

GREAT LAKES FISHERY COMMISSION

1980 Project Completion Report¹

The International Great Lakes Sport Fishery of 1980

by:

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REVIEW DRAFT

THE INTERNATIONAL GREAT LAKES SPORT FISHERY OF 1980

by

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SPECIAL STATISTICAL REPORT

Great Lakes Fishery Commission
1451 Green Road
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The data incorporated in this report were collected and compiled by the U.S. and Canadian 1980 survey teams as a service of the respective agencies. They also designed the survey questionnaires such that the Great Lakes statistics could be separated from others. Dr. John Charbonneau, Division of Program Plans, U.S. Fish and Wildlife Service, Washington designed the special features of the U.S. questionnaire, conducted the analysis, wrote the U.S. Great Lakes report and otherwise supervised the U.S. survey operation. Kieth Brickley, Chief-Surveys Group, Economic Policy Branch, Department of Fisheries and Oceans, Ottawa designed the special features of the Canadian questionnaire and coordinated the survey and analysis. Nilam Bedi, Fisheries Branch, Ontario Ministry of Natural Resources, Toronto supervised the Ontario portion on the Canadian survey and analysis. The Canadian Great Lakes data were analyzed and reported by Paul Clifford of Toronto. Many others were also involved in collecting and processing the data in both countries.

The Great Lakes Fishery Commission and Carlos M. Fetterolf, Jr., Executive Secretary to the Commission, requested that both government agencies provide separate Great Lakes statistics and coordinate their surveys to provide comparable results. Daniel R. Talhelm designed the results desired, with assistance from Fetterolf, Charbonneau, Brickley, Bedi, Gale C. Jansen, Fisheries Division, Michigan Department of Natural Resources, Lansing, Randy Eshenroder, Senior Scientist, Great Lakes Fishery Commission secretariat and Gary Eck, Great Lakes Fishery Laboratory, U.S. Fish and Wildlife Service, Ann Arbor. Talhelm compiled the statistics from the two survey teams and authored this report. Portions of the text are based on the Charbonneau and Clifford reports.

The Great Lakes Fishery Commission sponsored this report.

HIGHLIGHTS

Angling for Great Lakes fish in 1980

PARTICIPATION	Total anglers	4,165,000
	Canadian	1,023,000
	U.S.	3,142,000
	Total angler days	54,930,000
	Canadian	14,397,000
	U.S.	40,533,000

EXPENDITURES IN 1980	Total trip expenditures	\$766,188,000
	Canadian	\$124,968,000
	U.S.	\$641,220,000
	Total long term outlays	\$997,164,000
	Canadian	\$205,333,000
	U.S.	\$791,831,000
	Total trip + long term	\$1,763,351,000
	Canadian	\$330,300,000
	U.S.	\$1,433,051,000

EXPENDITURES PER DAY FISHED	Trip expenditures per angler day	\$14
	Canadian	\$9
	U.S.	\$16
	Long term outlays per angler day	\$18
	Canadian	\$14
	U.S.	\$20
	Trip + long term per angler day	\$32
	Canadian	\$23
	U.S.	\$35

ANGLING EFFORT (DAYS FISHED) BY LAKE	Lake Superior	1,761,000
	Lake Huron	11,900,000
	Lake Michigan	14,380,000
	Lake Erie	19,120,000
	Lake Ontario	9,596,000

TRIP EXPENDITURES BY LAKE	Lake Superior	\$35,625,000
	Lake Huron	\$155,447,000
	Lake Michigan	\$233,438,000
	Lake Erie	\$220,692,000
	Lake Ontario	\$107,776,000

EFFORT (DAYS FISHED) FOR SELECTED SPECIES	Perch	19,671,000
	Walleye/Sauger	15,166,000
	Bass	12,270,000
	Salmon/Steelhead	10,303,000
	Panfish	8,543,000
	Other Trout	7,368,000
	Lake Trout	7,071,000
	Catfish/Bullhead	7,038,000

INTRODUCTION

This report presents the results of the first direct estimates of angling effort and expenditures for angling for Great Lakes fish over the entire Great Lakes region. It is based on data collected in the U.S. 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation and the Canadian federal-provincial 1980 Survey of Sport Fishing in Ontario.

The Great Lakes provide an outstanding fishery. Four million anglers spent well over a billion dollars in 1980 for fishing for Great Lakes fish. Thus the fishery is not only an important source of recreation for millions of anglers in the region, but it is also the source of billions of dollars worth of economic activity.

This information about the entire Great Lakes fishery provides a new perspective. We can more easily see the significance of the overall sport fishery, and understand the contributions of the various lakes, management jurisdictions and fish species to the whole. While sport fishing is only one of several important uses of the fishery--commercial and ecological uses are others--these estimates have been awaited by the management agencies and others as an aid in better planning for future use of the resource.

The various jurisdictions have for years surveyed the fishery with their own, differing survey techniques in differing base years. The fact that it was not until 1984 that relatively consistent overall estimates became available points to one of the lesser difficulties in managing a resource that is divided between two countries, eight states, one province and thousands of local governments. The two surveys combined here differ mainly in that the Canadian team surveyed anglers by mail, whereas the U.S. team surveyed anglers by personal interview.

Because this was a first attempt, several difficulties were encountered that may be avoided in the future. Although both the U.S. and Canadian survey teams designed the 1980 surveys so Great Lakes angling could be separated from other kinds of angling, the task proved more difficult than expected. In the U.S. survey, expenditures and effort were sometimes inaccurately divided between lakes, whereas in the Canadian survey, stream angling for migrating Great Lakes fish was difficult to separate from stream angling for resident fish. To the extent possible, only angling for Great Lakes fish was included. In both surveys long term expenditures were overcounted because long term expenditures for Great Lakes angling purposes could not be separated from similar expenditures for other freshwater angling purposes. In addition, both survey teams had to write special computer programs to analyze Great Lakes data and to correct for the difficulties encountered. Overall, several unexpected delays occurred.

Data Bases

The U.S. study was conducted in two stages: an initial screening of households to identify participants, and a followup personal interview with selected households to collect detailed data about the household's angling and other wildlife-related recreation. In the Great Lakes states, over 24,500 interviews were conducted in the screening phase of the survey, and over 6,000 participants were interviewed in the followup survey. In the latter, 1,454 Great Lakes anglers were interviewed. Non-residents of the U.S. were not

included in this survey. Estimates include data for persons aged 16 and over only. Appendix C contains a more detailed explanation.

In Canada, randomly selected Ontario residents and randomly selected holders of Ontario non-resident fishing licenses were surveyed by mail. They were asked about household angling and expenditures in Ontario. A total of 3,078 Ontario resident and 1,395 Ontario non-resident respondents fished in the Great Lakes. Participation estimates include data for persons aged 17 and over only, whereas expenditure estimates include total household expenditures. Appendix B contains a more detailed explanation.

Organization of this Report

The statistical portion of this report is divided into three sections: (A) aggregate statistics, (B) lake statistics by jurisdiction fished and (C) lake statistics by angler origins and species sought. The aggregate statistics summarize the entire Great Lakes sport fishery, as well as the breakdown between the U.S. and Canadian portions. Section B presents statistics for each individual lake, subdivided by the contributions of the various jurisdictions on the lake. Section C describes for each lake the origins of anglers and the fish species sought by anglers. Explanatory notes, definitions, statistical procedures and statistical error terms are presented in the Appendix.

STATISTICAL TABLES

A. AGGREGATE STATISTICS

TABLE A1. EXPENDITURES AND LONG TERM OUTLAYS FOR ANGLING FOR GREAT LAKES FISH IN 1980¹ (thousands of dollars)

Item	CANADA			U. S.	AGGREGATE
	In Ontario by residents	Non- res.	Canadian Total	In U.S. by residents	
<u>TRIP EXPENSES</u>					
1. Lodging	9,882	7,311	17,193	31,110	48,304
2. Food	20,456	8,260	28,716	171,497	200,213
3. Supplies ²	13,243	1,522	14,765	168,981	183,746
4. Bait ₃	4,122	1,264	5,384	9,145	14,529
5. Fees ⁴	7,194	3,088	10,282	16,800	27,082
6. Boat use	15,721	2,659	18,380	96,074	114,454
7. Transport.	23,029	5,555	28,584	138,779	167,363
8. Other ⁵	933	731	1,664	8,833	10,497
Subtotal	94,579	30,389	124,968	641,220	766,188
<u>LONG TERM OUTLAYS</u>					
1. Boat & acc. ⁶	99,611	607	100,218	323,890	424,108
2. Vehicles	33,886	0	33,886	401,800	435,686
3. Camping equip.	21,380	580	21,960	31,701	53,661
4. Other	45,766	3,503	49,269	34,440	83,709
Subtotal	200,643	4,690	205,333	791,831	997,164
TOTAL	295,222	35,078	330,300	1,433,051	1,763,351

¹The Canadian survey estimated Great Lakes trip expenditures by pro-rating each household's total trip expenditures: Great Lakes trip expenditures equal total trip expenditures times the ratio of Great Lakes angling days to total provincial angling days. The U.S. survey specifically identified Great Lakes expenditures for travel, lodging, food, and fees. All other Great Lakes expenditures were counted only as part of the individual's freshwater fishing all expenditures and long term outlays for freshwater fishing were counted for all anglers who reported at least one occasion of fishing for Great Lakes fish. Canadian long term outlays were treated similarly: all long term outlays in Ontario were counted for households for which one or more anglers fished in the Ontario Great Lakes. Therefore, U.S. and Canadian long term outlays reported here are not solely attributable to Great Lakes angling.

