

2008 Charter Boat Operator Report
with emphasis on Catch and Effort
within Indiana Waters of Lake Michigan

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2009

EXECUTIVE SUMMARY

- Eighty charter licenses were issued to fish Indiana waters during 2008. Forty-five licenses were issued to fish Lake Michigan and 35 licenses were issued to fish other inland bodies of water including: Barbee Lake, Brookville Reservoir, Eel River, Geist Reservoir, James Lake, Monroe Reservoir, Patoka Lake, Raccoon Lake, St. Joseph River, Upper Long Lake, Tippecanoe Lake, Webster Lake, West Boggs Creek Reservoir, and White River.
- Overall, 100% of the mandated reports were received, with 13% failing to meet time frame requirements (based upon the post-mark date on the mailing envelope or the hand-delivery date).
- Operators submitted reports on 1,066 fishing trips in Indiana waters; 454 in Indiana waters of Lake Michigan and 612 on inland waters. Lake Michigan trips accounted for the majority of the charter angler effort, followed by the Webster Lake area, Monroe Reservoir, Brookville Reservoir, White River, Patoka Lake and Raccoon Lake.
- Salmonine species were the primary target for Lake Michigan operators; however, 75 fishing trips were conducted for yellow perch by 5 operators. One charter operator exclusively chartered for yellow perch. Inland charter operators targeted species based on fish populations within the body of water (s) fished (i.e. black bass at Monroe, Patoka, and White River; muskellunge at Webster, Barbee and Tippecanoe; temperate bass at Brookville, Monroe, Raccoon; walleye at Brookville, etc.). Sunfish (crappie), bass (smallmouth and largemouth), walleye, temperate bass (hybrid striped bass, striped bass, and white bass) and muskellunge comprised the bulk of the inland catch.
- A total of 9,712 hours were spent pursuing trout and salmon by 1,738 chartered Lake Michigan anglers. This was a 14% decrease in angler hours and anglers compared to the 2007 fishing season. A total of 1,998 hours were spent fishing for perch by 424 Lake Michigan chartered anglers. This was a 13% decline in effort compared to the 2007 season when 2,287 hours were fished exclusively for yellow perch.
- The Lake Michigan salmonine catch totaled 4,316 fish. The most abundant species in the catch was coho salmon, comprising 77% of the total. The 2008 trout and salmon catch increased 19% compared to the 2007 catch of 3,638 salmonines. The Lake Michigan yellow perch catch declined 35% compared to the 2007 perch catch.
- Lake Michigan charter fishing success for all salmonine species was 44.4 fish per 100 hours, an increase from the 32.6 fish per 100 hours observed in 2007. The 2008 charter catch rates declined for salmonine species, with the exception of coho salmon. Comparing 2008 catch rates with their ten-year averages, coho salmon, brown trout and lake trout had rates that were equal or exceeded their long-term average. Chinook salmon rates were 25% below and steelhead trout rates were 20% below their ten-year mean.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES.....	iv
LIST OF FIGURES.....	v
INTRODUCTION.....	1
METHODS.....	2
RESULTS.....	3
Charter licenses.....	3
Compliance.....	4
Charter effort and catch.....	4
Lake Michigan trout and salmon.....	4
Lake Michigan yellow perch.....	5
DISCUSSION.....	6
RECOMMENDATIONS.....	10
LITERATURE CITED.....	11
APPENDIX I 312 I.A.C. 9-7-17 Charter fishing boat operator’s license.....	25
APPENDIX II State form 25789: Charter fishing boat operator reporting form.....	26

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Number of charter licenses issued by Indiana Department of Natural Resources from 1999 through 2008.....	12
2. Catch and fishing effort reported by charter boat operators fishing Indiana waters during 2008.....	13
3. Trout and salmon harvest and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.....	14
4. Trout and salmon catch and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan from 1999 through 2008.....	15
5. The number of trout and salmon released as reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.....	16
6. Yellow perch harvest, number of yellow perch releases, and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.....	17
7. Number of trout and salmon stocked in Lake Michigan by Indiana Department of Natural Resources, 1996 through 2008.....	18

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Total number of angler hours fished as reported by charter boat operators fishing Indiana State waters during 2008.....	19
2. Trout and salmon harvest reported by charter boat operators fishing Indiana waters of Lake Michigan from 1999 through 2008.....	20
3. Charter catch rate for all salmonine species caught in Indiana waters of Lake Michigan from 1999 through 2008.....	20
4. Charter catch rate for coho salmon in Indiana waters of Lake Michigan from 1999 through 2008.....	21
5. Charter catch rate for Chinook salmon in Indiana waters of Lake Michigan from 1999 through 2008.....	21
6. Charter catch rate for steelhead in Indiana waters of Lake Michigan from 1999 through 2008.....	22
7. Charter catch rate for brown trout in Indiana waters of Lake Michigan from 1999 through 2008.....	22
8. Charter catch rate for lake trout in Indiana waters of Lake Michigan from 1999 through 2008.....	23
9. Charter catch rate for yellow perch in Indiana waters of Lake Michigan from 2002 through 2008.....	23
10. Number of trout and salmon stocked in Lake Michigan each year, 1996 through 2008.....	24

INTRODUCTION

As a trout and salmon fishery developed within Indiana's waters of Lake Michigan in the mid 1960's, a sport and charter boat industry also developed and prospered. By the mid 1970's, Indiana Department of Natural Resources (IDNR) biologists believed that charter boat operators were harvesting a large number of salmonines each year (Braun and Hudson 1988). As the number of operators increased, information about their fishing effort and catch was important in understanding fishing quality and the impact they had on the Lake Michigan fishery. In 1976, a pilot program was established with reporting forms distributed to ten charter boat operators known to be fishing from Indiana ports. These operators expressed an interest in providing information about their fishing trips to supplement the IDNR creel survey data; however, the degree of cooperation varied from full to no cooperation (Braun and Hudson 1988). To obtain a continuous annual record of charter fishing effort and the numbers and species of fish harvested by charter boat anglers in Indiana, legislation was introduced, and passed in 1987, that required reporting of sport catch and effort by the charter fishing industry.

Indiana Administrative Code 312 I.A.C. 9-7-17, charter fishing boat operator's license, regulates sport fishing for hire within waters of the State, including Lake Michigan. An individual may not take another sport fishing for hire on Indiana waters, waters containing state-owned fish, or state boundary waters without a charter fishing boat operator's license issued by the director under Indiana Code (IC) 14-22-15-4 pursuant to I.A.C. 9-7-17. Initially enacted to assist biologists with understanding the Lake Michigan fishery, 312 I.A.C. 9-7-17 also provides fishery information on other bodies of water as a continuous record of charter fishing effort and numbers and species of fish harvested and released by charter boat anglers throughout the state.

Data from the charter industry are used to assist with fishery management efforts by providing valuable trend information concerning charter harvest and catch rates and provides an overview of the status of stocked fish (e.g. salmonine species).

METHODS

Catch and effort information were submitted by charter boat operators through the mandatory catch reporting system. Licensees provided catch information on a per trip basis for all paid trips for which all or part of the trip was conducted in Indiana waters. Reports were required to be submitted before the fifteenth day of the following month, as outlined in Administrative Code 312 I.A.C. 9-7-17 (Appendix I). The administration of the charter reporting program and compilation of the charter fishing catch and effort was part of the Division of Fish and Wildlife's Project/Grant 300FW1F10D41504. This project focuses on sport fish monitoring in Lake Michigan and its tributaries.

The information obtained from each report included: reporting period (month), name of licensee, name of body of water fished, license number, date of fishing trip, total number of anglers, total hours fished, and numbers of fish harvested and released (Appendix II). Space was also provided on the form for comments or observations. Per I.A.C. 9-7-17, only paid trips conducted wholly or partially in Indiana waters needed to be reported. Reports were required monthly, even if no fishing activity occurred as long as the license was active. If IDNR personnel did not receive a report for a given month, the operator was delinquent since one cannot distinguish those operators that did not fish from those that failed to submit a report.

