

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

LAKE SUPERIOR CHARTER FISHING REPORT 2023

CHRIS ZUNKER and DRAY CARL

DNR Lake Superior Fisheries Management Team

April 29, 2024

METHODS

In the 2023 fishing season, 35 active licensed charter captains operated in the Wisconsin waters of Lake Superior. We collected effort and harvest information for guided charters from mandatory monthly reports initiated in 1973. Information on the number of anglers, hours fished, location (grid) and number of various species harvested was included in an online reporting system. Charter reports from October and November were not used in this report due to the standard closure of the Lake Trout sport fishing season during this period. We separated charter data by management unit for this report: WI-1 or the Western Arm (west of the line running north-south from Bark Point; 46 deg. 53.21 min. N, 91 deg. 11.16 min. W) and WI-2 or the Apostle Islands region (east of the Bark Point line; Figure 1).

Please note that the charter fishing data alone may not fully illustrate the status of the entire recreational fishery each year. Please refer to the Lake Superior Creel Report 2023 for more detailed numbers for harvest estimates of all species in the recreational fishery. All analyses were conducted in Program R, and the report was formatted using RMarkdown.

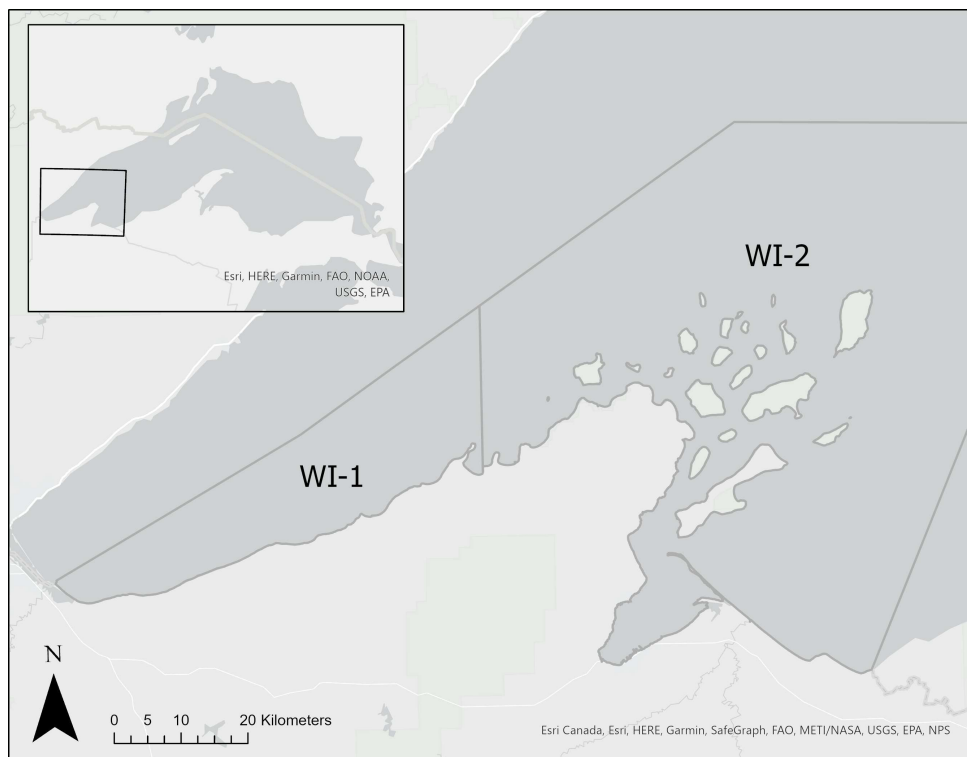


Figure 1. Wisconsin waters of Lake Superior and management units WI-1 and WI-2.

Results

WI-1

We observed a total charter fishery effort of 1,328 angler hours in management unit WI-1 in 2023, which is below the long-term average (Figure 2). This effort yielded a total of 380 harvested fish, including 214 lake trout, 76 Chinook salmon, 74 coho salmon, 7 walleye, 5 brown trout, 2 pink salmon and 2 rainbow trout (Figure 3). Overall harvest was the lowest since 2017 and below average for time series (Figure 3 and 4). Lake trout harvest was lower than the 2022 harvest and below average (Figures 3 and 4). In addition, Chinook salmon and coho salmon harvest were near average, and the 2023 walleye harvest was below average (Figure 3). The annual lake trout harvest rate in the 2023 charter fishing season was 0.1611 fish per angler-hour, which was below average for the time series (Figure 5). Lastly, the lake trout harvest in WI-1 was below average in all months (Figure 6), and the lake trout harvest rate was lower than average in early summer (May-July) but higher than average in late summer (August-September) in WI-1 in 2023 (Figure 7).

