The 1973 Salmonid Run: New York's Salmon River Sport Fishery, Angler Activity, and Economic Impact

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Photo: One of four or five good holes where salmon can be snagged, Salmon River, near Pineville.

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CONTENTS

FIGURE AND TABLES

DEVELOPMENT OF NEW YORK'S PACIFIC SALMONID FISHERY

Impetus for the Program

The famed success of the Michigan salmonid fishing program in the mid-1960s, combined with declines in both the commercial and sport fisheries in Lake Ontario and Lake Erie over the past four decades, led to NYS Department of Environmental Conservation (DEC) attempts to develop a quality salmonid sport fishery in the Great Lakes of New York. Stocking of the Pacific species of coho and chinook salmon dates from 1968; the first notable returns in this still-infant fishery came in 1973, following lamprey control treatments in 1971 by the Province of Ontario and in 1972 by New York State.

Michigan's successful efforts at stocking, rearing, and harvesting coho and chinook salmon in Lake Michigan were well researched and documented. As early as 1967, a 30-percent survival rate was being achieved for coho planted in Lake Michigan, and some 60,000 coho were caught, averaging about 10 pounds each. By 1971 the fishery had grown so phenomenally that over 3 million angler days were expended fishing for salmonids, and 1.2 million coho and 478,000 chinook were harvested, with excellent catches reported in both the open waters and tributaries of Lake Michigan (Rybicki 1973). Ellefson (1973) determined a net annual economic value of $17.5 million of this fishery to Michigan's resident fishermen and, using a seven percent discount rate, he estimated a benefit to Michigan fishermen of $11 for every dollar invested in the project by state government agencies.

The many parallels between the lower Great Lakes and Lake Michigan encouraged New York officials to invest state moneys in a salmonid program. Both Lake Erie and Lake Ontario have the breadth, depth, and temperature needed for successful salmonid growth. Both have abundant supplies of alewives, expected to be a major food fish for the growing salmonids. Major investments of both human effort and capital would be required,

but available information pointed to a positive biological feasibility for successful salmonid fisheries in the lower Great Lakes. This, plus the realization of the tremendous economic opportunity for many semi-depressed lake communities, resulted in New York's commitment to a Great Lakes salmonid fishery.

Evidence of a potentially flourishing fishery on New York's Great Lakes was particularly welcome in view of the recent history of declines. Such highly prized, historically abundant species as Atlantic salmon, blue pike, and lake trout had virtually disappeared from these lakes. Peak commercial production in Lake Ontario occurred in 1921, with landings totaling 5.5 million pounds. In the mid-1920s, whitefish harvests reached 2.6 million pounds and lake trout, just over 1 million pounds annually. By the late 1940s, lake trout and blue pike were commercially extinct, and whitefish production had dropped to levels of less than one-half million pounds annually (Neth 1972). Commercial fishing and sport fishing, especially for smallmouth bass, is done in limited amounts near the shoreline, but little occurs offshore today.

In 1968 New York's salmonid-stocking program began with the introduction of 25,000 coho salmon into Spring Brook Reservoir, in the village of Pulaski, just inland from the eastern shore of Lake Ontario. Lake Ontario and tributary stockings of coho and chinook followed: 195,000 in 1969, 434,000 in 1970, and 222,000 in 1971.

In the first years of the program, survival of these salmonids was extremely poor due to fatal attacks by the sea lamprey. A parasite that may reach 18 inches in the lower Great Lakes, the sea lamprey attaches its suckerlike mouth containing hooked teeth to other fishes. Fish may survive attacks of individual lampreys, but laboratory tests indicate adult lampreys may destroy 35 to 40 pounds of fish over a 12- to 20-month life span (Neth 1972). New York State and the Province of Ontario, via coordination and funding assistance from the Great Lakes Fishery Commission, began to

implement lamprey control measures (lampreycide treatment of tributaries) on the Canadian side of Lake Ontario in 1971, and on the New York side in 1972. The first positive signs of successful lamprey control were evidenced by salmon returning to tributaries to spawn in 1973.

In conjunction with the lamprey control measures, coho and chinook stocking levels in Lake Ontario were increased to 658,000 in 1972, 865,000 in 1973, and 1.15 million in 1974. These were supplemented with lake, brown, and rainbow trout stockings of 125,000 in 1973 and 1 million in 1974. A total of 125,000 chinook salmon were stocked in Lake Erie and tributaries in 1973.

