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THE IMPACT OF TOURISM ON EMPLOYMENT IN NEW YORK'S COASTAL AREAS¹

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TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGMENTS	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iii
LIST OF FIGURES	v
INTRODUCTION	1
STUDY AREA AND DATA BASE	3
RESULTS	8
Growth and Impact of Great Lakes Tourism on Businesses and Employment	8
Seasonality in Great Lakes Tourism Employment	13
Great Lakes Subregions	18
Jefferson County	23
St. Lawrence County	23
Niagara County	26
Oswego County and the Salmon River Area	26
Estimating the Impacts of Overnight Travel	30
Growth and Impact of Tourism on Long Island/New York City Coastal Employment	33
Impact of Tourism at the County Level	39
Long Island/New York City Subregions	43
Impact of Overnight Travel	47
Regional Comparisons	49
SUMMARY AND IMPLICATIONS	51
FUTURE RESEARCH NEEDS	55
LITERATURE CITED	57

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Tourism-related Sectors for Which Employment Information was Analyzed and Groupings for Analysis	7
2	Number of Firms and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone	9
3	Average Number of Employees per Firm for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone; 1975, 1980 and 1985	10
4	Average Monthly Employment and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone	12
5	Summer Seasonality Coefficients for Various Tourism-related Sectors in the Great Lakes Coastal Zone for 1975, 1980, and 1985	15
6	Net and Percent Growth in Three Sectors of Employment by Quarter in the Great Lakes Coastal Zone, 1975-1980 and 1980-1985	17
7	Percent of Total County-wide Employment that is Tourism-related, and Average Monthly Employment for 3 Tourism Sectors, by Great Lakes Counties, 1985	19
8	Percent of Average Monthly Employment that Occurs in the Great Lakes "Coastal Zone" by County, 1985	20
9	Average Employment and Seasonality in 3 Tourism-related Sectors for Counties and Major Cities within the Great Lakes Coastal Zone, 1985	21
10	Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 4 Employment Sectors in Coastal Jefferson County	24
11	Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 3 Employment Sectors in Coastal St. Lawrence County	25
12	Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 3 Employment Sectors in Coastal Niagara County	27

LIST OF TABLES (continued)

<u>Table</u>	<u>Title</u>	<u>Page</u>
13	Number of Firms and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Long Island Coastal Zone	34
14	Average Number of Employees per Firm for Various Tourism-related Employment Sectors in the Long Island Coastal Zone; 1975, 1980, and 1985	36
15	Average Monthly Employment in the Long Island/New York City Area by Various Tourism-related Sectors, 1985	37
16	Average Monthly Employment and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Long Island Coastal Zone	38
17	Summer Seasonality Coefficients for Various Tourism-related Sectors in the Long Island Coastal Zone for 1975, 1980, and 1985	41
18	Percent Growth in 3 Tourism-related Sectors of Employment by Quarter in the Long Island Coastal Zone, 1975-1980 and 1980-1985	42
19	Average Monthly Employment for 3 Tourism-related Sectors and Percent of Total Employment that is Tourism-related, by Long Island Counties, 1985	44
20	Percent of Average Monthly Employment that Occurs in the Long Island "Coastal Zone" by County, 1985	45
21	Average Employment and Seasonality in 3 Tourism-related Sectors for Areas Within the Long Island/New York City Coastal Zone, 1985	46
22	Average Monthly Employment in Lodging by Quarter and Percent Change, 1975-1980, and 1980-1985 for 3 Regions of the Long Island Coastal Zone	48
23	Employment in 3 Major Tourism Sectors in Various Regions of New York State, 1985	50

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	The Great Lakes Coastal Zone within New York State	4
2	The Long Island/New York City Coastal Zone within New York State	5
3	Monthly Employment for 3 Tourism-related Sectors of the Great Lakes Coastal Zone, 1985	14
4	Employment in Tourism-related Sectors Near the Salmon River, 1975-1985	29
5	Proportion of Eating and Drinking Employment Which is Tourism-related as Calculated Using Lodging Employment . .	31
6	Monthly Employment for 3 Tourism-related Sectors of the Long Island Coastal Zone, 1985	40

INTRODUCTION

Tourism is one of the largest industries in New York (Price Waterhouse 1986), and one of the growing industries in New York's coastal regions. Unlike agriculture and manufacturing, tourism is largely service rather than product oriented, and includes a number of types of small businesses, most of which also serve local residents. As a result, the impacts of tourism are exceedingly difficult to measure with accuracy. Although considerable progress has been made in recent years, we still do not have the depth of understanding of tourism and its impacts that we have for other industries.

The vast majority of previous studies investigating the impacts of tourism have confined themselves to documenting the primary expenditures of tourists, primary employment in tourism, and the secondary benefits resulting from this economic activity. Among the prominent recreation/tourism studies which have estimated economic impacts are those by Kalter and Lord (1968), Archer (1973), Hoffman and Yamauchi (1973), and Strang (1973). While carefully conducted studies such as these can be valuable in portraying the level of economic magnitude of tourism and the sectors most strongly affected, they provide a very incomplete picture of how tourism affects communities. They provide no information about the distributional effects of employment, about the seasonality of employment, or about the year-to-year permanency of employment. This broader understanding is needed to assess more fully the costs and benefits of tourism that affect communities and in the case examined herein, coastal communities.