WI-2

We observed a total charter fishery effort of 10,681 angler hours in management unit WI-2 in 2023, the highest effort on record going back to 2000 (Figure 2). Charter effort in WI-2 has increased each year since 2017. This effort yielded a total of 3,186 fish including 2,493 lake trout, 327 coho salmon, 221 brown trout, 98 splake, 24 Chinook salmon, 17 pink salmon, 3 rainbow trout and 3 lake herring (Figure 3). The overall harvest was similar to the harvest in 2022 and above average for time series (Figure 3 and 4). The lake trout harvest was also above average and the third-highest annual harvest in the time series (Figure 3 and 4). In addition, both the 2023 coho salmon and brown trout harvest were above average (Figure 3). The annual lake trout harvest rate in the 2023 charter fishing season was 0.2334 fish per angler hour, which was slightly below average (Figure 5). The lake trout charter harvest was near or above average in all months (May-September) in WI-2 in 2023 (Figure 6). Lastly, the lake trout harvest rate in the 2023 charter fishery was below average in May and July but near average in all other months (Figure 7).

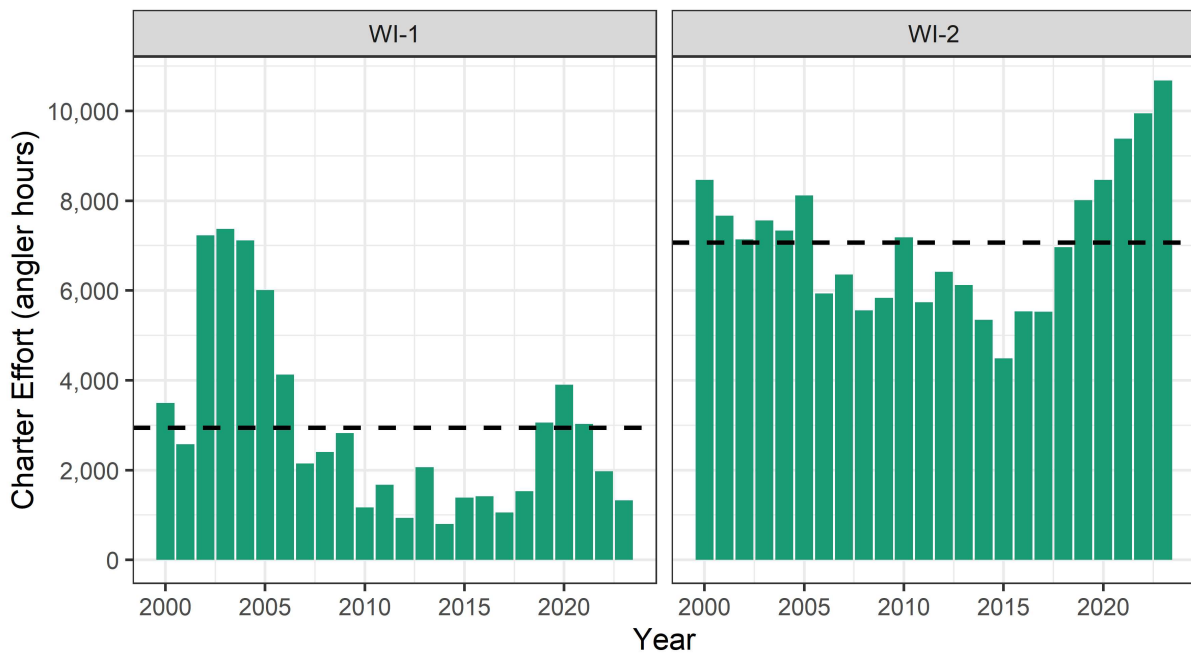


Figure 2. Charter angler effort (angler hours) annually from 2000 to 2023 in management unit WI-1 (left) and WI-2 (right). Dashed lines represent mean annual effort for each management unit throughout the time series.

