

Illinois Department of Natural Resources  
Division of Fisheries

# Charter Boat Fishing in Lake Michigan: 2020 Illinois Reported Harvest

Rebecca A Redman  
Illinois Department of Natural Resources  
Lake Michigan Program  
February 19, 2021

*This work was funded by Federal Aid in Sport Fish Restoration Funds (F-65-R)*

*The Illinois Department of Natural Resources receives Federal financial assistance from the U.S. Fish and Wildlife Service. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments Act of 1972, and the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or disability.*

*If you believe that you have been discriminated against in any program, activity, or facility, or if you need more information, please write to:*

*Chief, Public Civil Rights  
Office of Civil Rights  
U.S. Department of the Interior  
1849 C Street, NW  
Washington, D.C. 20240*

*This information may be provided in an alternative format if required. Contact the DNR Clearinghouse at 217/782-7498 for assistance.*

*Printed by the authority of the State of Illinois*

## Table of Contents

Executive Summary	1
Introduction	2
Methods	3
Results and Discussion	4
Literature Cited	6
Tables	7-9
Figures	10-11
Appendix (Lake Michigan Charter Boat Operator Monthly Catch Report)	12-13

### List of Tables

Table 1. Number of salmon and trout stocked in the Illinois waters of Lake Michigan, 1992-2020. *Due to COVID-19 restrictions on travel and offshore vessel operations, federally reared Lake Trout allocated to Illinois were stocked from shore at Kewaunee, Wisconsin in 2020.	7
Table 2. Monthly totals of fishing effort and salmonid harvest from the Illinois waters of Lake Michigan by charter boat anglers in 2020.	8
Table 3. Number of salmonids, by Lake Michigan statistical grid <sup>a</sup> , harvested by charter boat anglers in 2020. No salmonids were harvested from grids 2305, 2406, 2502, 2506, and 2606.	9

### List of Figures

Figure 1. Reported harvest of salmonids, by species, by charter boat sport anglers, 2010-2020. The numbers above the columns indicate the charter boat angler catch rate (number salmonids per 100 angler-hours) in each year.	10
Figure 2. Fishing effort (angler-hours) by anglers fishing from shore, non-charter boats, and from charter boats, 1988-2020. Non-charter effort estimates from Roswell and Czesny (2021).	10
Figure 3. Illinois charter boat and non-charter boat harvest rates for all salmonids, 2010-2020. The dashed line represents the 1979-2020 average charter boat harvest rate. Non-charter harvest rate estimates from Roswell and Czesny (2021).	11

## Executive Summary

Illinois charter boat operator permits were issued to 65 individuals, which is a 31% decline from 2019. Illinois residents accounted for approximately 88% of 8,113 sport anglers who fished on charter boats and harvested a reported 19,656 salmon and trout from the Illinois waters of Lake Michigan; a total of 2,316 Yellow Perch were also reported in the harvest. Lake Trout (47%) and Coho Salmon (46%) comprised the greatest portion of the charter boat angler harvest; Chinook Salmon (4%), Rainbow Trout (4%), and Brown Trout (<1%) constituted smaller percentages of the harvest. The percentage of Coho Salmon in the harvest was significantly less than the long-term average (1979-2020 average 64%; range 43-83%) likely due a to lack of fishing when Coho Salmon harvest typically peaks during spring; salmonid-directed effort and Coho Salmon harvest in May declined 97% compared to 2019. Overall, effort decreased by 47% and harvest declined by 43% compared to 2019. In contrast, the 2020 harvest rate for salmon and trout (47 fish per 100 angler-hours) was higher than the 44 fish per 100 angler-hours in 2019, and similar to the long-term average (1979-2020) of 48 fish per 100 angler-hours. While the COVID-19 pandemic had a significant impact on charter fishing effort and harvest during 2020, particularly during the spring, the rate of harvest remained consistent with charter harvest rates from earlier years.

## Introduction

Stocked salmonids have become 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; current stocking plans call for approximately 10.2 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 8.4% 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 and create a popular sport fishery, while at the same time helping to control overabundant Alewife.