The traditional research methods used for providing estimates of tourism impacts in specific communities are far too costly to be applicable to typical regional coastal planning situations. Such methods would involve first

obtaining an unbiased sample of tourists visiting the region and surveying them to determine their expenditures by economic sector. Such a study is perhaps feasible for visitors to a limited number of sites (e.g., a survey of visitors to 4 state parks by Connelly et al. [1986]), but has rarely been implemented on a regional scale. The second step typically required is some form of input-output analysis to determine the secondary impacts of tourist expenditures. The cost of these 2 studies can easily exceed \$100,000, for even a small region. Therefore, if the impacts of tourism are to be understood, other methods must be derived and evaluated for utilizing secondary data from state and federal sources.

This project was designed to evaluate the degree to which data typically produced by federal and state governments can be used to provide more comprehensive and less expensive estimates of the various impacts of tourism in coastal regions than a primary data collection study. The estimates derived provide information useful to state agencies involved in tourism, local government officials, and community leaders. This study examines the impacts of tourism, which is derived largely from the natural resources (e.g., beaches, fish, waters, parks), on employment in coastal communities. The study was funded by the New York Sea Grant Institute and focuses on coastal communities along the Great Lakes and Long Island. Because the type of state data that was examined is generally standardized for all states, the study methods could be applied to other coastal states. Data were also compared with results found in a similar study of the Adirondacks conducted by Brown and Connelly (1984). This will aid in the comparison of coastal tourism with other types of natural resource-based tourism.

STUDY AREA AND DATA BASE

The study focuses on the 2 coastlines of New York State, the area along the Great Lakes and the Long Island/New York City area. The Great Lakes Coastal Zone was defined as the municipalities (including townships) adjacent to Lake Erie, the Niagara River, Lake Ontario, and the St. Lawrence River (Fig. 1). This area includes the larger cities of Buffalo, Niagara Falls and Rochester and the smaller cities of Oswego, Ogdensburg, and Massena. Included in addition to these coastal entities were the townships of Albion and Orwell in Oswego County, through which the Salmon River flows, and Penfield in Monroe county, which borders Irondequoit Bay. This coastal area is almost identical to that traversed by the Seaway Trail.

The Long Island/New York City area was divided into 4 subareas - New York City, the Northshore of Long Island, the Southshore, and the Eastern End of Long Island (Fig. 2). Townships could not be used to define the Long Island coastal zone because they often crossed these important subarea boundaries. An attempt was made to include communities whose tourist trade was related in some way to the coast. For the Northshore and Southshore subareas the coastal zone was defined as the strip including the city or village closest to the water and communities on off-shore islands. Eastern Long Island included the 5 most eastern townships on Long Island -- Riverhead, Southampton, East Hampton, Shelter Island, and Southold.

Secondary data sources available from state and federal agencies were investigated for use in this study. Employment information from the New York State Department of Labor (DOL) was judged to be the most comprehensive and current source available. Any business establishment paying wages of more than \$300 per quarter is legally required to file employment information with the