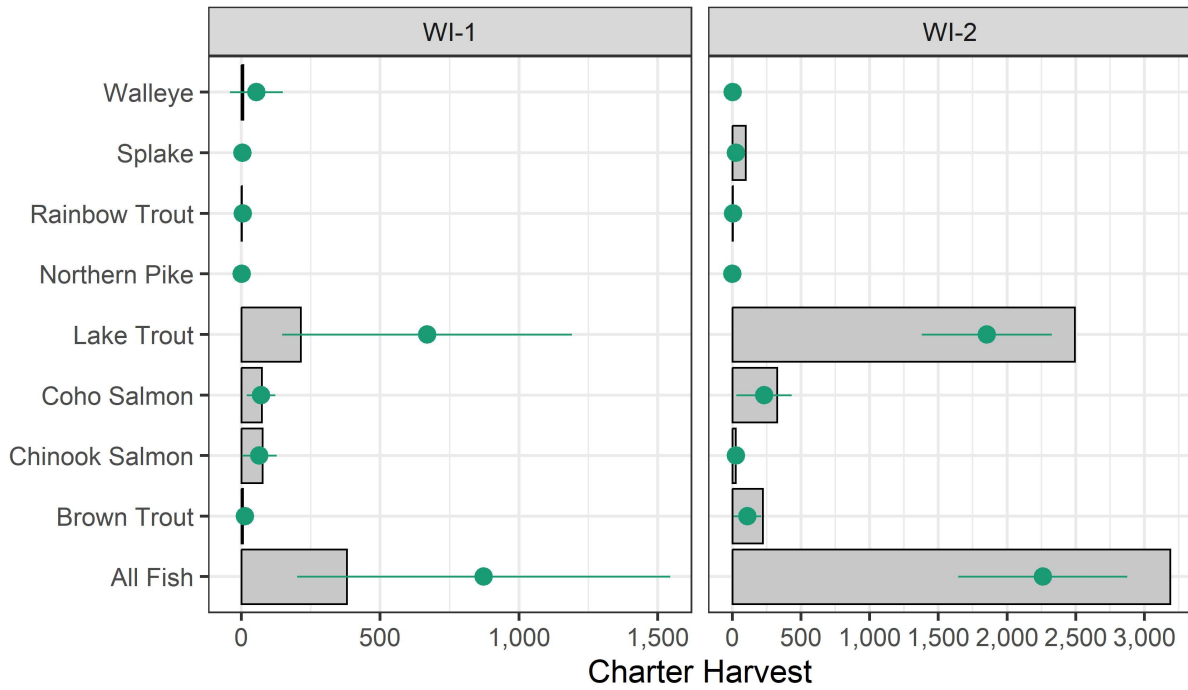


Figure 3. Charter harvest by species during the 2023 charter fishing season by management unit (WI-1 and WI-2). Green points and lines represent the annual mean since 2000 (+/- one standard deviation).

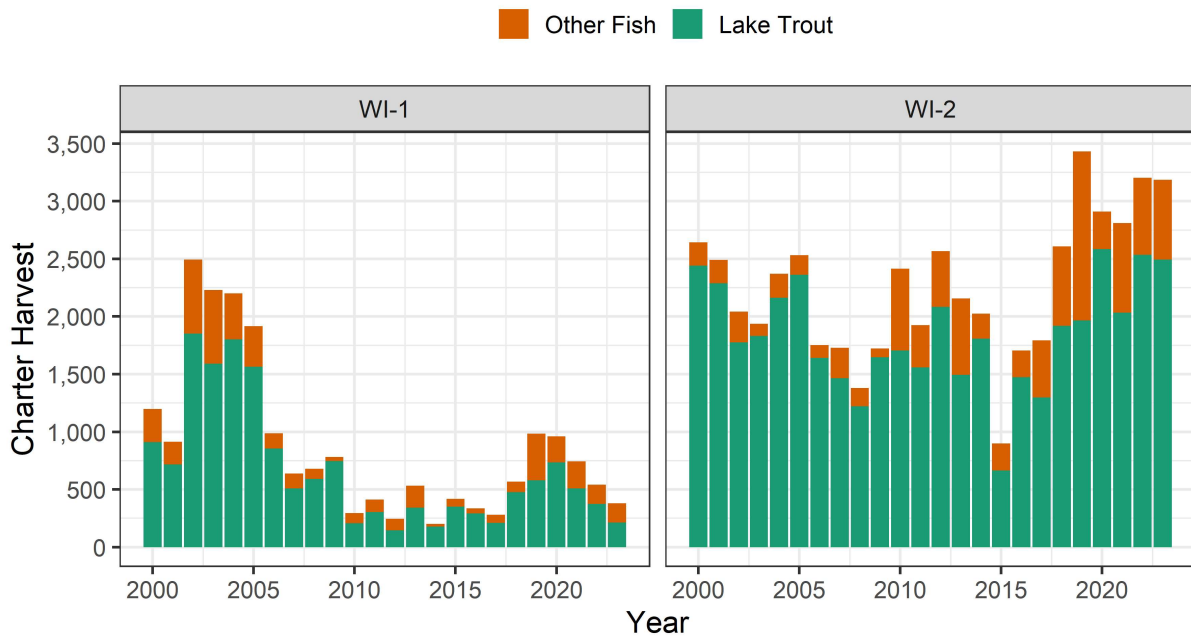


Figure 4. Annual harvest of lake trout (green) and all other fish (orange) in WI-1 (left) and WI-2 (right) during the charter fishing season from 2000 to 2023.

