

# Sea Grant

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## Expenditures of Anglers Fishing in New York's Great Lakes Waters

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This report provides a summary of economic data collected by the Department of Environmental Conservation in their 1984 New York Great Lakes Angler Survey of over 38,000 anglers. The survey was designed to measure sportfishing effort, angler harvest, and the trip expenditures of anglers. These trip expenditures are the daily out-of-pocket purchases made by anglers and do not include capital investments by anglers on boats, motors, trailers, electronic equipment, fishing equipment, and other investments such as seasonal rentals for boat dockage at marinas. Detailed economic and fishery information and a summary of the study methodology are available from the Great Lakes Fisheries Section office of the Department of Environmental Conservation located at Albany, New York.

### Great Lakes Angling Effort

Since the first coho salmon were stocked into Lake Ontario in 1968, there has been interest in knowing how the developing warmwater and coldwater sportfisheries have affected state and local economies. In 1984, anglers spent 6.8 million hours fishing during 1.27 million angler trips to Lakes Erie and Ontario and the Niagara River. Most of that effort was expended by anglers in boats on the open lake waters (42%) and anglers on tributary streams (28%) (Figure 1).

The majority of the sportfishing effort (77%) was spent on the Lake Ontario system, including the tributary streams, embayments, and lower Niagara River. Oswego County was the location for one third of that angler activity. The Lake Erie system, including its tributaries and Upper Niagara River, was the site for 23 percent of the angler effort, with Erie County having the heaviest use.

Fishing effort was concentrated in April through October with 88 percent of the 6.8 million angler hours of effort occurring in those months. September and October had the greatest amount of effort per month; each of these months had over 1 million hours of angling effort.

Anglers from out-of-state made 200,000 fishing trips to New York's Great Lakes waters while residents made more than one million angling trips.

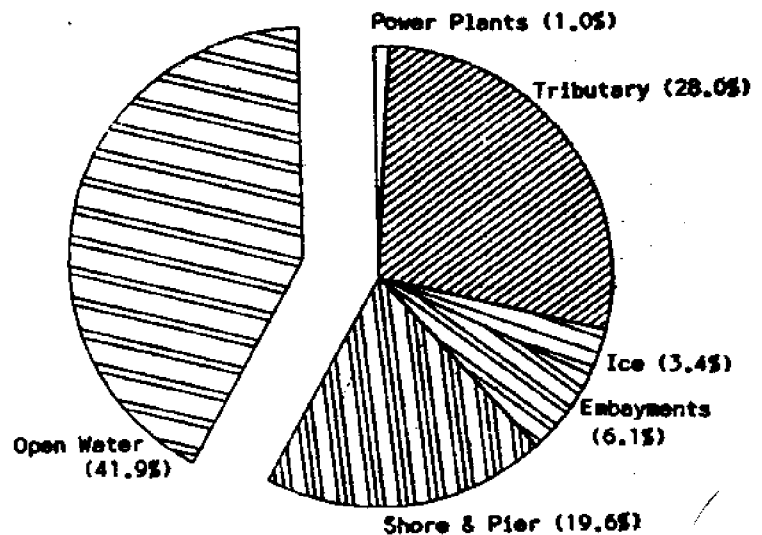


Figure 1. Percent Angler Hours Spent in Various Segments of the 1984 New York Great Lakes Sportfishery.

New York residents comprised 88% of the anglers while non-resident anglers most often came from Pennsylvania (6%), New Jersey (2%), Connecticut (1%), Massachusetts (1%), and Vermont (1%).

### Angler Expenditures

Great Lakes anglers spent \$42 million during their fishing trips to New York waters in 1984. Expenditures were made for food, lodging, gas, automotive services, fishing tackle, plus purchases of other goods and services. Equipment expenditures were only reported for very limited situations when the purchase of fishing or boating equipment was made during a fishing trip and primarily because of that trip. Thus, this survey process did not estimate the capital expenditures or full investment made by anglers to engage in their sport. The expenditures reported herein represent real out-of-pocket purchases made by anglers while on a fishing trip.

