



SPORT FISHING IN ONTARIO, 1985

Introduction

A survey on sport fishing in Ontario in 1985, was carried out to gather basic information on the nature and magnitude of the sport fishery and to show its importance to the province. The survey was conducted in 1986 by the Fisheries Branch of the provincial Ministry of Natural Resources, in co-operation with the Surveys Unit, Economic and Commercial Analysis Directorate of Canada's Department of Fisheries and Oceans, Ottawa.

The 1985 survey was the third in a series carried out at five year intervals. The surveys are part of a nationally co-ordinated effort by Canada's federal, provincial and territorial fisheries agencies. These studies have been successful in two important ways. First, they provided Canadians with the first authoritative data on the magnitude and importance of Canada's sport fisheries. Second, they demonstrated that, despite regional differences, consistent and comparable data can be

generated from a common group of questions administered throughout Canada.

Survey Background

Sixty percent (8,300) of the questionnaires sent to residents who had fished and to nonresidents who had purchased angling licences in Ontario in 1985 were completed and returned to provide the basis for the information given in this report. Resident anglers 16 years of age and over, were identified in a telephone pre-screening survey conducted in December 1985 – January 1986. A stratified random sample of 20,366 households was contacted in order to obtain the sample of anglers to whom questionnaires were sent. After extrapolating information from these returns, gathering information on known licence numbers, comparing estimates and holding discussions with fisheries management personnel, an overall description

of sport fishing in Ontario was developed.

The Resource Base

There are approximately 250,000 lakes in Ontario and unmeasured thousands of kilometers of streams and rivers. These waters are inhabited by more than 140 species of fish. The resource continues to be of economic and social significance to the province through its support of important recreational, commercial, and native food fisheries. The province boasts of one of the largest freshwater fisheries anywhere.

Angler Profile

Ontario's adult angling market in 1985 consisted of approximately 2,199,933 individuals. Approximately 1,577,816 of these anglers were residents of the province who actively fished in 1985. The remaining 622,117 were individuals who

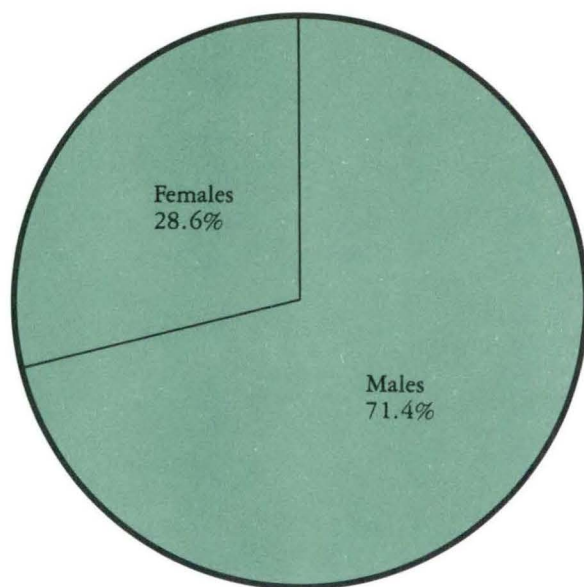
Table 1. Numbers and characteristics of anglers in Ontario in 1985.

	Resident	Nonresident		Total
		Canadian (c)	Other	
Total Licensed Angling Population (a) – Adults	1,577,816	34,279	587,838	2,199,933
Active Adult Anglers				
– Males	1,126,061	25,597	468,389	1,620,047
(Average Age, Years)	40	40	45	41
– Females	451,755	7,884	105,795	565,434
(Average Age, Years)	36	38	45	38
Total	1,577,816	33,481	574,184	2,185,481
Children (b)	750,376	9,674	115,064	875,114
Total Active Anglers – All Ages	2,328,192	43,155	689,248	3,060,595

- (a) Individuals who fished or held an angling licence in Ontario (Ontario residents did not require a licence to fish in 1985). This group provides the basis for the statistical information presented in this bulletin.
- (b) Residents of the province under 16 years of age and nonresidents under 17 years of age. (Nonresidents under 17 years old are exempt from purchasing a licence if accompanied by a licensed member of their family).
- (c) Canadians who live in provinces/territories and who fished in Ontario in 1985.

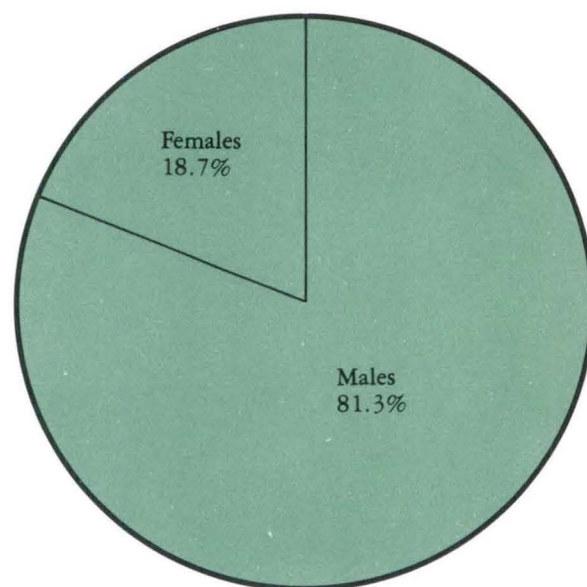
Fig. 1. Sex composition of active anglers.

(A) Resident



1,577,816 active anglers.

(B) Nonresident



607,665 active anglers.