Delinquencies were directly addressed by the Lake Michigan Fisheries office. Operators who were missing required reports were either telephoned or sent a written reminder requesting immediate report submission. A person who fails to keep accurate records of each day's catch of fish and other related information or fails to report monthly before the fifteenth day of each month commits a Class C infraction (312 I.A.C. 9-7-17; Authority I.C. 14-22-2-6, I.C. 14-22-15). Although delinquencies occurred throughout the 2008 fishing season, no written warnings or citations were issued.

The Lake Michigan office receives all charter boat operator reports from licensed operators throughout the State of Indiana. Brief summaries of fishing effort, harvest, and catch will be provided for inland fisheries; however, the emphasis of this report

will be the Lake Michigan fishery as the majority of charter licenses issued to operate within Indiana waters are for individuals targeting Lake Michigan waters.

Effort, or angler hours, is the total number of hours fished by all anglers. Harvest is the total number of fish caught and kept by an angler. Catch is the total number of fish caught and released by an angler. Catch rates are the total number of fish caught within a given amount of time.

Relative yearly comparisons of catch, independent of the magnitude of effort, are possible by expressing the catch on a per-unit-of-effort basis, known as catch rates. With this measure, the long-term trend of fishing success by species can be presented for comparisons. The catch rates provided will be targeted, in that only the Lake Michigan trout and salmon catch and effort were utilized for the salmonine catch rates and only yellow perch catch and effort were utilized for the yellow perch catch rates. With the exception of yellow perch, all catch rates presented are standardized to 100 angler-hours because rates are significantly less than one fish caught for every hour spent angling.

RESULTS

Charter licenses

A total of 80 charter licenses were issued to fish Indiana waters during 2008. Forty-five licenses were issued to fish Lake Michigan and 35 licenses were issued to fish other inland bodies of water including: Barbee Lake, Brookville Reservoir, Eel River, Geist Reservoir, James Lake, Monroe Reservoir, Patoka Lake, Raccoon Lake, St. Joseph River, Upper Long Lake, Tippecanoe Lake, Webster Lake, West Boggs Creek Reservoir, and White River (Table 1). The majority of inland licenses issued were for operators targeting the Webster Lake area (including lakes located in the Tippecanoe River Watershed such as the Barbee Chain, James Lake and Tippecanoe Lake), Monroe Reservoir, Patoka Lake, and St. Joseph River.

Since 2005, the number of inland charter licenses issued has steadily increased while the number of Lake Michigan charter licenses issued has slightly declined (Table 1).

Compliance

Overall, 100% of the mandated reports were received, with 13% failing to meet time frame requirements (based upon the post-mark date on the mailing envelope or the hand-delivery date). Lake Michigan operators submitted 12% of their reports late, while 14% of the inland operators submitted their reports past the legal required time frame.

Charter effort and catch

Operators submitted reports on 1,066 trips in Indiana waters; 454 in Indiana waters of Lake Michigan and 612 on inland waters (Tables 2-6). Lake Michigan trips accounted for the majority of the charter angler effort at 11,711 hours or 51% of the effort, followed by the Webster Lake area at 5,843 hours or 25% of the effort, Monroe Reservoir at 1,393 hours (6%), Brookville Reservoir at 1,292 hours (6%), White River at 1,099 hours (5%), Patoka Lake at 997 hours (4%), Raccoon Lake at 416 hours (2%), and St. Joseph River at 293 hours (1%, Figure 1).

For Lake Michigan operators, trout and salmon were the primary target; however, 75 fishing trips were conducted for yellow perch by 5 operators. One operator exclusively chartered for yellow perch.

Inland charter operators targeted species based on fish populations within the body of water (s) fished (i.e. black bass at Monroe, Patoka, and White River; muskellunge at Webster, Barbee and Tippecanoe; temperate bass at Brookville, Monroe, Raccoon; walleye at Brookville, etc.). Sunfish (crappie), bass (smallmouth and largemouth), walleye, temperate bass (hybrid striped bass, striped bass, and white bass) and muskellunge comprised the bulk of the catch (Table 2).

Lake Michigan trout and salmon

Charter boat operators fishing Indiana waters of Lake Michigan reported 1,738 chartered anglers that fished 9,712 hours for trout and salmon (Table 3). The total number of anglers and angler hours both decreased (14%) compared to 2007.

A total of 4,216 salmonines were harvested by chartered anglers during the 2008 season. Coho salmon dominated the salmonine harvest, comprising 3,251 fish or

77% of the total (Table 3, Figure 2). Chinook salmon harvest was second to coho at 317 fish or 7% of the total. Lake trout comprised 6% of the harvest at 251 fish, followed by brown trout (204 or 5% of the total) and steelhead (193 or 5% of the total). Harvest and effort were greatest during the month of April (Table 3).

While there was a noted decline in the number of charter anglers and effort, the overall total number of trout and salmon harvested increased 18% compared to 2007 (Figure 2). Catch, or the total number of fish harvested and released, also increased 19% (Table 4).

The overall salmonine charter catch rate in 2008 was 44.4 fish caught for every 100 hours spent trout and salmon angling (Figure 3). This was an increase over the 2007 salmonine charter catch rate (32.6 fish per 100 hours) and ten-year mean (44.1 fish per 100 hours). Comparing the 2008 trout and salmon species catch rates with 2007, catch rates declined for all salmonine species with the exception of coho salmon (Figures 4-8). Chinook salmon catch rates declined to 3.5 fish per 100 hours, which is similar to catch rates observed during the 2001-2003 fishing seasons (Figure 5). The catch rate in 2008 for lake trout (2.9 fish per 100 hours) was the second highest reported from the ten-year data series (Figure 8).

Comparing 2008 catch rates with their long-term average, coho salmon, brown trout and lake trout had rates that were equal or exceeded their ten-year mean (Figures 4, 7 and 8). Chinook salmon rates were 25% below and steelhead trout rates were 20% below their ten-year mean (Figures 5-6).

A relatively low number of trout and salmon were released by chartered anglers, totaling only 100 fish (Table 5). Brown trout, followed by lake trout, Chinook salmon and coho salmon were released most often. Most releases occurred during April and May.

Lake Michigan yellow perch

A total of 1,998 hours, representing 75 trips, were spent fishing for perch by 424 chartered anglers (Table 6). This was a 13% decline in effort compared to the 2007 fishing season when 2,287 hours, or 86 trips, were fished exclusively for yellow perch (Palla 2008). Yellow perch catch also declined 35%; 4,339 yellow perch compared to

6,681 perch in 2007. Largest yellow perch catches occurred during the month of July, followed by June. Yellow perch angler effort was greatest during July, then June (Table 6).

The yellow perch charter catch rate in 2008 was 2.2 fish caught for every hour spent perch fishing (Figure 9). This was a decrease from the 2007 perch charter catch rate (2.9 fish per hour) and long-term average (2.6 fish per hour). Yellow perch catch rates were 15% below their long-term average (Figure 9).

A total of 1,547 perch were legal releases, representing 36% of the total catch (Table 6). Perch were released most often during July, followed by June then August.

DISCUSSION

Coho salmon continue to dominate the charter salmonine catch within Indiana waters of Lake Michigan. The largest one-year change in the charter harvest by species occurred for coho. Coho salmon catch rates rebounded in 2008, 70% higher than what was observed during the 2007 season. In 2007, the charter coho salmon catch rate was the lowest recorded from the prior ten-year period.

Due to the increased coho catch, overall, the 2008 charter fishing season within Indiana waters of Lake Michigan was average comparing the current catch rates with the long-term average. Catch rates for Chinook salmon, steelhead trout, brown trout and lake trout all declined compared to 2007; however, brown trout and lake trout catch rates remain above average for the 1999-2008 time series.

Lake-wide, the total biomass of salmonines harvested (i.e. total pounds of trout and salmon harvested by sport anglers, including chartered trips, in Illinois, Indiana, Michigan and Wisconsin) was 35% lower than the previous fishing season (Breidert et al. 2009). The largest decline occurred for coho salmon; total biomass was 50% lower compared to 2007. Both the Chinook salmon and steelhead sport biomass harvest fell approximately 36% compared to the prior fishing season; the steelhead harvest was the lowest level observed for the 1985-2008 time series.

