

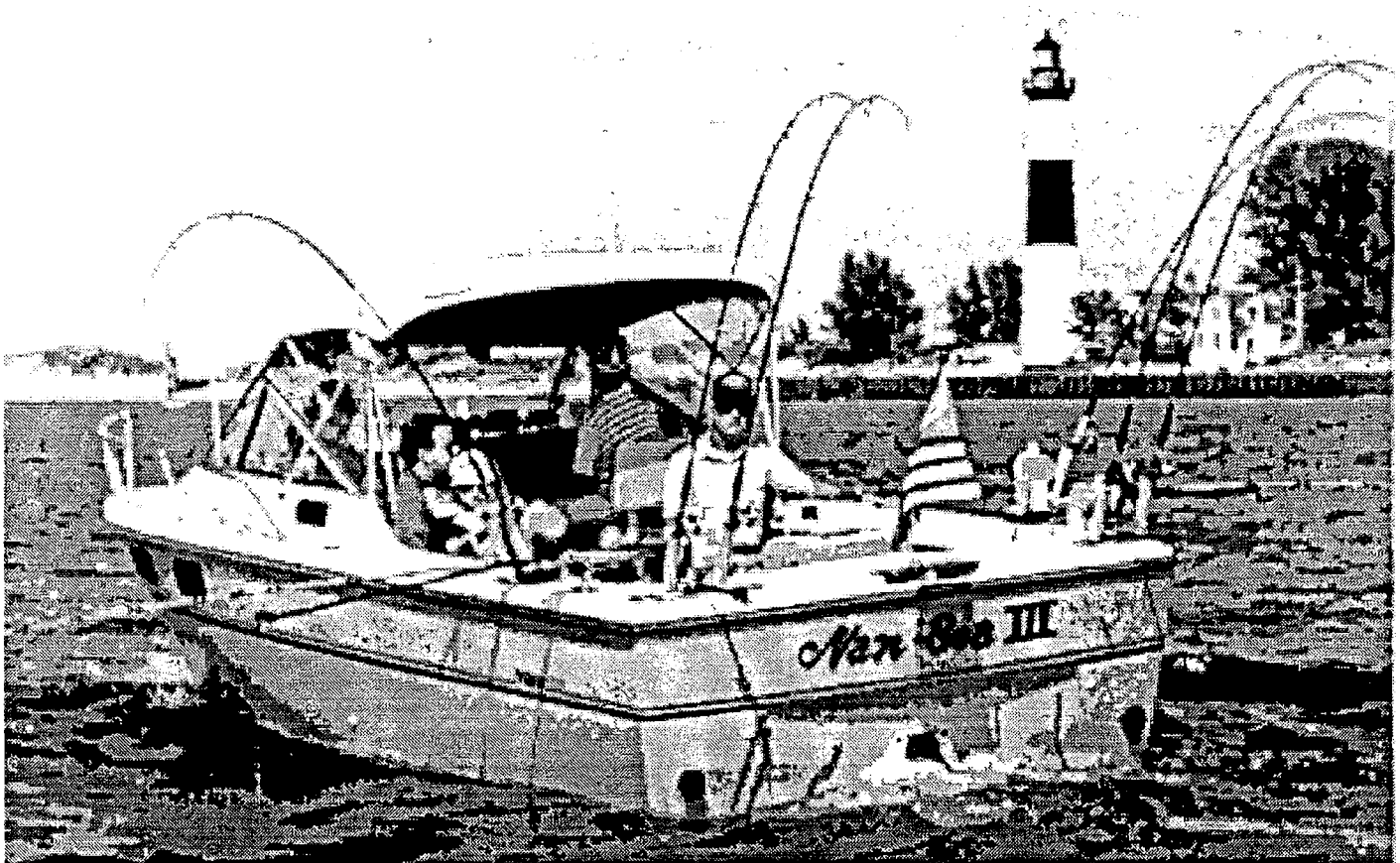
FISHERIES DIVISION TECHNICAL REPORT

Number 93-2

July 16, 1993

Charter Boat Catch and Effort from the Michigan Waters of the Great Lakes, 1992

Gerald P. Rakoczy
and
Ronald F. Svoboda



STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

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**Charter Boat Catch and Effort from the Michigan Waters
of the Great Lakes, 1992**

**Gerald P. Rakoczy
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Abstract.—Legislation enacted in 1992 by the State of Michigan requires all charter boat operators to report sportfishing catch and effort to the Michigan Department of Natural Resources. The objective of the catch and activity reporting system is to obtain a continuous annual record of the number, type, and location of fish harvested by charter boat clients in Michigan.

Ninety-seven percent of the 784 charter fishing operators complied with the law by returning their completed catch reporting forms in 1992. These operators reported making 16,447 charter fishing excursions during April through October. The total number of charter excursions decreased by 3,492 (-18%) in 1992 compared to 1991. Over 440,000 angler hours were spent fishing by some 71,000 charter clients. The distribution of charter fishing excursions was: 67% Lake Michigan, 15% Lake Huron, 10% Lake Erie, 5% Lake Superior, and 3% Lake St. Clair. Over 199,000 fish were reported harvested. The harvest was composed of about 68,000 yellow perch, 40,000 walleye, 33,000 lake trout, 20,000 rainbow trout, 19,000 chinook salmon, 11,000 coho salmon, and 1,500 brown trout. The numbers of fish harvested in all species categories declined in 1992 compared to 1991, except for walleye.

Michigan's charter boat industry has grown from 250 operations in 1979 to nearly 900 in 1992. Approximately 800 of these charter boats are used for sport fishing excursions on Michigan's Great Lakes waters. The charter fishing industry provides the State of Michigan each year with significant economic benefits. For example, 239,000 clients spent an estimated \$21 million in addition to charter fees in 1985, and the total statewide investment by charter boat firms in

the same year was estimated to exceed \$30 million (Mahoney et al. 1986).

The Michigan Legislature in 1992 passed Act 115, Public Acts of 1992. This legislation re-authorized and strengthened the law, first enacted during 1989 (Act 22, Public Acts of 1989), which required the reporting of sport catch and effort by the charter fishing industry. The legislation was supported by both Michigan Charter Boat Association (MCBA), an industry representative, and Michigan

Department of Natural Resources (MDNR). Among other provisions, the new law provides more stringent penalties for charter fishing operators who are delinquent by more than 60 days with their catch reports. Also, the new law requires that all operators maintain on board an up to date daily log of their catch and fishing activity.

The objective of the catch reporting system is to obtain a continuous annual record of fishing effort and the number, type, and location of fish harvested by charter boat anglers in Michigan. These data will aid MDNR's Great Lakes fishery management efforts by providing valuable trend information about charter harvest and catch rates, which reflect the status of fish stocks important to the industry. The data will also allow MCBA to monitor the health and welfare of its industry.