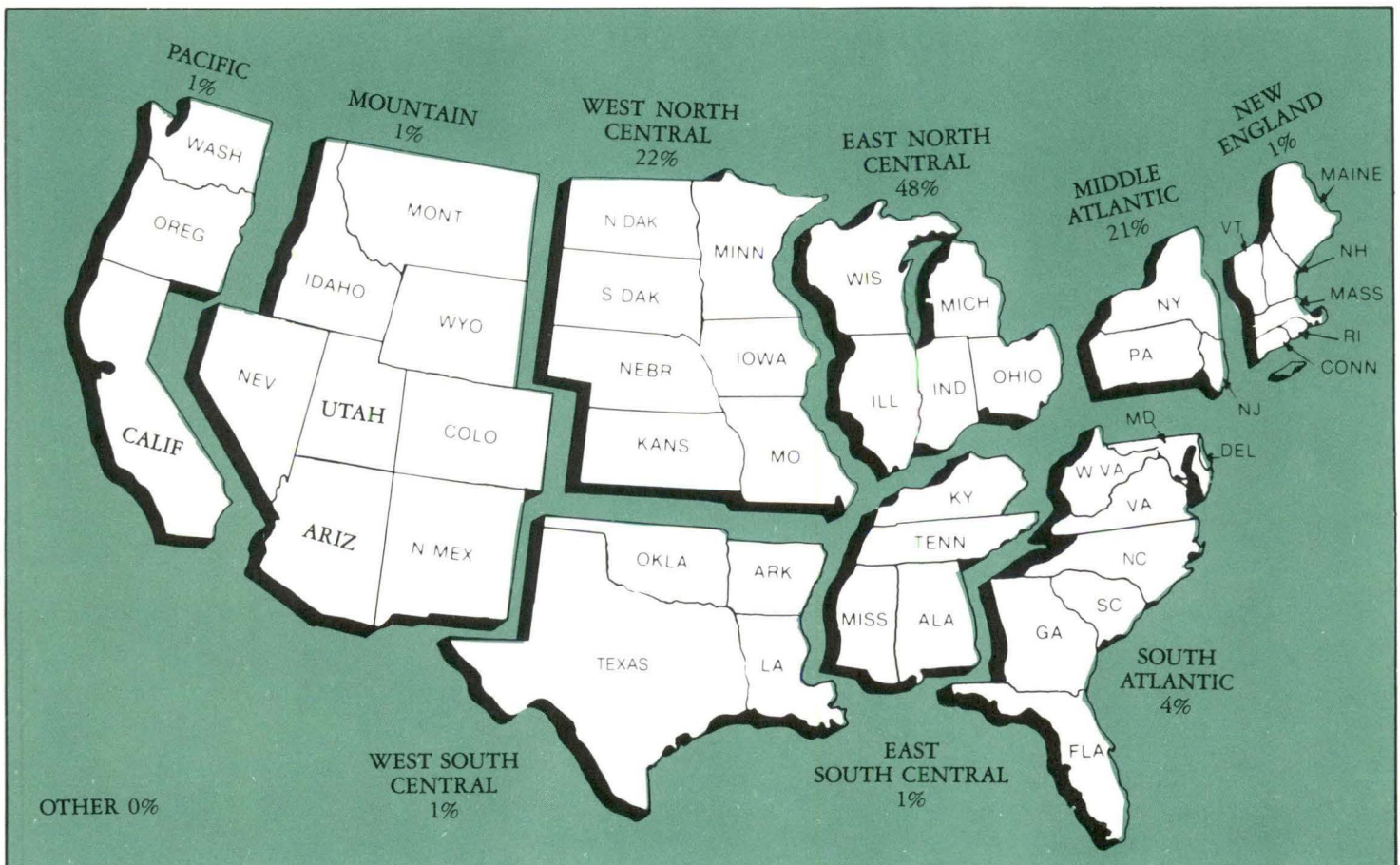
Table 2. Origin of nonresident licensed anglers in Ontario in 1985.

Province-State Group	Number
Canadian	
Newfoundland	114
Nova Scotia	114
New Brunswick	114
Quebec	3,542
Manitoba	27,767
Saskatchewan	914
Alberta	1,257
British Columbia	343
Northwest Territories	114
Canadian Total	34,279
Non-Canadian	
New England, U.S.A.	2,662
Mid-Atlantic, U.S.A.	122,906
East North Central, U.S.A.	284,255
West North Central, U.S.A.	131,913
Mountain, U.S.A.	3,957
Pacific, U.S.A.	3,533
South Atlantic, U.S.A.	22,354
East South Central, U.S.A.	7,413
West South Central, U.S.A.	7,613
U.S.A. - Other States	396
Other Countries	836
Non-Canadian Total	587,838
Grand Total	622,117

purchased a nonresident angling licence to fish in the province (Resident anglers did not require a licence to fish in Ontario in 1985). Approximately 98% or 607,665 of these nonresidents fished (Table 1). As well, 875,114 children under the age of 16 living in adult angler's households also fished, bringing the total population of active anglers in the province to 3,060,595. The impact on Ontario's sport fishery of the large number of anglers under 16 years of age, who are not covered by this survey is probably considerable. Seventy-one percent of the active resident adult anglers and 81% of the nonresidents were male (Figure 1).

Approximately 6% of the nonresident anglers in 1985 were Canadians, mainly from Manitoba. Most of the remaining nonresident anglers were United States citizens who came for the most part, from the East North Central, West North Central and Mid-Atlantic states of the U.S. (Table 2 - Figure 2).

Fig. 2. Regional distribution of United States residents who held Ontario angling licences in 1985.



Fishing Effort

Angling in Ontario is a major recreational activity. Anglers fished a total of about 34.4 million days in 1985 (Table 3). On the average, each angler spent 16 days fish-

ing in 1985. Resident anglers fished an average of 18 days, while non-residents spent an average of 9 days at their sport.

Most fishing (85%) occurred during the period April through September. During that time 83% of resident and 96% of nonresident

fishing effort was expended. More than half of all effort (54%) occurred during July, August, and September. As might be expected, nonresidents were most active during these summer months, expending 60% of their fishing effort during that time (Figure 3).

Table 3. Angling effort (in angler days) by season in Ontario in 1985.