Over one half of the daily expenditures were made by Great Lakes anglers using the open lake waters and another quarter of expenditures were made by anglers using tributary streams (Figure 2). Anglers using power plant discharges and ice fishermen contributed only 3.4% of the expenditures but this occurred during winter months when other locations or types of fishing are used infrequently or not at all.

The anglers using Lake Ontario and its tributaries and Lower Niagara River spent \$32 million or three-quarters of the total Great Lakes daily angler expenditures. One-third of these Lake Ontario expenditures were generated by out-of-state anglers fishing in New York (Figure 3).

The anglers using Lake Erie and its tributaries and Upper Niagara River spent \$10 million or one-quarter of the total Great Lakes angler expenditures. However, only 3 percent of these expenditures were made by out-of-state anglers (Figure 3).

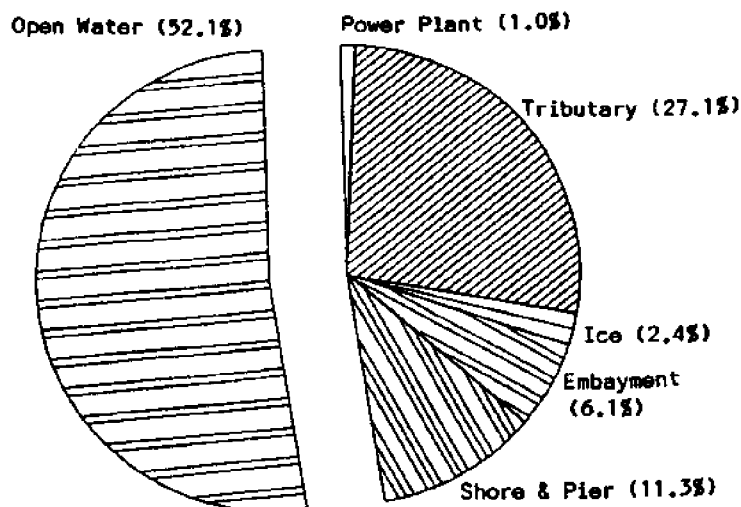


Figure 2. Percent Angler Daily Expenditures Spent in Various Segments of the 1984 New York Great Lakes Sportfishery.

### Expenditures by Segment Fished

Anglers fishing on the open lake waters and on Ontario tributaries made the greatest overall economic contributions (Table 1). This was due to the larger number of anglers and their tendency to spend more money per day than anglers fishing on other segments. Notable exceptions were the nonresident anglers who fished at power plant discharges or ice fished and spent in excess of \$85 per day to engage in their winter fishing activities.

While resident anglers outnumber non-residents by a ratio of 5 to 1, residents spent on average about half as much per day as nonresident anglers. Nonresident daily angler expenditures on Lake Ontario tributaries totaled \$5.2 million and nearly equaled total resident expenditures (Table 1). Nonresident anglers fishing on the open waters of Lake Ontario contributed \$4.0 million to that segment of the sportfishery economic impacts.

Expenditures were most often made for food, auto services, boat services, and other goods and services. Nonresident anglers spent more per trip on lodging accommodations than did resident anglers (Table 2).

