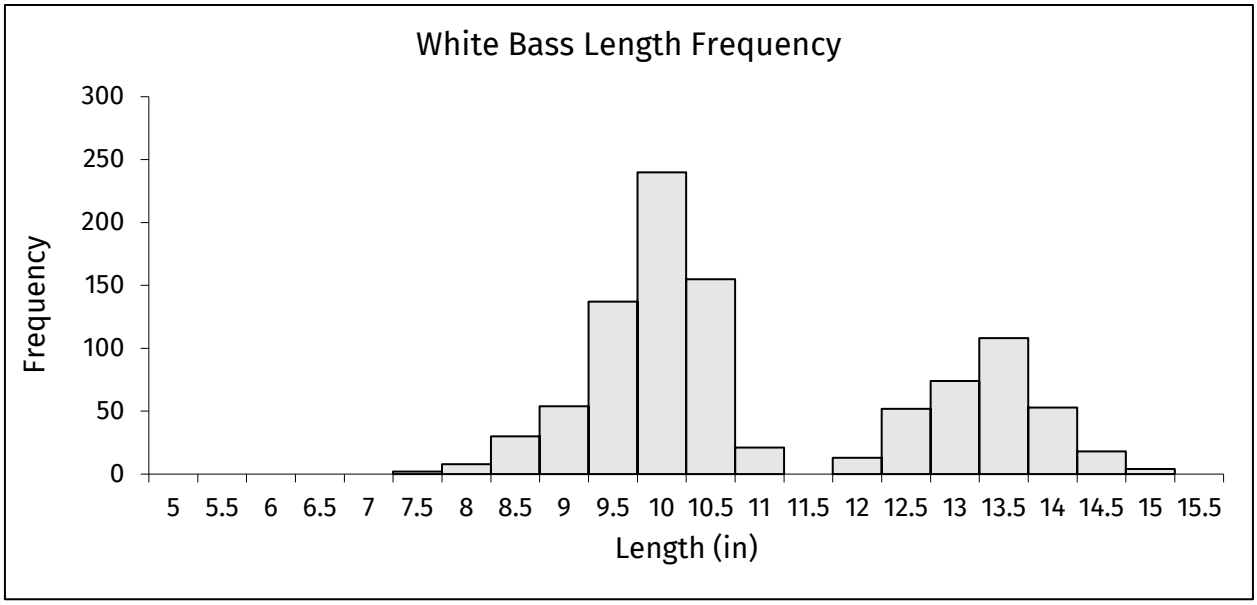


Figure 8. Length frequency for white bass captured in the 2025 trawl survey.

BLACK CRAPPIE

Image 12. YOY black crappie captured in the 2025 trawl survey. Photo credit: WI DNR.

Black crappie had a measurable hatch in 2025 with a YOY catch rate of 3.2/trawl (Figure 9). Black crappie are a lesser targeted fish on the Winnebago System when compared to species like walleye and yellow perch though still well enjoyed by many anglers. Black crappie abundance on the system fluctuates over time. Anglers on the system targeting crappie take note when a large year class is observed in the trawl survey as angling success will typically increase a few seasons after a notable year class. While the 2025 survey did not document a large hatch, it is good to see YOY fish show up in measurable numbers. For those wanting to target crappie on the system, shallow bays and channel systems on the west side of the lake are good areas to target in spring and early summer.

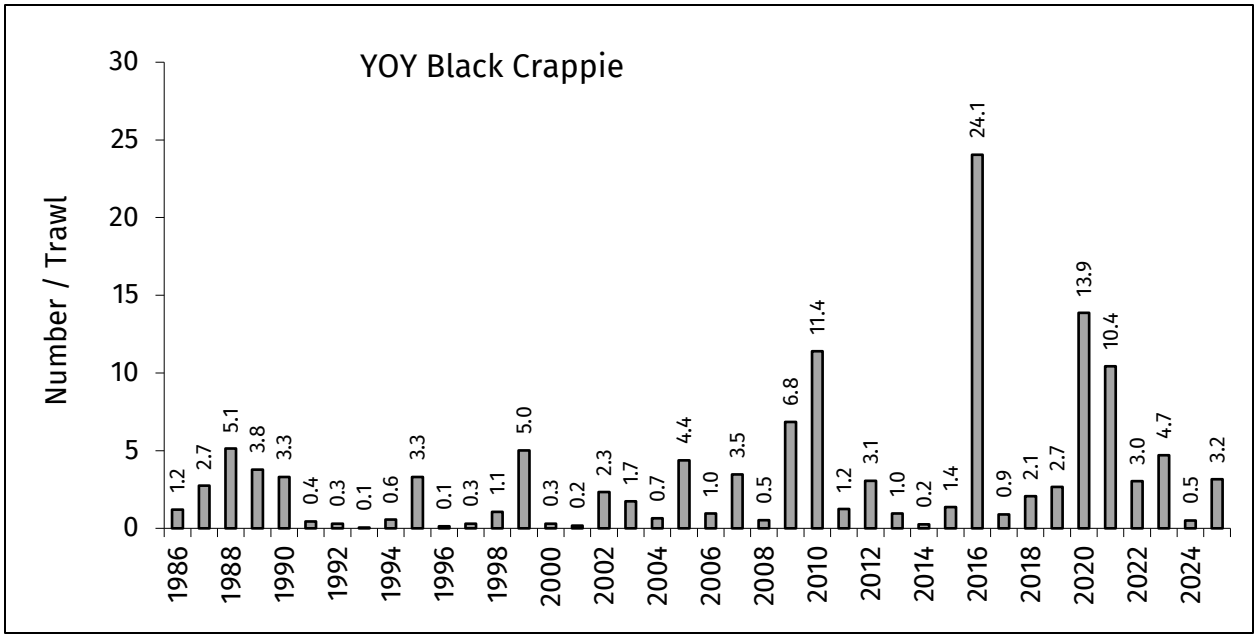


Figure 9. YOY black crappie catch rates in the Winnebago trawl survey from 1986 through 2025.