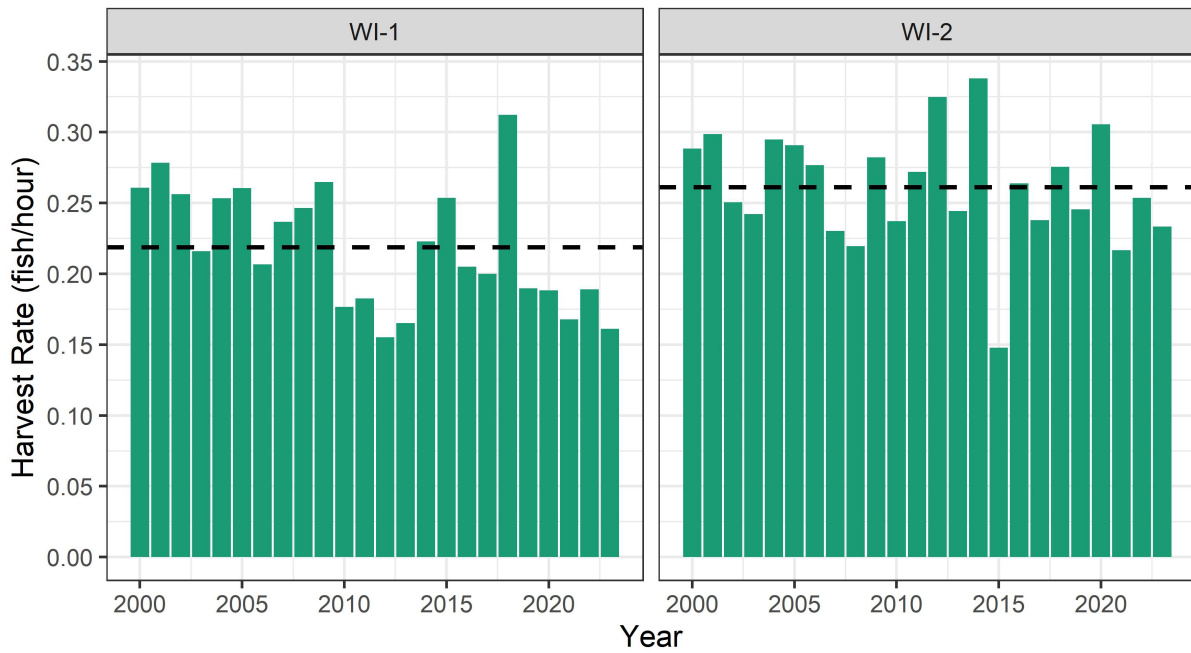


Figure 5. Annual harvest rate (fish/angler hour) of lake trout in WI-1 (left) and WI-2 (right) during the charter fishing season from 2000 to 2023. Dashed lines represent mean annual harvest rate for each management unit throughout the time series.