Because the natural capacity of Ontario and Erie tributaries for salmon spawning and nurturing is limited, the New York program calls for construction of a salmon hatchery to begin in 1975 or 1976. Total construction costs are projected at approximately $6.7 million. From the findings of a $149,000 contract for hatchery location and design, let in 1974, the new hatchery will probably be built near Altmar. It is expected to produce 3 to 4 million salmonid yearlings by the 1978-79 season.

As of this writing, despite seven years of experience with Pacific salmon in New York, the program must still be described as in its early stages. The success of the lamprey control program is still being determined, and hatchery construction is prerequisite to introducing salmonid yearlings in sufficient numbers to create lakewide fisheries.

Planning and Coordination

In the states of Washington and Michigan, anglers have trampled frequently over private lands to fish elbow to elbow along ocean and lake tributaries. This has raised concern in New York over the need to accompany development of the salmonid fishery with research geared at providing for fishermen, community protection interests, and simultaneously, orderly economic development of shoreline

communities. A number of agencies, colleges, and other organizations have become involved in this research.

The NYS Office of Parks and Recreation has authority for statewide comprehensive recreation planning. It is a coordinating agency between local communities and the US Army Corps of Engineers in planning and locating harbors of refuge. Safe harbors are virtually prerequisite on the storm-swept Great Lakes to private investment that could convert a tributary fishery into a lakewide fishery. At present, harbor construction has been held up while local communities look for ways to finance their share of harbor costs.

Two regional state commissions, the St. Lawrence-Eastern Ontario Commission and the Tug Hill Commission, have been active in planning for the eastern Lake Ontario fishery. The St. Lawrence-Eastern Ontario Commission has worked in central and western Oswego County, inventorying recreation service facilities and projecting service needs for future years as the fishery develops. The Tug Hill Commission has studied the probably impacts of locating the new hatchery in the Altmar area.

The New York Sea Grant Institute has been actively involved, both in its own right and in association with the NYS Cooperative Extension Program, in lending its expertise to the developing fishery. Sea Grant Advisory Service has coordinated work with DEC, citizens, fishermen, and various agencies and organizations. Advisory Service specialists have sponsored meetings of agency officials to examine current problems and research needs. They have also sponsored community meetings to inform local citizens and governments of the progress of the fishery and potential impacts on local communities. Finally, Advisory Service has sponsored trips to Michigan to help Lake Ontario businessmen understand business opportunities that a successful salmonid fishery would offer, such as charter boat services.

Sea Grant Research Efforts

This publication is the result of annual grants from the Sea Grant research program that began in 1972, designed to provide the expertise and financing to evaluate the progress of the developing fishery. The objectives of the research program have been to determine:

1) The effect of the developing fishery on statewide fishing participation, including numbers and rates of participation, and fishermen origin-destination patterns;
2) The economic impact of the fishery on coastal communities; and
3) The efficiency of the project, in terms of benefit/cost.

The Salmon River corridor in Oswego County is now being examined, as part of the development phase of the fishery. This stream has been the most heavily stocked of all New York streams, and current research is focusing on this area as an indicator of angler success and impact of tributary fishing on local communities. We have worked with DEC in developing a creel census methodology and associated data analysis. We have also worked independently to determine the impacts of the fishery on the Salmon River business community.

This report examines the quality and impact of the 1973 Salmon River runs. The 1974 data will be published in a separate report. A third report will examine the early interest and experience of New York fishermen in salmon fishing statewide, and the economic impact of freshwater fishing on the state economy.

THE STUDY AREA

Initial impacts of the developing salmonid fishery have been felt along the Salmon River corridor, in the villages of Pulaski and Altmar and the communities of Port Ontario and Pineville (Figure 1). Minor impact was also felt in the village of Lacona, and in the southern portion of Jefferson County.

Oswego County, which falls within the Syracuse Standard Metropolitan Statistical Area, had a 1970 population of 100,897. This population is located largely in the southern portion of the county, in and surrounding the cities of Oswego, Fulton, and Mexico. The northern portion of the county, most directly impacted by the 1973 salmon runs, is quite rural. The village of Pulaski had a 1970 population of 2,480. The total 1970 population of the towns of Richland, Albion, and Orwell, which includes the villages of Pulaski and Altmar and the entire Salmon River corridor, was only 7,612.