The decline in Chinook sport biomass is likely attributed to the smaller size of Chinook harvested by anglers, stocking reductions and declines in forage. Indiana charter catch rates for Chinook peaked in 2004 at 9.1 fish per 100 hours, but have

steadily decline to 3.5 fish per 100 hours in 2008. This catch rate, however, represents only Chinook that were caught within Indiana waters of Lake Michigan. The Indiana Lake Michigan creel survey more accurately reflects success, as the number represents estimates of fish returned to Indiana ports, whether anglers fished Indiana, Illinois, or Michigan waters. The creel data shows a steady increase in Chinook catch rates from 1993 through 2008. In 2008, Indiana Chinook creel catch rates declined 14% from 8.1 fish per 100 hours (2007) to 7.0 fish per 100 hours. The charter Chinook catch rates declined 19% from 4.3 fish per 100 hours to 3.5 fish per 100 hours.

Michigan charter data was similar to the Indiana creel and charter data. Chinook charter catch rates rose beginning in 1995 and continued through 2008. In 2008, Michigan Chinook catch rates declined 15% from 30.0 fish per 100 hours to 25.5 fish per 100 hours (Claramunt et al. 2009). Declines in the number of Chinook salmon have also been observed at Michigan weirs. Chinook weir returns dropped to the second lowest number in the 1985-2008 time series. Forage declines, specifically the decline in adult alewife biomass, may account for lower survival of 2 and 3-year old Chinook salmon impacting the overall total number of fish returning to the weirs (Claramunt et al. 2009).

The charter Chinook salmon catch rate decline can also be attributed to lake-wide stocking reductions implemented in 2006. In 2006, 25% less Chinook were stocked by all agencies; 3.2 million in 2006 compared to the previous ten-year average of 4.7 million. This reduction was in response to the record low levels of forage fish, particularly alewife. Lake Michigan forage levels remain at all-time lows; the 2008 total lake-wide prey fish biomass estimate (sum of alewife, bloater, rainbow smelt, deepwater sculpin, slimy sculpin, round goby, and ninespine stickleback) by the U.S. Geological Survey Great Lakes Science Center (GLSC) shows biomass fell to 25.62 kilotonnes (kt) (1 kt = 1000 metric tons), the lowest level observed since the survey began in 1973 (Bunnell et al. 2009). Balanced predator-prey levels remain critical for a stable Lake Michigan salmonine fishery; however, current prey fish biomass estimates indicate the system appears to be unstable (Claramunt et al. 2009).

For steelhead trout, Indiana sport and charter data show the same trends observed lake-wide. Steelhead sport biomass harvest fell 36%; harvest was the lowest level observed for the 23-year time series (1985-2008). Indiana charter steelhead harvest fell 20%, with the 2008 harvest being the third lowest in the 1999-2008 time series. The Lake Michigan creel data trends were similar. Harvest fell 13%, with the 2008 harvest marking the third lowest within this time period. Whether the poor steelhead catch was a function of decreased fish availability, decreased forage or other environmental variables remains unclear. Recent steelhead trout stocking changes in 2006 and 2007 by the IDNR, however, may have contributed to the low 2008 steelhead returns. Due to the shutdown and rehabilitation of Mixsawbah State Fish Hatchery in 2006, the spring release skamania steelhead were stocked in the fall of 2005 and 2006 as fingerlings. The '05 and '06 spring release skamania steelhead, typically stocked at a size of 7.5 inches, were approximately 1-inch smaller at the time of release (Bob Bell, personal communication). The smaller size resulted from overcrowding and lower growth of fish at Bodine State Fish Hatchery. Decreases in the size at stocking may have impacted fish migration. Either fish did not out-migrate until the following year after release, or lower numbers of fish potentially survived at this smaller size. The end result would be a reduction in the number of steelhead returning to area tributaries and the St. Joseph River in 2008.

Although brown trout and lake trout catch rates declined from 2007, their 2008 catch rates remain above their long-term average. Brown trout catch rates have steadily increased since 2003, likely the result of near shore stocking of brown trout in Indiana waters of Lake Michigan (Table 7). Since 2002, brown trout have been provided by the Illinois Department of Natural Resources through a cooperative trade agreement with the IDNR.

During the 2008 season, the number of yellow perch fishing trips, effort, and catch fell compared to the previous season. Catch rates, above-average from 2004 through 2007, fell to 2.2 fish per hour. The decline in adult relative abundance is one reason for the lower catch rates observed. Generally, yellow perch assessments throughout the lake show a long-term decline in adult yellow perch abundance (Makauskas and Clapp 2009). Overall, sampling did not provide evidence that the

Lake Michigan yellow perch population abundance is changing. Currently, the majority of the yellow perch population is comprised of the 2002, 2003 and 2005 year classes. Yellow perch from the 2005 year class comprised approximately 20-60% of the adult population from surveys within the various state waters (Makauskas and Clapp 2009). The 1998 year class is still present, albeit in very low numbers. In 2007, the 1998 year class only accounted for approximately 4-8% of the population.

Salmonine species and yellow perch continue to be important components of the Lake Michigan fish community. Trout and salmon, originally planted to utilize an overabundant population of non-native alewives, provide sport fishing opportunities for lake and tributary anglers. Stocking levels have been adjusted in an attempt to minimize the risk of a salmon population crash and its impacts to the fishery. In 2008, nearly 12 million trout and salmon were stocked into Lake Michigan (Figure 10). This level is consistent with the overall management goal to reduce the demand on the Lake Michigan forage base.

Lake-wide stocking levels, forage levels and other environmental variables (i.e. water temperatures) will continue to influence fishing success within Lake Michigan. Indiana waters are unique and diverse, with a shallow basin and the presence of coldwater fish species (i.e. trout and salmon), coolwater fish species (i.e. yellow perch), and warmwater fish species (i.e. smallmouth bass). This diversity within the fish community continues to provide valuable fishing opportunities. Charter operators that recognize the importance of diverse marketing may be able to increase profitability by offering trips for more than just one type of fishing or offering additional services (i.e. non-fishing charters for sightseeing, diving, etc.). However, it is important to recognize that other factors (e.g. economics, Lake Michigan ecological balance) may also impact the future success of the charter industry (Lichtkoppler et al., 2008; Kuehn et al., 2005).

RECOMMENDATIONS

It is recommended:

- The Lake Michigan Fisheries Research office continues program administration of the mandatory catch reporting system.
- The Lake Michigan Fisheries Research office continues to improve on report compliance through education efforts, especially with the noted increase in the number of new inland charter operators. Operators should be sent a letter at the beginning of the fishing season which outlines the compliance requirements of the Charter Fishing Boat Operator's License per 312 I.A.C. 9-7-17. The Lake Michigan office should continue working with District 10 Law Enforcement to improve compliance from repeat delinquent operators.
- The Lake Michigan Fisheries Research office should investigate an online reporting system through the IDNR Division of Fish and Wildlife web page. The online reporting site would provide the charter operator with the option of submitting reports electronically.
- The Lake Michigan Fisheries Research office should continue compiling and providing copies of the Charter Boat Catch and Effort in Indiana Water's of Lake Michigan report to charter operators. This report not only provides the Indiana charter community with catch and effort statistics, but also provides valuable trend information concerning charter harvest and catch rates.
- Data from inland charter operators continue to be made available to district fisheries biologists upon request.

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Date: April 13, 2009
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Date: July 10, 2009

Table 1. Number of charter licenses issued by Indiana Department of Natural Resources from 1999 through 2008.

<u>Year</u>	<u>Inland Licenses</u>	<u>Lake Michigan Licenses</u>	<u>Total Licenses</u>
1999	12	40	52
2000	20	39	59
2001	23	41	64
2002	28	47	75
2003	21	53	74
2004	21	54	75
2005	20	55	75
2006	29	55	84
2007	29	50	79
2008	35	45	80

Table 2. Catch and fishing effort reported by charter boat operators fishing Indiana waters during 2008.

