

Illinois Department of Natural Resources
Division of Fisheries

Charter Boat Fishing in Lake Michigan: 2023 Illinois Reported Harvest

Rebecca A Redman
Illinois Department of Natural Resources
Lake Michigan Program
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Table of Contents

Executive Summary	1
Introduction	2
Methods	3
Results and Discussion	3
Literature Cited	5
Tables	6-8
Figures	9-10
Appendix (Lake Michigan Charter Boat Operator Monthly Catch Report)	11-13

List of Tables

Table 1. Number of salmon and trout stocked in the Illinois waters of Lake Michigan, 2004-2023.	6
Table 2. Monthly fishing effort and salmonid harvest from the Illinois waters of Lake Michigan by charter boat anglers in 2023.	7
Table 3. Number of salmonids, by Lake Michigan statistical grid ^a , harvested by charter boat anglers in 2023. No salmonids were harvested from grids 2305, 2306, 2406, 2506, and 2606.	8

List of Figures

Figure 1. Reported harvest of salmon and trout by charter boat sport anglers, 2014-2023. The numbers above each column indicate the charter boat angler catch rate (number of salmonids per 100 angler-hours) in each year.	9
Figure 2. Salmonid fishing effort (angler-hours) by anglers fishing from shore, non-charter boats, and charter boats, 2014-2023. Non-charter effort estimates from Roswell and Czesny (2023); *no directed angler effort for salmonids available in 2020 due to Covid related restrictions.	9
Figure 3. Illinois charter boat and non-charter boat harvest rates for all salmonids, 2014-2023. The dashed line represents the rolling 20-year average (2004-2023) charter boat harvest rate. Non-charter boat harvest rate estimates from Roswell and Czesny (2023).	10

Executive Summary

Illinois charter boat operator permits were issued to 76 individuals in 2023. Most of the harvest (99%) and effort (99%) from charter fishing trips in Illinois waters of Lake Michigan was directed at salmon and trout. Illinois residents accounted for approximately 74% of the 10,715 sport anglers who fished on charter boats targeting salmon and trout in Illinois waters of Lake Michigan. Combined harvest by resident and non-resident anglers was 30,195 salmonids. Additionally, 28 charter anglers harvested 216 Yellow Perch during 7 non-salmonid charter fishing excursions. Coho Salmon (64%) comprised the greatest portion of charter boat angler harvest. Lake Trout (24%), Chinook Salmon (6%), Rainbow Trout (5%), and Brown Trout (<1%) constituted smaller percentages of the harvest. The percentage of Coho Salmon in the 2023 harvest was similar to the long-term average (1979-2022 average 64%; range 43-83%). Both total effort and harvest increased compared to 2022 and the 2023 harvest rate for salmon and trout (54 fish per 100 angler-hours) was well above the long-term average (1979-2022) of 44 fish per 100 angler-hours and the highest reported since 2007 (56 fish per 100 angler hours).

Introduction

Stocked salmonids are an integral part of the Lake Michigan fish community and the sport fishery. Pacific salmon and various trout species have been stocked in Lake Michigan since the late 1960s. Approximately 12 million salmonid fingerlings were annually stocked lakewide during 1976-2012; the current stocking target calls for approximately 10.3 million salmon and trout. Chinook Salmon comprised the greatest portion of salmonids stocked in Lake Michigan until 2005, after which stocked Chinook Salmon and Lake Trout numbers were similar. Lake Trout, which are native to Lake Michigan, also are stocked to meet criteria set forth by *A Fisheries Management Implementation Strategy for the Rehabilitation of Lake Trout in Lake Michigan* and to achieve the Salmonine Objective of the Fish Community Objectives for Lake Michigan. Salmonid stocking in Illinois waters (Table 1) constitutes approximately 8% of the salmonids stocked lakewide.

The purposes for stocking these fish are to provide sport fishing opportunities for Illinois and non-resident anglers, re-establish self-sustaining Lake Trout populations, and enhance naturalized populations of other stocked salmon and trout. The expansion of the Welland Canal at the turn of the century provided a bypass of Niagara Falls, which previously acted as a natural barrier to aquatic invaders from the Atlantic Ocean. Parasitic Sea Lamprey gained access to Lake Michigan and wreaked havoc on native predator populations. Alewife, another fish native to the Atlantic Ocean that was first discovered in Lake Michigan during 1950, drastically altered the food web and negatively impacted native fishes. Without predatory controls, Alewife populations reached nuisance levels of abundance. The original introduction of Pacific salmon in the 1960s was intended to take advantage of the abundant Alewife population by creating a popular sport fishery, while helping to control this overabundant non-native prey fish.