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 salmonid harvest from the Illinois waters of Lake Michigan in 2020.

### **Methods**

Lake Michigan Charter Boat Operator permits were issued to 65 individuals in 2020. 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 on a monthly basis, even in months when no charter trips occur. Harvest and fishing effort data from 1,653 charter boat excursions in 2020 were summarized by season, month, and statistical grid, and trends in harvest and effort were compared to previous years. The 2020 harvest data reported fishing effort by 7,051 Illinois residents and 895 non-residents during 1,613 charter trips targeting salmonids in the Illinois waters of Lake Michigan. Additionally, a total of 52 Illinois residents and 115 non-residents were reported charter fishing for yellow perch during 40 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 was based on total number of salmonids harvested within the grid divided by the fishing effort reported within the 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

Unlike previous years, Lake Trout were among the most harvested salmonid in Illinois waters of Lake Michigan in 2020 (Figure 1). Lake trout accounted for 47% and Coho Salmon accounted for 46% of the 2020 salmonid harvest. On average, Coho Salmon have comprised the greatest portion (64%; average 1979-2020) of the salmonid harvest since 1979. Chinook Salmon (4%), Rainbow Trout (4%) and Brown Trout (<1%) constituted smaller percentages of the 2020 harvest and the percentage of total harvest for each of these species was similar to 2019. Harvest of all salmon and trout declined significantly compared to 2019; the number of Coho Salmon harvested declined by 56% and Lake Trout harvest decreased by 21% compared to 2019. The number of Chinook Salmon (-40%), Rainbow Trout (-44%), and Brown Trout (-50%) also decreased.

Like declines in harvest, charter boat angler effort (41,797 angler-hours) also decreased substantially (47%) compared to 2019 (78,238 angler-hours). The reduction of charter fishing effort and harvest in 2020 was most pronounced during the typically productive spring fishing season and can be attributed to multiple harbor closures and the COVID-19 pandemic. Charter boat sportfishing accounted for approximately 21% (average 1988-1998) of the total fishing effort directed at salmonids in the Illinois portion of Lake Michigan prior to 1999. More recently, charter boats have comprised 29% (average 1999-2020) of the total angler effort for salmonids, due to a slow decline in shore-based salmon fishing after 1988 and a drop in non-charter boat effort after 1998 (Figure 2).

Despite the slow start of charter fishing in the spring of 2020, the annual charter boat harvest rate in 2020 (47 fish per 100 angler-hours) was higher than the harvest rate in 2019 (44 fish per 100 angler-hours; Figure 1) and similar to the long-term average of 48 fish per 100 angler-hours (average 1990-2020; Figure 3). Similar to previous years, the harvest rate of anglers fishing on charter boats was approximately twice that of anglers fishing on non-chartered boats (Figure 3).

Most charter fishing trips occurred during June - August in 2020, which is later than usual. The

beginning of the typical spring Coho Salmon season in May was largely missed by charter anglers because of the COVID-19 pandemic; salmonid effort and Coho harvest in May was 97% lower than May 2019. However, Coho Salmon were available in June when charter fishing resumed; 67% of Coho Salmon were harvested in June and 20% were harvested in July (Table 2). Chinook Salmon harvest also was seasonally atypical; peak harvest occurred in August (43%) and similar amounts of Chinook Salmon were harvested in June, July, and September. In a typical year, nearly all Chinook Salmon harvest occurs in July and August and it is evenly divided between these two summer months. Rainbow Trout harvest was highest in July and August, which is typically when most of these fish are harvested by charter anglers. Brown Trout harvest also primarily occurred in July and August (85%). However, this was later in the season than usual as Brown Trout harvest typically peaks during May. In most years prior to 2020, a large portion of the total salmonid harvest occurred during May (e.g., 31% of 2019 salmonid harvest) and is primarily driven by the harvest of Coho Salmon (79% of May harvest in 2019). The absence of charter fishing early in the year, especially during May, influenced the annual and seasonal demographics of charter fishing effort and harvest in Illinois making 2020 a highly atypical year in our long term dataset.