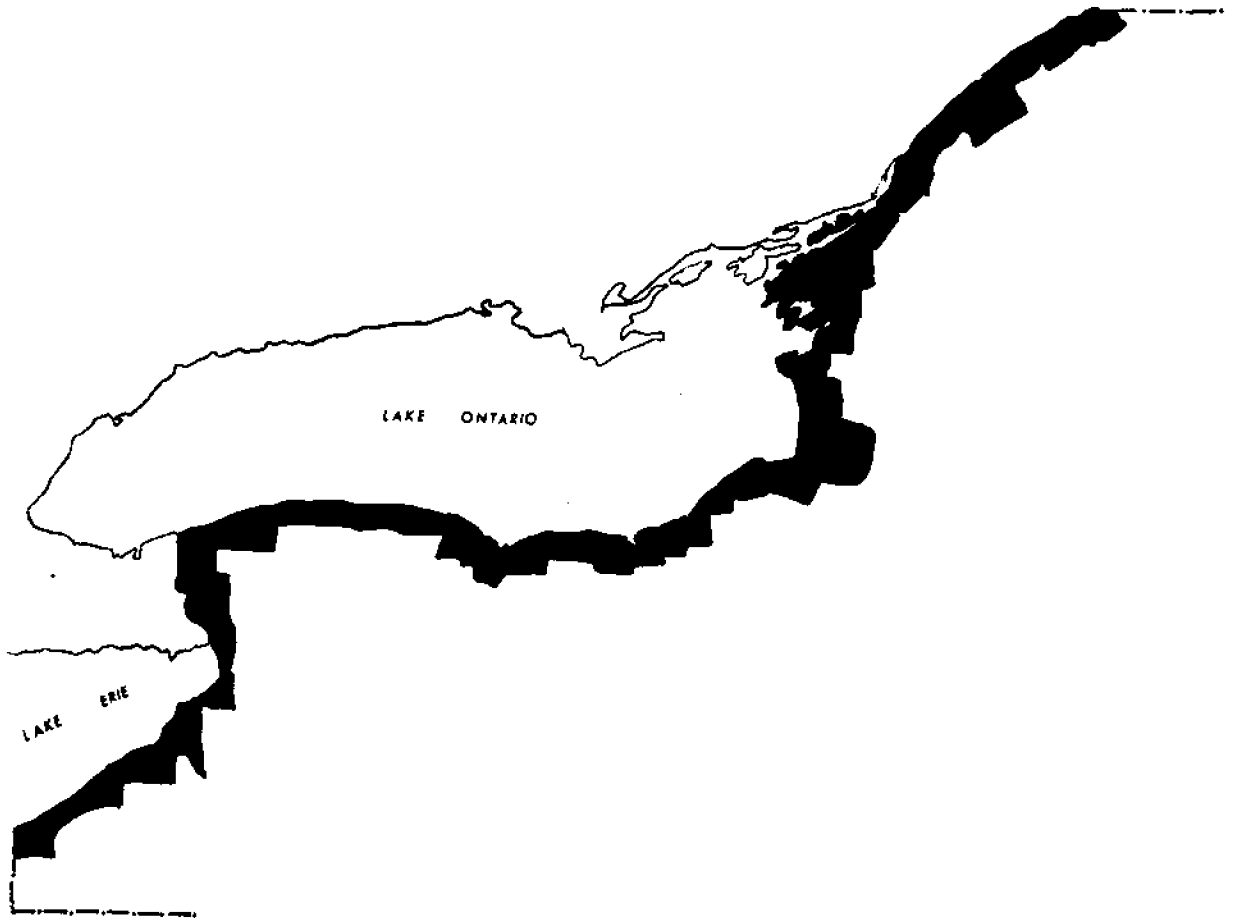


Figure 1. The Great Lakes Coastal Zone within New York State.