	MONTH										TOTAL
	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	
<u>TOTAL CATCH</u>											
Black Bass	0	265	361	578	400	467	196	175	0	0	2,442
Brown Trout	25	157	19	10	7	1	3	1	0	12	235
Catfish	0	10	10	68	75	9	15	41	0	0	228
Coho	71	1,702	258	517	669	44	5	0	0	1	3,267
Chinook	0	50	46	69	104	53	12	4	0	0	338
Freshwater Drum	0	0	0	0	0	35	0	0	0	0	35
Lake Trout	1	62	138	27	19	24	9	0	0	0	280
Muskellunge	12	52	84	39	9	11	43	85	20	3	358
Steelhead	2	64	53	30	37	6	1	0	0	3	196
Sunfish Species	0	952	1,902	1,106	857	311	729	943	0	0	6,800
Temperate Bass	0	0	14	13	172	63	132	104	62	0	560
Walleye	0	52	212	121	50	71	53	109	28	0	696
Yellow Perch	0	348	0	1,032	1,874	327	154	433	171	0	4,339
TOTAL	111	3,714	3,097	3,610	4,273	1,422	1,352	1,895	281	19	19,774
Angler-Hours	462	5,298	4,986	3,359	3,113	1,474	1,657	2,113	587	47	23,096
Anglers	79	910	761	583	558	255	263	344	83	7	3,843
Trips	22	218	226	159	139	76	85	110	28	3	1,066

Table 3. Trout and salmon harvest and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.

	MONTH										
	<u>MAR.</u>	<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>	TOTAL
<u>HARVEST</u>											
Coho	71	1,689	256	517	669	44	5	0	0	0	3,251
Chinook	0	33	45	67	104	53	11	4	0	0	317
Steelhead	2	64	53	30	37	6	1	0	0	0	193
Brown Trout	25	136	19	10	7	1	3	1	0	2	204
Lake Trout	1	53	128	27	19	14	9	0	0	0	251
TOTAL	99	1,975	501	651	836	118	29	5	0	2	4,216
Angler-Hours	246	3,914	2,103	1,191	1,345	362	419	101	0	31	9,712
Anglers	48	715	345	227	246	64	68	20	0	5	1,738
Trips	11	150	77	49	52	16	17	5	0	2	379

Table 4. Trout and salmon catch and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan from 1999 through 2008.

<u>Year</u>	<u>Coho</u>	<u>Chinook</u>	<u>Steel-head</u>	<u>Brown Trout</u>	<u>Lake Trout</u>	<u>Angler Hours</u>	<u>No. Anglers</u>	<u>Trips</u>
1999	6,933	403	1,484	249	203	27,964	5,427	1,139
2000	6,707	432	178	394	149	13,953	2,815	571
2001	10,129	675	305	272	192	19,295	3,576	744
2002	8,518	1,420	713	349	177	21,164	3,946	841
2003	8,777	818	889	176	63	22,201	4,000	862
2004	6,946	2,354	449	276	85	25,852	4,535	990
2005	3,697	1,371	453	286	68	18,449	3,229	703
2006	3,474	444	115	207	118	10,300	1,916	407
2007	2,196	476	245	287	434	11,143	2,019	415
2008	3,267	338	196	235	280	9,712	1,738	379
Five-year Average (‘04 - ‘08)	3,916	997	292	258	197	15,091	2,687	579
Ten-year Average	6,064	873	503	273	177	18,003	3,320	705

Table 5. The number of trout and salmon released as reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.

	MONTH										TOTAL
	<u>MAR.</u>	<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>	
<u>SPECIES</u>											
Coho	0	13	2	0	0	0	0	0	0	1	16
Chinook	0	17	1	2	0	0	1	0	0	0	21
Steelhead	0	0	0	0	0	0	0	0	0	3	3
Brown Trout	0	21	0	0	0	0	0	0	0	10	31
Lake Trout	0	9	10	0	0	10	0	0	0	0	29
TOTAL	0	60	13	2	0	10	1	0	0	14	100

Table 6. Yellow perch harvest, number of yellow perch releases, and fishing effort reported by charter boat operators fishing Indiana waters of Lake Michigan during 2008.

	MONTH										
	<u>MAR.</u>	<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>	<u>TOTAL</u>
<u>Yellow Perch</u>											
No. Harvested	0	233	0	699	1,259	179	79	272	71	0	2,792
No. Released	0	115	0	333	615	148	75	161	100	0	1,547
TOTAL	0	348	0	1,032	1,874	327	154	433	171	0	4,339
<u>Angler-</u>											
Hours	0	56	0	499	775	278	150	220	20	0	1,998
Anglers	0	16	0	104	161	63	30	45	5	0	424
Trips	0	3	0	19	28	11	5	8	1	0	75

Table 7. Number of trout and salmon stocked in Lake Michigan by Indiana Department of Natural Resources, 1996 through 2008.

Year	LAKE MICHIGAN				ST. JOSEPH RIVER		
	Chinook Salmon	Coho Salmon	Steelhead Trout	Brown Trout	Chinook Salmon	Coho Salmon	Steelhead Trout
1996	362,162	266,549	312,776	0	209,407	75,980	254,135
1997	279,297	80,817	340,010	0	143,262	0	287,174
1998	386,525	148,320	183,715	0	206,987	0	299,869
1999	264,608	146,882	319,082	0	150,811	0	252,491
2000	267,865	157,208	174,136	0	149,911	0	220,439
2001	297,195	157,048	297,971	0	153,520	0	293,475
2002	253,000	224,797	298,884	35,000	0	0	306,297
2003	232,395	233,248	309,134	40,400	0	0	282,857
2004	237,052	236,026	334,968	46,238	0	0	278,109
2005	251,281	237,009	645,576	36,371	0	0	287,471
2006 ¹	225,000	79,018	257,206	42,900	0	0	234,211
2007 ²	217,389	231,342	349,497	41,110	0	0	279,255
2008	215,770	248,667	295,489	22,446	0	0	276,511
Totals	3,489,539	2,446,931	4,118,444	264,465	1,013,898	75,980	3,552,294

¹Due to the shut-down and rehabilitation of Mixsawbah State Fish Hatchery in 2006, the coho salmon plantings were reduced by 60%; the spring release skamania steelhead were stocked in the fall of 2005 as fingerlings, Michigan steelhead (winter-run) were stocked in 2007 as yearlings instead of December 2006 as fingerlings; and the St. Joseph River fall steelhead plantings were reduced by approximately 40,000 fish to offset changes to the Trail Creek and Little Calumet steelhead stockings.

²Due to the shut-down and rehabilitation of Mixsawbah State Fish Hatchery in 2006, the spring release skamania steelhead were stocked in the fall of 2006 as fingerlings.

Lake Michigan (LM)
Webster Lake area (WEB)
Monroe Reservoir (MON)
Brookville Reservoir (BR)
White River (WR)
Patoka Lake (PA)
Raccoon Lake (RAC)
St. Joseph River (JO)