Charter boat operators receive a fee to provide sport anglers access to offshore fishing opportunities for salmonids. A catch reporting system is mandated through Illinois statutes governing charter boat licensees that engage in such activities in Illinois waters (Fish and Wildlife Code of Illinois, Section 5/10-135). This report summarizes the reported charter boat angler effort and harvest from the Illinois waters of Lake Michigan in 2023.

Methods

Lake Michigan Charter Boat Operator permits were issued to 76 individuals in 2023. In addition, operators also received standardized catch report forms (Appendix). Data requested on the catch report included: date of fishing trip, jurisdictional grid fished, number of resident and non-resident sport anglers, number of fishing lines used, total number of hours fished (excluding running time), and number and species of harvested fish. State regulations require that charter boat operators submit these completed catch reports monthly March through November, even when no charter fishing trips occur within a given month.

Harvest and fishing effort data from 2,140 charter boat excursions in 2023 were summarized by season, month, and statistical grid, and trends in harvest and effort were compared to previous years. The 2023 harvest data reported fishing effort by 7,910 Illinois residents and 2,805 non-residents during 2,133 charter trips targeting salmonids in the Illinois waters of Lake Michigan. Additionally, a total of 7 Illinois residents and 21 non-residents were reported charter fishing for yellow perch during 7 excursions. Since the number of fishing lines per angler was not equivalent among trips, fishing effort was instead expressed as angler-hours and calculated by multiplying the total number of anglers by number of hours fished per trip. Seasonal harvest rate was calculated by dividing the total harvest of all salmonids by total effort for the season. Harvest rate for each statistical grid within Illinois waters (map in Appendix) was based on total number of salmonids harvested within the grid divided by the fishing effort reported within the same grid. All harvest rates for salmonids were then standardized to 100 angler-hours because harvest rates are typically less than 1 fish per angler-hour.

Results and Discussion

Similar to most years, the majority of salmonids harvested from Illinois waters of Lake Michigan were Coho Salmon (Figure 1). Coho Salmon accounted for 64% of the 2023 salmonid harvest and have comprised the greatest portion of the salmonid harvest since 1979 (64%; average 1979-2022). Lake Trout (24%), Chinook Salmon (6%), Rainbow Trout (5%), and Brown Trout (<1%) constituted smaller percentages of the 2023 charter fishing harvest. Harvest of all salmon and trout increased 16% compared to 2022. The number of Coho Salmon harvested increased by 19% and Chinook Salmon harvest increased 43% compared to last year. Lake Trout (+24%) and Rainbow Trout (+5%) harvest also

increased compared to 2022, but Brown Trout harvest declined (-51%). No Pink Salmon were reported during 2023.

Like increases in harvest, charter boat angler effort (56,048 angler-hours) increased by 4% compared to 2022 (53,789 angler-hours). Prior to 1999, charter boat sportfishing accounted for approximately 21% (1988-1998 average) of the total fishing effort directed at salmonids in Illinois waters of Lake Michigan. Then, that proportion increased to 29% (average 1999-2019) of the total angler effort for salmonids, due to a slow decline in shore-based salmon fishing after 1988 and a decline in non-charter boat effort after 1998. During the last three years, charter boat sportfishing accounted for 22-23% (2021-2023) of total directed effort for salmonids (Figure 2).

Annual charter boat harvest rate for salmon and trout in 2023 (54 fish per 100 angler-hours) was higher than that in 2022 (49 fish per 100 angler-hours) and the long-term average (1979-2022) of 44 fish per 100 angler-hours. The harvest rate of anglers fishing on charter boats was approximately 1.5 times higher than that of anglers fishing on non-chartered boats (Figure 3).

Fifty percent of charter fishing trips occurred during the months of May and June with an additional 21% of trips in July. The spring Coho Salmon season in 2023 was typical in that it extended into June; 44% of Coho Salmon were harvested in May and an additional 29% were harvested in June (Table 2). Chinook Salmon harvest was also seasonally typical; most of the Chinook Salmon harvest was nearly evenly divided between July and August. Lake Trout were harvested April through October, but most of the harvest was also evenly split between July and August. Rainbow Trout harvest was highest in July and Brown Trout harvest primarily occurred May through July. Overall, salmonid harvest peaked in May (32% of total harvest) and June (25%) and was primarily driven by the harvest of Coho Salmon.