²Rods, reels, tackle, clothing, etc., purchased in 1980.

³Access fees, permits, guide services, boat rentals, campsite fees, etc.

⁴Gas, repairs, moorage, etc.

⁵Contains expenses not distributable by lake.

⁶Boats and boat accessories.

TABLE A2. EXPENDITURES AND LONG TERM OUTLAYS FOR ANGLING FOR GREAT LAKES FISH PER ANGLER DAY IN 1980¹ (dollars)

Item	CANADA			U. S.	AGGREGATE
	In Ontario by residents	Non- res.	Canadian Total	In U.S. by residents	
<u>TRIP EXPENSES</u>					
1. Lodging	0.79	3.98	1.19	0.77	0.88
2. Food	1.63	4.44	2.00	4.23	3.63
3. Supplies ²	1.06	0.82	1.03	4.17	3.33
4. Bait ³	0.33	0.68	0.37	0.23	0.26
5. Fees ³	0.57	1.66	0.71	0.41	0.49
6. Boat use ⁴	1.25	1.43	1.28	2.37	2.08
7. Transport.	1.84	2.99	2.00	3.47	3.04
8. Other ⁵	0.07	0.39	0.12	0.22	0.19
Subtotal	<u>7.54</u>	<u>16.34</u>	<u>8.68</u>	<u>15.82</u>	<u>13.89</u>
<u>LONG TERM OUTLAYS</u>					
1. Boat & acc. ⁶	7.95	0.33	6.96	7.99	7.69
2. Vehicles	2.70	0	2.35	9.91	7.90
3. Camping equip.	1.70	0.31	1.53	0.78	0.97
4. Other	3.65	1.88	3.42	0.85	1.52
Subtotal	<u>16.00</u>	<u>2.52</u>	<u>14.26</u>	<u>19.54</u>	<u>18.15</u>
TOTAL	23.55	18.86	22.94	35.36	32.10

¹The Canadian survey estimated Great Lakes trip expenditures by pro-rating each household's total trip expenditures: Great Lakes trip expenditures equal total trip expenditures times the ratio of Great Lakes angling days to total provincial angling days. The U.S. survey specifically identified Great Lakes expenditures for travel, lodging, food, and fees. All other Great Lakes expenditures were counted only as part of the individual's freshwater fishing expenditures. Thus, for categories other than travel, lodging, food and fees, all expenditures and long term outlays for freshwater fishing were counted for all anglers who reported at least one occasion of fishing for Great Lakes fish. Canadian long term outlays were treated similarly: all long term outlays in Ontario were counted for households for which one or more anglers fished in the Ontario Great Lakes. Therefore, U.S. and Canadian long term outlays reported here are not solely attributable to Great Lakes angling.

²Rods, reels, tackle, clothing, etc., purchased in 1980.

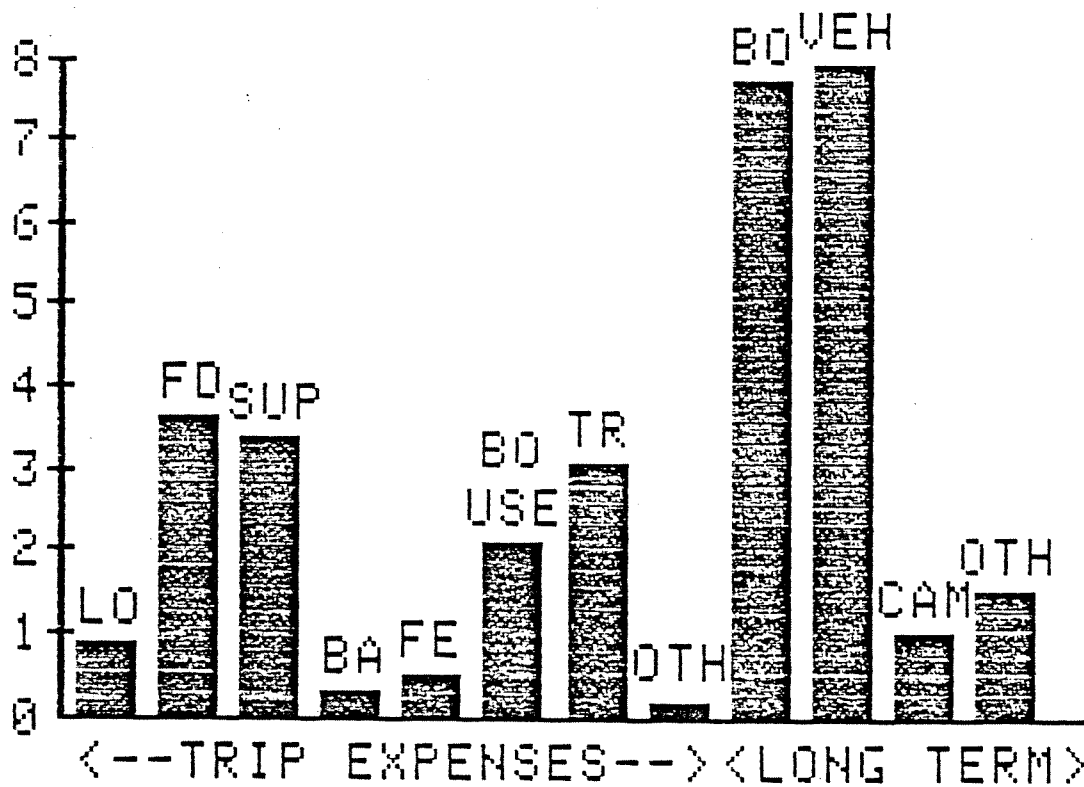
³Access fees, permits, guide services, boat rentals, campsite fees, etc.

⁴Gas, repairs, moorage, etc.

⁵Contains expenses not distributable by lake.

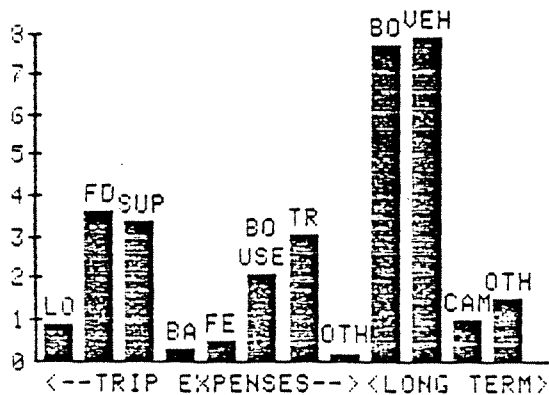
⁶Boats and boat accessories.

\$
DAILY
EXPENDITURE
BY
ITEM



**GREAT LAKES EXPENDITURES PER DAY
BY ITEM**

\$
DAILY
EXPENDITURE
BY
ITEM



**GREAT LAKES EXPENDITURES PER DAY
BY ITEM**

TABLE A3a. EXPENDITURES BY INCOME LEVEL FOR ANGLING IN CANADIAN WATERS¹ (thousands of dollars)

Item	INCOME CATEGORY				
	Under \$5,000	\$5,000 \$9,999	\$10,000 \$14,999	\$15,000 \$19,999	\$20,000 \$24,999
<u>TRIP EXPENSES</u>					
Lodging	115	430	844	1,679	1,981
Food	325	720	1,572	3,001	3,742
Supplies ²	184	575	1,140	2,637	2,537
Transport.	246	695	1,668	3,568	3,454
Other	213	528	1,363	2,954	3,988
Subtotal	<u>1,083</u>	<u>2,949</u>	<u>6,588</u>	<u>13,839</u>	<u>15,702</u>
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	329	1,593	4,239	7,564	16,901
Vehicles	0	264	811	6,276	6,294
Camp equip.	10	1,161	2,186	3,556	1,744
Other	61	180	7,159	1,239	2,398
Subtotal	<u>400</u>	<u>3,198</u>	<u>14,395</u>	<u>18,635</u>	<u>27,337</u>
TOTAL	<u>1,483</u>	<u>6,146</u>	<u>20,983</u>	<u>32,474</u>	<u>43,039</u>

Item	INCOME CATEGORY (continued)				
	\$25,000 \$29,999	\$30,000 \$39,999	\$40,000 \$49,999	Over \$50,000	Not Specified
<u>TRIP EXPENSES</u>					
Lodging	1,897	2,025	1,155	1,136	5,931
Food	3,136	3,456	1,585	1,620	9,560
Supplies ²	1,873	2,640	1,125	1,087	6,351
Transport.	3,157	3,632	1,591	1,731	8,842
Other	2,869	4,689	1,691	2,192	9,637
Subtotal	<u>12,932</u>	<u>16,443</u>	<u>7,147</u>	<u>7,965</u>	<u>40,320</u>
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	14,200	13,142	4,759	11,951	24,933
Vehicles	1,476	6,639	2,320	0	9,806
Camp equip.	2,335	1,535	101	3,018	5,733
Other	1,815	3,653	3,831	20,469	4,962
Subtotal	<u>19,826</u>	<u>24,969</u>	<u>11,011</u>	<u>35,438</u>	<u>45,434</u>
TOTAL	<u>32,758</u>	<u>41,412</u>	<u>18,158</u>	<u>43,403</u>	<u>85,754</u>

TABLE A3b. EXPENDITURES BY INCOME LEVEL FOR ANGLING IN UNITED STATES WATERS¹ (thousands of dollars)