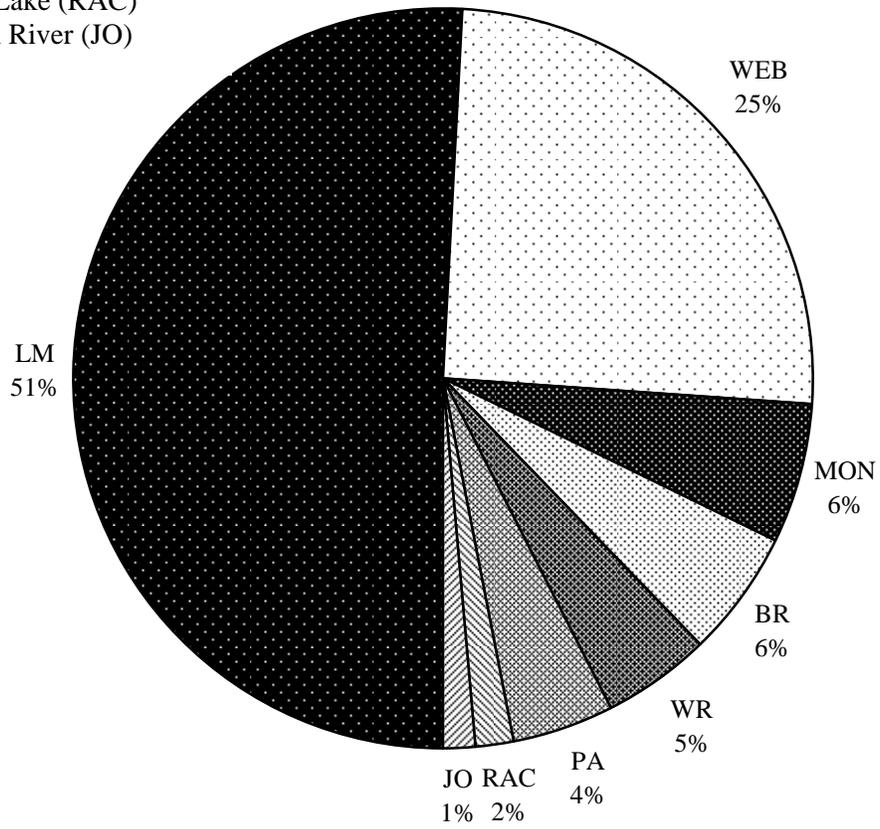


Figure 1. Total number of angler hours fished as reported by charter boat operators fishing Indiana State waters during 2008.

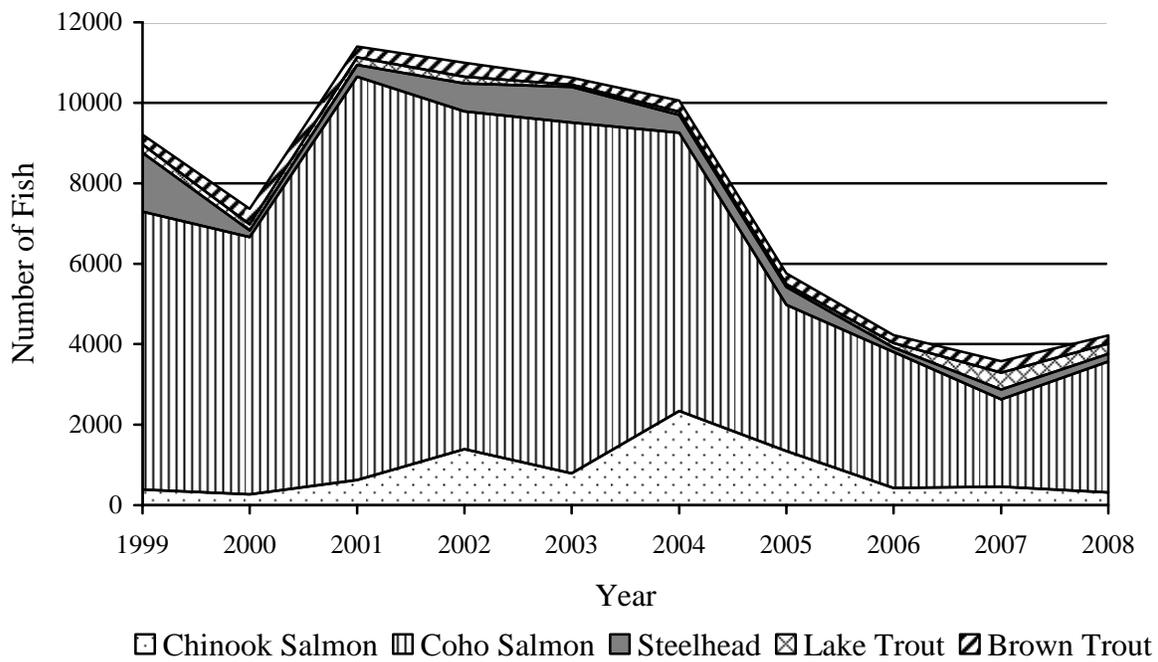


Figure 2. Trout and salmon harvest reported by charter boat operators fishing Indiana waters of Lake Michigan from 1999 through 2008.