Methods

The Michigan Charter Boat Daily Catch Report form was developed in 1989 by a committee made up of two members each from MDNR and MCBA (Figure 1). Forms and grid maps of the Great Lakes were mailed to 784 known charter operators during March 1992. Charter operators were identified from previous years' lists of reporting operators. Charter operators who used their vessels for fishing were informed that they were required by law to complete the form each time they fished. A form was to be mailed by the tenth of each month to MDNR's Charlevoix Fisheries Station.

The data form requires the following information: an assigned identification number for each charter boat, lake, date fished, port, grid, hours fished, number of resident and nonresident anglers, catch (number) of major species, and number of sea lamprey seen attached to chinook salmon or lake trout. Space was also provided on the form for comments or observations.

Completed data forms returned to Charlevoix Fisheries Station were logged, coded by port fished, and entered on computer. Incomplete forms were logged then returned to

the charter operator with a letter stating why the report was returned.

Each month (June through October), post-card notices were sent to charter operators who had not filed a report for the previous month. Two notices were sent each month, the first after an operator was delinquent for 10 days, and the second after 30 days.

In November 1992, operators who had not filed reports for one or more months during the period May through September were sent letters via certified mail. These letters informed the operator that this would be the last notice he or she would receive. If the recipient did not respond in writing within 14 days of receipt of this notice, his or her name was submitted to MDNR's Law Enforcement Division recommending non-issuance of an inspection certificate for the 1993 season.

Three measures of fishing effort were summarized: angler hours, angler trips, and charter excursions. Angler hours were based upon total hours fished (dock to dock) by each angler. An angler trip was one completed fishing outing by one individual. A charter excursion was one completed boat trip. For example, if a charter operator took four anglers fishing for 6 hours, total fishing effort would be 24 angler hours, 4 angler trips, and 1 charter excursion. Tables summarizing catch and effort for selected ports around the Great Lakes are contained in the appendices.

Data regarding number of sea lamprey observed by charter operators were collected at request of the U.S. Fish and Wildlife Service's (USFWS) Sea Lamprey Control Station at Marquette, Michigan. These data will be used by USFWS as an index of sea lamprey abundance.

Results

Compliance

During the 1992 fishing season, an average of 58% of all charter boat operators complied with the law by submitting their catch reports by the due date, while 76% submitted reports within 30 days of the due date.

Monthly rate of compliance in 1992 was 9% less than in 1991. By the end of the 1992 season, 97% of all charter operators had complied with the law. Final compliance rate for 1992 was the same as 1991 (Rakoczy 1992).

Catch and effort

Charter operators submitted reports on 16,447 charter excursions during April through October, 1992 on lakes Michigan, Huron, Erie, Superior and St. Clair (Tables 1 through 5). The total number of charter excursions in 1992 decreased by 3,492 (-18%) compared to 1991 (Rakoczy 1992). Decreases in the number of charter excursions in 1992 as compared to 1991 occurred on lakes Michigan (-19%), Huron (-27%), Superior (-6%), and St. Clair (-21%). Lake Erie was the only lake in 1992 for which the number of charter excursions increased (+16%) compared to 1991. The distribution of charter fishing effort (excursions) by lake was: 67% Lake Michigan, 15% Lake Huron, 10% Lake Erie, 5% Lake Superior, and 3% Lake St. Clair. The distribution of charter fishing effort by lake in 1992 was very similar to 1991.

A total of 440,406 hours were spent fishing by 71,298 charter anglers in Michigan's waters and tributaries of the Great Lakes. The total number of charter anglers in 1992 decreased by 17,109 (-19%) compared to 1991. Lake Erie was the only lake which had more charter anglers in 1992 than the previous year (+17%). Thirty-two percent of all charter clients were not residents of Michigan. Lake Superior charter operators had the greatest percentage of nonresident clients (54%; Table 4), while Lake St. Clair charter captains had the lowest percentage (2%; Table 5).

A total of 199,000 fish were reported harvested in all lakes. Lake Michigan accounted for 58% of all fish harvested, while lakes Erie and Huron accounted for 27% and 7%, respectively, of the total harvest. The most numerous species in the harvest was yellow perch (68,300) which accounted for 34% of the total harvest. Numbers of other

species harvested were: 39,800 walleye (20%), 33,000 lake trout (17%), 20,400 rainbow trout (10%), 18,500 chinook salmon (9%), 10,800 coho salmon (5%), and 1,500 brown trout (1%). The "other" species category was 4% of the total reported catch. Since other species are not identified on the catch reporting form, the actual composition of this category is unknown.

Numbers of fish harvested in all species categories declined in 1992 compared to 1991, except for walleye. This was due to a decline in fishing effort on most lakes. Total walleye harvest increased by 6,000 fish (+18%) during 1992 compared to 1991. This was due to an increased catch of walleye on Lake Erie (+38%). The greatest changes in the charter catch by species in 1992 compared to 1991 occurred for brown trout (-56%), chinook salmon (-42%), lake trout (-29%), and rainbow trout (-29%). Decreasing harvest by Lake Michigan charter anglers accounted for most of this change, as they harvested 2,000 fewer brown trout, 12,000 fewer chinook salmon, 10,400 fewer lake trout, and 8,100 fewer rainbow trout than 1991.

Catch rates (fish per 100 angler hours) by Lake Michigan charter anglers in 1992 compared to 1991 increased for coho salmon (+21%) (Table 6). Catch rates decreased for chinook salmon (-30%), rainbow trout (-10%), brown trout (-50%), lake trout (-13%), and yellow perch (-14%) in 1992 compared to the previous year. Many Lake Michigan charter captains commented that their fishing success and bookings were down in 1992 as a result of unusually cold weather, especially during the spring months. On Lake Huron, catch rates increased for rainbow (+17%) and brown trout (+250%) compared to 1991; however, the rate of catch for these two species was still relatively minor. Catch rates decreased in Lake Huron for lake trout (-16%) and yellow perch (-15%) in 1992 compared to 1991, while rates for chinook and coho salmon were unchanged. Lake trout are the most important salmonine in the charter catch from Lake Superior. Catch rates for lake trout on Lake Superior have been virtually unchanged during the past three seasons.

Walleyes play an important role in charter fisheries on lakes Erie, Huron, and St. Clair. Catch rates for walleyes by charter clients increased in 1992 on Lake Erie by 25%, but decreased on lakes Huron (-6%) and St. Clair (-39%) compared to 1991 (Table 6). Catch rates for walleye on Lake St. Clair have decreased during each of the past two years. Many Lake St. Clair charter captains have expressed their displeasure with condition of the walleye fishery during 1991-92 in the comments section of their reports.