Item	INCOME CATEGORY				
	Under \$5,000	\$5,000 \$9,999	\$10,000 \$14,999	\$15,000 \$19,999	\$20,000 \$24,999
TRIP EXPENSES					
Lodging	727	4,317	1,764	2,868	4,003
Food	9,616	15,688	16,182	21,587	26,298
Supplies ²	6,094	13,976	18,712	18,698	26,443
Transport. ³	6,752	14,825	15,035	16,856	17,246
Other	2,092	5,331	9,663	14,421	21,351
Subtotal	25,281	54,137	61,356	74,700	95,341
LONG TERM OUTLAYS					
Boat & acc ⁴	44	2,045	26,857	27,034	16,028
Vehicles	73	1,706	22,190	32,968	88,640
Camp equip.	302	1,007	6,457	5,696	3,318
Other	66	140	338	3,054	96
Subtotal	485	4,898	55,842	68,752	108,082
TOTAL	25,766	59,035	117,198	143,452	203,423

Item	INCOME CATEGORY (continued)				
	\$25,000 \$29,999	\$30,000 \$39,999	\$40,000 \$49,999	Over \$50,000	Not Specified
TRIP EXPENSES					
Lodging	9,305	3,647	296	1,979	2,204
Food	31,303	20,232	9,110	8,840	12,640
Supplies ²	24,656	24,297	9,788	11,164	24,028
Transport. ³	20,572	23,202	5,018	6,858	12,418
Other	19,521	19,478	5,429	9,268	15,156
Subtotal	105,357	90,856	29,641	38,109	66,446
LONG TERM OUTLAYS					
Boat & acc ⁴	100,986	69,113	13,752	39,883	28,149
Vehicles	67,865	46,628	14,264	13,508	113,958
Camp equip.	5,470	3,402	2,066	1,464	2,518
Other	5,496	22,693	68	30	2,462
Subtotal	179,817	141,836	30,150	54,885	147,087
TOTAL	285,174	232,692	59,791	92,994	213,533

TABLES A3a. AND A3b. Footnotes.

¹The Canadian survey estimated Great Lakes trip expenditures by pro-rating each household's total trip expenditures: Great Lakes trip expenditures equal total trip expenditures times the ratio of Great Lakes angling days to total provincial angling days. The U.S. survey specifically identified Great Lakes expenditures for travel, lodging, food, and fees. All other Great Lakes expenditures were counted only as part of the individual's freshwater fishing expenditures. Thus, for categories other than travel, lodging, food and fees, all expenditures and long term outlays for freshwater fishing were counted for all anglers who reported at least one occasion of fishing for Great Lakes fish. Canadian long term outlays were treated similarly: all long term outlays in Ontario were counted for households for which one or more anglers fished in the Ontario Great Lakes. Therefore, U.S. and Canadian long term outlays reported here are not solely attributable to Great Lakes angling.

²Rods, reels, tackle, clothing, etc., purchased in 1980.

³Access fees, permits, guide services, boat rentals, campsite fees, boat fuel, boat repairs, moorage, etc. Contains expenses not distributable by lake.

⁴Boats and boat accessories.

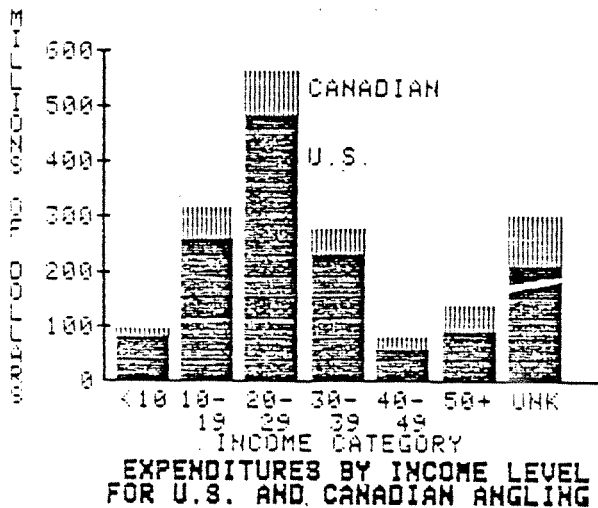
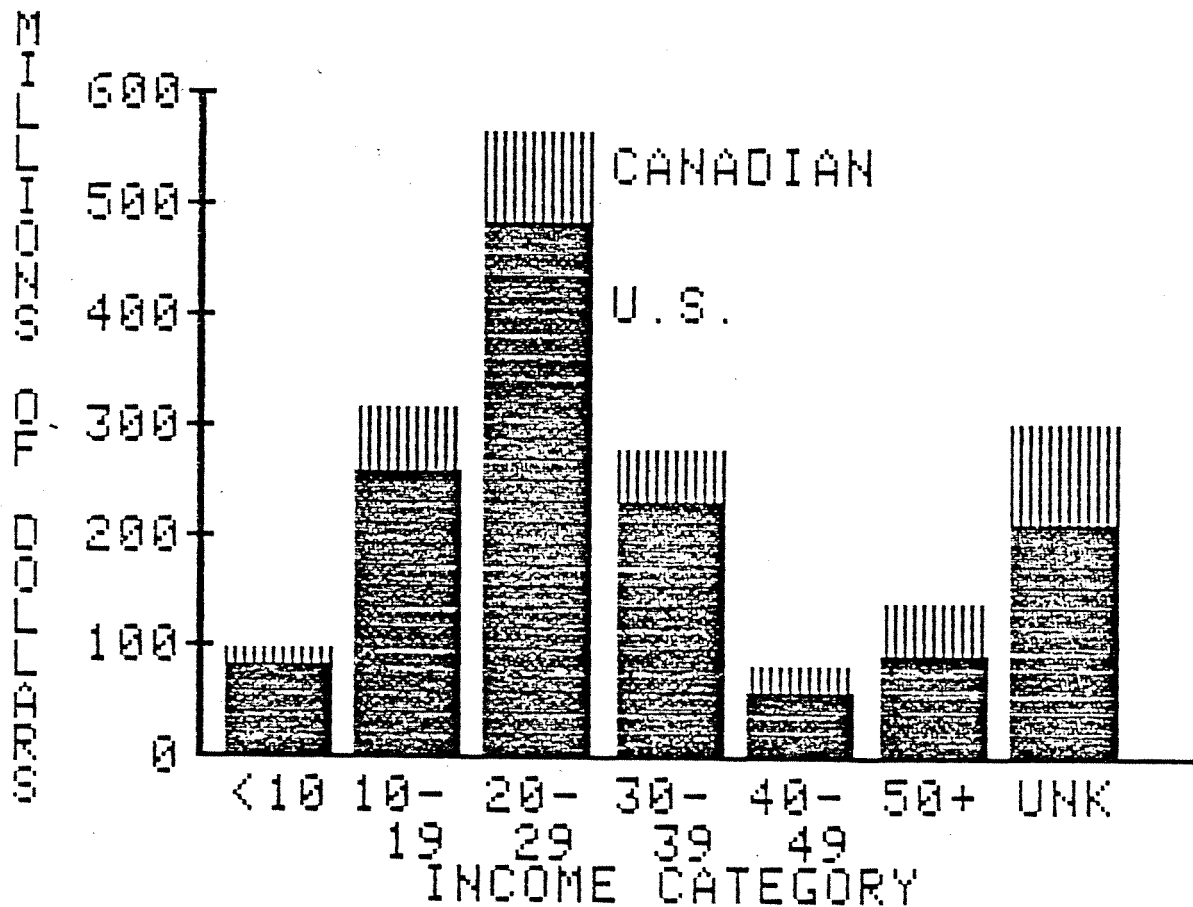


TABLE A4a. EXPENDITURES PER ANGLER DAY BY INCOME LEVEL FOR ANGLING IN CANADIAN WATERS¹ (dollars)

Item	INCOME CATEGORY				
	Under \$5,000	\$5,000 \$9,999	\$10,000 \$14,999	\$15,000 \$19,999	\$20,000 \$24,999
<u>TRIP EXPENSES</u>					
Lodging	0.76	0.60	0.79	0.79	1.10
Food	2.15	1.00	1.48	1.41	2.07
Supplies	1.22	0.80	1.07	1.24	1.40
Trans.	1.63	0.97	1.57	1.67	1.91
Other	1.41	0.73	1.28	1.38	2.21
Subtotal	7.17	4.10	6.20	6.49	8.68
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	2.18	2.22	3.99	3.54	9.35
Vehicles	0.0	0.37	0.76	2.94	3.48
Camp equip.	0.07	1.61	2.06	1.67	0.96
Other	0.40	0.25	6.73	0.58	1.33
Subtotal	2.65	4.45	13.54	8.73	15.12
TOTAL	9.82	8.55	19.74	15.22	23.80

Item	INCOME CATEGORY (continued)				
	\$25,000 \$29,999	\$30,000 \$39,999	\$40,000 \$49,999	Over \$50,000	Not Specified
<u>TRIP EXPENSES</u>					
Lodging	1.48	1.52	2.04	1.73	1.27
Food	2.44	2.59	2.80	2.47	2.04
Supplies ²	1.46	1.98	1.98	1.66	1.36
Transport.	2.46	2.73	2.81	2.64	1.89
Other	2.24	3.52	2.98	3.35	2.06
Subtotal	10.08	12.34	12.60	12.16	8.60
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	11.07	9.87	8.39	18.25	5.32
Vehicles	1.15	4.98	4.09	0.0	2.09
Camp equip.	1.82	1.15	0.18	4.61	1.22
Other	1.41	2.74	6.76	31.25	1.06
Subtotal	15.45	18.75	19.42	54.10	9.69
TOTAL	25.53	31.09	32.02	66.26	18.30