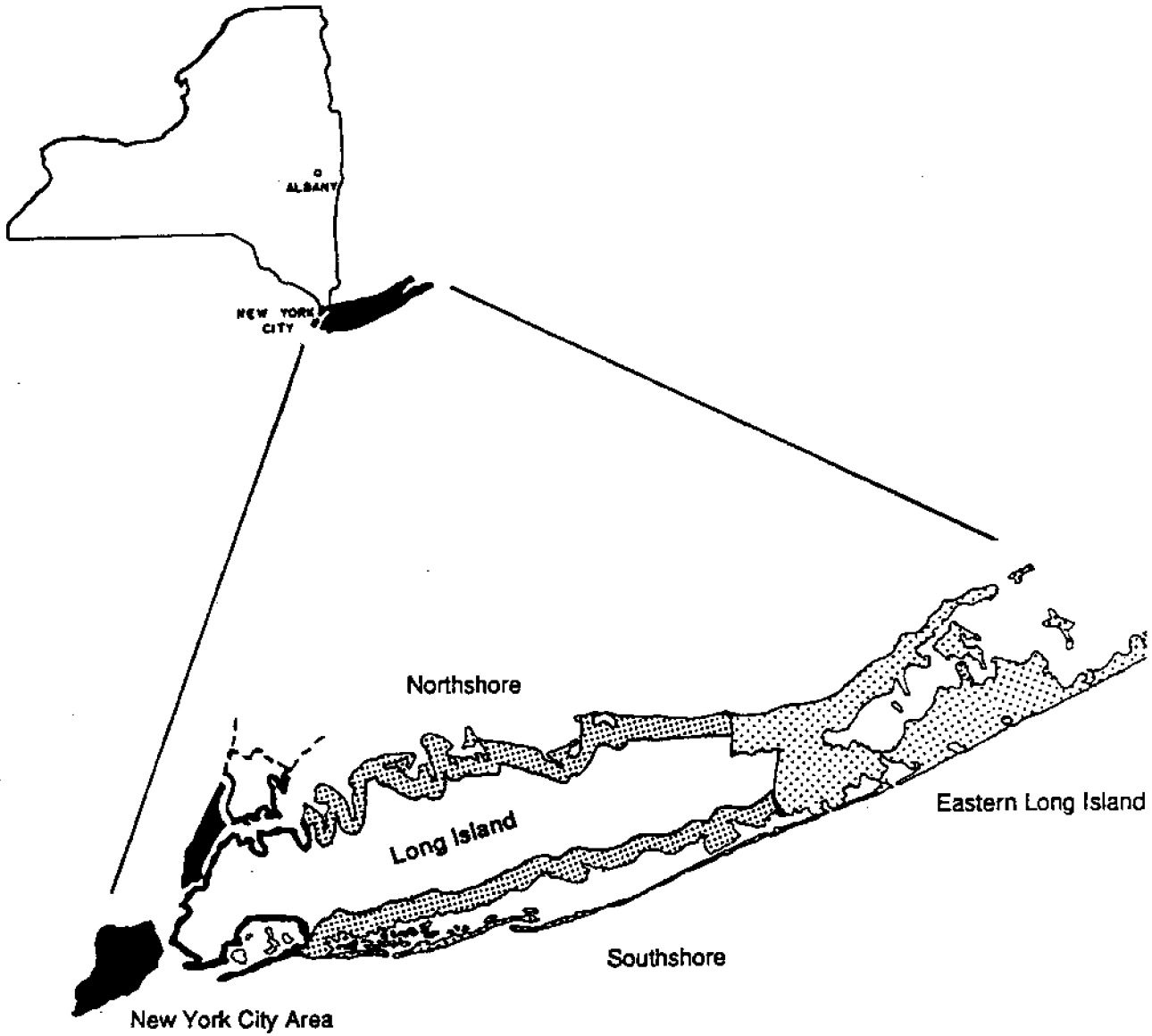


Figure 2. The Long Island/New York City Coastal Zone within New York State.

DOL. This information is computerized to aid in the many uses the State has of such a data base. The files do not include the many small businesses run by the owner or family that has no employees, nor do they include the owners of businesses with employees.

Employment information for the areas along each coastline was compiled by aggregating data from individual zip codes within that area. For example, along the Northshore of Long Island, zip codes for all of the cities and villages lining the shore were used. Along the Great Lakes, all of the zip codes within each township were used. In the New York City area, the best possible operational definition of the coastal zone was those zip codes which bordered the coast. This resulted in all of Manhattan and Staten Island being selected. Since all of the tourism-related businesses in these 2 areas, particularly Manhattan, were not coastal-related, it was impossible to define a true "coastal zone" for the New York City area using this data base. Therefore results from the New York City area will not be emphasized in this report.

The analysis used DOL employment data for 3 years: 1975, 1980 and 1985. The data base contained information on employment per month for various Standard Industrial Classification (SIC) codes of coastal tourism related businesses (Table 1). Groupings of SIC codes were made where logical. The miscellaneous code containing firms classified as primarily marinas were not included because it also contains a number of types of commercial nonrecreational waterfront transportation businesses. Although marinas are not excluded, firms classified as boat dealers, liveries, and charter/party boat businesses are included in the Amusement and Recreation Services Sector. Employment data are not presented for sectors containing 3 firms or less to protect the confidentiality of those firms.

Table 1. Tourism-related Sectors for which Employment Information was Analyzed and Groupings for Analysis.

<u>Employment Information Provided by the Dept. of Labor for these Sectors</u>	<u>Grouped for Analysis into these Sectors</u>
Boatbuilding and Repair Sporting and Athletic Goods Manufacturing	Selected Manufacturing
Taxicabs Local Passenger Charter Services Passenger Charter Services	Transportation
Wholesale Sporting Goods	Wholesale Sporting Goods
Fruit and Vegetable Markets Dairy Products Stores Bakeries	Food Specialty Stores
Gas Stations	Gas Stations
Boat Dealers	Boat Dealers
Recreational Vehicle Dealers	Recreational Vehicle Dealers
Eating & Drinking Establishments	Eating & Drinking Establishments
Retail Sporting Goods	Retail Sporting Goods
Gift Shops	Gift Shops
Lodging	Lodging
Golf Courses Coin-amusement Operations Amusement Parks Sporting Clubs Movie Theaters Other Amusement and Recreation Services	Amusement & Recreation Services

RESULTS

Growth and seasonality in coastal tourism-related firms and employment will be discussed for each major coastal zone (i.e., Great Lakes and Long Island/New York City). Comparisons will be made between the 2 coastlines, and with the Adirondack region, for which a similar analysis was conducted in 1984.

Growth and Impact of Great Lakes Tourism on Businesses and Employment

The major economic sectors impacted by coastal tourism, the number of firms in each sector, and the net change in number of firms from 1975 to 1985 are shown in Table 2. In initial economic expansion, growth in the demand for products and services by tourists is usually accompanied by growth in the number of firms. Later, some firms tend to enlarge while others go out of business, which sometimes results in fewer firms. The total number of tourism-related firms grew more rapidly from 1975 to 1980 than from 1980 to 1985. From 1975 to 1980, the number of gift shops, lodging establishments, and wholesale sporting goods establishments more than doubled. However, the largest absolute increase occurred in eating and drinking establishments, which increased by almost 800 firms. From 1980 to 1985, eating and drinking establishments increased by almost the same number as from 1975 to 1980. Most other sectors increased by almost the same number from 1975 to 1980 as from 1980 to 1985. Food specialty stores increasing even more rapidly in 1980 to 1985 than from 1975 to 1980. However, the number of gas stations and recreation vehicle dealers declined slightly from 1980 to 1985.