Fishing activity in 1973 was concentrated near deep water holes within the village of Pulaski, near Altmar, and just inland from Lake Ontario, where waters are protected and far safer than on the lake itself. Access to the Salmon River is limited. Selkirk Shores State Park adjoins the Salmon River but does not provide boat launching or rental facilities. Three small commercial marinas have boat launching facilities and a small number of boats for rent in the Port Ontario area. A combination of private lands and steep slopes restricts access almost entirely between Port Ontario and the village of Pulaski.

Although bank slopes are not steep between Pulaski and Altmar, and the Niagara Mohawk Corporation provides revocable angling access on most of the river banks above Pulaski, there are few access points to the river. Unless anglers use two bridges, neither of which has designated parking

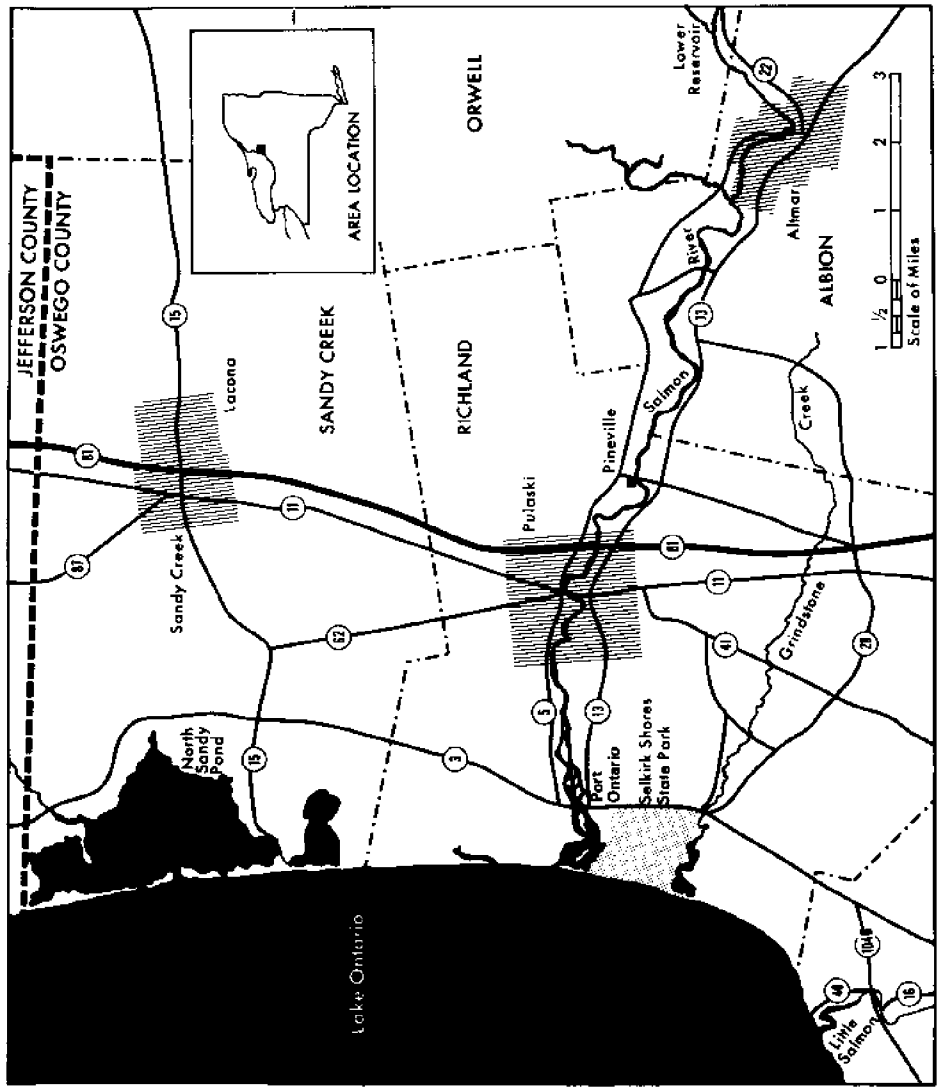

Figure 1 The Salmon River Corridor and Impact Area for Fall 1973

space, they must cross private lands to reach the river. Upstream fishing is restricted to a short distance northeast of Altmar, to the dam and reservoir operated for electric power generation by the Niagara Mohawk Corporation.