TABLE A4b. EXPENDITURES PER ANGLER DAY BY INCOME LEVEL FOR ANGLING IN UNITED STATES WATERS¹ (dollars)

Item	INCOME CATEGORY				
	Under \$5,000	\$5,000 \$9,999	\$10,000 \$14,999	\$15,000 \$19,999	\$20,000 \$24,999
<u>TRIP EXPENSES</u>					
Lodging	0.38	1.14	0.31	0.48	0.93
Food	4.97	2.45	2.82	3.62	6.11
Supplies ²	3.15	2.14	3.24	3.18	6.15
Transport.	3.49	2.32	3.62	2.82	4.01
Other ³	1.08	0.83	1.69	2.42	4.96
Subtotal	13.08	8.46	10.69	12.51	22.17
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	0.02	0.32	4.68	4.53	3.73
Vehicles	0.04	0.27	3.86	5.52	20.61
Camp equip.	0.16	0.16	1.12	0.95	0.77
Other	0.03	0.02	0.06	0.51	0.02
Subtotal	0.25	0.77	9.73	11.52	25.13
TOTAL	13.33	9.23	20.41	24.03	47.30

Item	INCOME CATEGORY (continued)				
	\$25,000 \$29,999	\$30,000 \$39,999	\$40,000 \$49,999	Over \$50,000	Not Specified
<u>TRIP EXPENSES</u>					
Lodging	1.68	0.94	0.14	1.67	0.62
Food	5.67	5.24	4.42	7.47	3.55
Supplies ²	4.47	6.29	4.75	9.43	6.75
Transport.	3.72	6.00	2.44	5.79	3.49
Other	3.53	6.00	2.44	5.79	3.49
Subtotal	19.07	23.51	14.39	32.19	18.67
<u>LONG TERM OUTLAYS</u>					
Boat & acc ⁴	18.28	17.89	6.68	33.68	7.91
Vehicles	12.29	12.07	6.92	11.41	32.02
Camp equip.	0.99	0.88	1.00	1.24	0.71
Other	0.99	5.87	0.03	0.03	0.69
Subtotal	32.55	36.71	14.64	46.36	41.33
TOTAL	51.62	60.22	29.02	78.54	60.00

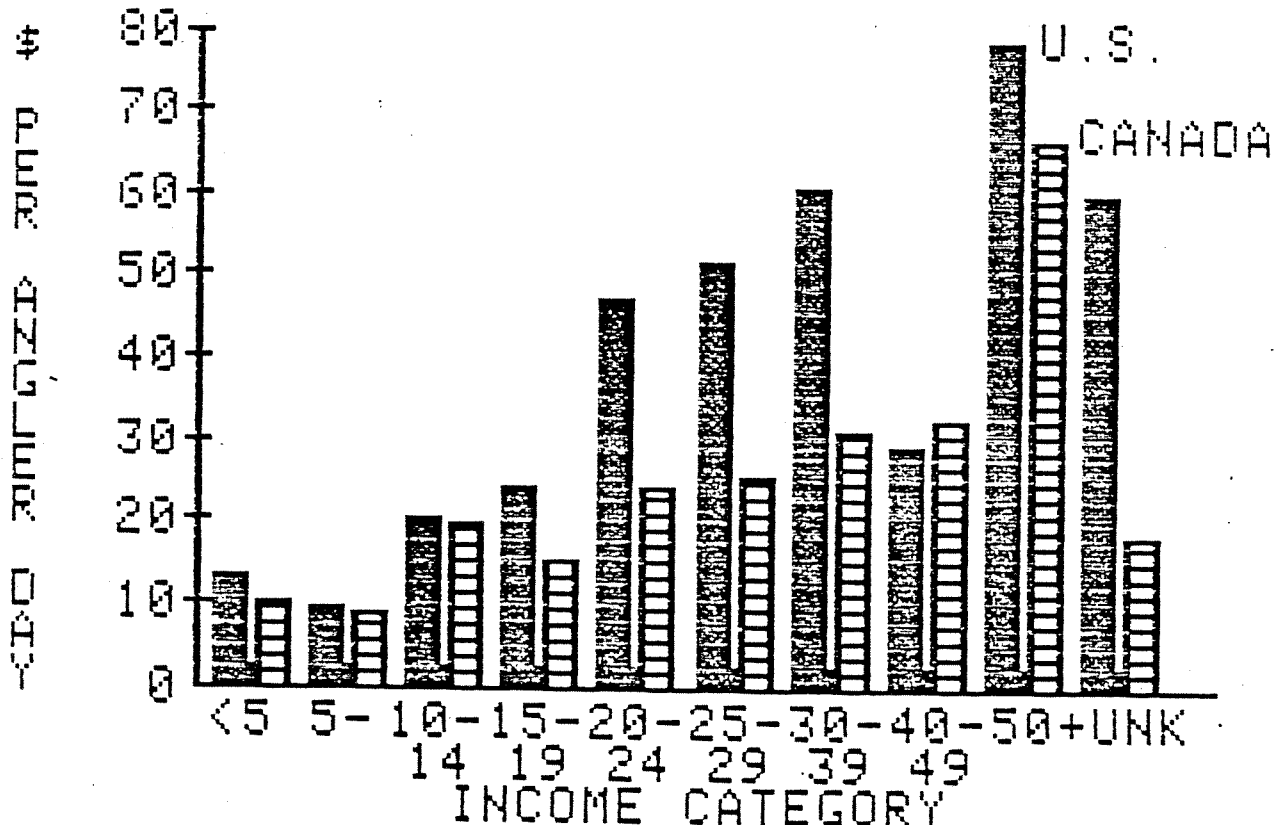
TABLES A4a, AND A4b. Footnotes.

¹The Canadian survey estimated Great Lakes trip expenditures by pro-rating each household's total trip expenditures: Great Lakes trip expenditures equal total trip expenditures times the ratio of Great Lakes angling days to total provincial angling days. The U.S. survey specifically identified Great Lakes expenditures for travel, lodging, food, and fees. All other Great Lakes expenditures were counted only as part of the individual's freshwater fishing expenditures. Thus, for categories other than travel, lodging, food and fees, all expenditures and long term outlays for freshwater fishing were counted for all anglers who reported at least one occasion of fishing for Great Lakes fish. Canadian long term outlays were treated similarly: all long term outlays in Ontario were counted for households for which one or more anglers fished in the Ontario Great Lakes. Therefore, U.S. and Canadian long term outlays reported here are not solely attributable to Great Lakes angling.

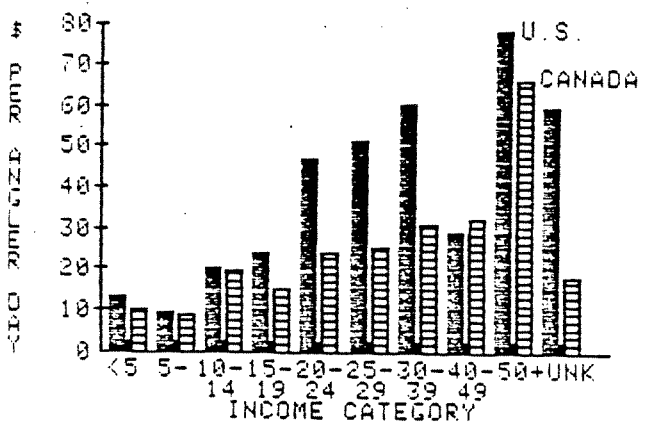
²Rods, reels, tackle, clothing, etc., purchased in 1980.

³Access fees, permits, guide services, boat rentals, campsite fees, boat fuel, boat repairs, moorage, etc. Contains expenses not distributable by lake.

⁴Boats and boat accessories.



TOTAL EXPENDITURES PER ANGLER DAY BY INCOME LEVEL IN U.S. & CANADA



TOTAL EXPENDITURES PER ANGLER DAY BY INCOME LEVEL IN U.S. & CANADA

TABLE A5. NUMBER OF ANGLERS AND ANGLER DAYS BY AGE (thousands)