No salmonid fishing was reported in five statistical grids. Approximately 59% of salmonids were harvested from Grid 2302 which also coincided with 57% of the fishing effort (Table 3). In general, harvest and effort are usually highest in the north and in grids closest to shore (i.e., 2302 and 2402). Harvest rates among grids where fishing occurred in Illinois waters ranged from 17 to 74 fish per 100 angler-hours. A map of Illinois's Lake Michigan statistical grids is included within the Appendix.

A total of 216 Yellow Perch were harvested on charter boat during November and December. The harvest rate for Yellow Perch was 1.6 fish per angler-hour.

Literature Cited

Roswell, C., and S. J. Czesny. 2023. A survey of sport fishing in the Illinois portion of Lake Michigan: March through September 2022. INHS Technical Report 2023 (46). Illinois Natural History Survey. 48pp.

Acknowledgements

I wish to thank Pat Bevell for entering data and monitoring reporting compliance. Special thanks are also extended to Steve Robillard for his past efforts on database development and management as well as writing support in previous versions of this annual report.

Table 1. Number of salmon and trout stocked in the Illinois waters of Lake Michigan, 2004-2023.

Year	Coho Salmon	Chinook Salmon	Lake Trout	Rainbow Trout (Arlee)	Rainbow Trout (Skamania)	Brown Trout	Total
2004	300,076	302,673	60,300	48,423	64,300	100,000	875,772
2005	301,006	295,242	62,832	55,338	56,058	100,000	870,476
2006	304,242	242,542	67,849	49,462	55,201	93,000	812,276
2007	301,377	252,265	56,381	50,982	66,334	100,000	827,339
2008	282,201	253,809	126,631	51,003	56,040	100,144	817,297
2009	300,559	236,983	118,160	45,285	56,714	100,550	858,251
2010	308,805	255,752	120,166	51,156	61,132	104,953	904,964
2011	281,429	235,972	122,058	101,789	0	104,579	843,769
2012	300,748	253,244	125,692	49,261	52,160	99,460	874,873
2013	310,288	227,336	124,021	56,335	42,933	102,281	863,194
2014	311,184	236,625	123,784	60,409	58,528	111,397	901,927
2015	305,630	197,504	124,094	62,751	64,092	112,870	866,941
2016	299,396	231,378	123,120	60,068	54,432	110,791	879,185
2017	300,128	163,992	119,510	59,370	54,402	111,594	808,996
2018	258,505	172,642	120,485	57,284	52,422	96,038	757,376
2019	270,057	159,196	120,759	55,330	59,126	132,220	796,376
2020	317,577	185,734	0 ^a	60,092	88,297	120,095	771,795
2021	328,446	186,051	0 ^a	60,033	77,953	119,790	772,273
2022	270,074	210,070	121,563	60,371	79,854	123,760	865,692
2023	289,911	225,104	121,259	57,257	53,457	118,023	865,011

^a Due to COVID-19 restrictions on operations, federally reared Lake Trout allocated to Illinois were stocked from shore in Wisconsin.

Table 2. Monthly fishing effort and salmonid harvest from the Illinois waters of Lake Michigan by charter boat anglers in 2023.

Month	Trips	Number residents	Number non-residents	Effort (angler-hours)	Coho Salmon	Chinook Salmon	Lake Trout	Rainbow Trout	Brown Trout	Total Catch
March	-	-	-	-	-	-	-	-	-	-
April	110	365	131	2,140	2,076	2	17	6	11	2,112
May	577	1,914	1,024	14,837	8,510	260	692	160	20	9,642
June	486	1,920	554	13,399	5,630	294	1,251	382	21	7,578
July	458	1,664	609	12,322	2,592	616	1,804	501	24	5,537
August	318	1,232	363	8,550	477	599	2,071	302	10	3,459
September	151	672	93	3,917	103	128	1,210	106	3	1,550
October	33	143	31	885	2	5	308	1	1	317
November	-	-	-	-	-	-	-	-	-	-
Total	2,133	7,910	2,805	56,048	19,390	1,904	7,353	1,458	90	30,195

Table 3. Number of salmonids, by Lake Michigan statistical grid ^a, harvested by charter boat anglers in 2023. No salmonids were harvested from grids 2305, 2306, 2406, 2506, and 2606.