Forage Species

TROUT PERCH

YOY trout perch catch rates have been elevated since 2021. This trend intensified in 2025 with the previous catch record being nearly doubled (1473.8/trawl, Figure 10). DNR staff and volunteers alike were impressed with the trout perch catch observed in 2025 (Image 13). The single largest net pull captured approximately 16,500 individual trout perch. The catch from this single net pull represents more fish captured than all 138 net pulls combined for some years of the survey. The abundance of forage in the system provides a good outlook for the systems gamefish populations by providing abundant food resources and shielding from angling harvest. Walleye angling was relatively good in 2025 though some anglers did report struggles catching fish. High abundance of prey items in the system has shown to lower angler success, indicated by lower harvest estimates during years of high forage, and the record-breaking abundance of trout perch is a significant observation. In addition to our observations in the trawl survey, anglers also reported an increased amount of trout perch encounters over the last year with many anglers reporting catching trout perch through the ice and snagging into trout perch while trolling or casting from shore.

Image 13. Two different net pulls of extremely high trout perch catch during the 2025 survey. Photo credit: WI DNR.

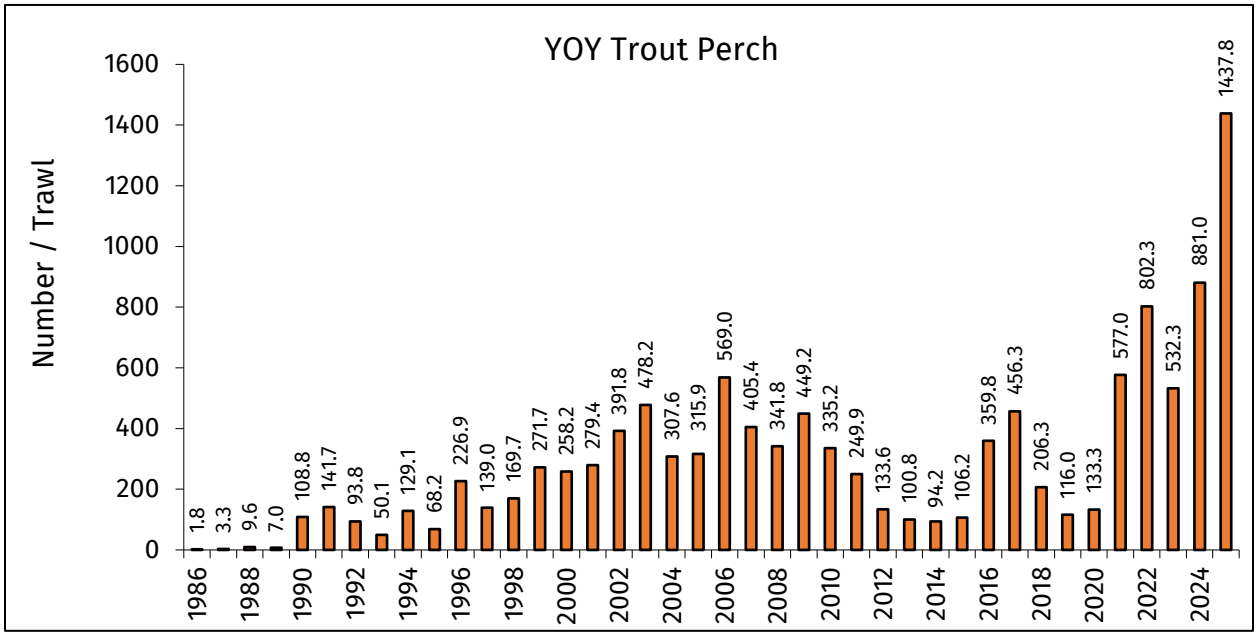


Figure 10. YOY trout perch catch rates in the Winnebago trawl survey from 1986 through 2025.

EMERALD SHINERS

Comparatively to other forage fish in the system, emerald shiners are typically caught in lower numbers with an average YOY catch of 1.3/trawl and an average adult catch of 1.9/trawl (Figure 11). In 2025, YOY catch was 0.8/trawl and adult catch was 0.4/trawl. While catch data shows, limited numbers of emerald shiners in the trawl

survey, reports of impressive shiner observations in many of the systems near shore habitat are common. The most impressive observations are found in protected areas such as bays, channels, and harbors.