	Resident	Nonresident	Total
January – March	3,023,470	72,894	3,096,364
April – June	8,621,749	1,912,745	10,534,494
July – September	15,453,446	3,275,769	18,729,215
October – December	1,902,873	163,782	2,066,655
Total	29,001,538	5,425,190	34,426,728

Fig. 3. Angling effort by season in Ontario in 1985.

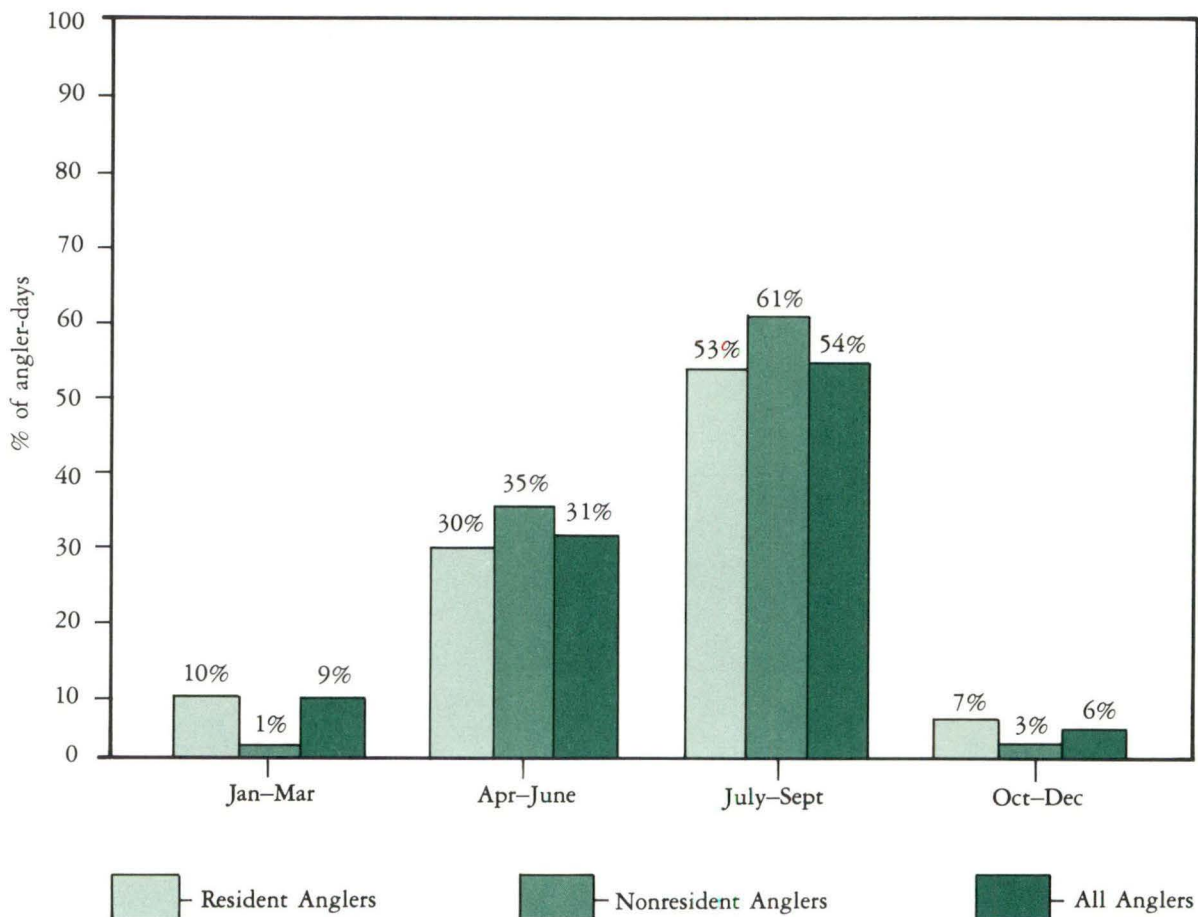
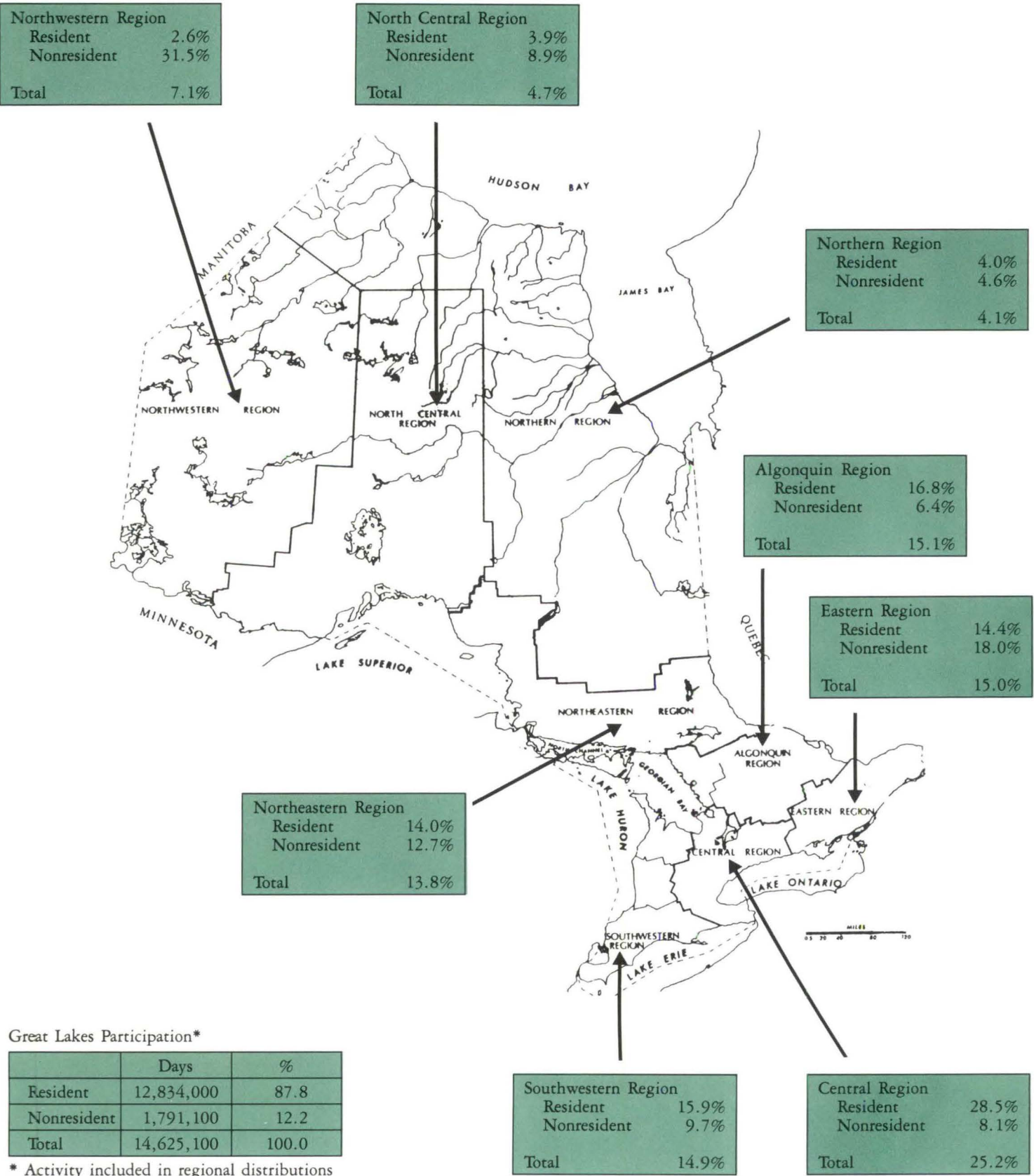