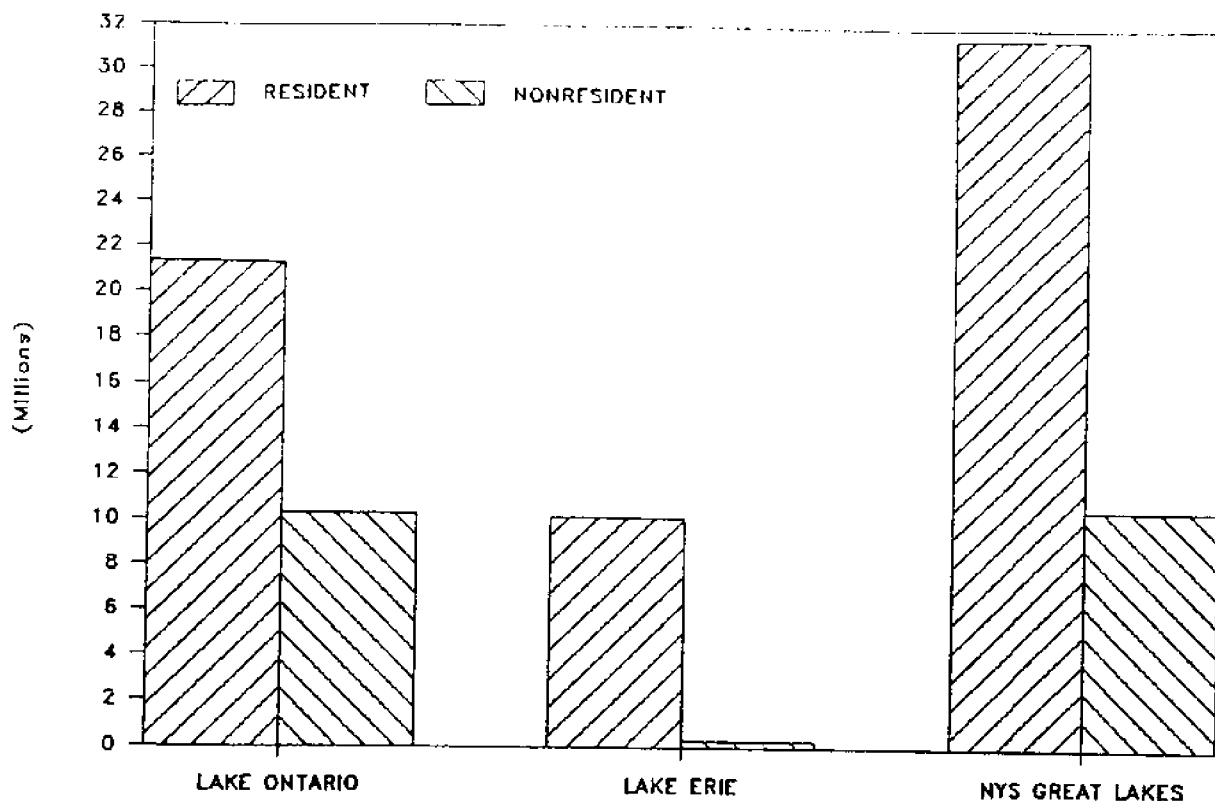


Figure 3. New York Resident and Nonresident Angler Expenditures by Lake System Fished in 1984.

#### Economic Impacts on Coastal Counties

Angler expenditures were made enroute to and within the Great Lakes coastal counties. Oswego County was the leading Lake Ontario destination county and it accounted for 41% of the total expenditures made by anglers using Lake Ontario and its tributaries (Table 3). The primary destination site within Oswego County was the Salmon River which generated \$6.1 million in total daily angler expenditures. Seventy-six percent of the expenditures anglers made on their trips to Oswego County were made within the county.

Erie county was the leading Lake Erie destination county that accounted for 64% of the daily expenditures made by anglers using Lake Erie and its tributaries and the Upper Niagara River (Table 3). The primary destination site within Erie County was the Upper Niagara River which generated \$3.1 million in daily angler expenditures. Ninety percent of the trip expenditures were made locally within Erie County. Lake Erie destination counties were where over 84% of the daily expenditures were actually made.

More than 80% of all the angler expenditures were spent in the destination counties (Table 3). Businesses located in coastal counties are the primary recipients of angler trip expenditures with the remainder of the expenditures being made to businesses outside the destination county.

New York anglers who made fishing trips to Lake Ontario and its tributaries contributed more than nonresidents in all counties except Oswego County (Figure 4). Out-of-state residents spent \$4.9 million in Oswego County compared to \$4.8 million spent by New York anglers. Out-of-state residents made substantial contributions to all of Lake Ontario's coastal counties.

Only 2% of the \$8.8 million angler dollars spent in Lake Erie's coastal counties were made by out-of-state anglers (Figure 5).

Table 1. Estimated Total Angler Expenditures in 1984 by Residence and by Lake and Segment Fished.