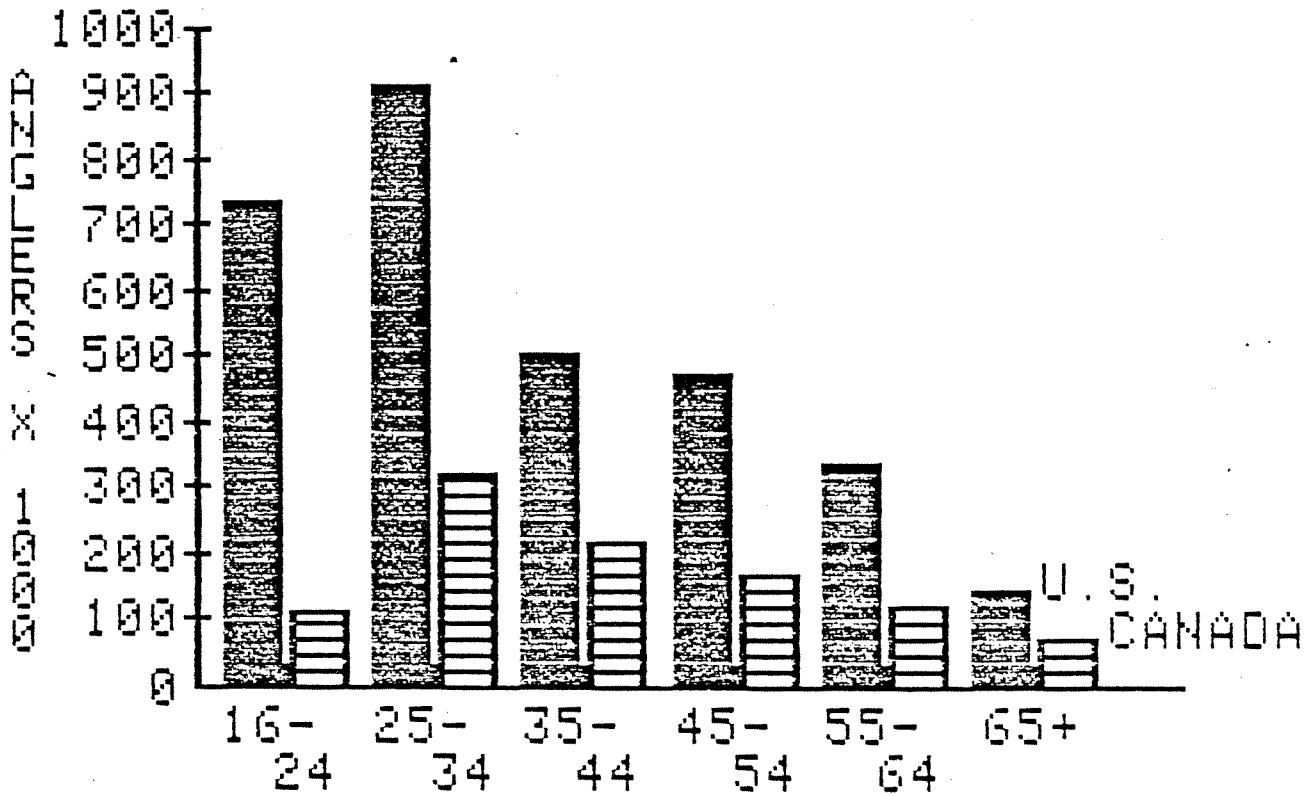
Age	U.S. ANGLERS			ONTARIO ANGLERS			AGGREGATE		
	number	%	days	number	%	days	number	%	days
Unknown	0	0	0	37	4	426	37	1	426
16-24	731	24	8,538	111	11	1,361	842	20	9,899
25-34	905	29	10,514	318	31	3,894	1,223	30	14,408
35-44	499	16	5,510	213	21	3,475	712	17	8,985
45-54	468	15	7,008	161	16	2,582	629	15	9,590
55-64	336	11	4,145	117	11	1,755	453	11	5,900
65+	144	5	4,818	66	6	904	210	5	5,722

TABLE A6. NUMBER OF ANGLERS AND ANGLER DAYS BY SEX (thousands)

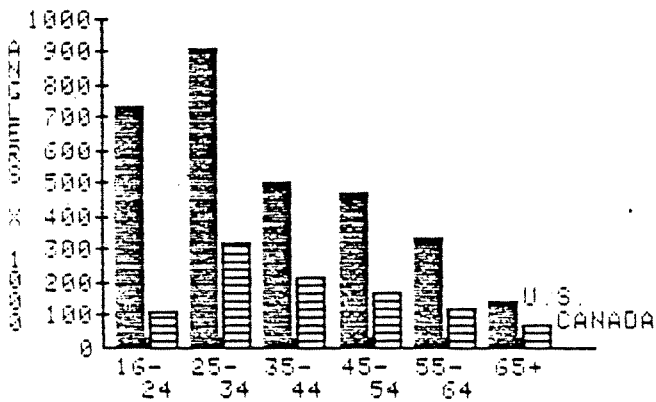
Sex	U.S. ANGLERS			ONTARIO ANGLERS			AGGREGATE		
	number	%	days	number	%	days	number	%	days
Male	2,394	78	33,124	708	69	10,339	3,102	76	43,463
Female	689	22	7,409	315	31	4,058	1,004	24	11,467

TABLE A7. NUMBER OF ANGLERS AND ANGLER DAYS BY INCOME (thousands)

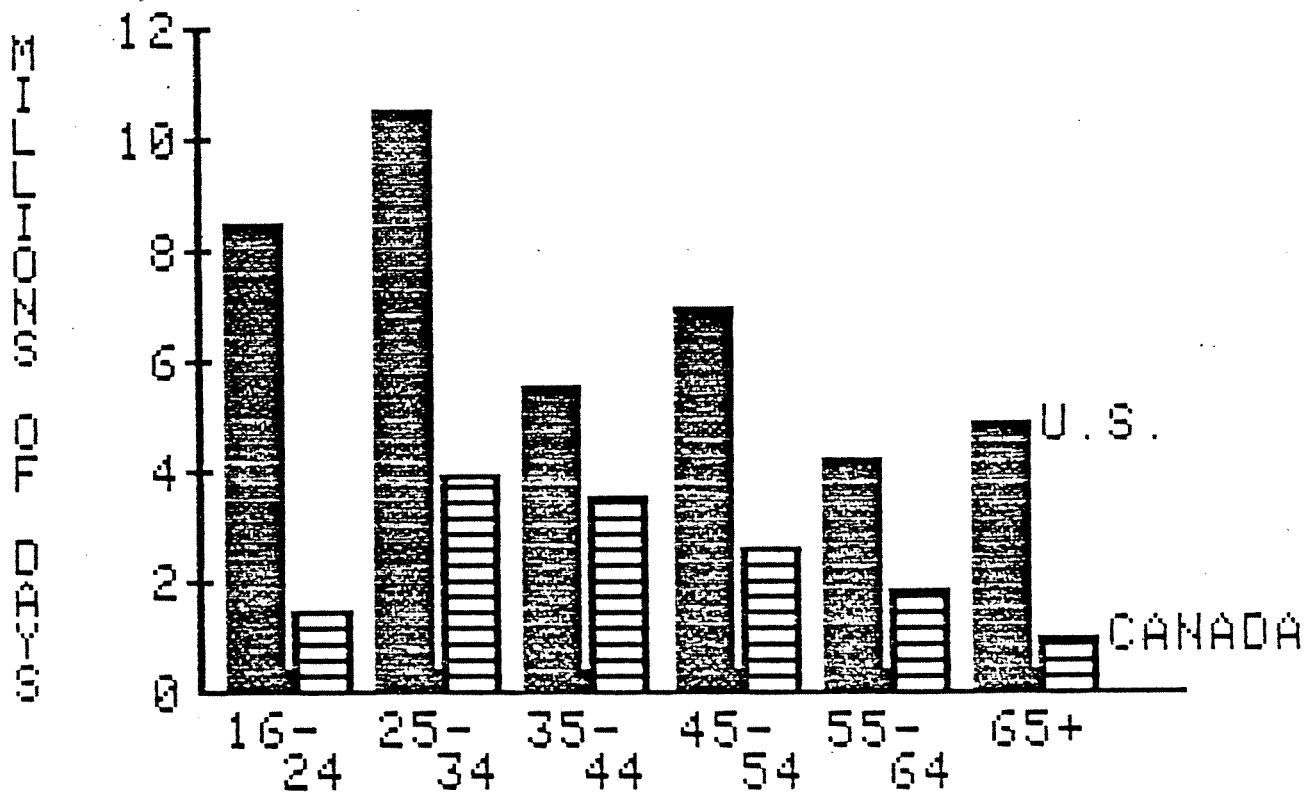
Household Income	U.S. ANGLERS			ONTARIO ANGLERS			AGGREGATE		
	number	%	days	number	%	days	number	%	days
under 5,000	115	4	1,933	20	2	151	125	3	2,084
5,000-9,999	269	9	6,397	46	4	719	315	8	7,116
10,000-14,999	314	10	5,742	86	8	1,063	400	10	6,805
15,000-19,999	361	12	5,969	114	11	2,134	475	12	8,103
20,000-24,999	500	16	4,301	128	12	1,808	628	15	6,109
25,000-29,999	468	15	5,524	94	9	1,283	562	14	6,807
30,000-39,999	360	12	3,864	112	11	1,332	472	12	5,196
40,000-49,999	141	5	2,060	49	5	567	190	5	2,627
50,000 or more	133	4	1,184	44	4	655	177	4	1,839
Not Known	421	14	3,559	333	32	4,687	754	18	8,246



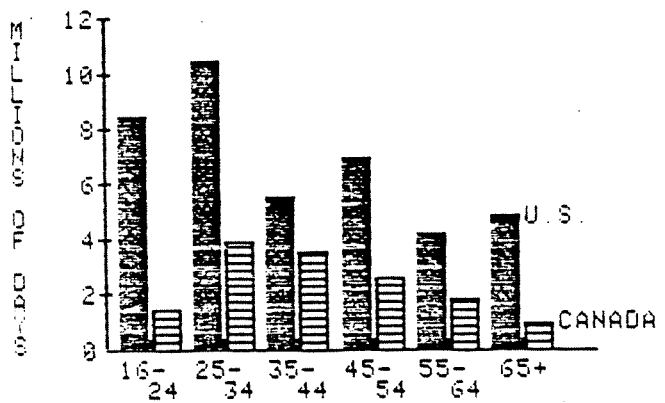
**NUMBERS OF ANGLERS BY AGE CLASS
U.S. AND CANADA**