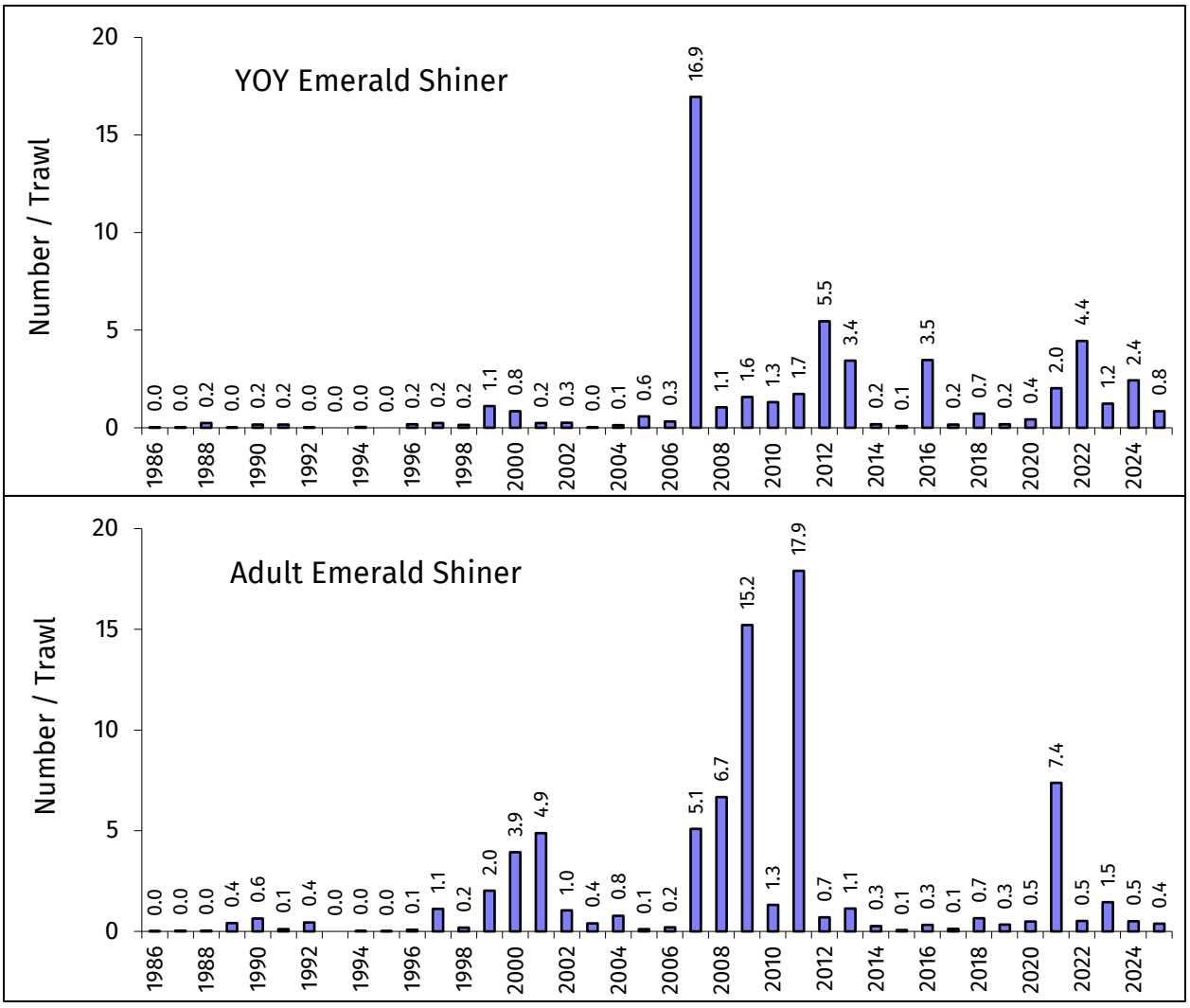


Figure 11. YOY (top) and adult (bottom), emerald shiner catch rates in the Winnebago trawl survey from 1986 through 2025.

FRESHWATER DRUM

Image 14. Fish counting table with a commonly observed catch dominated by adult freshwater drum. Photo credit: Wisconsin DNR

YOY Freshwater drum catch was low in 2025, ranking amongst the 10 lowest catch rates observed throughout the 40-year-old survey (27.3/trawl, Figure 12). Adult catch showed a slight rebound from the record low catch rate observed in 2024, but relative to the history of survey, adult catch remained below the survey average for the 8th consecutive year (Figure 12). The decreased catch rates for adult drum started in 2018 following a Viral Hemorrhagic Septicemia (VHS) event. The persistence of these lower adult catch rates is notable, though freshwater drum remain a high abundance species on the system (Image 14). There have been several notable year classes since 2018, though there has not been a correlation in adult catch rates. Only time will tell if adult numbers rebound to pre-2018 levels.

While freshwater drum often get a bad reputation from anglers due to their abundance and frequent capture as by-catch while targeting other species, they are a native species and do serve an ecological role in the system. YOY freshwater drum provide forage in the system and have been shown to comprise large proportions of cormorant diets, indicating they may shield more sought-after species from avian predation. Adult fish also provide plentiful angling opportunities, and large individuals can make for a memorable experience for any angler. As always, I encourage anglers to try harvesting their freshwater drum catch alongside their typical favorites to see how they compare. While freshwater drum are not a popular target for table fare, many anglers do harvest and enjoy freshwater drum.