SAMPLING AND SURVEY METHODS

The two techniques used to gather data in the 1973 study were a roving creel census and interviews with recreation service firms. The creel census obtained data on point of origin of fishing trips and anglers' expenditures up to the time of interview, as well as catch and effort data.

The Roving Creel Census

In a roving creel census, clerks travel the length of a stream, either by walking along the bank or by boat, interviewing anglers. The sections of the stream covered, direction taken by the clerks, and proportion of anglers interviewed are decided using a scientific sampling design.

A roving creel census of Salmon River anglers was deemed the most efficient and reliable tool for carrying out the DEC-Sea Grant objectives of determining number of angler trips, catch by species, catch per unit effort, point of origin of trips, and angler expenditures. The creel census was designed cooperatively by staff from DEC's Cape Vincent Station and Cornell University. It was carried out by DEC personnel, and analyzed at Cornell.

A roving creel census satisfies the requirements of probability sampling so long as the probability of being interviewed, p, can be determined. Basically, for some angler trait y, the population total T_y for the angler population on some particular day can be estimated by summing y/p for all anglers interviewed on that day. This probability (p) for a given angler depends both upon how long the angler fished and upon the extent of coverage of the fishery by interviewers on that particular day (Robson 1960).

Expanding sample data to total population data is straightforward for characteristics that do not change for a particular angler after he is interviewed. This includes such

traits as number of trips (since an angler incurs a probability of being interviewed again if he makes a second trip) and the angler's point of origin. On the other hand, a direct expansion of y/p for hours fished or fish caught would only estimate these parameters up to the time anglers were interviewed. This problem is overcome by having at least some (if not constant) interviewing effort from dawn to dusk (almost all fishing occurs during daylight hours). In this way, the average time of interview, for anglers actually interviewed, is exactly at the midpoint of the fishing trip, and total fishing time is estimated by doubling preinterview times for each day.

Estimates of the day's total fish catch and catch rate are based on the assumption that an angler's catch rate does not change during the course of his fishing trip. The catch rate (per hour) can then be multiplied by the estimate of total fishing time to yield total catch.

A problem arises in using creel census methodology to estimate angler expenditures. Unbiased expansions of preinterview expenditures in the study area can be made by using methods similar to those developed for other angler traits. However, this does not take into account angler's expenditures between the last time they fished and the time they left the study area. (Should the angler spend the night in the study area, then fish the next day, he incurs the probability of being reinterviewed, and no bias is encountered.) The creel census should yield good estimates of lodging, grocery, and sporting goods expenditures, but we would expect it to underestimate restaurant and automotive expenditures for anglers not from Oswego County, because some of these nonresidents purchase gasoline and a meal or snack following the fishing trip, before leaving for home.

We used the creel census to estimate expenditures because of budgeting constraints (e.g., postage for questionnaires) in obtaining complete trip data. No attempt is made to compensate for the economic sectors believed to be underestimated; rather, expenditure data have been interpreted as being

conservative. Data obtained on individual firm receipts can serve as a check on economic expansions derived from the creel census.

For the creel census, the Salmon River was divided into 16 sections, consisting of 15 one-mile sections plus the estuary. Interviewers, working shifts of approximately eight hours, censused random sections of the river from sunrise to sunset each day from September 1 through November 18, 1973. At the beginning of each shift, interviewers started censusing in a randomly chosen section and censused in a randomly chosen direction. They worked two overlapping eight-hour shifts Fridays through Sundays, and one eight-hour shift Mondays through Thursdays. To account for a heavier scheduling on weekends, plus shift overlaps that occurred in the middle of each day, we incorporated a system of weightings into the census expansion formulae.

To estimate interviewing coverage along the Salmon River, we compared the number of sections interviewed with the total number of sections multiplied by the total number of hours of interviewing for the 79-day period. A total of 955 sections were covered, out of a possible 15,405 total section hours, for an interviewing coverage rate of just over six percent. Interviewers saw a total of 1,649 anglers--638 on weekdays and 1,011 on weekends. They actually interviewed 1,352 anglers--82 percent of those seen. Since roving creel census methodology assumes a constant amount of interviewing time for each section, only a designated fraction of anglers were interviewed in heavily populated sections. Interviewers typically talked to all anglers on a systematically chosen bank of the stream, or every second or third angler in the stream, as conditions dictated. Expansion formulae incorporated this ratio of number of anglers seen divided by number interviewed for the duration of the census.