The greatest catch per charter excursion for most species of salmon and trout occurred at Lake Michigan ports (Table 7). Charter anglers at New Buffalo, Leland, and Ludington had the greatest catch per excursion on the Great Lakes for coho salmon (2.9), chinook salmon (4.9), and rainbow trout (3.8), respectively. Lake Huron charter anglers fishing out of Alpena had the best catch rate (1.5 fish per excursion) for brown trout. The greatest catch rate for lake trout (13.5 per excursion) occurred at Ontonagon, Lake Superior. Lake Michigan charter clients at

South Haven had the greatest catch rate for yellow perch (64.8 per excursion). The best catch per excursion for walleye (20.3) was noted for charter anglers at Monroe, Lake Erie.

As has been the case in previous years (1990-91), numbers of sea lamprey attached to chinook salmon and lake trout, were much higher on Lake Huron than the other Great Lakes (Table 8). Numbers of sea lamprey attached per 100 lake trout harvested from Lake Huron in 1992 was 4.6 as compared to 0.8 for lakes Michigan and Superior. Charter captains also reported 13.6 lamprey per 100 chinook salmon harvested on Lake Huron during 1992 as compared to 0.2 for Lake Michigan and none for Lake Superior.

Acknowledgments

The authors wish to thank the Michigan Charter Boat Association for their support throughout the season. Rhonda Gerlach and Evelyn Davis entered data on computer.



MICHIGAN DEPARTMENT OF NATURAL RESOURCES MICHIGAN CHARTER BOAT DAILY CATCH REPORT

By authority of Act 244, P.A. 1986, as amended and Act 22, P.A. 1989. Submission required.
Failure to comply with the provisions of these acts will prohibit issuance of an Inspection Certificate for the following season.

IDENTIFICATION NO.	LAKE	MONTH	YEAR
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(INSTRUCTIONS ON REVERSE SIDE)

Date	Port Fished	Grid Fished	Hours Fished (Dock to Dock)	No. Anglers		Daily Catch								No. Lamprey seen on			
				Res.	Non Res.	COH	CHS	RBT	BNT	LAT	YEP	WAE	OTH	CHS	LAT		
1																	
2																	
3																	
4																	
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COMMENTS _____

SIGNATURE _____ DATE _____

FR 8803 (Rev. 4/88)

Figure 1.—Michigan charter boat catch report.

Table 1.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for Lake Michigan charter boats, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0337	0.9412	1,473	1,906	721	969	3,902	1,271	107	10,349
Chinook salmon	0.0490	1.3693	82	1,262	460	4,086	7,708	1,348	109	15,055
Rainbow trout	0.0649	1.8147	126	972	2,630	5,094	7,829	2,697	605	19,953
Brown trout	0.0037	0.1040	195	189	86	231	282	154	7	1,144
Lake trout	0.0761	2.1272	2	3,899	3,376	8,947	6,649	503	13	23,389
Yellow perch	0.1436	4.0160	289	4,225	6,983	19,46	11,248	1,943	0	44,156
Walleye	0.0011	0.0317	2	12	88	87	61	42	57	349
Other	0.0010	0.0290	0	25	40	113	93	33	15	319
Lamprey on chinook salmon			0	1	3	6	17	6	0	33
Lamprey on lake trout			0	53	38	51	53	1	0	196
Angler hours			5,942	35,027	43,623	81,88	109,50	27,020	4,528	307,536
Angler trips			937	5,557	6,619	12,85	17,191	4,464	680	48,301
Anglers										
Resident			480	3,071	4,281	8,080	10,701	2,671	326	29,610
Nonresident			457	2,486	2,338	4,773	6,490	1,793	354	18,691
Charter excursions			224	1,270	1,474	2,879	3,892	1,070	186	10,995

Table 2.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for Lake Huron charter boats, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0019	0.0393	6	9	9	19	40	16	0	99
Chinook salmon	0.0639	1.3181	127	329	121	657	1,650	439	0	3,323
Rainbow trout	0.0073	0.1499	40	28	25	87	172	15	11	378
Brown trout	0.0068	0.1404	15	22	52	96	95	62	12	354
Lake trout	0.0661	1.3626	0	242	658	1,733	770	32	0	3,435
Yellow perch	0.0633	1.3038	1	30	340	847	1,189	736	144	3,287
Walleye	0.0667	1.3756	6	196	179	1,222	1,513	352	0	3,468
Other	0.0050	0.1035	2	7	18	113	100	21	0	261
Lamprey on chinook salmon			7	22	0	103	269	50	0	451
Lamprey on lake trout			0	8	35	88	24	2	0	157
Angler hours			1,342	6,143	5,199	14,971	18,806	5,327	181	51,968
Angler trips			219	1,068	919	2,652	3,235	964	31	9,088
Anglers										
Resident			199	995	825	2,240	2,669	825	31	7,784
Nonresident			20	73	94	412	566	139	0	1,304
Charter excursions			65	279	267	722	908	268	12	2,521

Table 3.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for Lake Erie charter boats, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0001	0.0018	3	0	0	0	0	0	0	3
Chinook salmon	0.0001	0.0018	3	0	0	0	0	0	0	3
Rainbow trout	0.0001	0.0024	0	0	3	1	0	0	0	4
Brown trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Lake trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Yellow perch	0.4333	11.2204	0	172	345	103	256	12,921	5,042	18,839
Walleye	0.7846	20.3180	288	7,058	15,852	9,143	1,744	27	2	34,114
Other	0.0281	0.7278	0	460	526	128	47	61	0	1,222
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			669	8,957	19,035	8,974	2,568	2,043	1,234	43,479
Angler trips			132	1,668	3,664	1,778	477	392	225	8,336
Anglers										
Resident			120	1,412	3,097	1,601	460	352	216	7,258
Nonresident			12	256	567	177	17	40	9	1,078
Charter excursions			29	346	715	358	103	86	42	1,679

Table 4.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for Lake Superior charter boats, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0128	0.4172	0	43	142	47	42	33	3	310
Chinook salmon	0.0031	0.1023	0	23	16	22	11	4	0	76
Rainbow trout	0.0014	0.0444	0	1	11	11	7	3	0	33
Brown trout	0.0003	0.0094	0	2	1	0	3	1	0	7
Lake trout	0.2551	8.2988	0	355	1,276	1,999	2,083	432	21	6,166
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0102	0.3311	0	2	1	68	162	13	0	246
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	3	13	18	13	1	0	48
Angler hours			0	1,435	5,138	8,493	7,301	1,681	120	24,167
Angler trips			0	190	667	1,184	1,123	281	18	3,463
Anglers										
Resident			0	136	295	551	469	124	2	1,577
Nonresident			0	54	372	633	654	157	16	1,886
Charter excursions			0	45	134	234	252	74	4	743

Table 5.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for Lake St. Clair and the St. Clair River charter boats, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0001	0.0020	1	0	0	0	0	0	0	1
Chinook salmon	0.0003	0.0079	1	3	0	0	0	0	0	4
Rainbow trout	0.0002	0.0039	0	1	0	0	1	0	0	2
Brown trout	0.0002	0.0039	0	0	0	0	2	0	0	2
Lake trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Yellow perch	0.1509	3.9293	0	1	287	225	737	624	126	2,000
Walleye	0.1248	3.2515	41	163	488	679	175	109	0	1,655
Other	0.4062	10.5796	0	94	1,192	2,020	967	1,087	25	5,385
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			132	936	3,396	4,226	1,913	2,284	369	13,256
Angler trips			29	143	540	653	319	373	53	2,110
Anglers										
Resident			28	143	531	630	307	368	53	2,060
Nonresident			1	0	9	23	12	5	0	50
Charter excursions			10	36	134	150	79	88	12	509

Table 6.—Catch rates (fish per 100 angler hours) by charter anglers for principal species on the Great Lakes during 1990-92.