Lake/Segment Fished	Residents		Non-Residents		Total	
	Expenditures	Average Daily Expenditures	Expenditures	Average Daily Expenditures	Expenditures	Average Daily Expenditures
Lake Ontario						
Tributaries	\$ 5,365,600	\$30.53	\$ 5,238,400	\$52.10	\$10,604,000	\$38.38
Power Plant Discharges	118,100	17.56	64,400	85.55	182,500	24.40
Ice Fishing	607,600	20.93	8,600	89.76	616,100	21.16
Open Water Fishing	10,924,900	35.65	3,987,500	66.59	14,912,300	40.71
Embayments	1,973,900	27.97	582,300	47.69	2,556,200	30.88
Shore & Pier Fishing	2,502,500	16.08	693,500	37.45	3,195,900	18.35
	=====	=====	=====	=====	=====	=====
Subtotal	\$21,492,500	\$28.88	\$10,574,500	\$55.08	\$32,067,100	\$34.25
Lake Erie						
Tributaries	\$775,900	\$19.56	\$18,700	\$23.29	\$794,600	\$19.63
Power Plant Discharges	199,000	35.25	45,000	85.55	244,000	39.54
Ice Fishing	370,800	43.46	3,100	93.02	373,900	43.65
Open Water Fishing	6,905,300	39.86	123,900	35.95	7,029,200	39.78
Shore & Pier Fishing	1,506,900	15.31	61,400	27.41	1,568,200	15.57
	=====	=====	=====	=====	=====	=====
Subtotal	\$9,757,900	\$29.97	\$252,100	\$35.77	\$10,009,900	\$30.10
Great Lakes Total						
Tributaries	\$6,141,500	\$28.51	\$5,257,100	\$51.87	\$11,398,600	\$35.98
Power Plant Discharges	317,100	25.63	109,400	85.55	426,500	31.24
Ice Fishing	978,400	26.05	11,700	90.60	990,100	26.27
Open Water Fishing	17,830,100	37.17	4,111,400	64.93	21,941,500	40.41
Embayments	1,973,900	27.97	582,300	47.69	2,556,200	30.88
Shore & Pier Fishing	4,009,300	15.78	754,800	36.36	4,764,200	17.33
	=====	=====	=====	=====	=====	=====
TOTAL	\$31,250,400	\$29.21	\$10,826,600	\$54.39	\$42,077,000	\$33.16

Table 2. Distribution of Average Dollar Spent By Lake and Angler Residence

Lake/Angler Residence	Food, Auto Services and Others	Lodging	Trip Equipment Expenditures
Lake Ontario Residents	\$0.79	\$0.03	\$0.18
Lake Ontario Nonresidents	0.84	0.15	0.01
Lake Erie Residents	0.71	0.01	0.28
Lake Erie Nonresidents	0.82	0.11	0.07

### Seasonal Distribution of Angler Expenditures

Thirty-five percent of the daily angler expenditures for the Great Lakes were made during September and October. The proportions made during the four seasons were: fall (38%), summer (36%), spring (20%), and winter (5%) (Table 4). Lake Ontario angler expenditures were greatest during the fall months when 41% of the expenditures occurred. Lake Erie anglers made 55% of their expenditures during the summer months.

New York State resident angler expenditures exceeded out-of-state residents in all months (Figure 6). The greatest contribution of nonresident anglers was during the months of September and October.

Table 3. Estimated Angler Expenditures in 1984 by Lake and Great Lakes County

Destination Lake/County	Total Trip Expenditures		Local Trip Expenditures in County	
	Expenditures	Percent Destination Co. Contri- bution to Lake Total	Expenditures	Percent of Expenditures Made in Destination County
Lake Ontario				
Cayuga	\$1,648,500	5.2%	\$1,254,100	76.1%
Jefferson	3,940,100	12.5%	3,287,400	83.4%
Monroe	4,061,100	12.8%	3,209,300	79.0%
Niagara	3,066,900	9.7%	2,441,200	79.6%
Orleans	2,246,800	7.1%	1,793,500	79.8%
Oswego	12,863,700	40.7%	9,709,000	75.5%
Wayne	3,754,600	11.9%	2,820,800	75.1%
Subtotal*	31,604,700	100.0%	24,534,400	77.6%
Lake Erie				
Cattaraugus	44,400	0.4%	37,200	83.8%
Chautauqua	2,891,500	27.9%	2,125,100	73.5%
Erie	6,586,900	63.6%	5,920,500	89.9%
Niagara	831,900	8.0%	689,700	82.9%
Subtotal*	10,354,700	100.0%	8,772,500	84.7%
	=====		=====	
<b>NYS Great Lakes Total*</b>	<b>\$41,959,400</b>		<b>\$33,306,900</b>	