Interviews of Recreation Service Firms

In addition to researching total revenue generated by the salmonid fishery, we also investigated its impact on individual firms, particularly those in rural northern Oswego County. The study area borders the Thousand Islands region and other parts of northern New York whose local economies, partially dependent upon tourism, suffer from a short summer season.

Objectives in interviewing firms were to determine:

1) The extent to which salmon tourist expenditures were in effect lengthening the summer season for these firms, and the economic impact on individual firms of various recreation service sectors;
2) The boundaries of the geographic area impacted by the fishery;
3) The degree to which the fishery is creating new jobs; and
4) The impact of the project on the recreational service base, and related service-facility developments in Oswego County.

Twenty-three firms in the Salmon River corridor, all of which were expected to be impacted to some degree, were chosen for study. Eleven firms outside this area were also contacted to discern the boundaries of impact. Firms were analyzed by the following sector groupings: bait/sporting goods/marina, grocery, restaurant/bar, lodging, and automotive service.

FISHING ACTIVITY AND SUCCESS

Angler Trips

Approximately 5,665 angler trips (an angler trip is defined as the fishing done by one individual during a one-day period) were taken to the Salmon River during the fall of 1973. Seventy-three percent were by nonresidents of Oswego County. Onondaga County, which contains the city of Syracuse, contributed 31 percent of all angler trips--more than any other county (Table 1).

TABLE 1 *Origin of 5,665 Salmon River Angling Trips, 1973*

County	*Percent of Total Trips*	*Number of Trips*
Onondaga	31	1,756
Oswego	27	1,535
Oneida	9	512
Monroe	5	288
St. Lawrence	4	230
Broome	4	225
Chemung	4	222
Other New York Counties	15	835
Out of State	1	62

Oswego County residents fished an average of 4.1 hours per day, compared to 4.7 hours for nonresidents (Table 2). The vast majority (88 percent) of all angling excursions were one-day trips. Seven percent of anglers interviewed planned to fish two days, and an additional five percent planned to fish from three to seven days. Ninety-two percent of nonresident anglers indicated they came to the Salmon River area primarily to fish for salmonids. The remaining eight percent of nonresidents had other business that took them the the Pulaski area, but they fished while they were there.

TABLE 2 *Trips and Hours of Salmon River Anglers, 1973*

Category	*Residence Group*		
	Oswego County	*Non-Oswego County*	*All Anglers*
Trips	1,535	4,130	5,665
Angler Hours	6,261	19,355	25,576
Hours per Angler Trip	4.1	4.7	4.5

Catch and Success Ratios

Expansion data for catch were based upon 148 salmonids, 103 of which were chinook salmon; these figures were confirmed by creel census interviewers. Expanding these data to all anglers fishing the Salmon River in the fall of 1973 shows that approximately 887 chinook, coho, and steelheads were caught (Table 3). Three-fourths of all salmonids caught were chinooks. Oswego County residents caught an average of 0.14 salmonids per trip, compared to 0.16 per trip for nonresidents. The total catch rate for residents and nonresidents was identical, at 0.034 salmonids per hour. Oswego County residents caught a slightly higher ratio of other salmonids per hour. The relatively low catch ratios are indicative of both a small salmonid run in 1973 and inexperience of New York anglers in fishing for Pacific salmon species.

Method of Fishing

It is well publicized that Pacific salmon seldom strike when spawning; snagging these species with a large hook is permitted and encouraged to assure maximum harvest of soon-to-die fish, each of which is hatchery grown and therefore a state investment. Nevertheless, 1973 salmonid fishermen often used bait and artificial lures. While 50 percent of the anglers interviewed restricted their fishing to snagging, 38 percent of anglers used artificial lures, 8 percent used live bait, and 4 percent used combinations of snagging and

bait or artificial lures. Approximately 76 percent of coho and chinook seen by the interviewers were caught by snagging, 18 percent were caught with artificial lures, and 6 percent were caught with live bait.