The average number of employees per firm in each sector over time is shown in Table 3. The number of employees per firm has been relatively constant from 1975 to 1985, even with new firms being established. This is generally

Table 2. Number of Firms and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone.

<u>Employment Sector</u>	<u>Number of Firms 1975</u>	<u>Net Change 1975-80</u>	<u>Number of Firms 1980</u>	<u>Net Change 1980-85</u>	<u>Number of Firms 1985</u>
Selected Manufacturing	*	*	6	6	12
Transportation	20	3	23	4	27
Wholesale Sporting Goods	5	5	10	11	21
Food Specialty Stores	79	26	105	68	173
Gas Stations	333	90	423	-15	408
Boat Dealers	32	2	34	14	48
Recreational Vehicle Dealers	11	1	12	-1	11
Eating & Drinking Establishments	997	799	1,796	749	2,545
Retail Sporting Goods	50	38	88	27	115
Gift Shops	16	30	46	30	76
Lodging	56	80	136	62	198
Amusement & Recreation Services	97	38	135	39	174
Totals	1,696- 1,702*	1,106- 1,112*	2,814	994	3,808

*Withheld to avoid disclosing data for individual firms.

Table 3. Average Number of Employees per Firm for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone; 1975, 1980, and 1985.

<u>Employment Sector</u>	<u>Average Number Employees/Firm 1975</u>	<u>Average Number Employees/Firm 1980</u>	<u>Average Number Employees/Firm 1985</u>
Selected Manufacturing	*	4	4
Transportation	13	18	19
Wholesale Sporting Goods	8	7	9
Food Specialty Stores	11	11	9
Gas Stations	4	4	6
Boat Dealers	5	7	7
Recreational Vehicle Dealers	3	5	8
Eating & Drinking Establishments	12	11	11
Retail Sporting Goods	6	5	6
Gift Shops	7	5	4
Lodging	28	23	21
Amusement & Recreation Services	15	15	16

*Withheld to avoid disclosing data for individual firms.

consistent with typical growth patterns in the early phases of economic growth. There is a range in the average number of employees per firm in various sectors. Lodging, which had the largest number of employees per firm, had an average of 21 employees per firm in 1985. Lodging was followed in number of employees per firm by transportation, amusement and recreation services, eating and drinking establishments, and food specialty stores. Sectors with the lowest average number of employees were gas stations and selected manufacturing.

An average of 42,405 persons were employed each month in these tourism-related sectors along the Great Lakes coast in 1985 (Table 4). Eating and drinking establishments had by far the highest employment, followed by lodging, amusement and recreation services, and gas stations. (Keep in mind that, except for lodging employment, all other sectors attribute part of their employment to tourists and part to local residents.)

Tourism-related employment along the Great Lakes more than doubled from 1975 to 1985, increasing by 132%. While the percent growth was higher from 1975 to 1980 than from 1980 to 1985, the totals in Table 4 show that more tourism-related jobs were created from 1980 to 1985 than during 1975 to 1980. From 1975 to 1980, absolute growth was greatest in sectors such as eating and drinking establishments, lodging, amusement and recreation services, and gas stations. These are primary tourism sectors which tourists buy from directly. Employment growth in these sectors continued from 1980 to 1985. As the salmonid sport fishery redeveloped and expanded, however, notable increases were also seen in the tourism-related wholesale trade and manufacturing sectors, and in capital equipment sales, as reflected in the boat dealers sector.

Table 4. Average Monthly Employment and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Great Lakes Coastal Zone.

<u>Employment Sector</u>	<u>Average Monthly Employment 1975</u>	<u>Net Change 1975-80</u>	<u>Average Monthly Employment 1980</u>	<u>Net Change 1980-85</u>	<u>Average Monthly Employment 1985</u>
Selected Manufacturing	*	*	24	24	48
Transportation	258	152	410	109	519
Wholesale Sporting Goods	40	34	74	120	194
Food Specialty Stores	898	305	1,203	430	1,633
Gas Stations	1,349	379	1,728	632	2,360
Boat Dealers	165	61	226	130	356
Recreational Vehicle Dealers	37	20	57	30	87
Eating & Drinking Establishments	12,053	7,912	19,965	9,240	29,205
Retail Sporting Goods	309	110	419	248	667
Gift Shops	112	111	223	81	304
Lodging	1,576	1,554	3,130	1,111	4,241
Amusement & Recreation Services	1,492	584	2,076	715	2,791
Totals	18,289- 18,313*	11,198- 11,222*	29,535	12,870	42,405

*Withheld to avoid disclosing data for individual firms.

Seasonality in Great Lakes Tourism Employment

Average monthly data reveal the relative magnitude of various economic sectors, but these data mask the seasonality of the tourism economy. Monthly employment patterns are shown in Figure 3 for the 3 largest tourism-related sectors: eating and drinking establishments, lodging, and amusement and recreation services. For these sectors the lowest employment occurred in the late winter months. The greatest summer seasonality in employment occurred within the amusement and recreation services sector. Businesses which would contribute to this seasonality include amusements parks, golf courses, and water-based amusements.