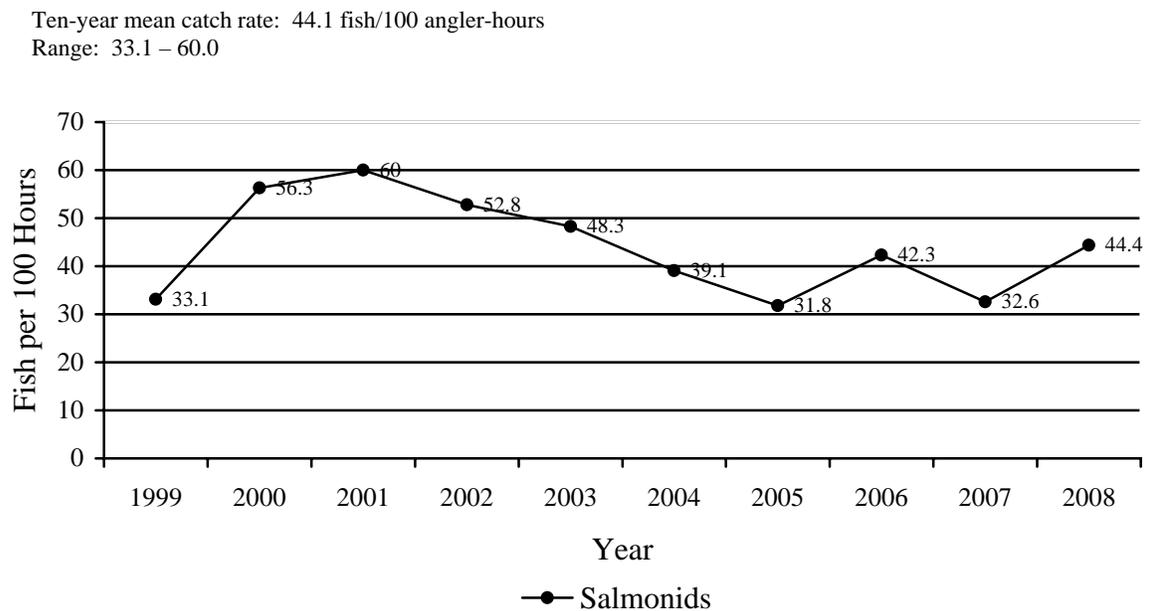
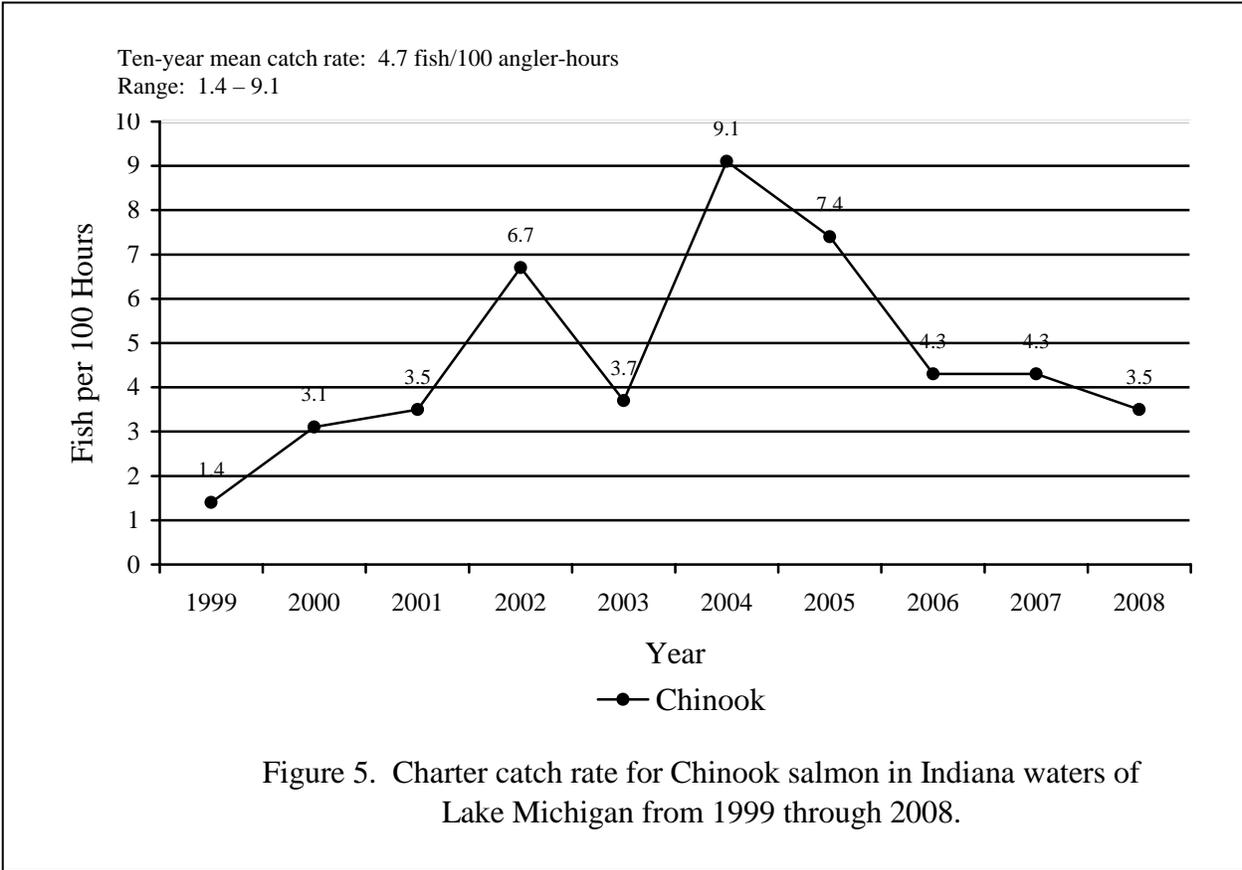
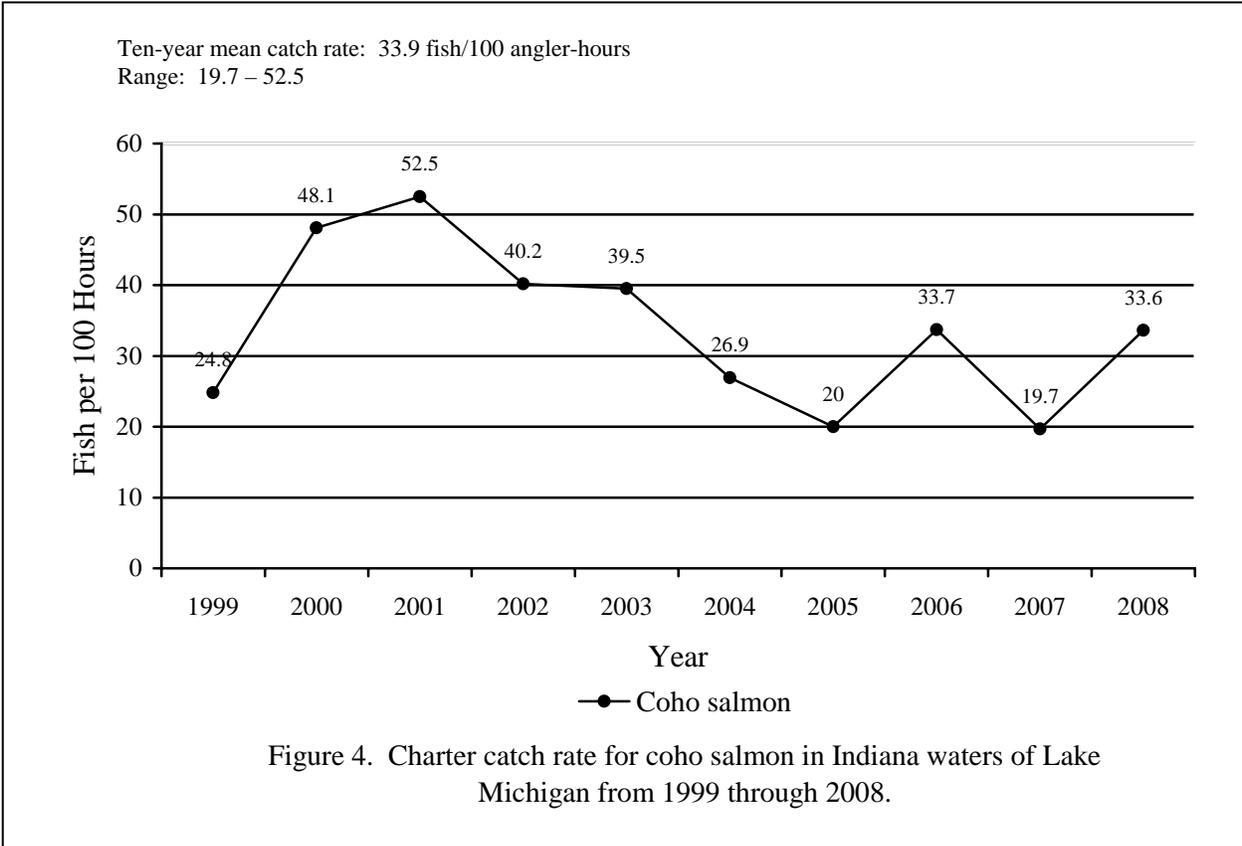


Figure 3. Charter catch rate for all salmonine species caught in Indiana waters of Lake Michigan from 1999 through 2008.



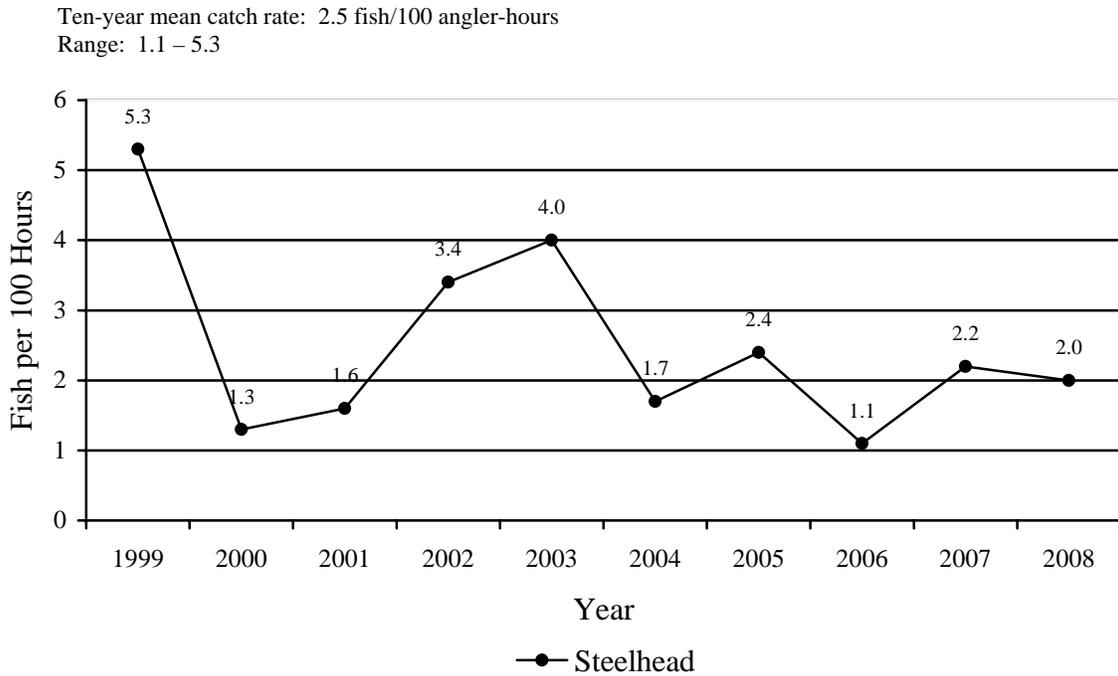


Figure 6. Charter catch rate for steelhead in Indiana waters of Lake Michigan from 1999 through 2008.