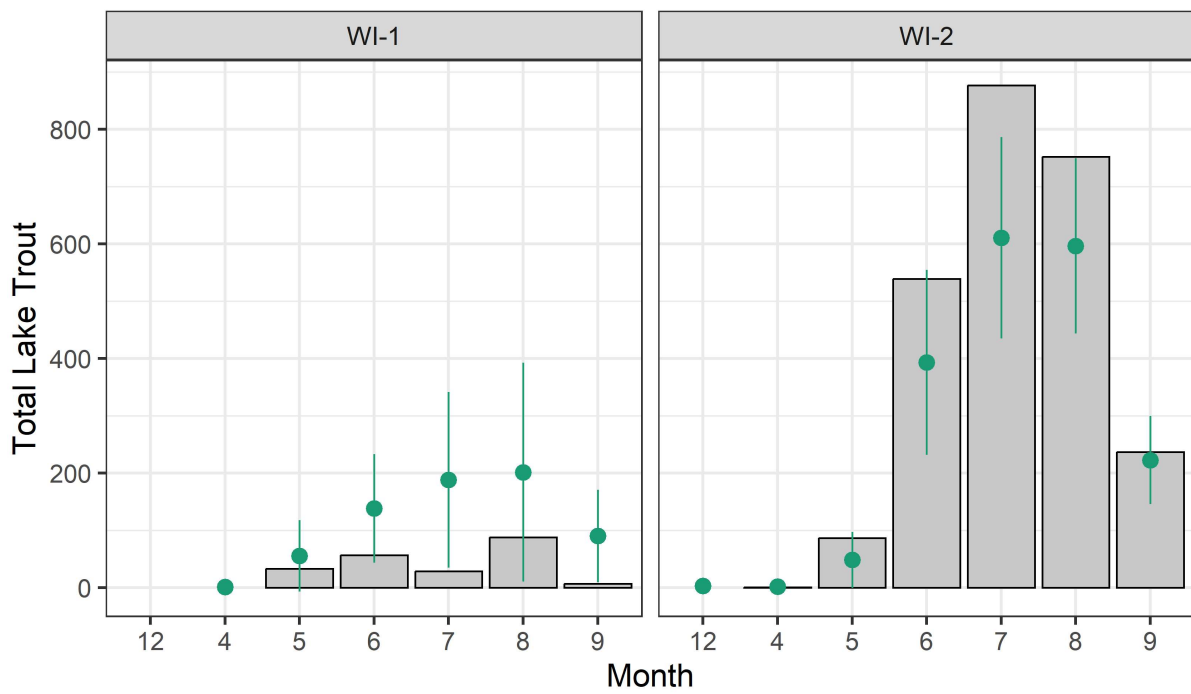


Figure 6. Lake trout harvest by month during the 2023 charter fishing season in management unit WI-1 (left) and WI-2 (right). Green points and lines represent the mean (+/- one standard deviation) lake trout harvest by month since 2000.

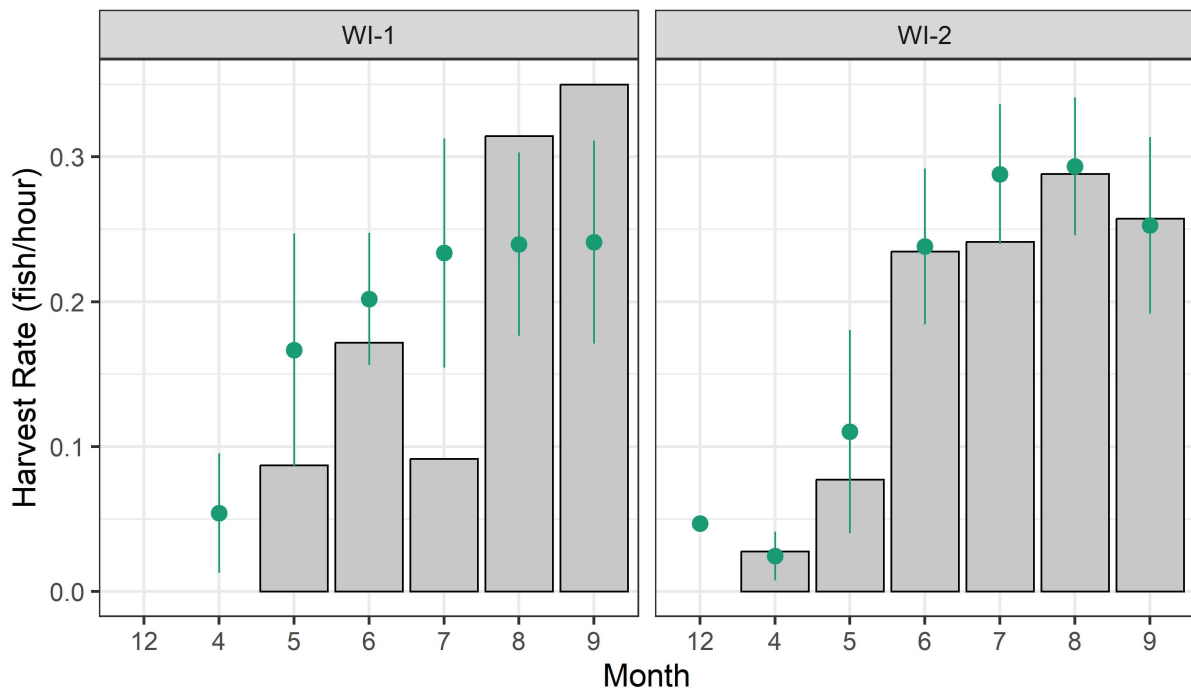


Figure 7. Lake trout harvest rate (fish per angler hour) by month during the 2023 charter fishing season in management unit WI-1 (left) and WI-2 (right). Green points and lines represent the mean (+/- one standard deviation) lake trout harvest rate by month since 2000.