To improve quantitative description of the summer seasonality aspect of employment, a seasonality coefficient was calculated by dividing employment in the highest summer month (June, July or August) by that of the lowest nonsummer month (Table 5). All of the tourism-related sectors showed some summer seasonality, with amusement and recreation services having the highest coefficient over the 10-year period. Eating and drinking establishments had a relatively low coefficient, but with the large number of people employed in this sector, a 3,000 person difference in employment existed between the summer high and winter low months. In all but 1 sector (retail sporting goods) the 1985 seasonality coefficient was less than or equal to the corresponding 1975 coefficient.

A similar analysis done by the authors in the Adirondack region of New York for the years 1975 and 1981 showed much higher seasonality coefficients. There, seasonality coefficients of 4 for lodging and amusement and recreation services, and 2 for eating and drinking establishments were reported (Brown and Connelly 1984). Lower seasonality effects in tourism-related employment along

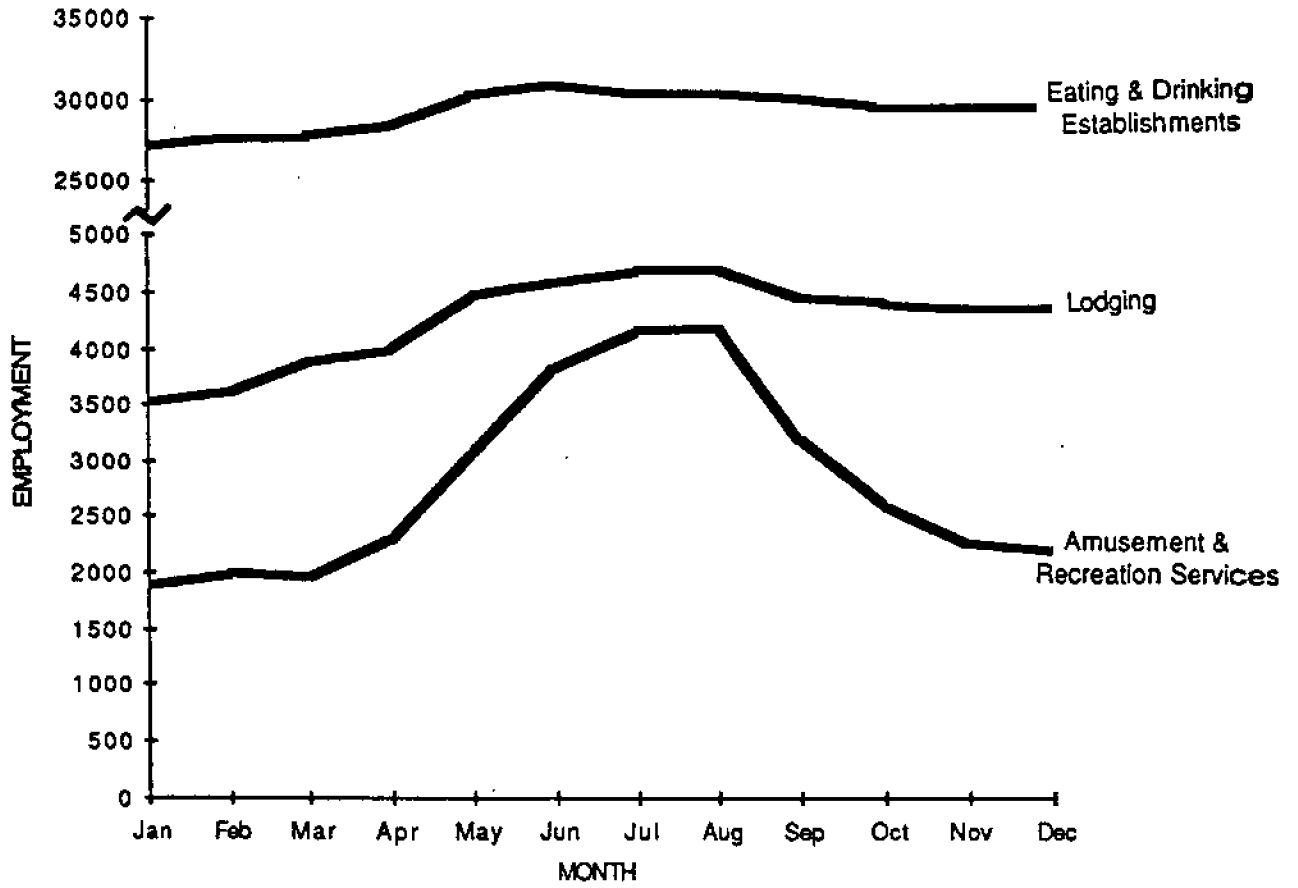


Figure 3. Monthly Employment for 3 Tourism-related Sectors of the Great Lakes Coastal Zone, 1985.