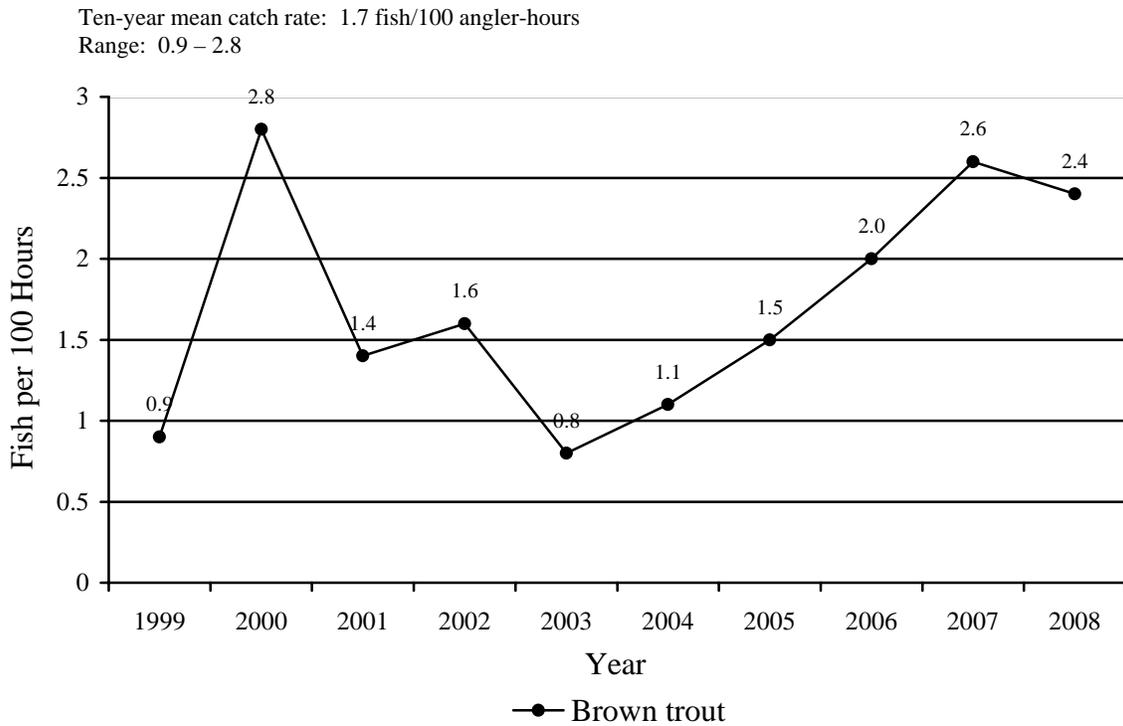


Figure 7. Charter catch rate for brown trout in Indiana waters of Lake Michigan from 1999 through 2008.

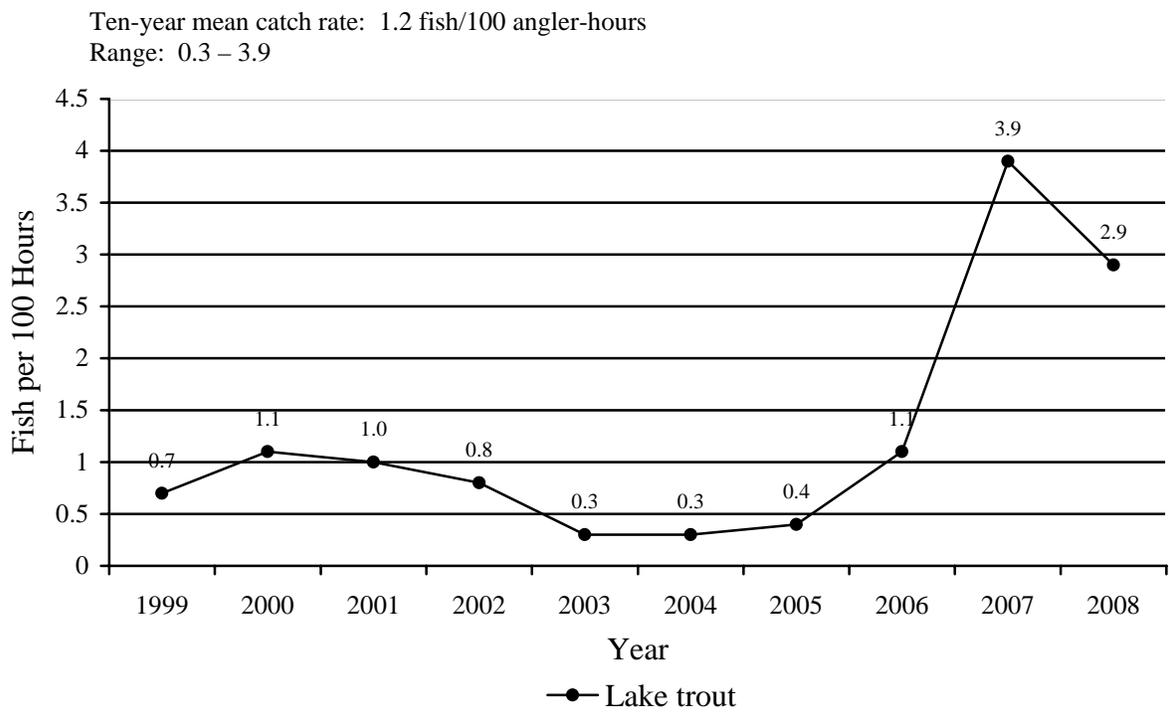


Figure 8. Charter catch rate for lake trout in Indiana waters of Lake Michigan from 1999 through 2008.

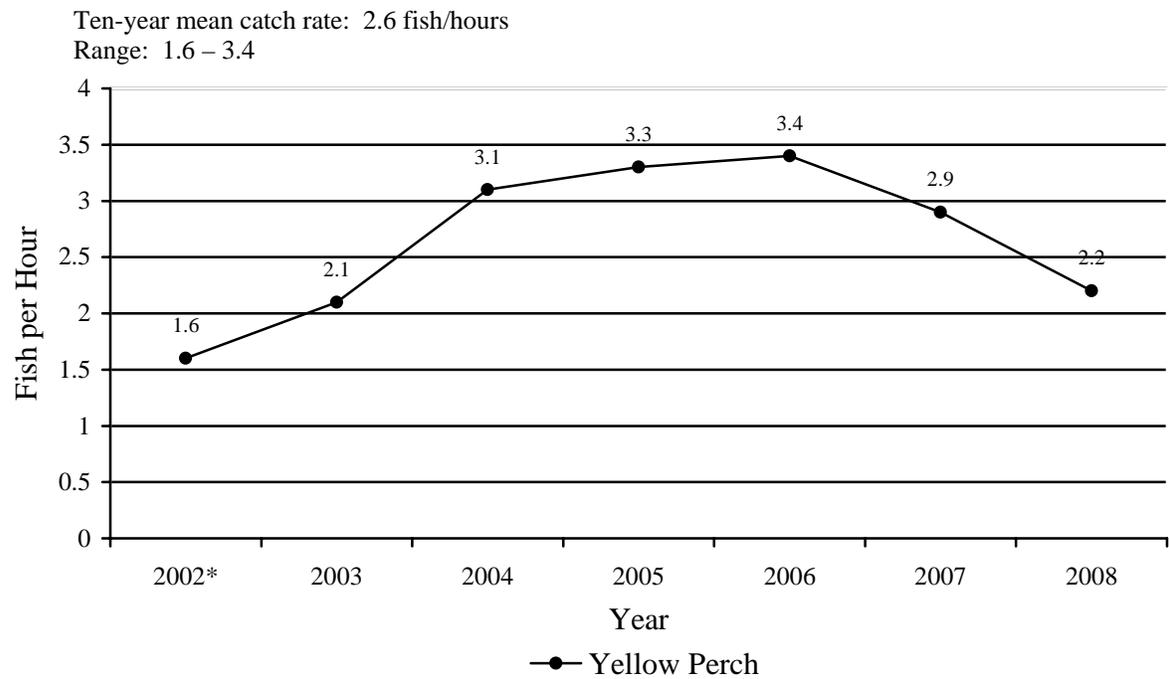


Figure 9. Charter catch rate for yellow perch in Indiana waters of Lake Michigan from 2002 through 2008.