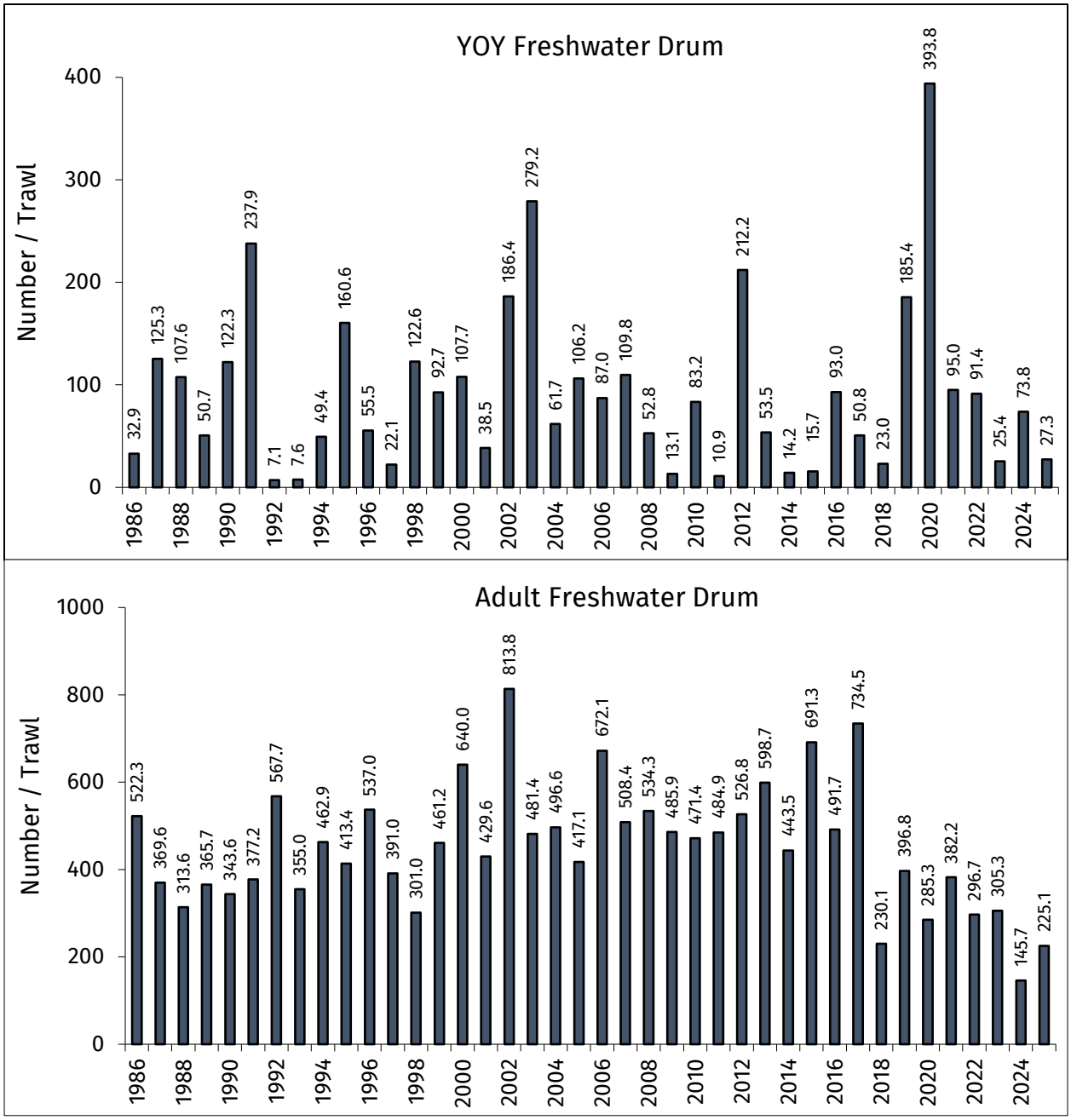


Figure 12. YOY (top) and adult (bottom), freshwater drum catch rates in the Winnebago trawl survey from 1986 through 2025.

GIZZARD SHAD

Image 15. YOY gizzard shad (top), trout perch (middle), and freshwater drum (bottom) captured in the 2025 trawl survey. Photo credit: WI DNR.

2025 trawl results indicate another “bust” year for gizzard shad with a YOY catch rate of 2.1/trawl (Figure 13). The last “boom” year was in 2016 with 102.4/trawl and numbers have remained close to zero since then. This being said, gizzard shad are still commonly found throughout the system, sometimes in impressive numbers in certain localities. For example, local Fisheries staff reported extremely high abundances of gizzard shad in a 2025 spring electrofishing survey in Millers Bay. The prolonged period of decreased gizzard shad catch in the survey has been observed before with a similar duration of “bust” years occurring throughout the 1990s. While the trawl results indicate a relatively low abundance for gizzard shad, the population persists at a level that makes it reasonable to believe that another “boom” gizzard shad catch could occur any given year if the environmental conditions line up.

Gizzard shad are one of the most inquired about species in the trawl survey. There is good reason for this as the gizzard shad population in Lake Winnebago follows a “boom” or “bust” recruitment cycle, and the year class strength of this forage fish has many implications on the rest of the fishery. For example, when there is a “boom” year class, gizzard shad are found in very high densities, and this can result in an abundance of natural forage for gamefish, which can lead to less angler success. Alternatively, when there is a “bust” year class and other forage in the system are relatively low, such as trout perch and freshwater drum, anglers tend to have higher success. This can lead to increases in gamefish exploitation, specifically our walleye harvest estimates the year following a gizzard shad “boom” year. Sturgeon spearers are also interested in the gizzard shad catch as winter die off of gizzard shad is

common resulting in an abundant food source for sturgeon and potentially heavier fish coming in on the spear.