Fig. 4. Percentage of angler-days expended by anglers in each fishing area of Ontario in 1985.



Great Lakes Participation*

	Days	%
Resident	12,834,000	87.8
Nonresident	1,791,100	12.2
Total	14,625,100	100.0

* Activity included in regional distributions above.

For the purposes of the survey, Ontario was divided into eight fishing regions. Of these, the Central region was the most heavily fished (Table 4). The pressure on the region was largely the result of its popularity with resident anglers, who spent 29% of their fishing time

there. In contrast, nonresident anglers preferred the Northwestern region, where they spent about 31% of their time. The majority of other fishing effort was more or less equally divided among four other regions: the Algonquin (which was especially popular with resident an-

glers), the Eastern, the Southwestern and the Northeastern. The remaining regions of the province (the Northwestern, North-Central and Northern) attracted relatively few anglers (Fig. 4).

Table 4. Distribution of angler-days expended by anglers in each fishing area of Ontario in 1985.

Region Fished	Resident		Nonresident		Total	
	No.	%	No.	%	No.	%
Northwestern	749,493	2.6	1,709,717	31.5	2,459,210	7.1
North Central	1,132,535	3.9	481,112	8.9	1,613,647	4.7
Northern	1,160,442	4.0	251,620	4.6	1,412,062	4.1
Northeastern	4,055,074	14.0	690,050	12.7	4,745,124	13.8
Algonquin	4,858,009	16.8	348,645	6.4	5,206,654	15.1
Eastern	4,180,637	14.4	976,892	18.0	5,157,529	15.0
Central	8,253,629	28.5	438,610	8.1	8,692,239	25.2
Southwestern	4,611,719	15.9	528,544	9.7	5,140,263	14.9
Total	29,001,538	100.0	5,425,190	100.0	34,426,728	100.0

Harvest

The recreational fishery of Ontario is one of major proportions. In 1985, anglers caught an estimated 144.1 million fish of all species and retained 74.4 million of them (Table 5). These fish weighed approximately 40.1 million kilograms or 88.5 million pounds. Resident anglers caught 75% of the fish harvested (by number). Smelt, perch and walleye were the most widely taken species, accounting for 64% of the harvest by number (Figure 5). On average, each angler retained 34 fish. Walleye, trout and bass, in order of priority, were the species most sought after by resident and non-resident anglers (Table 6).

Table 5. Numbers of fish caught and retained by species in Ontario in 1985.

Fish Species	Resident	Nonresident	Total
Smelt	16,658,776	616,844	17,275,620
Perch	12,025,263	4,677,755	16,703,018
Walleye	8,500,662	4,896,811	13,397,473
Smallmouth Bass	3,898,585	1,298,735	5,197,320
Panfish	1,504,252	3,602,233	5,106,485
Pike	2,663,173	2,159,915	4,823,088
Brook Trout	1,968,473	82,707	2,051,180
Largemouth Bass	1,584,761	432,225	2,016,986
Lake Trout	1,702,604	216,056	1,918,660
Rainbow Trout	1,324,399	22,569	1,346,968
Whitefish	474,048	69,920	543,968
Chinook	466,636	9,433	476,069
Coho	280,572	8,555	289,127
Brown Trout	236,508	9,881	246,389
Maskinonge	71,490	16,629	88,119
Other Species	2,530,811	380,146	2,910,957
Total Number Retained	55,891,013	18,500,414	74,391,427
Weight Of Fish Kept (in lbs)	63,081,001	25,379,655	88,460,656

Fig. 5. Proportion of fish (by number) retained by active licensed anglers in Ontario in 1985.