Table 5. Summer Seasonality Coefficients for Various Tourism-related Sectors in the Great Lakes Coastal Zone for 1975, 1980, and 1985.

<u>Employment Sector</u>	<u>Summer Seasonality Coefficient^a</u>		
	<u>1975</u>	<u>1980</u>	<u>1985</u>
Selected Manufacturing	1.7	1.2	1.4
Transportation	1.1	1.2	1.1
Wholesale Sporting Goods	3.5 (small n)	1.3	1.2
Food Specialty Stores	1.2	1.1	1.2
Gas Stations	1.1	1.0	1.1
Boat Dealers	1.9	1.8	1.8
Recreational Vehicle Dealers	1.6	1.2	1.4
Eating & Drinking Establishments	1.1	1.1	1.1
Retail Sporting Goods	1.3	1.1	1.5
Gift Shops	3.0	1.2	1.1
Lodging	1.5	1.3	1.3
Amusement & Recreation Services	2.4	2.3	2.2

^aThe Summer Seasonality Coefficient was calculated by dividing employment in the high, summer month by the low, nonsummer month.

the Great Lakes coast is due in part to the high proportion of tourism-related employment in urban areas such as Rochester and Buffalo. These areas have convention centers and businesses that attract travelers year-round. Urban/rural seasonality differences will be examined more closely in a later section dealing with employment by county.

Lower seasonality with respect to tourism along the Great Lakes coast is also attributable to the nature of the Great Lakes sport fisheries. Unpublished New York State Department of Environmental Conservation data show that these fisheries, which stimulated total angler expenditures exceeding \$32 million in 1984, stimulated angler expenditures of over \$2 million per month from April through October, thus helping to extend the traditional summer season. Tourism in the spring and fall in the Adirondacks, on the other hand, is minor compared with the summer season.

Seasonal growth in tourism along the Great Lakes coast was examined by analyzing the change in employment data by quarter from 1975 to 1980 and 1980 to 1985 for 3 major tourism sectors. Both net and percent growth in employment were relatively constant across quarters for the lodging and eating and drinking sectors (the latter had greater second-quarter growth from 1975 to 1980 but less second quarter growth from 1980 to 1985) (Table 6). Net growth in the amusement and recreation services sector was more typical of tourism-related employment by having peak growth during the third quarter. These data reinforce previous findings that while some sectors have notable seasonality components, the tourism industry as a whole is moderately strong year-round on the Great Lakes.

Table 6. Net and Percent Growth in Three Sectors of Employment by Quarter in the Great Lakes Coastal Zone, 1975-1980 and 1980-1985.

<u>Employment Sector</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
	<u>Quarter</u>	<u>Quarter</u>	<u>Quarter</u>	<u>Quarter</u>
	<u>Number (Percent)</u>			
Lodging				
1975-1980	1,511 (115.1)	1,589 (104.7)	1,653 (91.6)	1,466 (87.9)
1980-1985	853 (30.2)	1,235 (39.7)	1,138 (32.9)	1,215 (38.7)
Amusement & Recreation Services				
1975-1980	532 (54.2)	364 (19.5)	796 (40.0)	644 (57.0)
1980-1985	436 (28.8)	824 (36.9)	1,045 (37.5)	558 (31.5)
Eating & Drinking Establishments				
1975-1980	7,355 (66.0)	9,199 (76.0)	7,648 (61.0)	7,441 (59.9)
1980-1985	9,047 (48.9)	8,425 (39.5)	9,999 (49.6)	9,490 (47.8)

Great Lakes Subregions

The Great Lakes coastal zone, while important to examine as a large coastal entity because of the impact of the Great Lakes fisheries and marketing efforts such as the Seaway Trail, also has regional and local economic importance warranting examination at the county and multi-county levels. Coastal tourism can be examined in more localized areas of the Great Lakes in terms of the proportion of total county-wide employment involved in tourism and the proportion of county-wide tourism employment that occurs within the coastal zone.

For each of the Great Lakes counties, less than 10% of total county-wide employment was in tourism-related sectors (Table 7), although Jefferson and Niagara Counties approached 10%. Erie and Monroe Counties, which contain the 2 largest urban areas of Buffalo and Rochester, respectively, had the largest number of employees in each of the 3 major tourism sectors.

Although tourism comprised less than 10% of county-wide employment for each Great Lakes county, tourism-related employment was substantially more important in the coastal regions of these counties. The proportion of county-wide tourism that existed within the coastal region exceeded 50% for Niagara, Monroe, and Oswego Counties (Table 8). Generally, lodging was a particularly important employment sector along the Great Lakes coast. For example, in Niagara County over 80% of lodging employment occurred within the coastal zone, compared to 60% of total tourism-related employment. Also, almost all of the boat dealers in each county were located within the coastal zone.

The Great Lakes coastal zone was broken down by county and larger cities to highlight urban/rural and regional differences with regard to the provision of tourism-related services and seasonality of employment (Table 9). Erie County

Table 7. Percent of Total County-wide Employment that is Tourism-related, and Average Monthly Employment for 3 Tourism Sectors, by Great Lakes Counties, 1985.