Species	Michigan			Huron			Erie			St. Clair			Superior		
	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992	1990	1991	1992
Coho salmon	3.9	2.8	3.4	0.2	0.2	0.2							1.2	3.2	1.3
Chinook salmon	7.4	7.0	4.9	6.0	6.4	6.4							0.3	0.4	0.3
Rainbow trout	4.0	7.2	6.5	0.3	0.6	0.7							0.3	0.3	0.1
Brown trout	0.6	0.8	0.4	0.1	0.2	0.7							0.1	0.2	<0.1
Lake trout	8.4	8.7	7.6	9.8	7.9	6.6							28.5	27.9	25.5
Yellow perch	14.1	16.8	14.4	9.2	7.4	6.3	29.4	34.1	43.3	13.8	16.8	15.1			
Walleye				5.1	7.1	6.7	74.5	62.8	78.5	32.4	20.4	12.5			

Table 7.—Maximum catch per excursion (number) of principal species by charter anglers on the Great Lakes, 1992.

Species	Catch per Excursion	Location
Coho salmon	2.9	New Buffalo, Lake Michigan
Chinook salmon	4.9	Leland, Lake Michigan
Rainbow trout	3.8	Ludington, Lake Michigan
Brown trout	1.5	Alpena, Lake Huron
Lake trout	13.5	Ontonagon, Lake Superior
Yellow perch	64.8	South Haven, Lake Michigan
Walleye	20.3	Monroe, Lake Erie

Table 8.—Sea lamprey incidence (lamprey per 100 fish) for chinook salmon and lake trout harvested by the charter fishery in the Michigan waters of the Great Lakes, 1990-92.

Location	Chinook Salmon			Lake Trout		
	1990	1991	1992	1990	1991	1992
Lake Michigan	0.5	0.3	0.2	1.8	1.2	0.8
Lake Huron	18.6	13.9	13.6	6.6	5.7	4.6
Lake Superior	0.0	8.0	0.0	1.8	1.6	0.8

References

- Mahoney, E. M., M. Brunke, and C. Pistis. 1986. 1985 Michigan charter fishing study. Michigan State University, Department of Parks and Recreation Resources, East Lansing.
- Rakoczy, G. P. 1992. Charter boat catch and effort from the Michigan waters of the Great Lakes, 1991. Michigan Department of Natural Resources, Fisheries Technical Report 92-9, Ann Arbor.

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Alan D. Sutton, Graphics
Barbara A. Diana, Word Processor

Appendix 1.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at New Buffalo, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.1081	2.8966	161	160	11	2	2	0	0	336
Chinook salmon	0.0135	0.3621	8	28	3	0	3	0	0	42
Rainbow trout	0.0303	0.8103	15	62	2	10	5	0	0	94
Brown trout	0.0016	0.0431	0	4	1	0	0	0	0	5
Lake trout	0.0766	2.0517	0	32	15	102	77	12	0	238
Yellow perch	0.0789	2.1121	0	0	0	0	114	131	0	245
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	4	0	0	0	0	4
Angler hours			385	1,057	185	452	652	296	80	3,107
Angler trips			72	161	32	64	84	49	21	483
Anglers										
Resident			35	32	3	0	5	0	5	80
Nonresident			37	129	29	64	79	49	16	403
Charter excursions			15	38	10	16	20	12	5	116

Appendix 2.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at St. Joseph, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0681	2.2103	1,024	1,144	293	245	104	62	8	2,880
Chinook salmon	0.0255	0.8281	39	251	132	231	292	133	1	1,079
Rainbow trout	0.0372	1.2087	23	369	368	558	190	61	6	1,575
Brown trout	0.0029	0.0929	31	49	19	15	4	2	1	121
Lake trout	0.0903	2.9309	1	1,409	678	863	809	58	1	3,819
Yellow perch	0.1960	6.3645	0	0	1,263	3,601	2,608	821	0	8,293
Walleye	0.0002	0.0061	0	0	8	0	0	0	0	8
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	1	0	0	0	0	1
Lamprey on lake trout			0	22	2	4	0	0	0	28
Angler hours			2,987	10,916	7,805	9,289	8,559	2,684	73	42,312
Angler trips			473	1,560	1,157	1,387	1,281	396	14	6,268
Anglers										
Resident			215	504	357	404	285	95	7	1,867
Nonresident			258	1,056	800	983	996	301	7	4,401
Charter excursions			103	321	243	288	256	85	7	1,303

Appendix 3.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on the St. Joseph River, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0013	0.0359	0	0	0	0	0	5	3	8
Chinook salmon	0.0141	0.3767	0	0	0	0	6	71	7	84
Rainbow trout	0.1014	2.7040	73	2	41	62	83	89	253	603
Brown trout	0.0030	0.0807	17	0	0	0	0	0	1	18
Lake trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0261	0.6951	0	0	44	78	31	0	2	155
Other	0.0150	0.3991	0	4	25	19	25	2	14	89
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			383	104	477	615	731	1,723	1,911	5,944
Angler trips			51	11	62	78	94	229	240	765
Anglers										
Resident			11	3	12	15	17	47	60	165
Nonresident			40	8	50	63	77	182	180	600
Charter excursions			16	3	20	25	31	62	66	223

Appendix 4.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at South Haven, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0048	0.2345	0	8	4	27	31	2	0	72
Chinook salmon	0.0123	0.6026	2	78	18	41	29	17	0	185
Rainbow trout	0.0084	0.4104	0	39	15	52	11	9	0	126
Brown trout	0.0006	0.0293	0	0	1	4	4	0	0	9
Lake trout	0.0350	1.7134	0	158	102	117	134	15	0	526
Yellow perch	1.3257	64.8404	250	867	4,113	8,428	5,372	876	0	19,906
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	2	0	0	0	0	2
Angler hours			54	1,807	3,164	4,450	4,615	926	0	15,015
Angler trips			12	327	463	859	918	178	0	2,757
Anglers										
Resident			6	266	430	762	823	107	0	2,394
Nonresident			6	61	33	97	95	71	0	363
Charter excursions			2	53	54	88	89	21	0	307