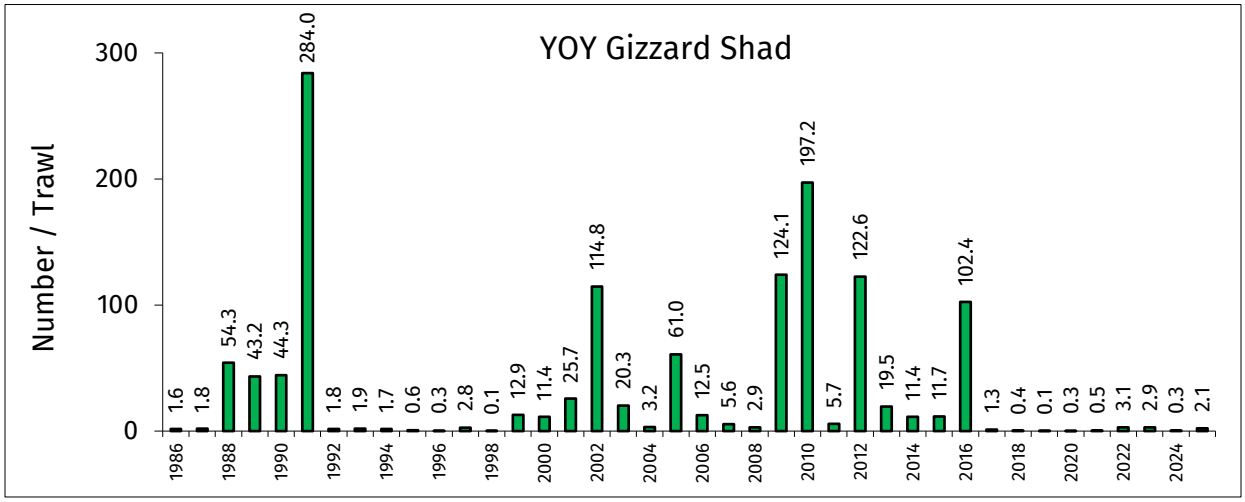


Figure 13. YOY catch rates for gizzard shad in the Winnebago trawl survey from 1986 through 2025.

Summary

Image 16. Fisheries staff Nate Schimanski with a juvenile muskellunge captured in the 2025 survey.

As always, the 2025 trawl survey provided valuable insight on the status of the fisheries of Lake Winnebago. Walleye production on the system continues to be high and the outlook for the fishery is promising. The Winnebago System yellow perch fishery has declined in comparison to recent high abundance years, though adult catch rates in 2025 were above average and the continuation of high YOY catch is a positive note for future years. White bass numbers in the trawl survey have started to increase the past two years, and this observation comes at a critical time as public concern for the white bass fishery has been elevated. The white bass tagging project will continue, though harvest estimates thus far have been relatively low indicating environmental and biological factors are likely the main drivers of white bass abundance on the system. Freshwater drum continued their lower catch

Image 17. Fisheries biologist Angelo Cozzola with a 38.5-inch bigmouth buffalo captured in the 2025 trawl survey.

rates for adult fish and a small hatch was observed in 2025. While gizzard shad experienced another "bust" year, trout perch far exceeded their previous catch record indicating that forage in the system is high. This may lead to tougher angling in the near future, but the abundance of forage is beneficial for the growth and survival of the systems most targeted species.

The Winnebago trawl survey is the longest standing and single largest survey effort on the system. It provides highly anticipated insight on the current status for many species. It takes an impressive amount of time, people, and resources in order to conduct this survey and summarize the results. This large task is made much more manageable through the utilization of our dedicated volunteers. The volunteer interest for the survey continues to be impressive, and it is great to see the interest from the surrounding community in our work and the health of the system. To everyone who came out on the Calumet with us this season, your time is very appreciated, thank you! I would also like to acknowledge the fisheries operations staff at Asylum Bay.