No salmonid fishing was reported in five statistical grids. Approximately 49% of the salmonids were harvested from Grid 2302 which also coincided with 49% of the fishing effort focused in that grid (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 that were fished in Illinois waters ranged from 18 to 109 fish per 100 angler-hours.

A total of 2,316 Yellow Perch were harvested on charter boats. Yellow Perch were harvested during the months of March, June, November, and December and the harvest rate for Yellow Perch was 3.7 fish per angler-hour.

### **Literature Cited**

Roswell, C., and S. J. Czesny. 2021. A survey of sportfishing in the Illinois portion of Lake Michigan: March through September 2020. Technical Report INHS 2020 (X). Illinois Natural History Survey. xxpp.

### **Acknowledgements**

I wish to thank Pat Bevell for entering data and monitoring reporting compliance. Special thanks is 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, 1992-2020. \*Due to COVID-19 restrictions on travel and offshore vessel operations, federally reared Lake Trout allocated to Illinois were stocked from shore at Kewaunee, Wisconsin in 2020.

Year	Coho Salmon	Chinook Salmon	Lake Trout	Rainbow Trout (Arlee)	Rainbow Trout (Skamania)	Brown Trout	Total
1992	308,581	352,669	100,033	52,076	53,195	100,107	966,661
1993	117,789	364,197	96,000	159,028	0	105,657	842,671
1994	328,004	285,583	96,700	51,618	46,080	100,528	908,513
1995	308,204	362,718	59,605	50,026	49,042	98,211	927,806
1996	305,581	365,427	60,900	50,071	51,980	85,160	919,119
1997	320,288	360,117	120,000	41,500	50,178	90,066	964,149
1998	305,835	366,172	60,000	50,050	52,933	99,748	874,738
1999	301,589	304,645	64,000	84,660	0	102,665	857,559
2000	302,300	305,706	0	100,000	0	100,000	808,006
2001	300,900	304,000	59,240	87,608	0	72,316	824,064
2002	300,932	305,341	61,024	46,003	60,461	100,000	873,761
2003	249,066	299,462	60,771	50,886	75,968	100,000	836,153
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*	60,092	88,297	120,095	771,795

Table 2. Monthly totals of fishing effort and salmonid harvest from the Illinois waters of Lake Michigan by charter boat anglers in 2020.

Month	Trips	Number residents	Number non-residents	Effort (angler-hours)	Coho Salmon	Chinook Salmon	Lake Trout	Rainbow Trout	Brown Trout	Total Catch
March	1	3	1	20	7	-	-	-	-	7
April	4	7	6	49	63	-	20	-	3	86
May	29	109	17	672	239	11	119	4	-	373
June	430	1,751	272	10,739	6,033	164	912	195	1	7,305
July	429	1,898	202	11,105	1,831	124	2,287	249	32	4,523
August	437	1,954	246	11,535	705	306	3,237	277	23	4,548
September	233	1,094	120	6,262	100	100	2,101	34	6	2,341
October	50	235	31	1,417	1	1	471	-	-	473
<b>Total</b>	<b>1,613</b>	<b>7,051</b>	<b>895</b>	<b>41,797</b>	<b>8,979</b>	<b>706</b>	<b>9,147</b>	<b>759</b>	<b>65</b>	<b>19,656</b>

Table 3. Number of salmonids, by Lake Michigan statistical grid <sup>a</sup>, harvested by charter boat anglers in 2020. No salmonids were harvested from grids 2305, 2406, 2502, 2506, and 2606.