\* Totals differ slightly from Table 1 and 4 due to the use of different statistical formulas for these calculations.

### 1984 Economic Impacts

Great Lakes anglers made daily expenditures of an estimated \$33.3 million in the coastal counties to pursue their fishing activities. These angler expenditures contributed 2.5% of the 1984 travel and tourism expenditures in the Great Lakes counties, based on New York State Department of Commerce data. The travel and tourism industry includes public and private transportation services, recreation businesses, restaurants, and other businesses that provide goods and services to travelers, visitors, tourists, as well as anglers. In rural counties, angler expenditures make a larger contribution to the travel and tourism industry than in urban counties.

Angler expenditures are important to many coastal communities and businesses regardless of their overall contribution to the county economy. For example, a 1984 study in Northern Oswego County around the Salmon River and Sandy Pond area found that certain businesses received 25% to 100% of their revenues from sportfishermen. Those businesses included marinas, charterboats, sportfishing retail stores, motels and hotels, most gas stations and restau-

rants, and some other service/retail firms. An estimated 188 full-time and 238 part-time employees had jobs in those businesses as a result of the expenditures by anglers in the Salmon River/Sandy Pond area.

The revenues generated by Great Lakes sportfishing activities also have a secondary economic impact as employees and business owners respnd those monies within their local and county economies. The respending of these angler dollars creates a "multiplier" effect which further stimulates the local economy by employing others in such businesses as clothing stores, grocery stores, medical services, and laundry services.

This study did measure the daily expenditures of anglers making trips to use the Great Lakes sportfishery. Capital expenditures for large and more expensive items such as boats, trailers, motors, electronic equipment, and fishing equipment were not included since they were generally not purchased on fishing trips. Further studies are needed to measure the economic impacts due to capital expenditures.