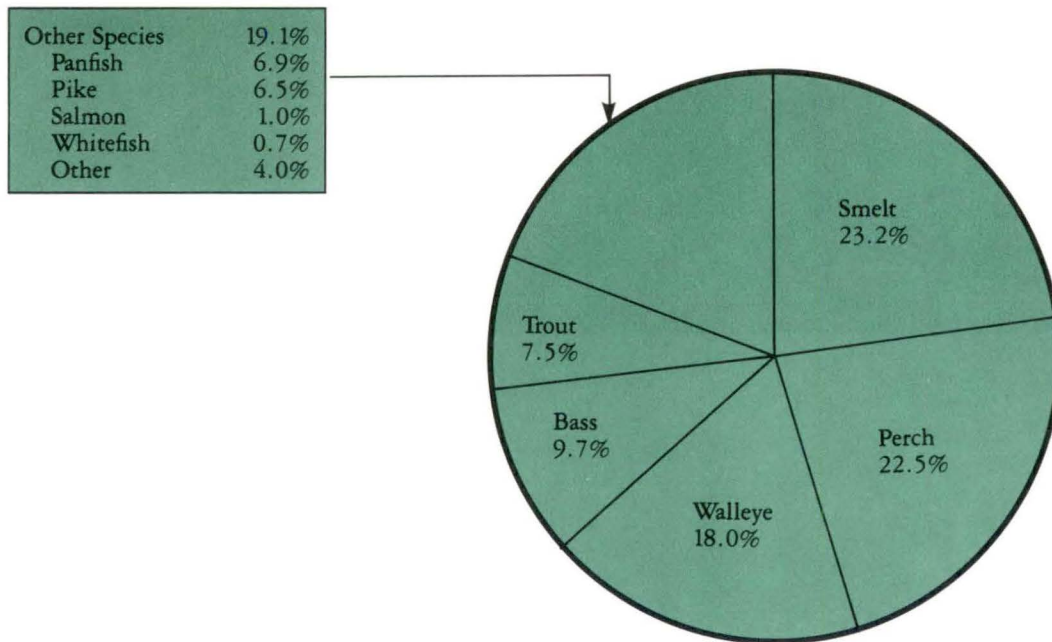


Table 6. Distribution of species preference indicated by anglers in Ontario in 1985.

Species	Resident	Nonresident	All Anglers
	%	%	%
Walleye	26.7	37.5	29.8
Trout	28.3	8.9	22.7
Bass	21.8	19.4	21.1
Northern Pike	8.9	23.4	13.1
Perch	6.3	4.8	5.9
Maskinonge	2.3	3.0	2.5
Salmon	3.3	0.4	2.5
Lake Whitefish	0.7	0.3	0.6
Panfish	0.2	1.0	0.5
Smelt	0.5	0.3	0.4
Catfish	0.4	0.1	0.3
Bluegill	0.1	0.4	0.1
Other Species	0.5	0.5	0.5
Total	100.0	100.0	100.0

Previous Fishing Activity

Eighty-seven percent of the Ontario residents, and 62% of the nonresidents who held Ontario sport fishing licences in 1985, had also fished in the province in 1984 (Table 7). In addition, 73% of the resident and 46% of the nonresident anglers fished in Ontario at the time of the previous survey 5 years ago.

Fishing Outside Ontario

Twenty-seven percent of the nonresident anglers indicated Ontario was the only place they fished in 1985. Only 144,596 resident anglers (9% of adult resident anglers) fished outside Ontario in 1985, usually while on vacation, at the cottage, or on business (Table 8). Michigan and Quebec were their two main destinations, with 30% and 24% respectively, of their out-of-the province fishing days spent in these areas.

Table 7. Fishing activity in Ontario during the last five years (based on angler population in 1985).

Year of Activity	Resident	Nonresident	All Anglers
	%	%	%
1980	72.9	46.3	65.4
1981	75.3	47.6	67.5
1982	79.1	51.3	71.3
1983	83.5	58.6	76.5
1984	87.2	62.1	80.1

Table 8. Reasons given by residents of Ontario for fishing outside the province in 1985.

Reasons	Number	%
Species not Available	10,100	7.0
On Vacation, Business, etc.	114,907	79.5
Other Reasons	19,589	13.5
Total	114,596	100.0

Table 9. Trip characteristics of nonresident anglers in Ontario in 1985.

Characteristics	Number
Trips to Ontario – All Reasons	2,089,734
Fishing Trips to Ontario	1,566,306
– %	75
Days Spent For All Reasons	7,770,524
Days Fished	5,425,188
– %	70
Fishing Trips – Main Reason for Visit	1,307,776
– Secondary Reason	220,253
– Decided Upon After Arrival	38,277
Day Trips for Fishing	331,867
Overnight Trips for Fishing	1,234,439
Accommodation Used on Overnight Trips (% of nights)	
Friends and Relatives	7.6
Tent or Trailer	8.7
Cottages	21.4
Camping in Provincial Parks	3.9
Camping on Crown Land	2.3
Camping in Commercial Camp Grounds	5.6
Fishing Lodge or Camps	34.5
Commercial Accommodation	12.9
Other Accommodation	2.9
Total Nights Spent on Fishing Trips	5,436,037

Table 10. Importance of factors affecting fishing enjoyment in Ontario in 1985.

Factors	Ranking Score		
	Residents	Nonresidents	All Anglers
1. Quality of Water	15.4	12.9	14.6
2. Beauty of Surroundings	14.8	12.9	13.6
3. Escape Routine	11.4	11.3	11.4
4. Weather Conditions	12.1	9.3	11.2
5. Privacy	8.8	9.6	9.1
6. Access to Wilderness	8.9	8.5	8.8
7. Catch Species Desired	7.5	8.9	7.9
8. Angling for Wild Fish	7.3	7.1	7.3
9. Number of Fish Caught	5.9	8.6	6.8
10. Size of Fish Caught	6.1	7.9	6.7
11. Catch as Source of Food	2.4	3.0	2.6

Nonresident Trip Activity

Nonresident anglers made 2,089,734 trips to Ontario in 1985, or about three trips per angler, of which 75% were for fishing (Table 9). For 83% of their fishing trips, fishing was the main reason for visiting the province. Seventy-nine percent of their fishing trips to the province lasted more than a day (the average length of an overnight fishing trip was 4 nights). On these trips they stayed mostly in fishing lodges and camps (35% of the time) or at their cottages (21% of the time).