**NUMBERS OF ANGLERS BY AGE CLASS
U.S. AND CANADA**



**ANGLER DAYS BY AGE CLASS
U.S. AND CANADA**



**ANGLER DAYS BY AGE CLASS
U.S. AND CANADA**

STATISTICAL TABLES

B. LAKE STATISTICS BY JURISDICTION FISHED

TABLE B1. ANGLER DAYS BY LAKE AND JURISDICTION FISHED (thousands)

Jurisdiction fished	Lake Superior ¹		Lake Huron		Lake Michigan		Lake Erie ²		Lake Ontario ³		TOTAL ⁵	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Ontario	850	48	5,050	42	0	0	3,974	21	4,304	45	14,397	26
Minnesota	381	22	0	0	0	0	0	0	0	0	382	1
Wisconsin	183	10	0	0	2,501	17	0	0	0	0	2,715	5
Michigan	347	20	6,850	58	6,828	48	4,114	22	0	0	16,119 ⁶	29
Illinois	0	0	0	0	4,559	32	0	0	0	0	4,589	8
Indiana	0	0	0	0	492	3	0	0	0	0	499	1
Ohio	0	0	0	0	0	0	8,781	46	0	0	8,787	16
Pennsylvania	0	0	0	0	0	0	1,055	5	0	0	1,055	2
New York	0	0	0	0	0	0	1,174	6	5,292	55	6,387	12
Unspecified ⁴	0	0	0	0	0	0	22	0	0	0	0	0
TOTAL	1,761	100	11,900	100	14,380	100	19,120	100	9,596	100	54,930	100

¹Lake Superior includes the St. Mary River.

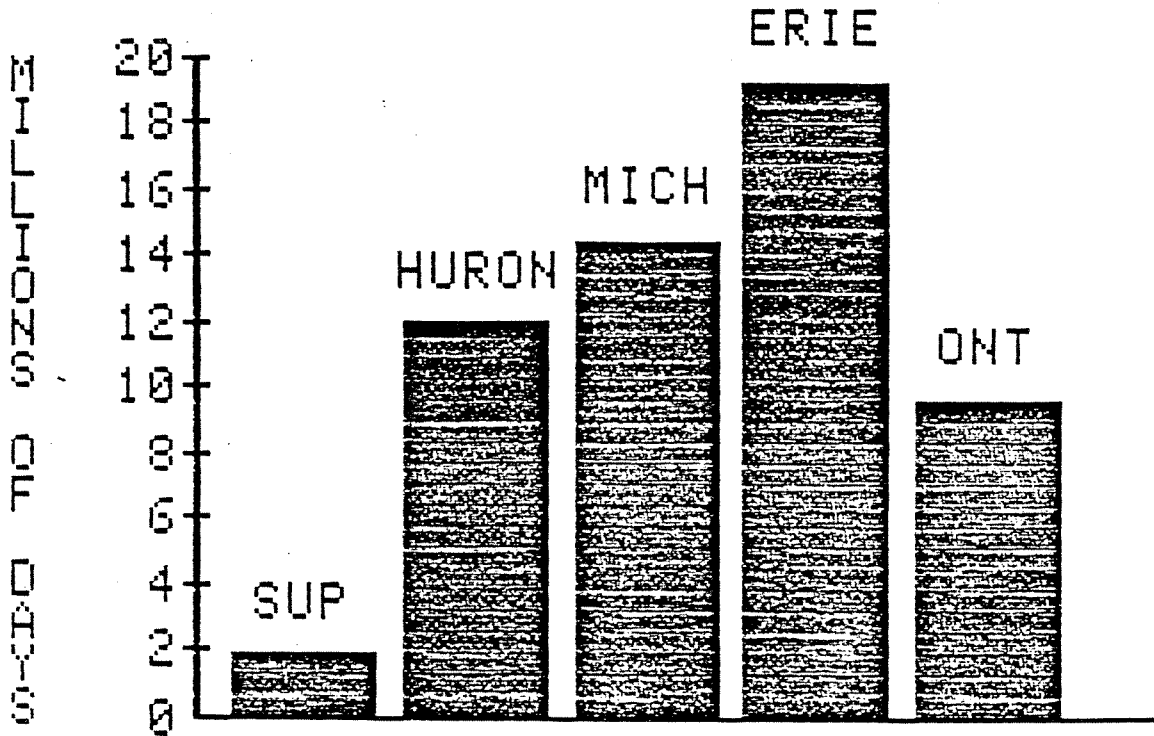
²Lake Erie includes the Detroit River, Lake St. Clair and the St. Clair River.

³Lake Ontario includes the St. Lawrence River and the Niagara River.

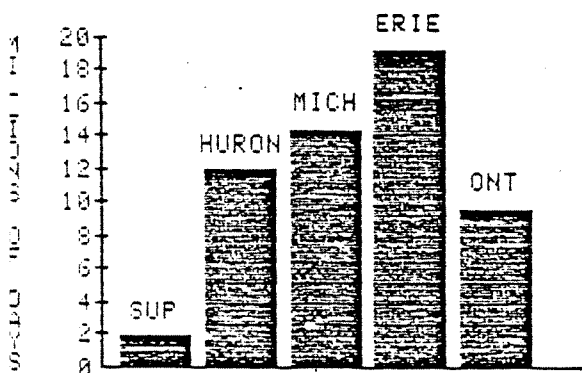
⁴State of destination not given.

⁵Includes angler days not allocated by lake. Effort in U.S. waters by non-U.S. residents is not included.

⁶Some anglers reported more than one lake fished on the same days.



ANGLER DAYS BY LAKE



ANGLER DAYS BY LAKE

TABLE B2. NUMBER OF ANGLERS BY LAKE AND JURISDICTION FISHED (thousands)

Jurisdiction fished	Lake Superior ¹		Lake Huron		Lake Michigan		Lake Erie ²		Lake Ontario ³		TOTAL ⁵	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Ontario	99	37	478	51	0	0	288	22	360	50	1,023	25
Minnesota	72	27	0	0	0	0	0	0	0	0	73	2
Wisconsin	29	11	0	0	383	31	0	0	0	0	411	10
Michigan	67	25	454	49	449	36	211	16	0	0	1,071	26
Illinois	0	0	0	0	322	26	0	0	0	0	318	7
Indiana	0	0	0	0	84	7	0	0	0	0	85	2
Ohio	0	0	0	0	0	0	653	49	0	0	656	16
Pennsylvania	0	0	0	0	0	0	105	8	0	0	105	2
New York	0	0	0	0	0	0	72	5	357	50	423	10
Unspecified ⁴	0	0	0	0	0	0	7	0	0	0	7	0
TOTAL⁵	267	100	932	100	1,238	100	1,336	100	717	100	4,165	100

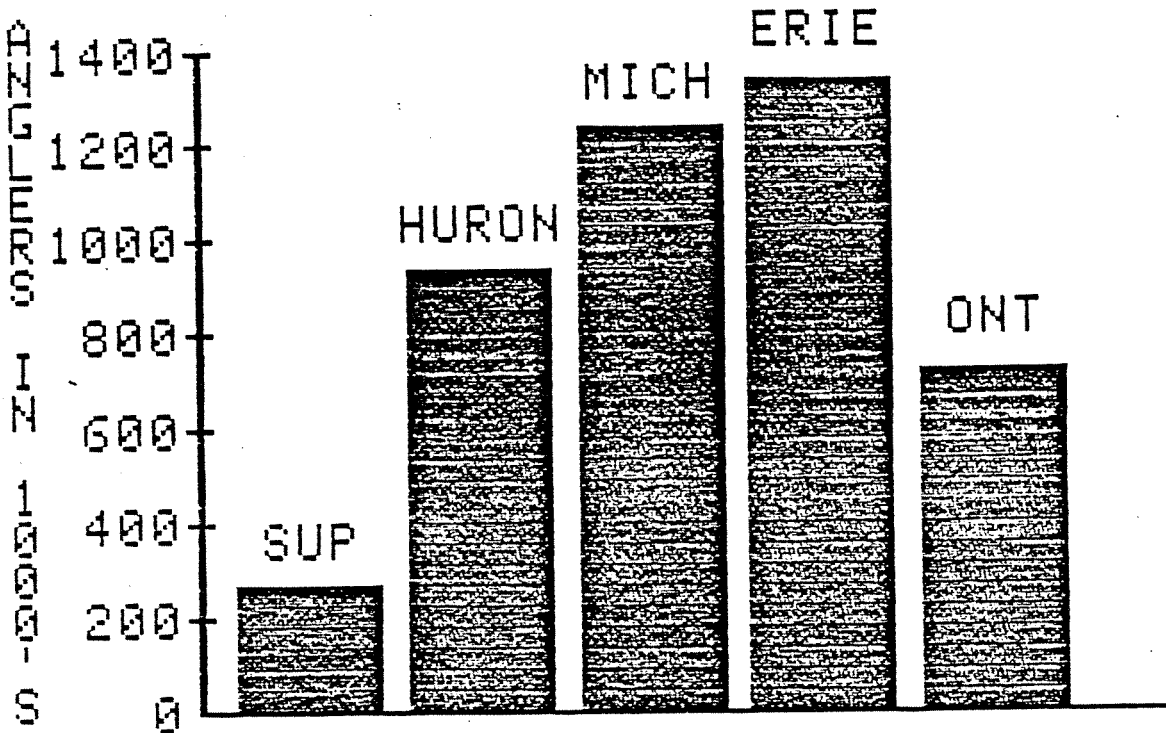
¹Lake Superior includes the St. Mary River.