TABLE 3 *Salmonid Catch and Effort Data, Salmon River, 1973*

Category	*Residence Group*		*Total*
	Oswego County	*Non-Oswego County*	
Trips	1,535	4,130	5,665
Angler Hours	6,261	19,355	25,576
Salmonids Caught	211	676	887
Salmonid Catch per Trip	0.14	0.16	0.16
Salmonid Catch per Hour	0.034	0.034	0.034
Chinook Caught	194	469	663
Chinook Catch per Trip	0.13	0.11	0.12
Chinook Catch per Hour	0.031	0.024	0.026

REVENUES AND ECONOMIC IMPACT

Revenues Generated

Salmon River anglers spent approximately $61,975 in Oswego County in 1973. Of this, $55,088 was spent by nonresidents who came to the county for the express purpose of salmonid fishing. The $55,088 can be interpreted as new revenue to the county, resulting directly from the new fishery. Oswego County anglers spent $5,837, and nonresidents who were in the county for reasons other than fishing spent an additional $1,050. The sum of these last two items, $6,673, cannot be interpreted as new revenue to the county, but portions spent in sectors such as marinas and sporting goods provided additional revenues to these Salmon River area businesses.

The largest revenue-generating sector was automotive services: the $19,250 was spent largely for gasoline and oil, but it also included some repairs to vehicles belonging to nonresidents. The marina/sporting goods sector produced a total of $15,299 in the study area, and was second highest. Marina and sporting goods revenues were combined because of the small number of firms in each category. Revenues generated by other sectors are itemized in Table 4.

TABLE 4 *Revenues Generated in Oswego County from Salmon River Anglers in the Fall of 1973*

Revenue Sectors	*Residency Groups*		*Totals*
	Oswego County	*Non-Oswego Co.*	
Marina/Sporting Goods	$5,633	$ 9,666	$15,299
Automotive Services	*	19,250	19,250
Restaurant/Bar	*	10,658	10,658
Lodging/Camping	*	7,435	7,435
Groceries	*	4,668	4,668
Miscellaneous	204	4,461	4,665
TOTALS	$5,837	$56,138	$61,975

* Revenues measured for Oswego County residents were limited to those attributable to the fishery.

Angler Expenditures

Salmon River anglers spent an average of $10.93 per trip in Oswego County (Table 5). Oswego County residents spent $3.80 per trip in new sales to recreation service sectors, and nonresidents spent an average of $13.59.

The average angler expenditure of $10.93 is considerably higher than the $7.02 per recreation day reported in the last national fishing survey (US Department of the Interior 1970). There are three possible reasons for this disparity: the most obvious is inflation, combined with higher gasoline prices. Second, the cost of living in New York State is above the national average. Third, there is a slight difference in the definition of a recreation activity day in the two studies. The USDI study defines a recreation day as any day or part of a day in which hunting or fishing occurred, the "sunup to sundown" or diurnal definition. Since the New York study used incomplete trip data from angler interviews, we were forced to modify our definition of an activity day, for the purpose of expenditure calculations, to the 24-hour period immediately prior to the interview. As indicated earlier, this should provide a conservative estimate of expenditures obtained from complete trip data (because it doesn't include what nonresidents spent after fishing but before leaving the county).

Impact upon Local Businesses

Although the survey of business firms was primarily designed to analyze the impact upon individual firms of several recreation service sectors, data estimates provided by business firms were cross-checked with expanded angler expenditure data from the creel census. The results of data gained via the two methods are generally comparable.

Specifically, expanded total estimates from firms underestimated expanded angler expenditures by less than 20 percent for all but one sector (groceries). This disparity is explained by combinations of creel census sampling deviation,

TABLE 5 *Oswego County Per Diem Expenditures of 5,665 Angler Trips to the Salmon River, 1973*

Expenditure Sectors	*Residency Groups*		*Totals*
	Oswego County	*Non-Oswego Co.*	
Marina/Sporting Goods	$3.67	$ 2.34	$ 2.70
Automotive Service	*	4.66	3.40
Restaurant/Bar	*	2.58	1.88
Lodging/Camping	*	1.80	1.31
Groceries	*	1.13	.82
Miscellaneous	.13	1.08	.82
TOTALS	$3.80	$13.59	$10.93

* Not recorded.

errors in businessmen's estimates of fishing impact, plus expenditures of anglers outside the Salmon River corridor, though still in Oswego County (not discernible to individual businesses). Grocers estimated receipts from anglers at just over twice the figure computed from creel census estimates. Their estimate reflects grocery expenditures by Oswego County anglers, not included in the creel census estimates, since they theoretically do not reflect new income to this sector from a countywide perspective. Also, communication between customers and personnel in groceries is less likely than in other sectors surveyed, and so grocery estimates of impact would be less accurate than those from other sectors.