Appendix 5.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Saugatuck, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0201	0.6070	14	41	14	102	112	109	8	400
Chinook salmon	0.0391	1.1791	18	304	54	121	214	65	1	777
Rainbow trout	0.0506	1.5250	3	205	61	149	169	365	53	1,005
Brown trout	0.0060	0.1806	37	29	10	18	21	4	0	119
Lake trout	0.1354	4.0819	0	707	320	710	868	81	4	2,690
Yellow perch	0.5692	17.1624	0	0	723	7,419	3,058	110	0	11,310
Walleye	0.0017	0.0501	2	0	29	0	2	0	0	33
Other	0.0010	0.0288	0	2	9	7	1	0	0	19
Lamprey on chinook salmon			0	1	0	0	0	0	0	1
Lamprey on lake trout			0	17	3	8	14	0	0	42
Angler hours			290	3,684	2,614	4,943	6,238	1,893	209	19,870
Angler trips			48	564	383	727	816	268	38	2,844
Anglers										
Resident			37	355	244	424	442	127	18	1,647
Nonresident			11	209	139	303	374	141	20	1,197
Charter excursions			12	129	95	163	186	66	8	659

Appendix 6.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Holland, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0219	0.5284	0	9	8	35	63	43	0	158
Chinook salmon	0.0319	0.7726	0	35	11	48	118	19	0	231
Rainbow trout	0.0360	0.8696	0	6	11	63	90	77	13	260
Brown trout	0.0025	0.0602	0	2	2	8	6	0	0	18
Lake trout	0.1253	3.0301	0	133	120	293	337	23	0	906
Yellow perch	0.0017	0.0401	0	0	0	12	0	0	0	12
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	4	0	0	2	0	0	6
Angler hours			0	942	1,036	1,812	2,725	658	58	7,231
Angler trips			0	157	172	292	433	119	11	1,184
Anglers										
Resident			0	115	102	189	184	76	0	666
Nonresident			0	42	70	103	249	43	11	518
Charter excursions			0	44	41	73	108	30	3	299

Appendix 7.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Grand Haven, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0216	0.5478	1	23	9	80	391	175	9	688
Chinook salmon	0.0522	1.3232	2	465	87	244	713	141	10	1,662
Rainbow trout	0.0380	0.9642	2	55	73	259	477	303	42	1,211
Brown trout	0.0038	0.0971	0	38	14	29	33	5	3	122
Lake trout	0.0701	1.7763	0	348	296	791	772	24	0	2,231
Yellow perch	0.0248	0.6298	0	2	788	0	1	0	0	791
Walleye	0.0001	0.0032	0	0	0	0	3	1	0	4
Other	0.0005	0.0127	0	0	0	0	5	11	0	16
Lamprey on chinook salmon			0	0	0	0	1	0	0	1
Lamprey on lake trout			0	1	2	1	0	0	0	4
Angler hours			96	6,352	4,800	6,315	10,660	3,281	330	31,834
Angler trips			16	1,059	804	1,108	1,804	589	64	5,444
Anglers										
Resident			16	835	641	833	1,359	442	45	4,171
Nonresident			0	224	163	275	445	147	19	1,273
Charter excursions			4	258	179	252	408	139	16	1,256

Appendix 8.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Muskegon, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0149	0.3630	0	5	2	11	60	19	1	98
Chinook salmon	0.0378	0.9222	0	38	23	18	137	25	8	249
Rainbow trout	0.0479	1.1667	0	8	10	61	138	92	6	315
Brown trout	0.0033	0.0815	1	1	10	2	3	5	0	22
Lake trout	0.0343	0.8370	0	56	49	39	72	4	6	226
Yellow perch	0.0542	1.3222	39	227	0	0	91	0	0	357
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0009	0.0222	0	1	0	0	4	1	0	6
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	1	0	0	0	0	1
Angler hours			60	1,036	1,285	968	2,253	833	147	6,582
Angler trips			10	166	226	168	376	143	32	1,121
Anglers										
Resident			10	96	181	146	261	94	16	804
Nonresident			0	70	45	22	115	49	16	317
Charter excursions			4	43	48	39	94	35	7	270

Appendix 9.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Whitehall-Montague, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0221	0.6216	0	0	1	39	56	16	3	115
Chinook salmon	0.0331	0.9297	0	1	1	48	113	6	3	172
Rainbow trout	0.0913	2.5676	0	1	3	190	196	83	2	475
Brown trout	0.0027	0.0757	0	0	0	2	12	0	0	14
Lake trout	0.0300	0.8432	0	8	11	75	62	0	0	156
Yellow perch	0.0015	0.0432	0	0	0	8	0	0	0	8
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0004	0.0108	0	0	0	0	0	2	0	2
Lamprey on chinook salmon			0	0	0	1	0	0	0	1
Lamprey on lake trout			0	0	0	0	4	0	0	4
Angler hours			28	192	257	2,147	1,988	540	51	5,202
Angler trips			8	34	43	254	297	86	9	731
Anglers										
Resident			8	22	37	147	129	57	4	404
Nonresident			0	12	6	107	168	29	5	327
Charter excursions			3	9	13	63	74	20	3	185

Appendix 10.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Pentwater, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0338	0.8853	0	0	2	34	181	84	0	301
Chinook salmon	0.0453	1.1853	0	23	6	176	173	25	0	403
Rainbow trout	0.1193	3.1235	0	1	27	328	559	147	0	1,062
Brown trout	0.0031	0.0824	0	0	1	18	9	0	0	28
Lake trout	0.0543	1.4206	0	38	28	292	125	0	0	483
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	1	0	0	1
Angler hours			0	526	565	3,914	3,355	540	0	8,900
Angler trips			0	83	89	577	509	87	0	1,345
Anglers										
Resident			0	59	57	375	240	54	0	785
Nonresident			0	24	32	202	269	33	0	560
Charter excursions			0	21	26	141	130	22	0	340

Appendix 11.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Ludington, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0402	1.1952	0	1	27	93	1,391	364	28	1,904
Chinook salmon	0.0679	2.0195	0	20	63	509	2,266	316	43	3,217
Rainbow trout	0.1291	3.8399	0	31	476	1,212	3,430	884	84	6,117
Brown trout	0.0037	0.1099	1	8	7	54	86	17	2	175
Lake trout	0.0410	1.2191	0	24	175	971	760	11	1	1,942
Yellow perch	0.0658	1.9592	0	3,025	96	0	0	0	0	3,121
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0003	0.0075	0	6	0	2	2	2	0	12
Lamprey on chinook salmon			0	0	0	1	8	1	0	10
Lamprey on lake trout			0	0	3	11	2	0	0	16
Angler hours			66	2,163	4,259	11,044	24,788	4,362	719	47,400
Angler trips			9	295	561	1,574	3,563	623	82	6,707
Anglers										
Resident			9	230	437	1,188	2,431	411	68	4,774
Nonresident			0	65	124	386	1,132	212	14	1,933
Charter excursions			4	75	135	372	836	153	18	1,593