²Lake Erie includes the Detroit River, Lake St. Clair and the St. Clair River.

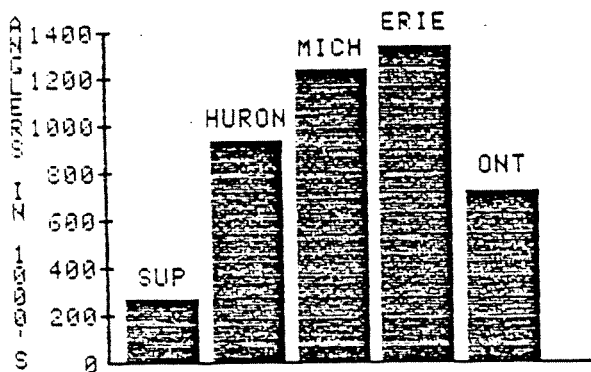
³Lake Ontario includes the St. Lawrence River and the Niagara River.

⁴State of destination not given.

⁵Totals are not additive because each angler is counted only once in the total, but is counted in each jurisdiction and lake fished. Totals include anglers not allocated by lake. Non-U.S. resident anglers fishing in U.S. waters were not included.



NUMBER OF ANGLERS BY LAKE



NUMBER OF ANGLERS BY LAKE

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>ONTARIO⁴</u>						
<u>All anglers</u>						
1. Lodging	1,261	6,842	0	3,619	5,334	17,193
2. Food	2,591	12,135	0	6,172	7,634	28,716
3. Supplies ⁵	1,329	7,167	0	5,516	5,725	20,148
4. Transportation	2,428	11,810	0	6,734	7,424	28,584
5. Other	1,469	11,502	0	8,849	8,339	30,326
TOTAL	<u>9,078</u>	<u>49,456</u>	<u>0</u>	<u>308901</u>	<u>34,455</u>	<u>124,968</u>
<u>Residents</u>						
1. Lodging	581	4,153	0	2,083	2,984	9,801
2. Food	1,738	9,379	0	3,793	5,466	20,376
3. Supplies ⁵	1,116	6,584	0	4,283	5,062	17,009
4. Transportation	1,847	9,935	0	4,809	6,339	22,930
5. Other	1,055	9,500	0	6,960	6,213	23,728
TOTAL	<u>6,337</u>	<u>39,515</u>	<u>0</u>	<u>21,929</u>	<u>26,064</u>	<u>94,579</u>
<u>Non-residents</u>						
1. Lodging	680	2,689	0	1,536	2,350	7,255
2. Food	852	2,756	0	2,380	2,168	8,156
3. Supplies ⁵	213	619	0	1,233	662	2,727
4. Transportation	581	1,875	0	1,925	1,085	5,466
5. Other	415	2,002	0	1,889	2,126	6,432
TOTAL	<u>2,741</u>	<u>9,941</u>	<u>0</u>	<u>8,962</u>	<u>8,392</u>	<u>30,389</u>
<u>MINNESOTA</u>						
<u>All anglers</u>						
1. Lodging	1,415	0	0	0	0	1,415
2. Food	2,774	0	0	0	0	2,774
3. Supplies ⁵	3,575	0	0	0	0	3,575
4. Transportation	1,903	0	0	0	0	1,903
5. Other	2,326	0	0	0	0	2,326
TOTAL	<u>11,993</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>11,993</u>
<u>Residents</u>						
1. Lodging	484	0	0	0	0	484
2. Food	1,753	0	0	0	0	1,753
3. Supplies ⁵	2,832	0	0	0	0	2,832
4. Transportation	1,278	0	0	0	0	1,278
5. Other	2,213	0	0	0	0	2,213
TOTAL	<u>8,560</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>8,560</u>

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS (Cont)
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>Non-residents</u>						
1. Lodging	931	0	0	0	0	931
2. Food	1,021	0	0	0	0	1,021
3. Supplies ⁵	743	0	0	0	0	743
4. Transportation	625	0	0	0	0	625
5. Other ⁵	113	0	0	0	0	113
TOTAL	<u>3,433</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3,433</u>
<u>WISCONSIN</u>						
<u>All anglers</u>						
1. Lodging	42	0	4,381	0	0	4,423
2. Food	1,056	0	12,827	0	0	13,882
3. Supplies ⁵	1,031	0	22,748	0	0	23,779
4. Transportation	1,427	0	12,748	0	0	14,076
5. Other ⁵	884	0	11,448	0	0	12,332
TOTAL	<u>4,439</u>	<u>0</u>	<u>64,052</u>	<u>0</u>	<u>0</u>	<u>68,491</u>
<u>Residents</u>						
1. Lodging	42	0	399	0	0	441
2. Food	436	0	7,827	0	0	8,262
3. Supplies ⁵	465	0	15,520	0	0	15,985
4. Transportation	651	0	6,305	0	0	6,955
5. Other ⁵	463	0	7,601	0	0	8,064
TOTAL	<u>2,056</u>	<u>0</u>	<u>37,652</u>	<u>0</u>	<u>0</u>	<u>39,708</u>
<u>Non-residents</u>						
1. Lodging	0	0	3,982	0	0	3,982
2. Food	620	0	5,000	0	0	5,619
3. Supplies ⁵	566	0	7,228	0	0	7,794
4. Transportation	776	0	6,344	0	0	7,120
5. Other ⁵	421	0	3,846	0	0	4,267
TOTAL	<u>2,383</u>	<u>0</u>	<u>26,400</u>	<u>0</u>	<u>0</u>	<u>28,783</u>
<u>MICHIGAN</u>						
<u>All anglers</u>						
1. Lodging	703	5,067	5,067	954	0	11,791
2. Food	2,634	32,679	32,679	12,906	0	80,898
3. Supplies ⁵	2,829	23,641	23,641	8,725	0	58,835
4. Transportation	2,459	25,286	25,286	10,290	0	63,321
5. Other ⁵	1,490	19,318	19,318	10,580	0	50,706
TOTAL	<u>10,114</u>	<u>105,991</u>	<u>105,991</u>	<u>43,455</u>	<u>0</u>	<u>265,552</u>

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS (Cont)
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>Residents</u>						
1. Lodging	591	3,496	3,496	392	0	7,975
2. Food	1,998	27,252	27,252	10,368	0	66,870
3. Supplies ⁵	1,917	18,087	18,087	5,888	0	43,980
4. Transportation	1,486	20,661	20,661	7,770	0	50,578
5. Other	1,069	17,150	17,150	9,662	0	45,031
TOTAL	<u>7,061</u>	<u>86,647</u>	<u>86,647</u>	<u>34,080</u>	<u>0</u>	<u>214,434</u>
<u>Non-residents</u>						
1. Lodging	111	1,571	1,571	562	0	3,816
2. Food	636	5,427	5,427	2,538	0	14,028
3. Supplies ⁵	912	5,553	5,553	2,837	0	14,855
4. Transportation	972	4,625	4,625	2,520	0	12,743
5. Other	421	2,168	2,168	918	0	5,675
TOTAL	<u>3,054</u>	<u>19,345</u>	<u>19,345</u>	<u>9,374</u>	<u>0</u>	<u>51,117</u>
<u>ILLINOIS</u>						
<u>All anglers</u>						
1. Lodging	0	0	504	0	0	504
2. Food	0	0	9,291	0	0	9,291
3. Supplies ⁵	0	0	23,663	0	0	23,663
4. Transportation	0	0	11,942	0	0	11,942
5. Other	0	0	8,336	0	0	8,336
TOTAL	<u>0</u>	<u>0</u>	<u>53,735</u>	<u>0</u>	<u>0</u>	<u>53,735</u>
<u>Residents</u>						
1. Lodging	0	0	459	0	0	459
2. Food	0	0	7,964	0	0	7,964
3. Supplies ⁵	0	0	22,691	0	0	22,691
4. Transportation	0	0	11,286	0	0	11,286
5. Other	0	0	7,640	0	0	7,640
TOTAL	<u>0</u>	<u>0</u>	<u>50,040</u>	<u>0</u>	<u>0</u>	<u>50,040</u>
<u>Non-residents</u>						
1. Lodging	0	0	45	0	0	45
2. Food	0	0	1,327	0	0	1,327
3. Supplies ⁵	0	0	972	0	0	972
4. Transportation	0	0	656	0	0	656
5. Other	0	0	696	0	0	696
TOTAL	<u>0</u>	<u>0</u>	<u>3,695</u>	<u>0</u>	<u>0</u>	<u>3,695</u>