Perhaps the economic impact of this developing fishery on local businesses can best be examined in the light of proportion of total revenues attributable to anglers for the fall months. In interpreting such data, it should be noted that while northern Oswego County does not have a highly developed tourism industry, it does have a state park, eight commercial campgrounds, and eight commercial marine facilities. In addition to the obvious dependency on tourism of these facilities and the 16 area hotels and motels, several retail trade sectors also draw significant summer revenue from tourists. Previously, as in many northern and central locations, the tourism impact ended on Labor Day.

In September and October of 1973, sporting goods and marine businesses estimated that an average of 40 percent of their revenues were attributable to fishermen. Automobile service stations estimated 15 percent of total revenues could be attributed to fishermen, and restaurant/bar and lodging sectors attributed 10 percent of their revenues to angler expenditures during this period. Groceries, which primarily serve local residents, estimated that anglers accounted for only 0.25 percent of revenues during September and October. The 1973 salmon run did not result in any new jobs, or in expansion of business facilities. For many already-established businesses, the fishery did, in effect, extend the tourist season an additional two months.

Summary of Community Impact

In attempting to estimate the impact of the $56,138 community revenue from nonresidents, we examined several recreational impact studies. From consultation with Dr. Robert Kalter, who conducted a 1966 inter-industry analysis of a five-county region of New York that included Oswego County (Kalter 1969), and Dr. Laurence Goss, Jr., who conducted input-output analysis for the Tug Hill region (including eastern Oswego County) in 1972, we concluded that approximately 30 percent of nonresident expenditures would accrue to Salmon River communities as direct income, while the remainder would be paid by these local businesses to firms outside the area for products sold to anglers. The estimate of 30 percent direct community income compares to an estimate of 30 percent for the Grand Traverse, Michigan area (Kapetsky and Ryckman 1973). Thus, the direct income to Oswego County (almost entirely along the Salmon River corridor) from the 1973 fishery was approximately $16,841.

The Salmon River area shows the multiplier effect as local businessmen respend this $16,841, and it continues to recirculate in dwindling proportions within the study area. The magnitude of typical short-term, regionally induced income (as opposed to employment) multipliers derived from other studies ranges from 1.52 in Walworth County, Wisconsin

(Kalter and Lord 1968) to 1.63 in the State of Hawaii (Hoffman and Yamauchi 1973). Such estimates are influenced in opposite directions by two factors. If the studies had included the effects of local spending by government, utilities, and households, these multipliers would have been higher. On the other hand, in small study areas such as the Salmon River corridor, less spending interaction occurs than in a larger study area.

Taking these factors into consideration, one could justify total sales multipliers in the range of 1.25 for the Salmon River corridor, and 1.60 for Oswego County. Thus, if we applied these multipliers as estimates of total new community net income attributable to the fishery, we would find approximately $21,000 accrued to the Salmon River corridor area, with perhaps an additional $6,000 accruing to the remainder of Oswego County.

IMPLICATIONS OF THIS STUDY

The large investment in New York's Great Lakes salmonid program is an attempt by DEC to develop a more diverse statewide fishery, and to restore sport fishing in the Great Lakes. While the Michigan experience has proved that a project of such magnitude can be economically feasible, and can in fact return an excellent dividend on investment to that state's economy, study results indicate a number of initial obstacles to overcome in New York. These include achieving sufficient stocking rates and sea lamprey control to result in a good catch/angler trip ratio, establishing harbors of refuge, and encouraging orderly recreational development of the Great Lakes shoreline to provide a lakewide fishery that will impact a large part of the state.

The State of New York is probably now running a deficit on the fishery, although perhaps not a large deficit. State expenditures relating to the salmonid project for fiscal 1972-73, including salaried positions, were only about $175,000, roughly half of which was federally reimbursed. In addition to approximately $27,000 in new income in Oswego County, lesser amounts were generated in at least six other areas of Lake Erie and Lake Ontario. More money is being spent for lamprey control, but these funds are federally shared by the United States and Canada. The new $6.7 million hatchery will be the key investment; salmonid fishing will have to flourish to repay this investment.

This evaluation comes in the very early stages of the fishery, but the amount spent per angler and the impact of limited angling activity on the Salmon River community is encouraging. Even as the fishery becomes a lakewide resource, and fishing occurs in other seasons, communities located on the tributaries should continue to benefit from local fishing during fall salmon runs.

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