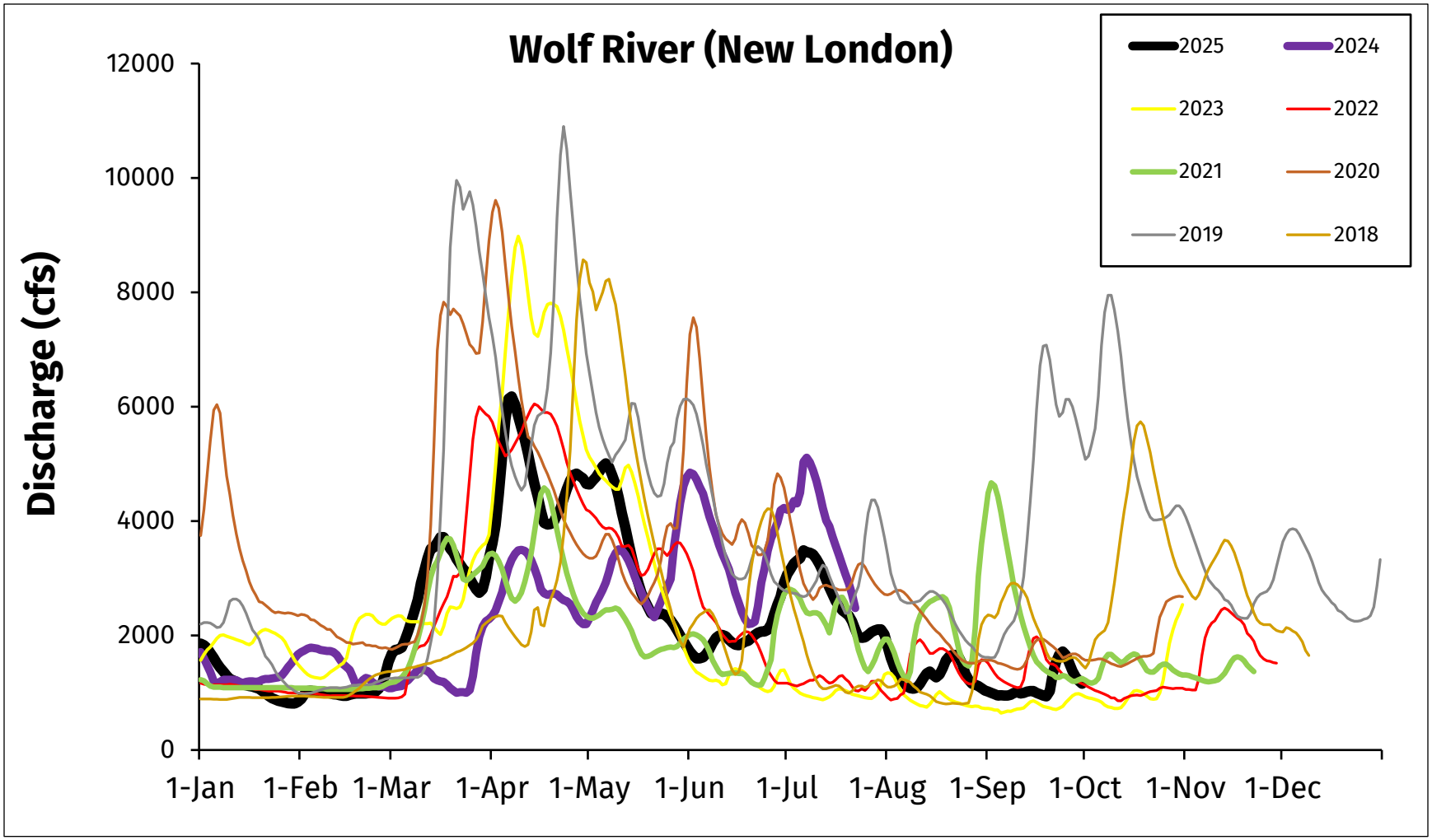
I hope you enjoyed reading the 2025 Winnebago Trawling Report. If you are interested in becoming a trawl volunteer, please contact myself at the number or email below or fisheries biologist Jason Kohls at (920) 420-9943 or Jason.Kohls@wisconsin.gov for more information. Stay safe on the ice and best of luck to all Winnebago System anglers in 2025!