Appendix 12.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Manistee, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0204	0.5899	0	0	13	52	270	67	8	410
Chinook salmon	0.0350	1.0129	0	2	25	169	385	112	11	704
Rainbow trout	0.0911	2.6388	4	0	572	407	605	224	22	1,834
Brown trout	0.0084	0.2432	102	11	8	19	23	6	0	169
Lake trout	0.0418	1.2101	0	1	200	443	195	2	0	841
Yellow perch	0.0053	0.1525	0	104	0	0	2	0	0	106
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0001	0.0029	0	0	0	1	1	0	0	2
Lamprey on chinook salmon			0	0	0	1	3	0	0	4
Lamprey on lake trout			0	0	6	3	2	0	0	11
Angler hours			757	467	4,470	5,859	6,882	1,540	167	20,140
Angler trips			105	73	543	777	976	233	27	2,734
Anglers										
Resident			92	69	475	642	785	206	25	2,294
Nonresident			13	4	68	135	191	27	2	440
Charter excursions			30	21	122	202	252	61	7	695

Appendix 13.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Onekama, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0172	0.5166	0	0	4	17	69	19	0	109
Chinook salmon	0.0466	1.3981	0	0	17	79	170	29	0	295
Rainbow trout	0.1107	3.3175	0	0	305	154	191	50	0	700
Brown trout	0.0022	0.0664	3	3	1	4	2	1	0	14
Lake trout	0.0495	1.4834	0	5	105	148	55	0	0	313
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	2	0	0	0	0	2
Lamprey on lake trout			0	0	1	0	0	0	0	1
Angler hours			30	169	1,865	1,899	2,047	315	0	6,325
Angler trips			6	26	233	245	287	54	0	851
Anglers										
Resident			5	20	193	174	198	41	0	631
Nonresident			1	6	40	71	89	13	0	220
Charter excursions			2	7	55	61	71	15	0	211

Appendix 14.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Frankfort-Elberta, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0475	1.3112	0	0	4	24	1,034	281	39	1,382
Chinook salmon	0.0309	0.8539	0	1	8	274	535	63	19	900
Rainbow trout	0.0560	1.5446	0	2	386	355	593	204	88	1,628
Brown trout	0.0021	0.0569	0	3	8	24	23	2	0	60
Lake trout	0.0733	2.0228	1	225	153	1,405	346	1	1	2,132
Yellow perch	<0.0001	0.0009	0	0	0	0	1	0	0	1
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0004	0.0114	0	4	1	5	2	0	0	12
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	3	6	13	2	0	0	24
Angler hours			187	1,554	3,947	8,569	12,021	2,383	429	29,089
Angler trips			28	249	578	1,276	1,837	412	73	4,453
Anglers										
Resident			28	198	518	1,055	1,413	364	46	3,622
Nonresident			0	51	60	221	424	48	27	831
Charter excursions			5	61	138	298	433	100	19	1,054

Appendix 15.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Leland, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0050	0.1326	0	0	0	53	51	1	0	105
Chinook salmon	0.1843	4.9141	0	3	0	1,805	2,012	72	0	3,892
Rainbow trout	0.1050	2.7992	0	0	225	960	939	93	0	2,217
Brown trout	0.0023	0.0606	0	0	3	13	30	2	0	48
Lake trout	0.0429	1.1439	0	242	238	298	122	6	0	906
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0006	0.0152	0	1	0	6	5	0	0	12
Lamprey on chinook salmon			0	0	0	3	1	0	0	4
Lamprey on lake trout			0	6	4	2	0	0	0	12
Angler hours			0	551	1,674	8,412	9,685	792	0	21,114
Angler trips			0	121	294	1,371	1,525	134	0	3,445
Anglers										
Resident			0	85	215	898	1,108	87	0	2,393
Nonresident			0	36	79	473	417	47	0	1,052
Charter excursions			0	29	70	317	343	33	0	792

Appendix 16.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Traverse City, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0004	0.0068	0	0	0	0	1	1	0	2
Chinook salmon	0.0460	0.7065	12	8	1	8	64	108	6	207
Rainbow trout	0.0044	0.0683	0	1	0	11	5	3	0	20
Brown trout	0.0098	0.1502	0	36	0	5	3	0	0	44
Lake trout	0.1253	1.9249	0	117	100	224	118	5	0	564
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0064	0.0990	0	0	3	8	12	6	0	29
Lamprey on chinook salmon			0	0	0	0	0	3	0	3
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			16	353	419	1,096	1,390	1,200	29	4,503
Angler trips			4	87	103	236	320	271	7	1,028
Anglers										
Resident			4	49	94	189	251	170	3	760
Nonresident			0	38	9	47	69	101	4	268
Charter excursions			1	26	29	68	97	69	3	293

Appendix 17.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Acme, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0004	0.0070	0	0	0	0	0	2	0	2
Chinook salmon	0.0446	0.7003	0	0	1	25	99	76	0	201
Rainbow trout	0.0035	0.0557	0	0	0	9	7	0	0	16
Brown trout	0.0024	0.0383	1	0	0	1	8	1	0	11
Lake trout	0.1248	1.9617	0	189	146	126	100	2	0	563
Yellow perch	0.0011	0.0174	0	0	0	0	0	5	0	5
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0124	0.1951	0	0	0	24	28	4	0	56
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	1	0	0	1
Angler hours			14	442	704	972	1,822	556	0	4,510
Angler trips			4	116	185	239	458	146	0	1,148
Anglers										
Resident			4	66	110	141	319	102	0	742
Nonresident			0	50	75	98	139	44	0	406
Charter excursions			2	26	43	62	116	38	0	287

Appendix 18.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Charlevoix, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0000	0.0000	0	0	0	0	0	0	0	0
Chinook salmon	0.0218	0.4532	0	0	0	11	89	21	0	121
Rainbow trout	0.0043	0.0899	0	2	0	11	11	0	0	24
Brown trout	0.0022	0.0449	0	3	0	0	5	4	0	12
Lake trout	0.1258	2.6180	0	4	100	399	179	17	0	699
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0002	0.0037	0	0	0	0	1	0	0	1
Lamprey on chinook salmon			0	0	0	0	3	0	0	3
Lamprey on lake trout			0	0	0	1	1	0	0	2
Angler hours			0	221	794	1,961	2,094	487	0	5,556
Angler trips			0	51	163	414	430	113	0	1,171
Anglers										
Resident			0	35	81	250	225	76	0	667
Nonresident			0	16	82	164	205	37	0	504
Charter excursions			0	10	36	91	99	31	0	267