Grid	Coho salmon	Chinook Salmon	Lake trout	Rainbow Trout	Brown Trout	Total harvest	Effort (angler-hours)	Harvest rate <sup>b</sup>
2302	4,712	394	3,980	452	7	9,545	20,321	47
2303	155	35	332	35	3	560	1,621	35
2304	6	-	2	1	-	9	50	18
2305	-	-	-	-	-	-	-	na
2306	29	-	17	2	-	48	72	67
2402	2,243	122	1,527	101	7	4,000	7,590	53
2403	669	76	1,053	62	11	1,871	4,165	45
2404	17	19	68	4	18	126	252	50
2405	49	3	6	4	-	62	130	48
2406	-	-	-	-	-	-	-	na
2502	-	-	-	-	-	-	-	na
2503	47	8	434	5	9	500	1,693	30
2504	29	9	384	6	3	431	964	45
2505	1	-	20	-	-	21	50	42
2506	-	-	-	-	-	-	-	na
2603	76	-	51	5	-	132	377	35
2604	492	28	834	42	3	1,399	3,020	46
2605	99	12	388	32	1	532	1,028	52
2606	-	-	-	-	-	-	-	na
2703	86	-	20	1	3	110	101	109
2704	265	3	29	6	-	303	335	90
2705	4	-	2	1	-	7	32	22

<sup>a</sup> See Appendix for grid map of Illinois waters.

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

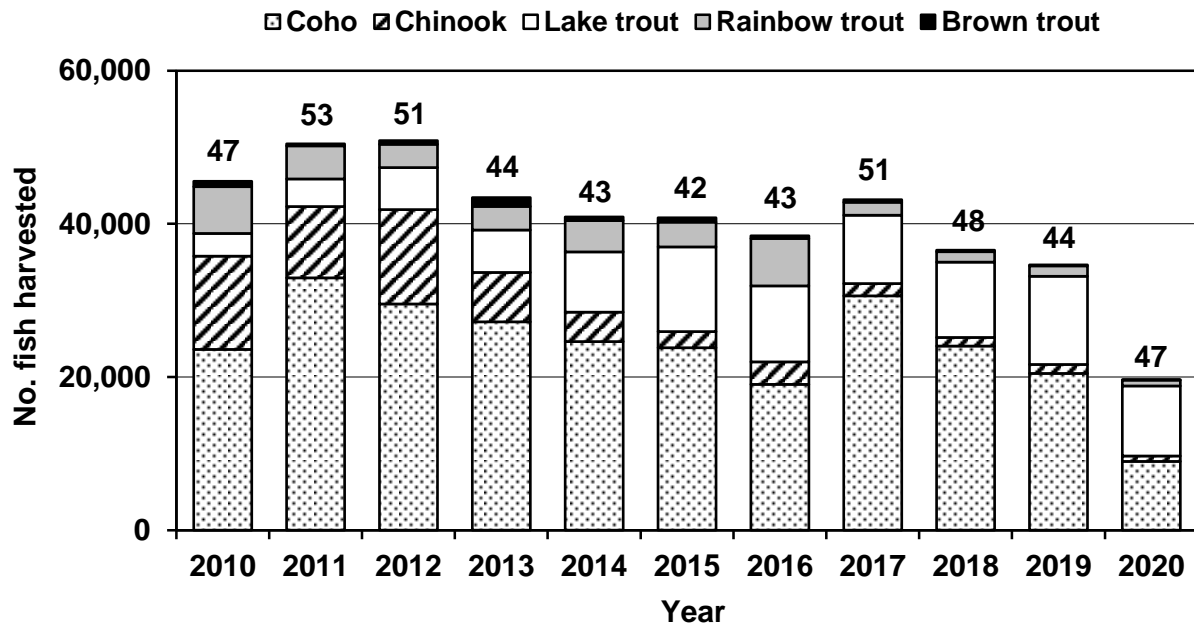


Figure 1. Reported harvest of salmonids, by species, by charter boat sport anglers, 2010-2020. The numbers above the columns indicate the charter boat angler catch rate (number salmonids per 100 angler-hours) in each year.