Sincerely,

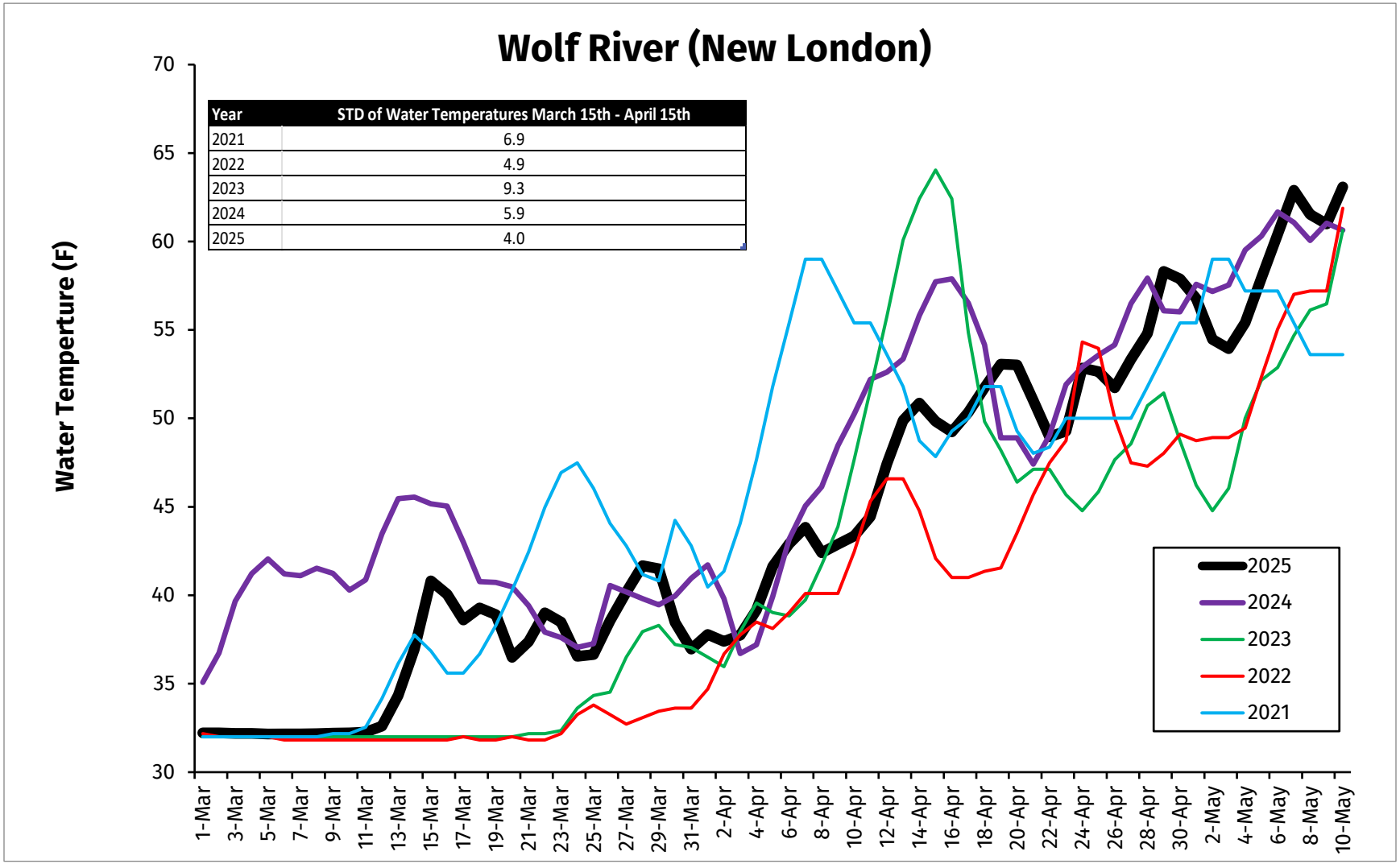
Angelo Cozzola

Winnebago System Gamefish Biologist
Fisheries Management Bureau/Division of Fish, Wildlife and Parks
Wisconsin Department of Natural Resources
(920) 410-9170, angelo.cozzola@wisconsin.gov

Appendix 1. Wolf River hydrograph displaying discharge as cubic feet per second (CFS) at the New London gauge from 2018 through 2025.



Appendix 2. Temperature data at the New London gauge on the Wolf River from 2021 through 2025. Standard deviation (STD) for March and April water temperatures displayed in table.



Year	STD of Water Temperatures March 15th - April 15th
2021	6.9
2022	4.9
2023	9.3
2024	5.9
2025	4.0

Appendix 3. Catch rates (#/trawl) for the most common adult fish species captured in the Lake Winnebago trawl survey.

Year	Freshwater Drum	Yellow Perch	Emerald Shiner	Walleye	White Bass	White Sucker	Channel Catfish	Common Carp	Bluegill	Quillback
1986	522.3	0.4	0.0	1.4	24.3	1.6	0.3	1.1	0.0	0.4
1987	369.6	0.3	0.0	0.8	8.1	1.5	0.1	0.8	0.0	0.4
1988	313.6	0.9	0.0	0.3	5.7	1.2	0.3	0.9	0.0	0.3
1989	365.7	1.6	0.4	0.3	10.8	1.2	0.4	1.3	0.0	0.9
1990	343.6	4.3	0.6	0.2	7.9	1.4	0.3	0.8	0.0	0.8
1991	377.2	3.2	0.1	0.6	6.4	1.1	0.5	0.7	0.0	0.3
1992	567.7	2.6	0.4	4.6	11.9	1.8	0.6	1.2	0.0	0.4
1993	355.0	1.1	0.0	4.7	6.9	2.2	0.4	1.6	0.0	0.6
1994	462.9	0.7	0.0	6.3	3.8	1.6	0.5	2.3	0.0	0.5
1995	413.4	0.7	0.0	3.8	2.8	1.2	0.4	1.4	0.0	0.3
1996	537.0	1.2	0.1	3.3	7.0	2.0	0.3	0.8	0.0	0.6
1997	391.0	0.9	1.1	6.4	5.7	1.7	0.6	0.9	0.0	1.0
1998	301.0	0.6	0.2	4.5	3.2	2.0	0.6	1.5	0.0	1.3
1999	461.2	1.2	2.0	4.7	7.5	2.0	0.6	1.9	0.0	1.4
2000	640.0	2.0	3.9	2.8	27.1	2.2	0.9	1.9	0.0	1.0
2001	429.6	1.2	4.9	1.0	14.0	1.6	0.7	1.1	0.0	1.0
2002	813.8	4.2	1.0	14.4	10.1	2.9	0.9	1.0	0.0	1.6
2003	481.4	4.5	0.4	11.7	8.5	2.1	1.4	1.4	0.0	0.8
2004	496.6	2.8	0.8	8.2	6.3	1.2	0.8	1.8	0.0	0.7
2005	417.1	4.0	0.1	5.4	1.9	1.8	0.6	1.4	0.1	0.3
2006	672.1	21.4	0.2	7.5	12.2	1.4	0.8	2.3	1.7	0.5
2007	508.4	6.9	5.1	6.0	8.8	2.7	0.7	2.4	2.0	1.0
2008	534.3	5.1	6.7	3.4	4.1	2.0	0.8	3.4	0.1	0.5
2009	485.9	7.3	15.2	10.8	4.2	2.3	0.9	2.2	0.6	1.3
2010	471.4	6.1	1.3	3.4	3.7	2.0	0.8	2.7	0.1	1.0
2011	484.9	14.0	17.9	3.9	17.4	5.1	1.3	3.6	0.2	1.0
2012	526.8	5.5	0.7	4.7	10.3	5.4	2.2	1.9	0.0	0.8
2013	598.7	4.4	1.1	3.4	7.6	4.0	3.3	2.0	0.0	0.5
2014	443.5	1.6	0.3	6.6	2.8	4.6	1.7	1.6	0.0	0.3
2015	691.3	0.4	0.1	6.8	4.0	4.4	1.5	1.8	0.0	0.8
2016	491.7	0.3	0.3	4.6	2.7	3.6	1.7	0.8	0.0	0.6
2017	734.5	10.6	0.1	9.0	3.2	3.0	1.5	1.3	0.4	0.6
2018	230.1	6.7	0.7	10.3	5.0	3.2	1.4	1.6	0.1	0.9
2019	396.8	2.5	0.3	8.0	1.4	4.4	1.7	2.3	0.2	1.1
2020	285.3	4.0	0.5	5.9	2.2	2.9	1.4	2.1	0.1	1.1
2021	382.2	9.6	7.4	5.4	3.6	2.7	1.9	1.8	1.4	1.2
2022	296.7	15.5	0.5	6.4	4.6	1.9	1.3	1.4	1.6	0.8
2023	305.3	13.4	1.5	15.7	3.8	2.5	1.4	0.9	3.1	0.8
2024	145.7	4.3	0.5	5.2	1.0	1.8	1.2	1.3	0.1	0.4
2025	225.1	7.2	0.4	7.7	7.0	2.0	1.2	1.7	0.2	0.8
Average	449.3	4.6	1.9	5.5	7.2	2.4	1.0	1.6	0.3	0.8