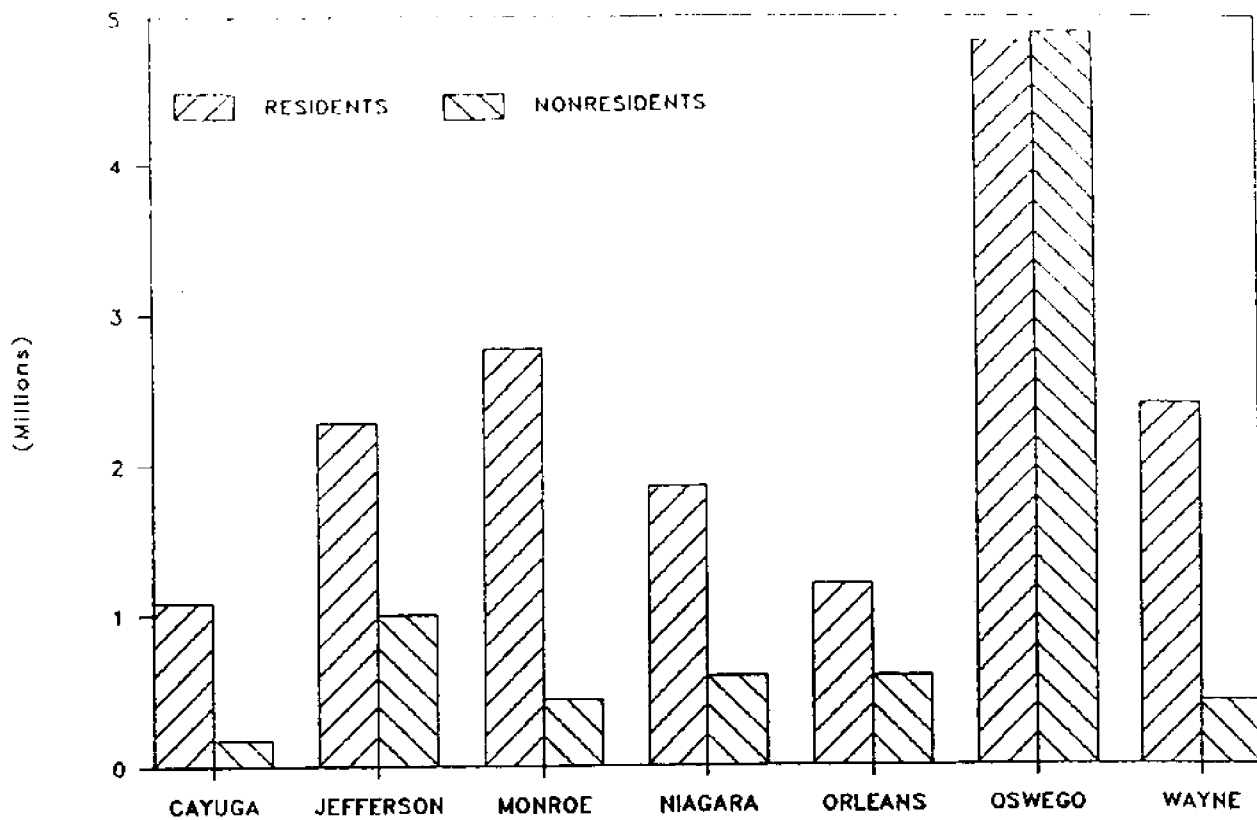


Figure 4. New York Resident and Nonresident Angler Expenditures Within the Destination County on Lake Ontario in 1984.