Appendix 19.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Harbor Springs-Petoskey, Lake Michigan, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0000	0.0000	0	0	0	0	0	0	0	0
Chinook salmon	0.0121	0.1739	0	0	0	4	3	1	0	8
Rainbow trout	0.0030	0.0435	0	0	0	1	1	0	0	2
Brown trout	0.0015	0.0217	0	0	0	0	0	1	0	1
Lake trout	0.2610	3.7391	0	0	20	98	47	7	0	172
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0015	0.0217	0	0	0	1	0	0	0	1
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	1	2	3	0	0	6
Angler hours			0	0	167	256	188	48	0	659
Angler trips			0	0	41	63	47	12	0	163
Anglers										
Resident			0	0	26	22	14	0	0	62
Nonresident			0	0	15	41	33	12	0	101
Charter excursions			0	0	12	17	13	4	0	46

Appendix 20.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Rogers City, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0041	0.0796	0	0	0	0	6	3	0	9
Chinook salmon	0.1007	1.9735	0	0	0	65	117	41	0	223
Rainbow trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Brown trout	0.0009	0.0177	0	0	0	0	2	0	0	2
Lake trout	0.0194	0.3805	0	0	12	23	8	0	0	43
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0005	0.0088	0	0	0	0	1	0	0	1
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	27	27	5	0	59
Lamprey on lake trout			0	0	0	1	0	0	0	1
Angler hours			0	0	55	510	1,129	520	0	2,214
Angler trips			0	0	11	112	192	104	0	419
Anglers										
Resident			0	0	7	57	103	40	0	207
Nonresident			0	0	4	55	89	64	0	212
Charter excursions			0	0	4	30	52	27	0	113

Appendix 21.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Rockport, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0050	0.0889	0	0	0	1	11	0	0	12
Chinook salmon	0.1963	3.5037	0	0	0	95	378	0	0	473
Rainbow trout	0.0079	0.1407	0	0	0	4	15	0	0	19
Brown trout	0.0004	0.0074	0	0	0	1	0	0	0	1
Lake trout	0.0444	0.7926	0	0	0	25	82	0	0	107
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	25	79	0	0	104
Lamprey on lake trout			0	0	0	2	6	0	0	8
Angler hours			0	0	10	717	1,683	0	0	2,410
Angler trips			0	0	2	148	275	0	0	425
Anglers										
Resident			0	0	1	107	225	0	0	333
Nonresident			0	0	1	41	50	0	0	92
Charter excursions			0	0	1	47	87	0	0	135

Appendix 22.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Alpena, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0045	0.0944	0	0	1	7	9	0	0	17
Chinook salmon	0.1190	2.5056	0	0	3	211	182	55	0	451
Rainbow trout	0.0082	0.1722	0	0	1	13	14	3	0	31
Brown trout	0.0720	1.5167	11	7	48	82	59	54	12	273
Lake trout	0.0203	0.4278	0	2	13	49	13	0	0	77
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0810	1.7056	6	176	122	1	1	1	0	307
Other	0.0005	0.0111	0	0	0	1	1	0	0	2
Lamprey on chinook salmon			0	0	0	34	28	0	0	62
Lamprey on lake trout			0	1	2	3	0	0	0	6
Angler hours			60	323	464	1,451	1,144	330	20	3,791
Angler trips			12	74	86	226	171	64	4	637
Anglers										
Resident			4	49	51	176	161	62	4	507
Nonresident			8	25	35	50	10	2	0	130
Charter excursions			2	22	24	62	50	18	2	180

Appendix 23.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Harrisville, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0050	0.0959	0	0	0	1	3	10	0	14
Chinook salmon	0.0532	1.0205	0	0	6	40	88	15	0	149
Rainbow trout	0.0079	0.1507	0	0	1	12	8	1	0	22
Brown trout	0.0018	0.0342	0	0	0	4	1	0	0	5
Lake trout	0.0768	1.4726	0	0	12	136	61	6	0	215
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0025	0.0479	0	0	1	4	2	0	0	7
Lamprey on chinook salmon			0	0	0	2	5	0	0	7
Lamprey on lake trout			0	0	3	3	1	1	0	8
Angler hours			0	0	163	1,314	1,084	240	0	2,801
Angler trips			0	0	28	241	198	45	0	512
Anglers										
Resident			0	0	27	220	180	43	0	470
Nonresident			0	0	1	21	18	2	0	42
Charter excursions			0	0	10	65	57	14	0	146

Appendix 24.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Oscoda, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0006	0.0128	0	0	0	3	3	0	0	6
Chinook salmon	0.0864	1.8462	0	16	37	92	530	189	0	864
Rainbow trout	0.0152	0.3248	0	7	9	37	93	6	0	152
Brown trout	0.0044	0.0940	0	10	4	7	20	3	0	44
Lake trout	0.0618	1.3205	0	7	150	387	72	2	0	618
Yellow perch	0.0003	0.0064	0	0	0	0	3	0	0	3
Walleye	0.0013	0.0278	0	0	0	1	12	0	0	13
Other	0.0025	0.0534	0	0	7	7	8	3	0	25
Lamprey on chinook salmon			0	1	0	4	75	30	0	110
Lamprey on lake trout			0	0	3	35	3	0	0	41
Angler hours			0	273	1,30	2,32	4,765	1,338	0	10,005
Angler trips			0	49	217	393	763	229	0	1,651
Anglers										
Resident			0	47	206	305	611	200	0	1,369
Nonresident			0	2	11	88	152	29	0	282
Charter excursions			0	16	57	112	210	73	0	468

Appendix 25.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Saginaw Bay (Port Austin to Tawas), Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0001	0.0021	0	1	0	0	0	0	0	1
Chinook salmon	0.0084	0.1934	0	40	16	18	19	1	0	94
Rainbow trout	0.0013	0.0309	0	1	7	5	1	1	0	15
Brown trout	0.0002	0.0041	0	0	0	0	0	2	0	2
Lake trout	0.0167	0.3848	0	23	49	98	17	0	0	187
Yellow perch	0.2818	6.4794	1	30	340	784	1,121	729	144	3,149
Walleye	0.2541	5.8436	0	11	40	1,206	1,245	338	0	2,840
Other	0.0153	0.3519	2	2	8	98	45	16	0	171
Lamprey on chinook salmon			0	10	0	0	4	0	0	14
Lamprey on lake trout			0	0	1	1	0	0	0	2
Angler hours			41	603	1,081	4,576	3,581	1,22	70	11,176
Angler trips			9	106	189	756	609	208	11	1,888
Anglers										
Resident			3	101	179	698	533	201	11	1,726
Nonresident			6	5	10	58	76	7	0	162
Charter excursions			2	26	53	187	161	53	4	486