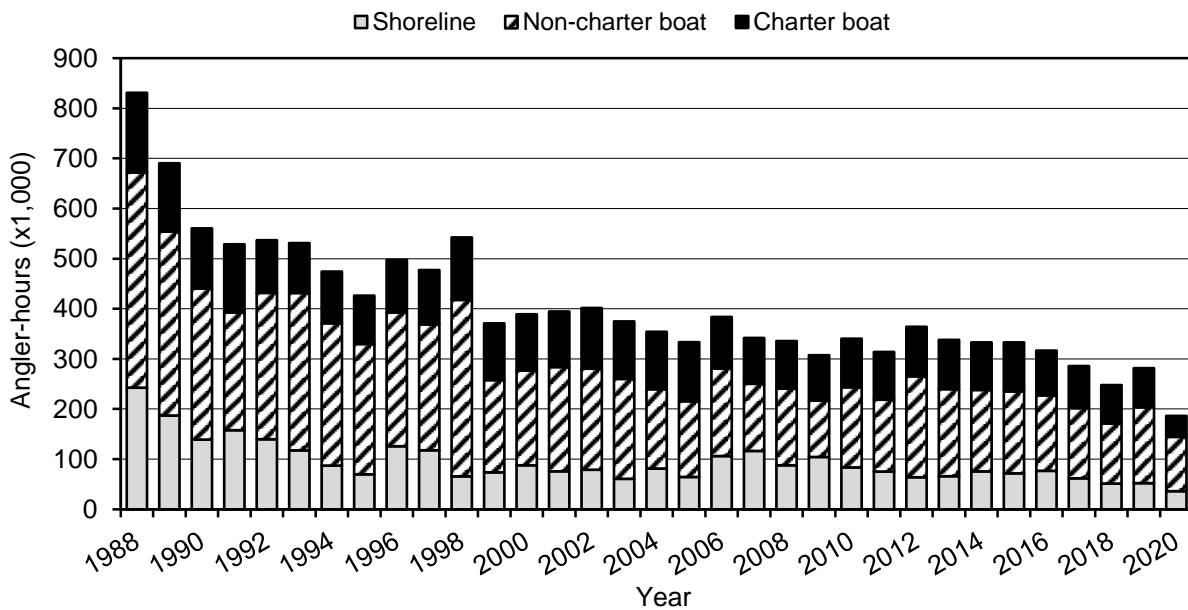


Figure 2. Fishing effort (angler-hours) by anglers fishing from shore, non-charter boats, and from charter boats, 1988-2020. Non-charter effort estimates from Roswell and Czesny (2021).

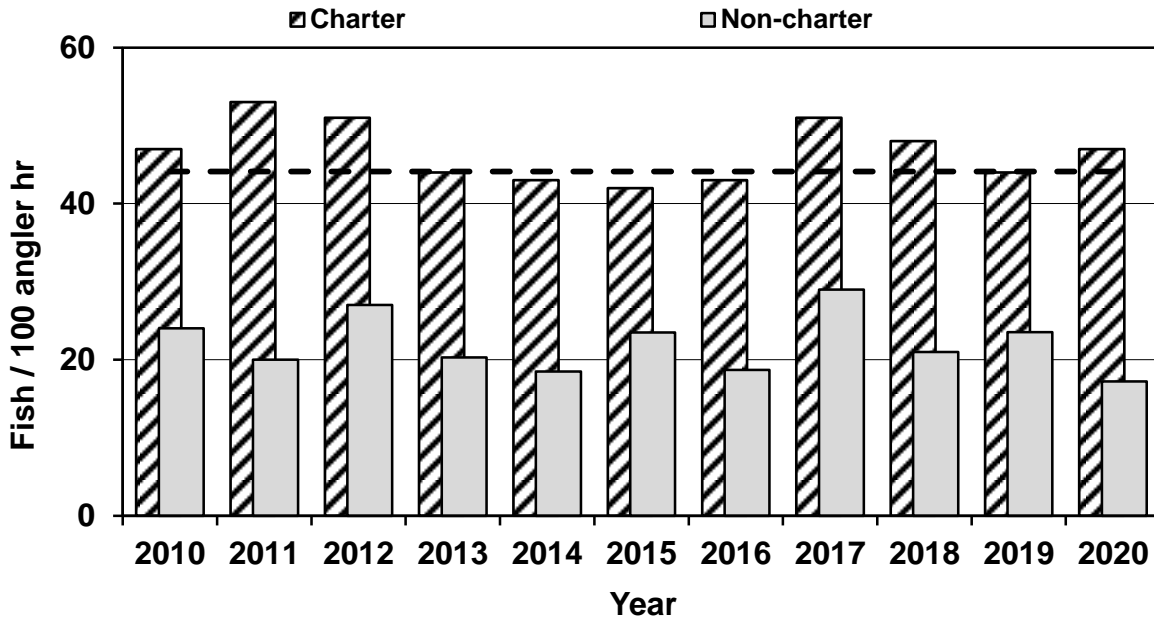
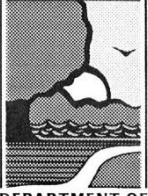