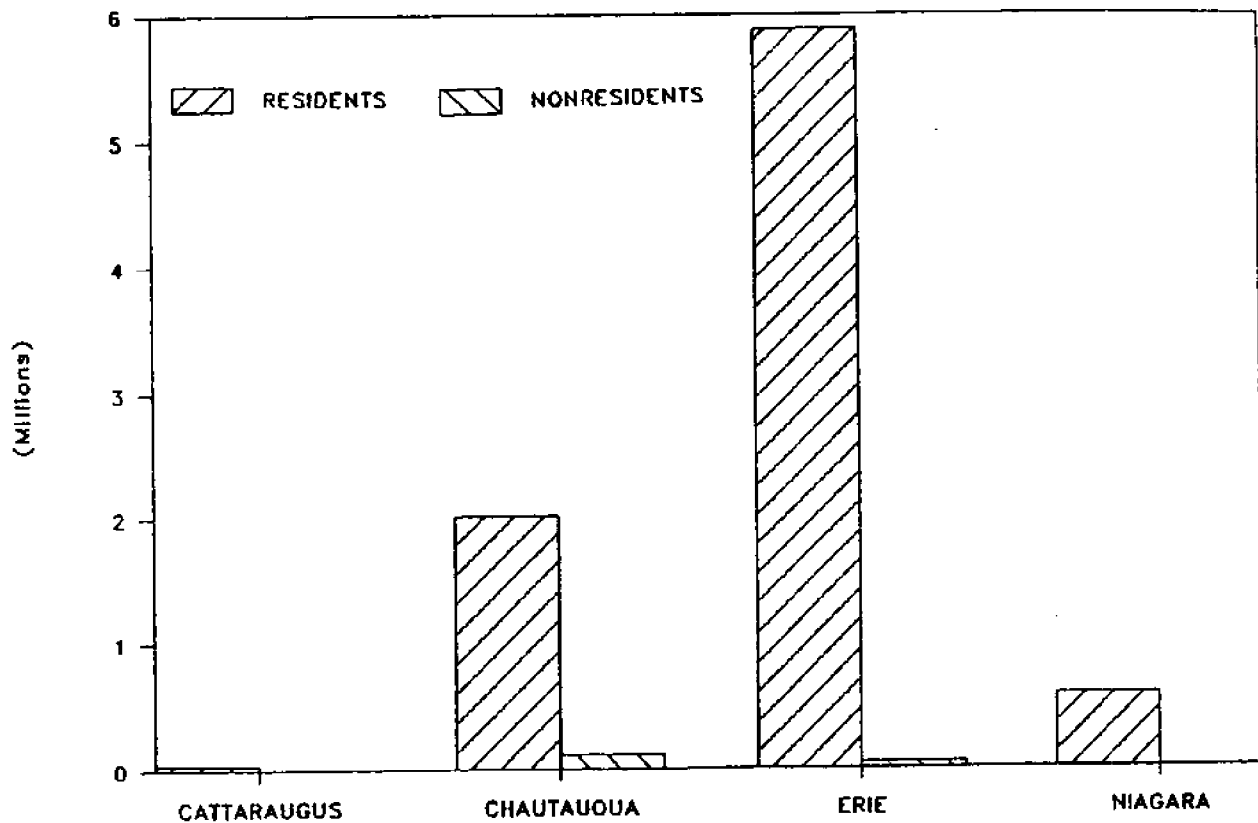
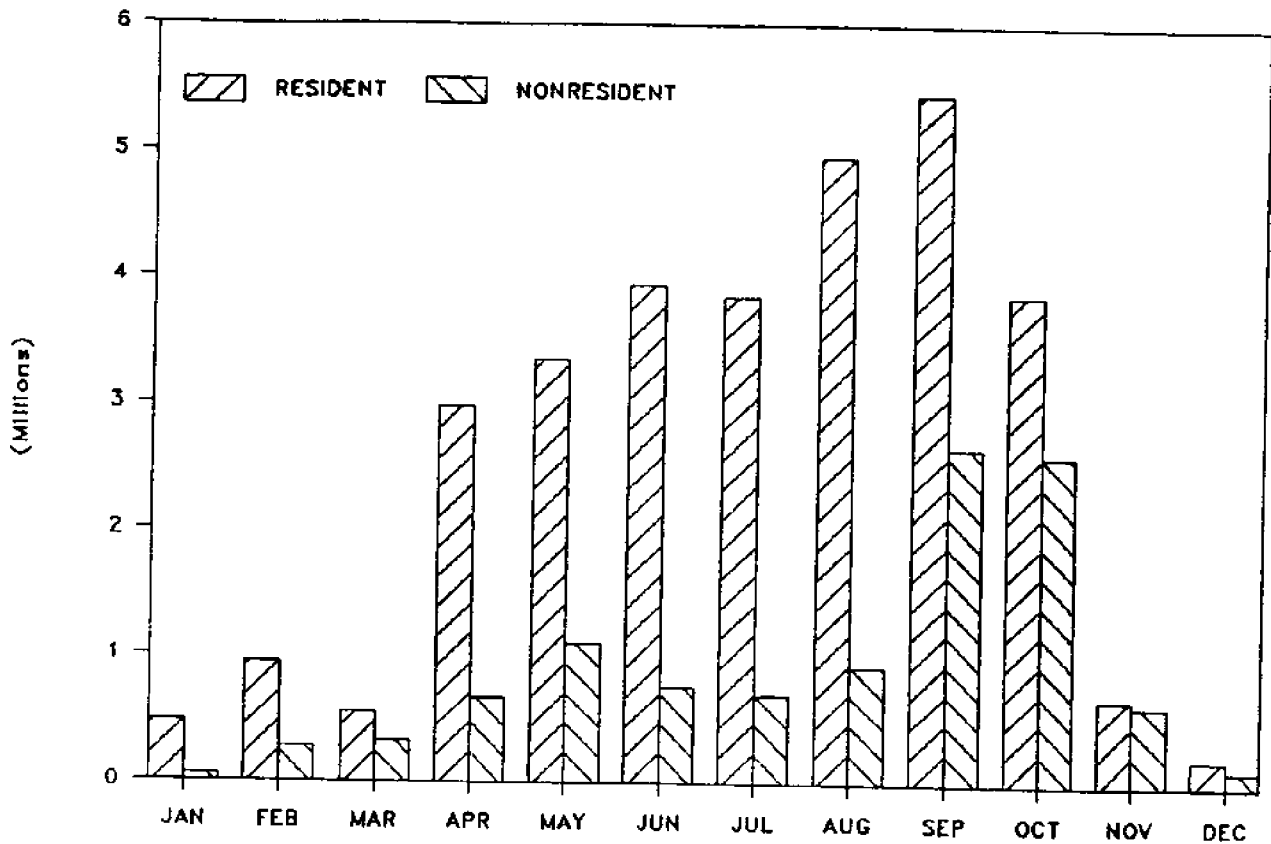