Grid	Coho salmon	Chinook Salmon	Lake trout	Rainbow Trout	Brown Trout	Total harvest	Effort (angler-hours)	Harvest rate ^b
2302	11,880	1,293	3,703	936	27	17,839	31,837	56
2303	304	62	250	61	1	678	1,188	57
2304	3	-	4	1	-	8	40	20
2305	-	-	-	-	-	-	-	na
2306	-	-	-	-	-	-	-	na
2402	2,289	219	704	66	13	3,291	5,581	59
2403	436	114	370	70	7	997	2,015	49
2404	57	12	74	7	1	151	507	30
2405	8	-	4	5	-	17	99	17
2406	-	-	-	-	-	-	-	na
2502	107	1	38	5	1	152	206	74
2503	1,093	28	624	45	3	1,793	3,949	45
2504	277	24	605	70	4	980	2,740	36
2505	44	4	84	9	4	145	409	35
2506	-	-	-	-	-	-	-	na
2603	832	27	86	31	17	993	2,025	49
2604	780	82	694	108	4	1,668	2,995	56
2605	437	17	87	23	-	564	801	70
2606	-	-	-	-	-	-	-	na
2703	56	-	-	-	4	60	107	56
2704	698	19	24	17	4	762	1,324	58
2705	89	2	2	4	-	97	227	43

^a See Appendix for grid map of Illinois waters.

^b Harvest rate (fish per 100 angler-hours) = total harvest / effort x 100.

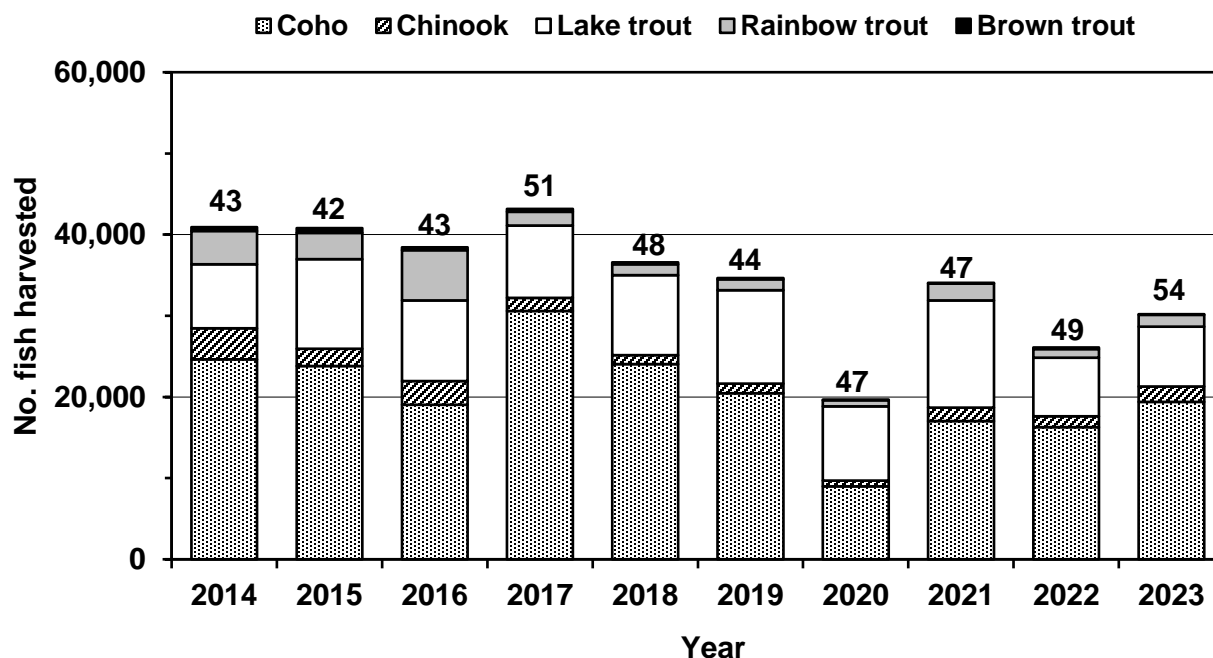


Figure 1. Reported harvest of salmon and trout by charter boat sport anglers, 2014-2023. The numbers above each column indicate the charter boat angler catch rate (number of salmonids per 100 angler-hours) in each year.