Factors Influencing Fishing Enjoyment

Angling is a rewarding recreational activity and many factors influence the overall enjoyment of this sport. To gain a true understanding of the effect of these factors and their relative importance to sport fishing, anglers were asked to rate eleven common factors given to them as very important, important or not important. The results were ranked according to their importance (Table 10).

Residents and nonresidents alike listed the environment as the most important factor that contributed to their enjoyment of sport fishing in Ontario. The quality of the water, natural beauty of the province, favourable weather conditions and access to wilderness areas were important components of the environmental factor. Other important factors were the ability to escape from work or household routine, privacy from other fishing parties, and success in catching the species desired. Relative to the factors mentioned above, anglers attached little importance to angling for wild (as opposed to hatchery) fish, the number or the size of fish caught, and to catching fish as a source of food.

Wildlife Activities

Ontario residents also enjoyed many wildlife related activities in the province in 1985 (Table 11). Hunting was of particular interest to many of these resident anglers, as 18% were actively involved in hunting for wild birds, 18% hunted for small game and 14% enjoyed hunting for big game. Feeding wildlife, bird watching and nature photography were other favorite pastimes for 37%, 34% and 33% of these anglers respectively.

Membership Organization

Approximately 20% of adult resident anglers were members of a national or provincial wildlife organization or other local membership club; 113,329 anglers indicated membership in a provincial organization, 58,172 indicated membership in the Canadian Wildlife Federation, and 147,936 anglers were members of some other local organizations or clubs (Table 12).

Angler Satisfaction

Approximately 95% of active nonresident anglers indicated they would return to Ontario to fish in the future (Table 13). Sixty-seven percent of nonresident active anglers said they would not have come to the province if there were no fishing opportunities in Ontario in 1985, while 24% said they would have substituted other activities and approximately 7% would have reduced the length of their trip (Table 14). Overall, a majority of 69% of nonresident active anglers rated the quality of fishing in Ontario as good to excellent; 19% rated fishing as fair and 10% rated the quality as poor. (Table 15).

Table 11. Wildlife related activities of Ontario residents in 1985.

Activity	%
Hunting –	
1. Big Game	13.8
2. Small Game	17.8
3. Wildlife Birds	17.8
4. Nature Photography	33.1
5. Bird Watching	34.1
6. Feeding Wildlife	37.0

Table 12. Membership organization of Ontario residents in 1985.

Organization	No.	%
Provincial Organizations or Clubs	113,329	7.1
Canadian Wildlife Fed.	58,172	3.7
Other Membership Organizations	147,936	9.3

Table 13. Projected future participation of active nonresident anglers in Ontario.

Return	No.	%
Yes	576,790	94.9
No	16,231	2.7
No Opinion	14,644	2.4
Total	607,665	100.0

Table 14. Activities of active nonresident anglers if there were no fishing opportunities in Ontario in 1985.

Activity	No.	%
Stay Shorter Time	46,883	7.7
Substitute Other Activities	143,712	23.6
Not Come at All	406,834	67.0
No Opinion	10,235	1.7
Total	607,665	100.0

Table 15. Attitude of active nonresident anglers on quality of fishing in Ontario in 1985.

Rating	No.	%
Excellent	67,833	11.2
Very Good	152,820	25.1
Good	200,229	33.0
Fair	115,929	19.1
Poor	62,697	10.3
No Opinion	8,147	1.3
Total	607,655	100.0

Expenditures and Investments

In 1985, anglers spent \$981.2 million in Ontario on activities and supplies directly connected with their sport (Table 16). Residents spent a total of \$696.4 million, or an average of \$441 per active angler. Nonresidents spent \$284.8 million, or \$469 per active angler. Food, lodging and transportation accounted for 84% of the expenditures of resident anglers and 56% of the expenditures of nonresident anglers (Figure 6). Packages, which included the costs of aircraft, lodge facilities and charter boats, accounted for 27% of the nonresident expenditures.

Anglers in Ontario invested \$1.4 billion on major durable and property in 1985 (Table 17), of which \$782.4 million, or 54% was attributed to sport fishing activities (Figure 7). The average investment of active resident anglers was \$876 and the average investment of active nonresidents was \$109. Ninety-five percent of the investments were made by resident anglers. Boats and related equipment attracted 31% of investment dollars, and special vehi-

Table 16. Expenditures directly attributable to sport fishing in Ontario in 1985.

Expenditures	Resident	Nonresident	Total
	\$	\$	\$
Food and Lodging	316,063,782	117,110,935	433,174,717
Transportation	269,434,036	42,958,033	312,392,069
Fishing Services	19,982,264	34,096,389	54,078,653
Fishing Gear	56,402,788	11,062,195	67,464,983
Packages	29,455,970	77,892,727	107,348,697
Other	5,098,780	1,683,160	6,781,940
Total	696,437,620	284,803,439	981,241,059
Average Per Active Angler	441.39	468.68	448.98

Table 17. Major purchases or investments relating in whole or in part to sport fishing in Ontario in 1985.

Expenditures	Resident	Nonresident	Total
	\$	\$	\$
Fishing Equipment	81,069,146	3,397,652	84,466,798
Boats and Related Equipment	439,463,222	11,587,284	451,050,506
Camping Equipment	156,121,557	2,978,476	159,100,033
Special Vehicles (ATV's etc)	349,951,559	2,500,193	352,451,752
Land-Buildings	327,867,463	43,760,132	371,627,595
Other	27,319,042	1,863,843	29,182,885
Total Expenditures	1,381,791,989	66,087,580	1,447,879,569
Average Per Active Angler	875.76	108.76	662.50
Total Attributable to Sport fishing	741,592,179	40,810,568	782,402,747
Average Per Active Angler	470.01	67.16	358.00

Fig. 6. Proportion of expenditures attributable to sport fishing in Ontario in 1985.