Figure 5. New York Resident and Nonresident Angler Expenditures Within the Destination County on Lake Erie in 1984.

**Table 4. Estimated Total Angler Expenditures in 1984 by Month and Percent Contribution Per Month.**

Month	Lake Ontario		Lake Erie		New York State Great Lakes	
	Total	Percent	Total	Percent	Total	Percent
Jan.	\$377,300	1.2%	\$150,600	1.5%	\$527,900	1.3%
Feb.	886,100	2.8%	333,000	3.3%	1,219,100	2.9%
Mar.	722,400	2.3%	153,400	1.5%	875,700	2.1%
Apr.	3,021,700	9.4%	624,600	6.2%	3,646,200	8.7%
May	3,876,600	12.1%	567,100	5.7%	4,443,700	10.6%
June	2,953,800	9.2%	1,728,400	17.3%	4,682,200	11.1%
July	2,738,100	8.5%	1,811,700	18.1%	4,549,800	10.8%
Aug.	3,932,900	12.3%	1,943,700	19.4%	5,876,500	14.0%
Sept.	6,533,200	20.4%	1,573,300	15.7%	8,106,500	19.3%
Oct.	5,502,900	17.2%	969,000	9.7%	6,471,900	15.4%
Nov.	1,196,500	3.7%	116,500	1.2%	1,313,000	3.1%
Dec.	286,000	0.9%	37,000	0.4%	323,100	0.8%
TOTAL	\$32,067,100	100.0%	\$10,009,900	100.0%	\$42,077,000	100.0%



**Figure 6. New York Resident and Nonresident Angler Monthly Expenditures in 1984 During Fishing Trips to New York's Great Lakes.**

### Estimated 1986 Economic Impacts

Since the 1984 angler study was completed, the sportfishery has continued to grow. Evidence of this can be seen by comparing the number of fishing licenses sold in the Great Lakes coastal counties in 1984 and 1985. The number of resident and nonresident licenses sold increased 9% from 314,478 to 341,241 by 1985. The Department of Environmental Conservation conducted an open water fishing boat creel census in 1985 and reported a 11% increase over the number of fishing boat trips taken on Lake Ontario in 1984. Therefore, it was estimated that the overall daily trip expenditures related to the Great Lakes sportfishery increased from \$42 million to \$47 million by 1985.

Similarly, the Department of Environmental Conservation 1986 open water fishing boat census on Lake Ontario reported a 4% increase over 1985. Thus, angler trip expenditures may have been in excess of \$49 million by 1986 for the Great Lakes sportfishery.

### Discussion

The information contained in this publication has some program or facility implications for all of the Great Lakes coastal counties and communities. In the case of Oswego County, the amount of resident and out-of-state angler activity and expenditures suggests that their marketing programs have been relatively effective. Whereas, the Lake Erie sportfishery was predominately used by New York residents in 1984 and marketing programs could be targeted at out-of-state anglers to stimulate them to use certain locations or fisheries in appropriate seasons.

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Consideration of the economic impacts will help small businesses, coastal communities, and coastal counties to better plan for appropriate sportfishery related development. The sportfishery resource is approaching its full potential for many important game species. The corresponding economic development is progressing but has not reached its full potential in many communities. Each community needs to assess what factors currently limit or encourage its growth: access for anglers and boaters; lodging accommodations and restaurants; fish cleaning stations and angler support services; and public information and marketing programs. The sportfishery resource is there now. Is your community trying to capitalize on it?

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