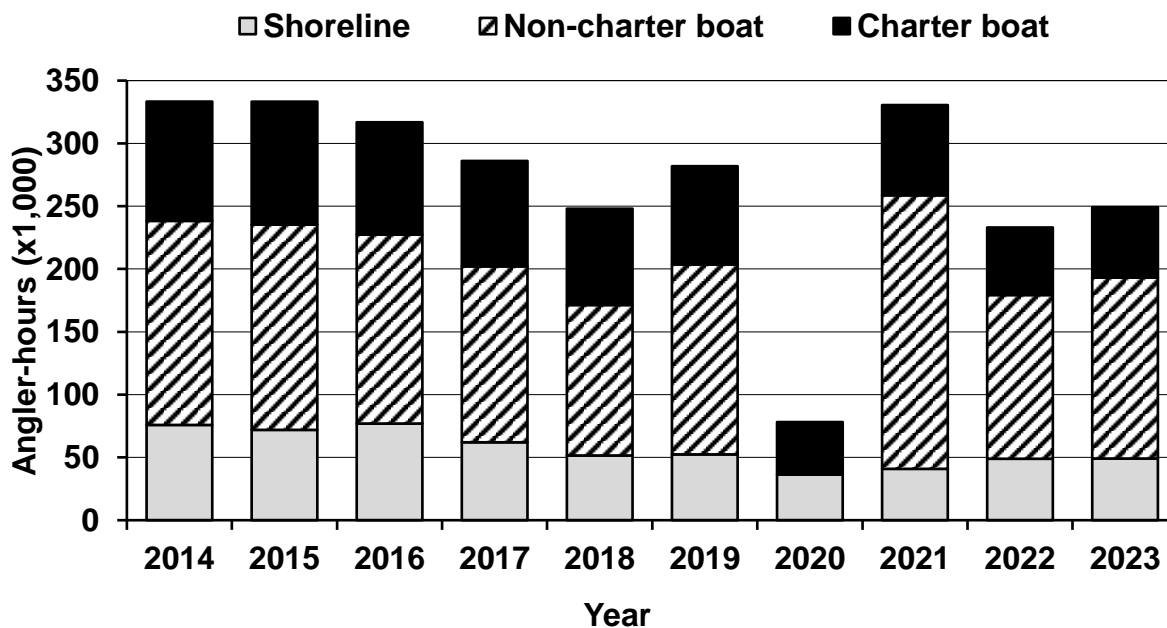


Figure 2. Salmonid fishing effort (angler-hours) by anglers fishing from shore, non-charter boats, and charter boats, 2014-2023. Non-charter effort estimates from Roswell and Czesny (2023); *no directed angler effort for salmonids available in 2020 due to Covid related restrictions.