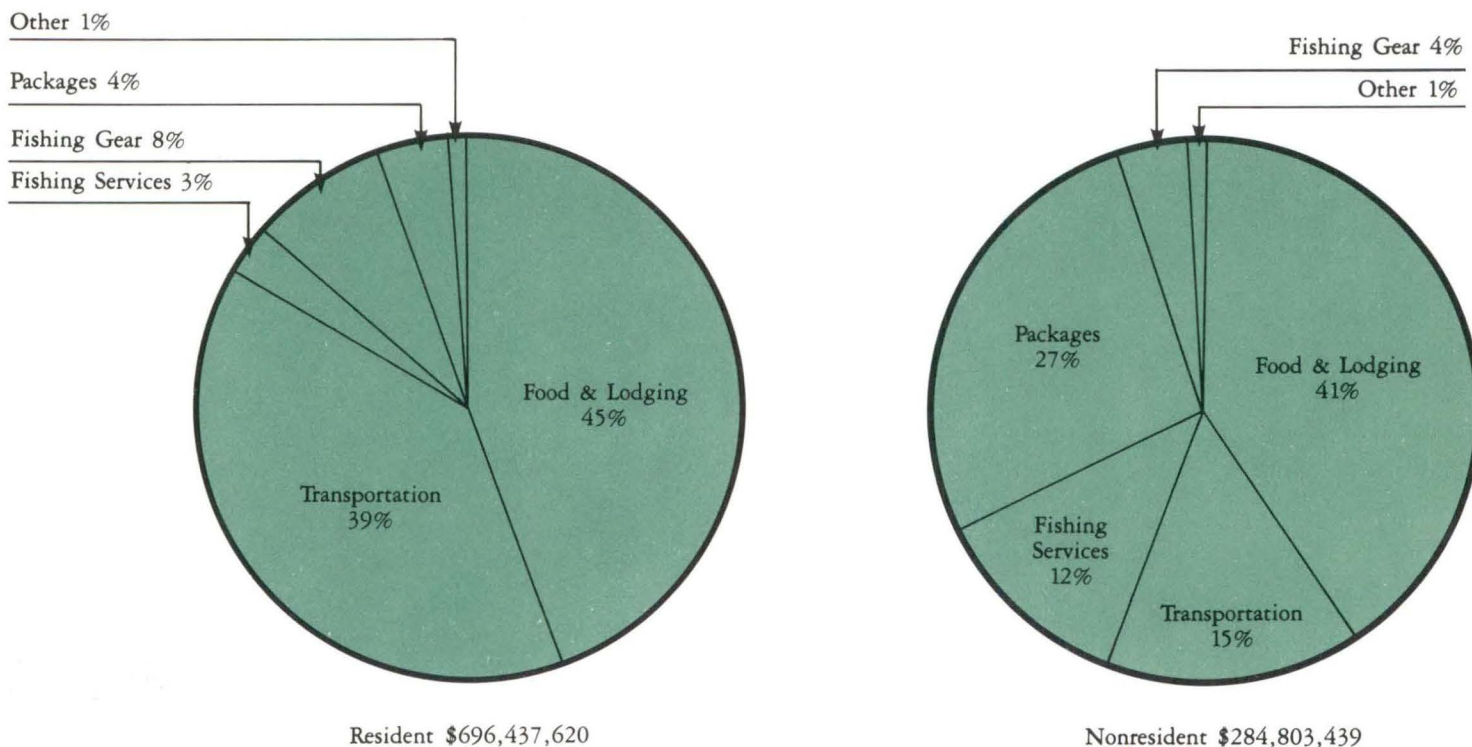
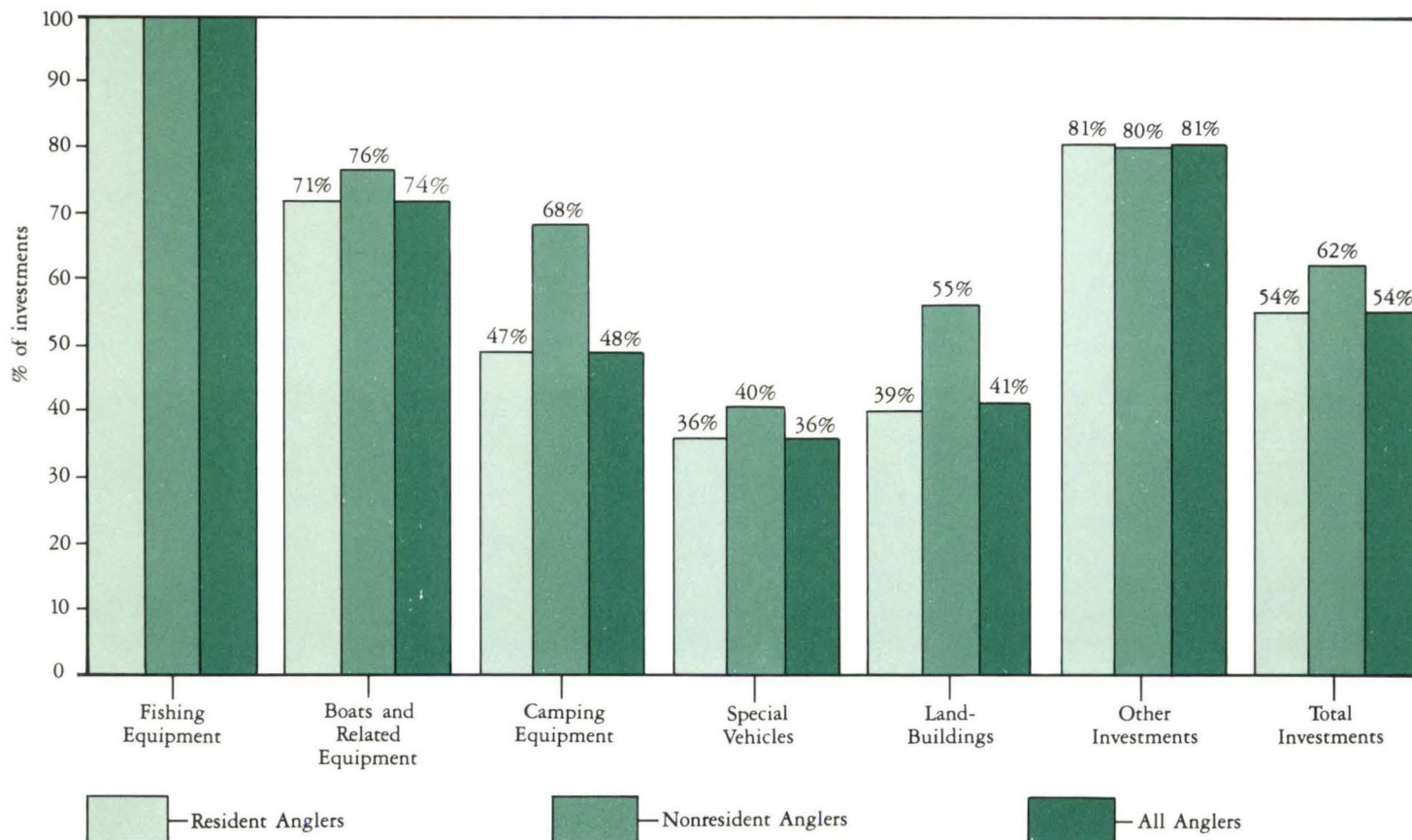