* Yellow perch charter catch rate data not available prior to 2002.

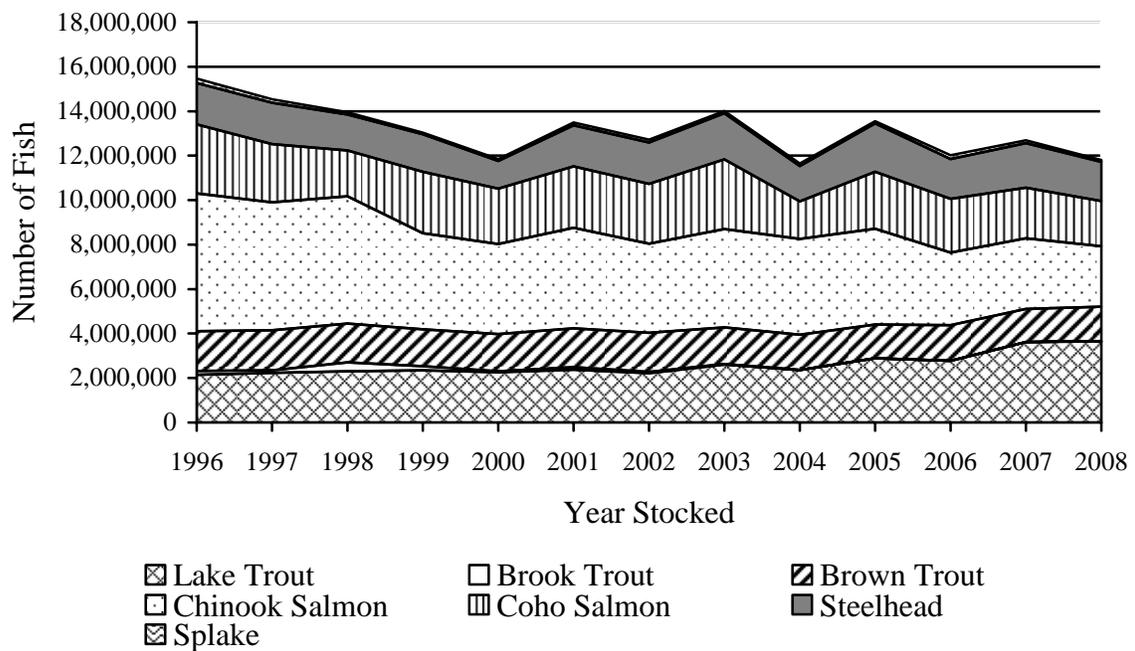


Figure 10. Number of trout and salmon stocked in Lake Michigan each year, 1996 through 2008.

APPENDIX I

312 I.A.C. 9-7-17 Charter fishing boat operator's license

Authority: IC 14-22-2-6; IC 14-22-15

Affected: IC 14-22-15-4

Sec. 17. (a) An individual may not take another individual sport fishing for hire on:

- (1) Indiana waters;
- (2) waters containing state-owned fish; or
- (3) state boundary waters;

without a charter fishing boat operator's license issued by the director under IC 14-22-15-4 and this section.

(b) A license holder under this section shall, on a departmental form, keep legible and accurate daily fishing records of the:

- (1) species;
- (2) numbers, locations, and dates of fish taken; and
- (3) number of fishermen and hours fished;

while engaged in charter fishing. These daily records shall be recorded before the licensed fishing person departs the boat at the conclusion of the fishing trip.

(c) A license holder under this section shall, on a departmental form, prepare a monthly report of the information maintained on the daily fishing records. The monthly report shall be submitted to the director or the director's representative before the fifteenth day of each month following the month covered. The report shall be submitted each month regardless of whether charter fishing activity occurs in the month covered unless the license holder has submitted an Inactive License Form to signify that no fishing activity will take place for the remainder of the calendar year. The Inactive License Form shall be submitted to the director or the director's representative before the fifteenth day of the month following the month the license is deemed inactive.

(d) The director or the director's representative may, at any reasonable time, inspect the daily fishing records required under subsection (b) or IC 14-22-15-4. (*Natural Resources Commission; 312 IAC 9-7-17; filed May 12, 1997, 10:00 a.m.: 20 IR 2721; filed May 28, 1998, 5:14 p.m.: 21 IR 3723; filed Dec 26, 2001, 2:40 p.m.: 25 IR 1540; readopted filed Jul 28, 2003, 12:00 p.m.: 27 IR 286*)

INSTRUCTIONS FOR COMPLETING FORM
(numbers correspond to numbers on the reverse side)

1. TRIP DATE. Daily fishing trips shall be recorded before the licensed fishing person departs the boat at the conclusion of the charter boat fishing trip (see *administrative rule* 312 AC 9-7-17). Only trips for which all or part of the trip was conducted in **Indiana** waters need to be accounted for. Record the day of the month the fishing activity occurred. If more than one charter boat fishing trip occurs per day, record each trip on a separate line using the same trip date. For example, if you had 3 trips on April 17th, April 17th will occupy three separate lines.
2. NUMBER OF ANGLERS. Daily records shall include the number of anglers fishing in the chartered party. If the captain or first mate's license is used to fish additional poles for the trip or if their license is used for bag limits to count toward the catch, these should be included in the total number of anglers fishing on the boat.
3. LENGTH OF TRIP. Record the number of hours fished in **Indiana** waters. If only a portion of the total trip was conducted in Indiana waters, estimate the total hours that were actually fished in Indiana waters.
4. TOTAL HOURS FISHED. The total hours fished is arrived at by multiplying the number anglers times the hours fished in Indiana waters. For example, if 4 anglers fished 6 hours, the total hours fished is 24.
5. NUMBER OF FISH HARVESTED. Record only fish harvested while fishing in Indiana jurisdictional waters. Use "OTHER" columns for species not listed. **Indicate** what those species are and the **number** harvested in the appropriate boxes. Use the fish abbreviation codes listed. If a code is **not** listed, use the comments box to define the species. For example, if 2 smallmouth bass, 3 largemouth bass and 5 channel catfish were harvested, the fish would be recorded as 2SMB/3LMB in the black bass harvested column and 5CHC in the catfish harvested column.

Black Bass: smallmouth bass (SMB)
 largemouth bass (LMB)

Northern Pike / Muskellunge: northern pike (NOP)
 muskie (MUE)

Temperate Bass: white bass (WHB)
 striped bass (STB)
 hybrid striped bass or wiper (HSB)

Walleye / Sauger: walleye (WAE)
 sauger (SAE)

OTHER: carp (CAP)
 freshwater drum (FWD)
 sunfish family (SUN): includes bluegill, crappie, green sunfish, longear sunfish, pumpkinseed, redear, rock bass, warmouth, etc.

6. NUMBER OF FISH RELEASED. Record only fish that were landed but then released while fishing in Indiana jurisdictional waters. Use "OTHER" columns for species not listed. **Indicate** WHAT those species are and the **number** released in the appropriate box. Use the fish abbreviation codes listed above. If a code is **not** listed, use the comments box to define the species. For example, if 3 walleye, 10 crappie and 2 bluegill were released, the fish would be recorded as 3WAE in the walleye/sauger released column and 12SUN in the other released column.
7. SIGNATURE OF CHARTER OPERATOR. Sign and date the form. Forms must be submitted monthly, even if no fishing activity occurred. Reports are due in the Fish and Wildlife's Michigan City office on or before the 15th of the month following the report month.

NOTE: Return the original copy (*white*) to the Michigan City address displayed below. This report is due in the Division's Michigan City office on or before the 15th of the month following the report month. At any time you may place your license into inactive status by completing an Inactive Report form. Once your license becomes inactive it may not be used for the remainder of the year.

Return to:
Lake Michigan HQT
100 West Water Street
Michigan City, IN 46360-1310