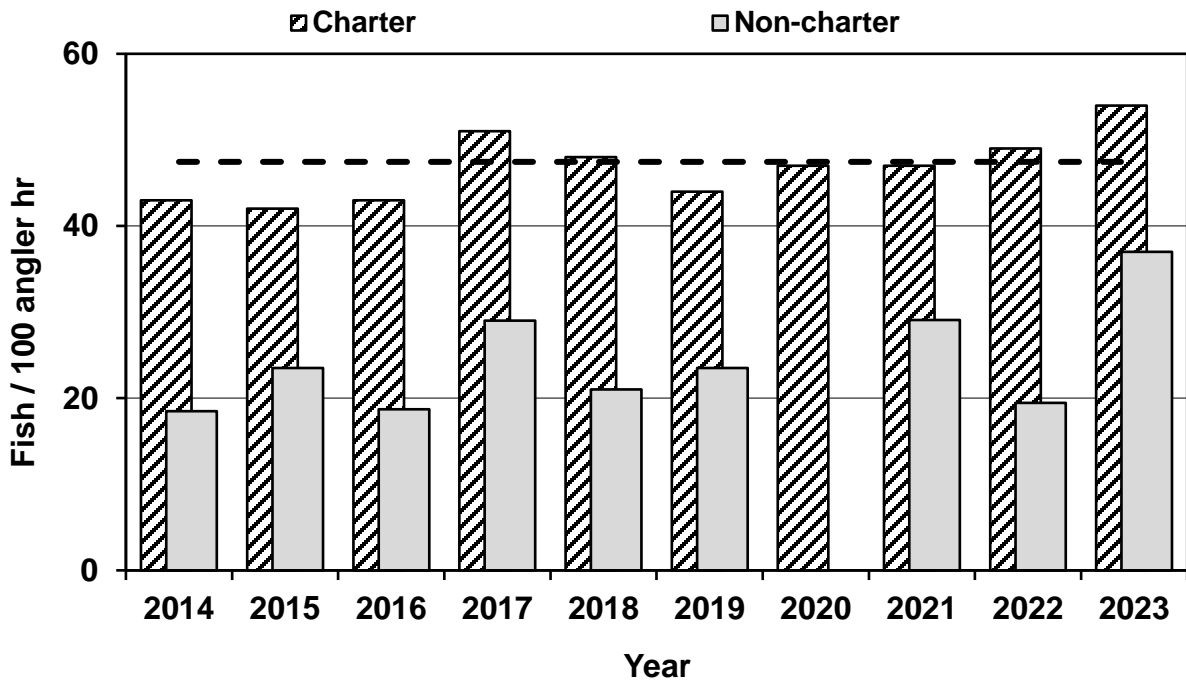


Figure 3. Illinois charter boat and non-charter boat harvest rates for all salmonids, 2014-2023. The dashed line represents the rolling 20-year average (2004-2023) charter boat harvest rate. Non-charter boat harvest rate estimates from Roswell and Czesny (2023).

The Illinois Department of Natural Resources is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined in the Fish Code of Illinois, Section 5/10-135. Disclosure of this information is required by law. Failure to provide such information could result in the denial of future charter boat permits under Section 5/20-35. This form has been approved by the Forms Management Center. Information given on this report is confidential and no information revealing private enterprise will be given out.

Reports must be submitted for EACH month (March through November) and received on or before the 15th day of the following month, whether fishing occurred or not.

When no more fishing will occur for the season, the report must be submitted stating “NO MORE FISHING FOR CURRENT YEAR”, and reports will NOT have to be submitted for subsequent months.

INSTRUCTIONS FOR PREPARING REPORT

CHARTER BOAT OPERATOR PERMIT NUMBER – Enter your **current** Illinois operator permit number.

PORT – Enter the port of your **departure**.

MONTH – Name of the month (and year) for which the report is being prepared.

DATE – Enter the date on which the fishing occurred. **Use a separate line for each trip.**

LOCATION BY GRID NUMBER – Refer to the lake chart below and determine the number of the grid in which most of the fishing was done. Enter this number in the space provided.

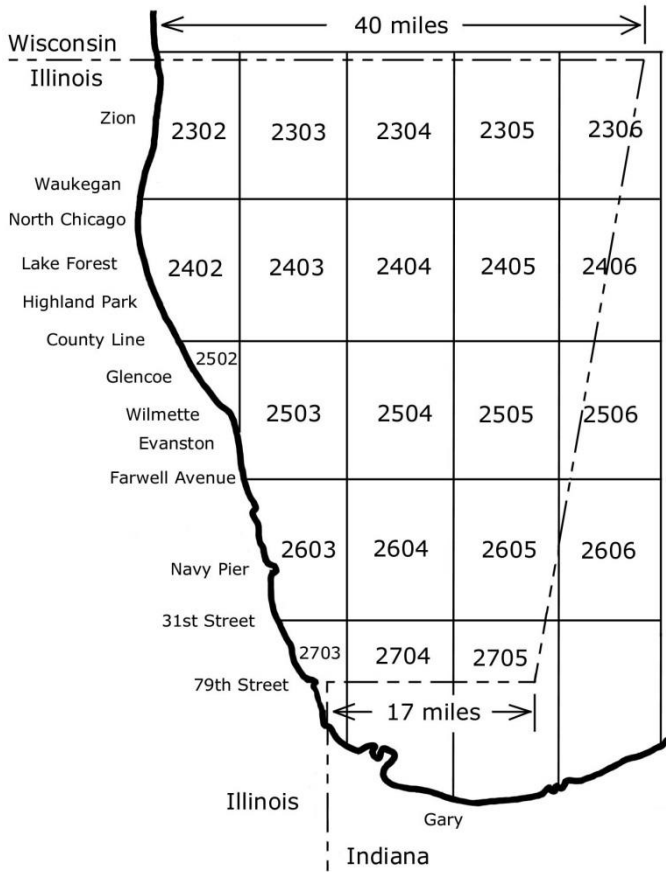
NUMBER OF ANGLERS, RESIDENT AND NON-RESIDENT – Enter the number of **Illinois** residents and non-resident anglers in the fishing party and include crew members if they fished.

NUMBER OF LINES – Enter the number of lines being fished from the boat.

HOURS FISHED – Enter the number of hours in which the party was engaged in fishing. **Do not include running time.**

CATCH DATA – Enter the number of fish of each species **kept** during the trip. Enter the color and number on any tags observed on those fish caught during the trip.

Preparer of form must sign and date on the bottom of the form in the space provided.



Mail completed forms to:

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Unusual observations, comments, and requests for additional forms may be noted in the space below.

REMARKS:

Questions regarding this form? (847) 294-4134