Appendix 26.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Harbor Beach, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0027	0.0573	6	2	0	4	1	2	0	15
Chinook salmon	0.0579	1.2099	2	39	10	13	132	121	0	317
Rainbow trout	0.0071	0.1489	0	8	1	3	25	2	0	39
Brown trout	0.0035	0.0725	1	2	0	1	12	3	0	19
Lake trout	0.0809	1.6908	0	6	30	175	230	2	0	443
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0181	0.3779	0	0	0	3	84	12	0	99
Other	0.0013	0.0267	0	2	2	0	2	1	0	7
Lamprey on chinook salmon			0	1	0	3	19	14	0	37
Lamprey on lake trout			0	0	0	7	5	0	0	12
Angler hours			167	1,126	329	591	2,094	1,155	12	5,474
Angler trips			28	190	56	110	366	205	3	958
Anglers										
Resident			23	163	54	92	330	190	3	855
Nonresident			5	27	2	18	36	15	0	103
Charter excursions			8	49	16	35	98	55	1	262

Appendix 27.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Port Sanilac, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0014	0.0294	0	3	1	0	0	0	0	4
Chinook salmon	0.0603	1.2500	39	107	5	4	2	13	0	170
Rainbow trout	0.0057	0.1176	1	9	4	1	1	0	0	16
Brown trout	0.0007	0.0147	0	2	0	0	0	0	0	2
Lake trout	0.0025	0.0515	0	0	0	0	7	0	0	7
Yellow perch	0.0404	0.8382	0	0	0	60	47	7	0	114
Walleye	0.0039	0.0809	0	1	0	0	10	0	0	11
Other	0.0011	0.0221	0	1	0	1	0	1	0	3
Lamprey on chinook salmon			5	7	0	0	0	0	0	12
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			317	1,630	149	274	260	167	25	2,820
Angler trips			52	286	26	58	51	35	5	513
Anglers										
Resident			52	280	24	56	50	33	5	500
Nonresident			0	6	2	2	1	2	0	13
Charter excursions			13	70	9	17	17	9	1	136

Appendix 28.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Lexington, Lake Huron, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0034	0.0784	0	2	2	0	0	0	0	4
Chinook salmon	0.1062	2.4706	86	39	1	0	0	0	0	126
Rainbow trout	0.0008	0.0196	0	1	0	0	0	0	0	1
Brown trout	0.0034	0.0784	3	1	0	0	0	0	0	4
Lake trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Yellow perch	0.0025	0.0588	0	0	0	3	0	0	0	3
Walleye	0.0008	0.0196	0	0	0	0	1	0	0	1
Other	0.0034	0.0784	0	1	0	2	1	0	0	4
Lamprey on chinook salmon			2	1	0	0	0	0	0	3
Lamprey on lake trout			0	0	0	0	0	0	0	0
Angler hours			527	627	8	15	9	0	0	1,186
Angler trips			86	94	2	3	3	0	0	188
Anglers										
Resident			85	88	1	3	3	0	0	180
Nonresident			1	6	1	0	0	0	0	8
Charter excursions			23	25	1	1	1	0	0	51

Appendix 29.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Black River Harbor, Lake Superior, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0388	1.5877	0	6	125	27	14	8	1	181
Chinook salmon	0.0017	0.0702	0	3	0	1	2	2	0	8
Rainbow trout	0.0024	0.0965	0	0	9	2	0	0	0	11
Brown trout	0.0004	0.0175	0	0	1	0	1	0	0	2
Lake trout	0.2161	8.8333	0	18	389	315	233	41	11	1,007
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0305	1.2456	0	0	1	32	109	0	0	142
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	6	6	4	0	0	16
Angler hours			0	208	1,899	1,450	857	239	8	4,660
Angler trips			0	22	241	207	118	45	4	637
Anglers										
Resident			0	18	58	83	36	25	2	222
Nonresident			0	4	183	124	82	20	2	415
Charter excursions			0	4	43	35	21	10	1	114

Appendix 30.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Ontonagon, Lake Superior, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0117	0.3571	0	9	10	4	2	0	0	25
Chinook salmon	0.0051	0.1571	0	2	4	2	3	0	0	11
Rainbow trout	0.0014	0.0429	0	1	1	0	1	0	0	3
Brown trout	0.0014	0.0429	0	2	0	0	1	0	0	3
Lake trout	0.4424	13.5286	0	96	213	255	379	4	0	947
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0000	0.0000	0	0	0	0	0	0	0	0
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	3	0	3	0	0	6
Angler hours			0	259	540	540	790	12	0	2,141
Angler trips			0	37	78	96	141	4	0	356
Anglers										
Resident			0	27	39	31	69	0	0	166
Nonresident			0	10	39	65	72	4	0	190
Charter excursions			0	8	16	21	24	1	0	70

Appendix 31.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Marquette, Lake Superior, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0070	0.2486	0	19	2	1	6	16	0	44
Chinook salmon	0.0027	0.0960	0	8	2	0	6	1	0	17
Rainbow trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Brown trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Lake trout	0.3105	11.0734	0	181	545	660	445	129	0	1,960
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0003	0.0113	0	2	0	0	0	0	0	2
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	2	3	4	1	0	0	10
Angler hours			0	558	1,767	2,386	1,267	335	0	6,313
Angler trips			0	74	205	273	189	64	0	805
Anglers										
Resident			0	61	145	162	132	55	0	555
Nonresident			0	13	60	111	57	9	0	250
Charter excursions			0	21	39	48	48	21	0	177

Appendix 32.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats in the vicinity of Isle Royale National Park, Lake Superior, 1992.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0033	0.1016	0	0	3	9	4	1	2	19
Chinook salmon	0.0000	0.0000	0	0	0	0	0	0	0	0
Rainbow trout	0.0032	0.0963	0	0	1	8	6	3	0	18
Brown trout	0.0000	0.0000	0	0	0	0	0	0	0	0
Lake trout	0.1844	5.6310	0	17	49	305	544	128	10	1,053
Yellow perch	0.0000	0.0000	0	0	0	0	0	0	0	0
Walleye	0.0000	0.0000	0	0	0	0	0	0	0	0
Other	0.0004	0.0107	0	0	0	0	1	1	0	2
Lamprey on chinook salmon			0	0	0	0	0	0	0	0
Lamprey on lake trout			0	0	0	0	1	0	0	1
Angler hours			0	148	441	1,799	2,479	731	112	5,710
Angler trips			0	23	68	313	397	100	14	915
Anglers										
Resident			0	8	10	62	43	2	0	125
Nonresident			0	15	58	251	354	98	14	790
Charter excursions			0	5	15	60	83	21	3	187