Fig. 7. Proportion of purchases or investments made by anglers in Ontario attributable to sport fishing in 1985.



cles (ATV's, snowmobiles, camper trucks, etc.) were another popular commodity, accounting for 24% of

Table 18. Willingness of active resident anglers to pay additional costs for fishing in Ontario in 1985.

Additional Cost Per Day	% of Active Anglers
	%
up to \$0.00	21.3
up to \$1.00	24.8
up to \$2.00	26.1
up to \$3.00	27.9
up to \$4.00	29.8
up to \$5.00	39.7
up to \$7.50	41.7
up to \$10.00	63.9
up to \$20.00	81.5
up to \$30.00	89.5
up to \$40.00	92.6
up to \$50.00	96.1
up to \$100.00	100.0
Additional Annual Amount ('000)	\$490,556.4

investment dollars. Anglers also invested approximately \$372 million dollars (26% of total purchases) on land-buildings (cabins, cottages, land, etc.) and 41% of these expenditures on land-buildings are directly attributable to their sport fishing activities.

Ontario residents and nonresidents, indicated that 54% and 62% respectively, of their purchases and investments were for sport fishing.

It should be emphasized that caution is needed in the interpretation and use of these expenditure figures. While sport fishing is undoubtedly big business, angler expenditures do not necessarily represent the value of the fisheries resource or the value of recreation provided. Reference to economics literature can provide further guidance on the state of the science in the derivation of various economic 'values' associated with fisheries and how angler expenditures enter those value derivations.

Willingness to Pay

“Willingness to pay” is a method used by economists to estimate the value people place on experiences such as outdoor recreation, scenic beauty or other unpriced amenities of life in this province, over and above the actual costs incurred to enjoy them.

Active resident anglers were asked, “If your fishing costs had been higher in 1985 due to increased costs for gasoline, accommodation, supplies and other services, at what additional daily cost would you have decided not to fish?” Choices were given between \$1.00 and \$100.00 per day (Table 18). Twenty-one percent of resident anglers indicated they would not have been willing to pay any additional costs. The remaining seventy-nine percent indicated a total “willingness to pay” of \$490.6 million.

While this may represent, however crude, the net economic value

of sport fishing to residents of the province, caution is required. The basic rationale for including this question was an experimental one — to compare the results with estimates of net economic value derived by much more sophisticated methods of valuation that are planned or underway across the country.

The net income to Ontario from nonresident expenditures in the province is being calculated in a separate study to determine the total net economic value of sport fishing.

Conclusions

The results of the 1985 survey of sport fishing in Ontario confirm that it is a major outdoor recreational activity and an important component of the natural resource based tourism in the province. It is estimated anglers spent \$981.2 million on activities directly associated with sport fishing. These included

expenditures for accommodation, food, travel, bait, licences, etc. Additionally, anglers invested \$1.4 billion on major durables and property, of which an estimated \$782.4 million was used for sport fishing.

Overall, 2,185,481 adults fished for sport in Ontario in 1985. More than 1,577,816 of these active adult anglers were residents of the province. Based on the population estimate of 7,046,700* individuals 16 years of age and over, one Ontario resident adult in four fished in 1985. Anglers fished a total of 34.4 million days in 1985 and they harvested 74.4 million fish of all species. These fish weighed 40.7 million kilograms or 85.5 million pounds.

Ontario anglers indicated that they were more concerned about the fishing experience than they were about catching fish. They rated quality of water and natural beauty of the province as the two most im-

portant factors while number and size of fish were rated nine and ten, respectively. Although fish provide the focus for angling activity, other elements must be considered by managers in order to provide a greater recreational fishing experience.

In summary, the average angler fishing in 1985 was 40 years old, strongly preferred to fish for walleye, trout and bass and felt that water quality and natural beauty of surroundings were the most important factors influencing a day's fishing. This average angler fished 16 days, while spending \$807 and catching 66 fish. Thirty-four of these fish were kept, weighing a total of 41 pounds (18.6 kilograms).

* Statistics Canada — Postcensal Annual Estimates of Population, June 1985 — Volume 3.



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