Figure 3. Illinois charter boat and non-charter boat harvest rates for all salmonids, 2010-2020. The dashed line represents the 1979-2020 average charter boat harvest rate. Non-charter harvest rate estimates from Roswell and Czesny (2021).

ILLINOIS



DEPARTMENT OF  
NATURAL  
RESOURCES

# LAKE MICHIGAN CHARTER BOAT OPERATOR MONTHLY CATCH REPORT

(See instructions for preparing this form on reverse side)

IL Charter Boat  
Operator Permit # \_\_\_\_\_

Operator's Name \_\_\_\_\_  
(Please print)

Port \_\_\_\_\_ Month \_\_\_\_\_ Year 20 \_\_\_\_\_

Date	Location by Grid No.	No. of Anglers		No. Lines	Hours Fished	Lake Trout	Coho	Brown	Rainbow	Chinook	Yellow Perch	Tag Numbers (if any)
		IL Res	NonRes									
<b>TOTAL</b>												

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE.

Prepared By	Date Prepared
-------------	---------------

Appendix

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 15<sup>th</sup> 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.

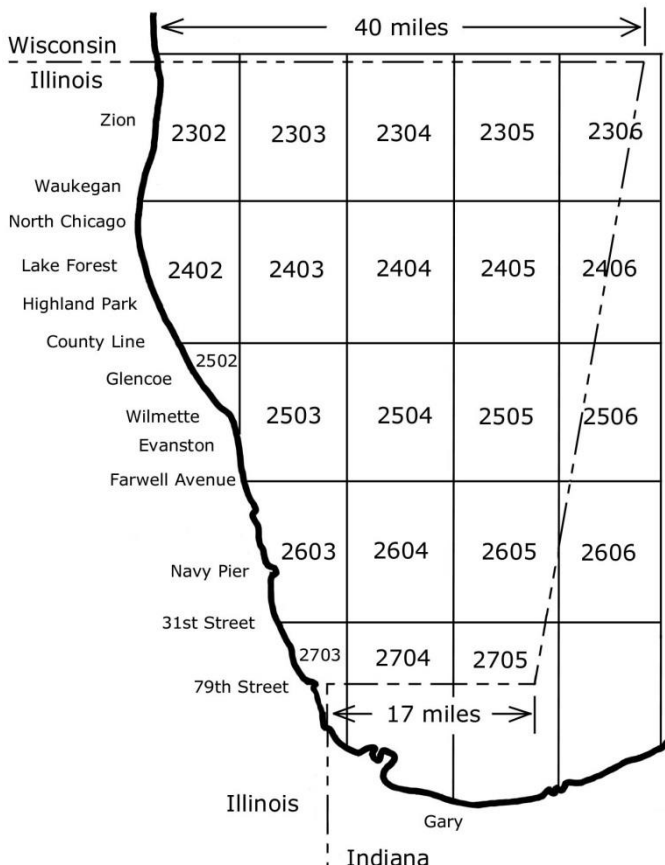
NUMBER OF ANGLERS, RESIDENT AND NON-RESIDENT – Enter the number of **Illinois** residents and non-resident anglers in the fishing party and include crew members if they fished.

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:**

Illinois Department of Natural Resources  
 Division of Fisheries  
 Lake Michigan Program  
 9511 Harrison Street  
 Des Plaines, IL 60016

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

REMARKS:

Questions regarding this form? (847) 294-4134