Appendix 4. Catch rates (#/trawl) for the most common YOY fish species captured in the Lake Winnebago trawl survey.

Year	T. PERCH	DRUM	B. CRAPPIE	WALLEYE	Y. PERCH	W. BASS	EM. SHINER	G. SHAD	SAUGER	BLUEGILL
1986	1.8	32.9	1.2	0.1	0.1	10.8	0.0	1.6	0.00	0.0
1987	3.3	125.3	2.7	0.0	0.3	9.1	0.0	1.8	0.00	0.0
1988	9.6	107.6	5.1	0.1	0.2	43.1	0.2	54.3	0.12	0.0
1989	7.0	50.7	3.8	0.1	0.1	18.8	0.0	43.2	0.02	0.0
1990	108.8	122.3	3.3	2.9	0.3	90.9	0.2	44.3	0.36	0.0
1991	141.7	237.9	0.4	7.3	1.1	32.9	0.2	284.0	0.04	0.0
1992	93.8	7.1	0.3	0.8	0.4	8.2	0.0	1.8	0.01	0.0
1993	50.1	7.6	0.1	2.5	0.2	2.3	0.0	1.9	0.00	0.0
1994	129.1	49.4	0.6	0.1	0.2	19.1	0.0	1.7	0.01	0.0
1995	68.2	160.6	3.3	0.2	0.5	43.0	0.0	0.6	0.12	0.1
1996	226.9	55.5	0.1	23.7	0.4	169.1	0.2	0.3	0.00	0.0
1997	139.0	22.1	0.3	2.2	0.1	23.4	0.2	2.8	0.00	0.0
1998	169.7	122.6	1.1	2.5	0.3	10.4	0.2	0.1	0.00	0.1
1999	271.7	92.7	5.0	0.2	0.5	48.8	1.1	12.9	0.00	0.0
2000	258.2	107.7	0.3	0.3	0.1	11.7	0.8	11.4	0.00	0.0
2001	279.4	38.5	0.2	11.8	2.2	36.5	0.2	25.7	0.00	0.0
2002	391.8	186.4	2.3	1.9	2.1	18.8	0.3	114.8	0.13	0.0
2003	478.2	279.2	1.7	6.5	1.9	60.3	0.0	20.3	0.32	0.0
2004	307.6	61.7	0.7	8.8	6.9	17.8	0.1	3.2	0.42	0.0
2005	315.9	106.2	4.4	11.1	5.6	50.9	0.6	61.0	0.06	0.1
2006	569.0	87.0	1.0	2.4	5.4	23.0	0.3	12.5	0.05	0.0
2007	405.4	109.8	3.5	0.5	5.6	10.7	16.9	5.6	0.88	0.1
2008	341.8	52.8	0.5	17.5	2.2	50.2	1.1	2.9	0.37	0.0
2009	449.2	13.1	6.8	1.4	1.8	17.2	1.6	124.1	0.33	0.0
2010	335.2	83.2	11.4	0.9	1.4	15.0	1.3	197.2	0.23	0.4
2011	249.9	10.9	1.2	10.4	5.7	102.4	1.7	5.7	0.01	0.0
2012	133.6	212.2	3.1	0.2	1.0	36.7	5.5	122.6	0.00	0.4
2013	100.8	53.5	1.0	11.9	0.9	12.1	3.4	19.5	0.01	0.0
2014	94.2	14.2	0.2	0.4	0.1	0.2	0.2	11.4	0.00	0.0
2015	106.2	15.7	1.4	1.4	0.7	4.3	0.1	11.7	0.07	0.0
2016	359.8	93.0	24.1	9.9	2.3	17.6	3.5	102.4	0.02	0.0
2017	456.3	50.8	0.9	4.1	0.8	7.4	0.2	1.3	0.00	0.0
2018	206.3	23.0	2.1	5.1	3.5	0.8	0.7	0.4	0.00	0.1
2019	116.0	185.4	2.7	5.9	4.2	7.9	0.2	0.1	0.01	0.0
2020	133.3	393.8	13.9	3.6	13.8	18.0	0.4	0.3	0.01	1.3
2021	577.0	95.0	10.4	8.2	5.1	4.2	2.0	0.5	0.30	0.1
2022	802.3	91.4	3.0	17.4	19.5	4.2	4.4	3.1	0.00	0.1
2023	532.3	25.4	4.7	2.8	9.6	1.0	1.2	2.9	0.00	0.3
2024	881.0	73.8	0.5	9.7	7.1	21.1	2.4	0.3	0.04	0.1
2025	1437.8	27.3	3.2	16.0	15.8	29.3	0.8	2.1	0.0	0.4
Average	293.5	92.1	3.3	5.3	3.2	27.7	1.3	32.9	0.1	0.1