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS (Cont)
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>INDIANA</u>						
<u>All anglers</u>						
1. Lodging	0	0	118	0	0	118
2. Food	0	0	2,824	0	0	2,824
3. Supplies ⁵	0	0	4,149	0	0	4,149
4. Transportation	0	0	1,158	0	0	1,158
5. Other ⁵	0	0	1,051	0	0	1,051
TOTAL	0	0	9,660	0	0	9,660
<u>Residents</u>						
1. Lodging	0	0	118	0	0	118
2. Food	0	0	2,307	0	0	2,307
3. Supplies ⁵	0	0	3,090	0	0	3,090
4. Transportation	0	0	1,268	0	0	1,268
5. Other ⁵	0	0	721	0	0	721
TOTAL	0	0	7,504	0	0	7,504
<u>Non-residents</u>						
1. Lodging	0	0	0	0	0	0
2. Food	0	0	517	0	0	517
3. Supplies ⁵	0	0	1,059	0	0	1,059
4. Transportation	0	0	250	0	0	250
5. Other ⁵	0	0	330	0	0	330
TOTAL	0	0	2,156	0	0	2,156
<u>OHIO</u>						
<u>All anglers</u>						
1. Lodging	0	0	0	5,113	0	5,113
2. Food	0	0	0	31,429	0	31,429
3. Supplies ⁵	0	0	0	34,147	0	34,147
4. Transportation	0	0	0	22,774	0	22,774
5. Other ⁵	0	0	0	23,733	0	23,733
TOTAL	0	0	0	117,195	0	117,195
<u>Residents</u>						
1. Lodging	0	0	0	4,796	0	4,796
2. Food	0	0	0	29,382	0	29,382
3. Supplies ⁵	0	0	0	29,872	0	29,872
4. Transportation	0	0	0	20,599	0	20,599
5. Other ⁵	0	0	0	23,057	0	23,057
TOTAL	0	0	0	107,705	0	107,705

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS (Cont)
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>Non-residents</u>						
1. Lodging	0	0	0	317	0	317
2. Food	0	0	0	2,047	0	2,047
3. Supplies ⁵	0	0	0	4,275	0	4,275
4. Transportation	0	0	0	2,175	0	2,175
5. Other ⁵	0	0	0	676	0	676
TOTAL	0	0	0	9,490	0	9,490
 <u>PENNSYLVANIA</u>						
<u>All anglers</u>						
1. Lodging	0	0	0	355	0	355
2. Food	0	0	0	4,222	0	4,222
3. Supplies ⁵	0	0	0	5,770	0	5,770
4. Transportation	0	0	0	4,305	0	4,305
5. Other ⁵	0	0	0	2,638	0	2,638
TOTAL	0	0	0	17,290	0	17,290
 <u>Residents</u>						
1. Lodging	0	0	0	246	0	246
2. Food	0	0	0	3,989	0	3,989
3. Supplies ⁵	0	0	0	5,491	0	5,491
4. Transportation	0	0	0	4,069	0	4,069
5. Other ⁵	0	0	0	1,809	0	1,809
TOTAL	0	0	0	15,604	0	15,604
 <u>Non-residents</u>						
1. Lodging	0	0	0	109	0	109
2. Food	0	0	0	233	0	233
3. Supplies ⁵	0	0	0	280	0	280
4. Transportation	0	0	0	236	0	236
5. Other ⁵	0	0	0	829	0	829
TOTAL	0	0	0	1,686	0	1,686
 <u>NEW YORK</u>						
<u>All anglers</u>						
1. Lodging	0	0	0	100	7,292	7,393
2. Food	0	0	0	4,008	22,094	26,102
3. Supplies ⁵	0	0	0	3,267	18,314	21,581
4. Transportation	0	0	0	2,908	15,996	18,904
5. Other ⁵	0	0	0	1,577	9,624	11,201
TOTAL	0	0	0	11,861	73,320	85,191

TABLE B3. TRIP EXPENDITURES BY RESIDENTS AND NON-RESIDENTS (Cont)
(thousands of dollars)

Jurisdiction fished	Lake Superior ¹	Lake Huron	Lake Michigan	Lake ² Erie	Lake ³ Ontario	TOTAL
<u>Residents</u>						
1. Lodging	0	0	0	100	5,808	5,907
2. Food	0	0	0	3,802	18,959	22,761
3. Supplies ⁵	0	0	0	2,323	11,462	13,785
4. Transportation	0	0	0	2,728	14,172	16,900
5. Other	0	0	0	1,545	7,269	8,814
TOTAL	0	0	0	10,497	57,670	68,167
<u>Non-residents</u>						
1. Lodging	0	0	0	0	1,485	1,485
2. Food	0	0	0	206	3,134	3,341
3. Supplies ⁵	0	0	0	944	6,852	7,796
4. Transportation	0	0	0	180	1,824	2,004
5. Other	0	0	0	32	2,355	2,388
TOTAL	0	0	0	1,363	15,650	17,014
<u>AGGREGATE⁶</u>						
<u>All anglers</u>						
1. Lodging	3,421	11,909	10,069	10,141	12,627	48,304
2. Food	9,055	44,814	57,621	58,737	29,728	200,213
3. Supplies ⁵	8,764	30,809	74,200	57,425	24,039	198,275
4. Transportation	8,216	37,096	51,395	47,012	23,420	167,363
5. Other	6,169	30,820	40,153	47,377	17,963	152,033
TOTAL	35,625	155,447	233,438	220,692	107,776	766,188
<u>Residents</u>						
1. Lodging	1,698	7,649	4,471	7,617	8,792	30,313
2. Food	5,925	36,631	45,350	51,333	24,425	163,876
3. Supplies ⁵	6,329	24,671	59,388	47,857	16,524	157,143
4. Transportation	5,262	30,596	39,520	39,976	20,511	136,048
5. Other	4,800	26,650	33,113	43,032	13,482	129,192
TOTAL	24,014	126,162	181,842	189,816	83,734	616,050
<u>Non-residents</u>						
1. Lodging	1,722	4,260	5,598	2,524	3,835	17,991
2. Food	3,129	8,183	12,271	7,404	5,302	36,336
3. Supplies ⁵	2,435	6,172	14,811	9,569	7,514	41,131
4. Transportation	2,954	6,500	11,875	7,036	2,909	31,316
5. Other	1,370	4,170	7,040	4,344	4,481	22,842
TOTAL	11,610	29,286	51,596	30,876	24,042	150,138

TABLE B3. Footnotes.

¹Lake Superior includes the St. Mary River.

²Lake Erie includes the Detroit River, Lake St. Clair and St. Clair River.

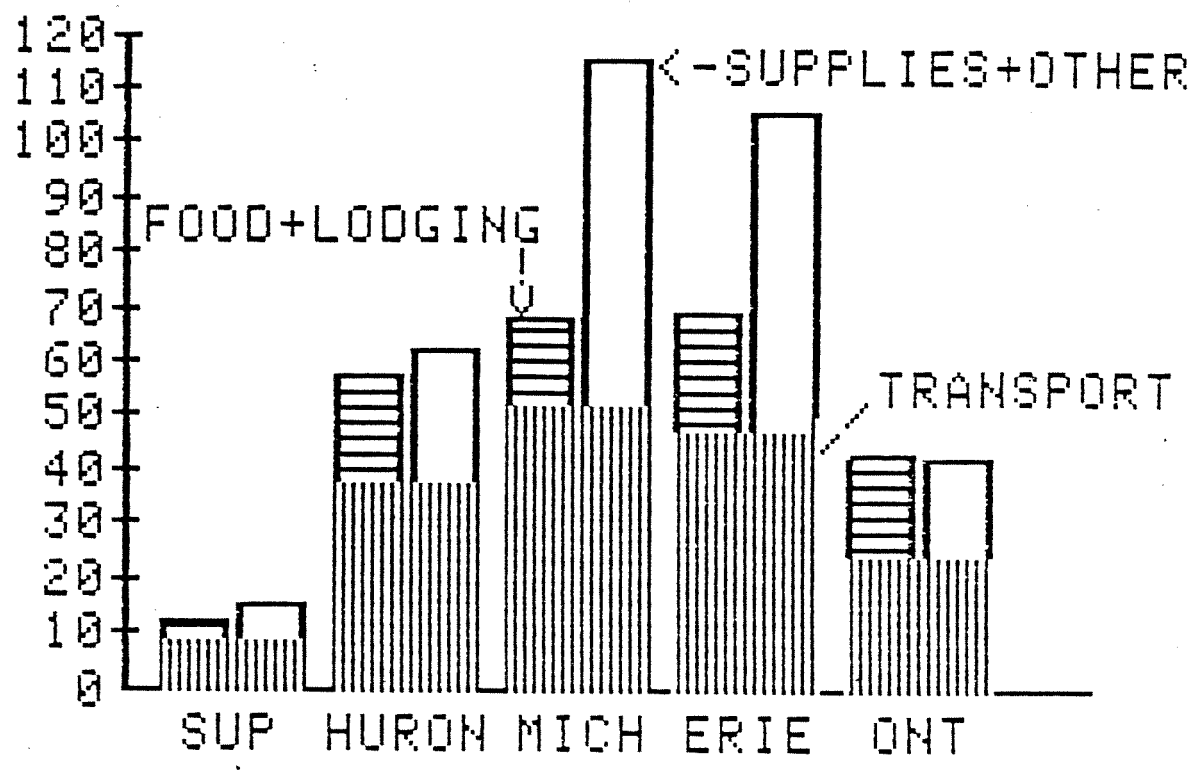
³Lake Ontario includes the St. Lawrence River and Niagara River.

⁴Total column for Expenditures for Ontario includes \$1,087,500 in expenditures not identified by lake fished.

⁵Supplies include bait, rods, reels, tackle, clothing, etc.
"Other" includes access fees, permits, guide service, rentals, charters, boat, gas, repairs, moorage, household owned costs, etc.

⁶The "Aggregate" total column includes \$12,123,000 in U.S. expenditures that were not included in lake and jurisdiction fished totals because the expenditures could not be assigned to particular locations fished.

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AGGREGATE EXPENDITURES BY LAKE