County	Total Employment	Percent Tourism-related Employment ^a	Lodging Employment	Eating & Drinking Employment	Amusement & Recreation Services Employment
Chautauqua	51,541	8.3	383	2,736	474
Erie	401,073	8.7	3,219	24,536	2,339
Niagara	76,735	9.6	640	5,179	588
Orleans	9,533	5.8	16	451	33
Monroe	359,511	7.3	2,208	18,717	1,592
Wayne	23,891	6.9	75	1,188	118
Cayuga	21,779	8.9	138	1,406	78
Oswego	34,060	7.0	168	1,707	96
Jefferson	29,483	9.9	258	1,957	313
St. Lawrence	32,397	7.2	200	1,793	42

^aTourism-related employment includes all sectors defined in Table 1.

Table 8. Percent of Average Monthly Employment that Occurs in the Great Lakes "Coastal Zone" by County, 1985.

Employment Sector	Percent									
	Chautauque County	Essex County	Niagara County	Olean County	Monteale County	Wayne County	Cayuga County	Oswego County	Jefferson County	St. Lawrence County
Selected Manufacturing	13.2	100.0	-	6.9	-	-	-	100.0	-	-
Transportation	9.4	78.4	95.1	100.0	0.0	0.0	0.0	93.0	0.0	90.7
Wholesale Sporting Goods	0.0	41.0	100.0	-	84.3	-	0.0	0.0	100.0	100.0
Food Specialty Stores	17.8	58.4	65.5	3.8	87.0	89.7	30.3	54.5	20.9	75.0
Gas Stations	23.4	40.7	59.7	0.0	66.6	26.6	0.0	42.3	13.7	15.0
Boat Dealers	0.0	97.7	99.1	0.0	90.1	100.0	39.3	69.9	100.0	100.0
Recreational Vehicle Dealers	0.0	31.8	0.0	-	76.5	49.2	100.0	0.0	0.0	-
Eating & Drinking Establishments	22.8	43.4	57.0	4.5	65.9	37.0	2.8	52.4	20.3	47.8
Retail Sporting Goods	25.6	37.7	61.0	0.0	71.6	86.0	0.0	58.5	59.8	32.0
Gift Shop	7.7	19.4	30.5	0.0	62.1	54.2	0.0	64.8	86.4	0.0
Lodging	19.9	49.2	82.7	28.6	78.1	33.1	0.0	69.6	19.3	65.4
Amusement & Recreation Services	14.5	41.2	40.4	0.0	87.1	40.5	0.0	41.0	11.3	30.4
Totals	20.9	44.1	59.5	4.6	69.1	38.8	3.5	53.0	22.2	47.6

-That sector has no employees in the county.

Table 9. Average Employment and Seasonality in 3 Tourism-related Sectors for Counties and Major Cities Within the Great Lakes Coastal Zone, 1985.

Location	Avg. Lodging		Lodging		Avg. Amusement		Amusement &		Avg. Eating &		Eating and	
	Employment	Seasonality Coefficient	Employment	Seasonality Coefficient	Services & Recreation	Services Seasonality Coefficient	Drinking Establishment	Drinking Establishment	Employment	Seasonality Coefficient	Drinking Establishment	Seasonality Coefficient
Great Lakes Coastal Zone	4,241	1.3	2,791	2.2	22,205	1.1						
Chautauqua Co.	76	1.4	69	2.4	624	1.4						
Erie Co.	1,585	1.5	963	2.1	10,646	1.1						
Buffalo City	1,055	1.7	614	1.5	7,501	1.0						
Rest of Erie Co.	530	1.2	349	3.6	3,146	1.2						
Niagara Co.	529	1.5	238	2.3	2,955	1.2						
Niagara Falls City	494	1.5	99	1.4	2,122	1.2						
Rest of Niagara Co.	35	1.8	139	4.1	833	1.3						
Orleans Co.	5	1.0	0	-	21	2.3						
Monroe Co.	1,724	1.2	1,387	2.4	12,331	1.1						
Rochester City	1,694	1.2	1,288	2.3	11,309	1.1						
Rest of Monroe Co.	30	1.7	99	3.7	1,022	1.2						
Wayne Co.	25	1.6	48	2.2	439	1.4						
Cayuga Co.	0	-	0	-	39	1.5						
Oswego Co.	117	1.3	39	9.0	895	1.3						
Jefferson Co.	50	9.5	35	57.0	398	3.9						
St. Lawrence Co.	131	3.0	13	8.0	858	1.3						

and Monroe County each comprised over one-third of the total lodging employment in the Great Lakes coastal zone. These highly urbanized areas showed little summer seasonality in lodging employment, as did other counties from Oswego westward. These relatively low seasonality coefficients appear to be attributable to a combination of diversified economies that include: convention centers in Buffalo, Niagara Falls and Rochester; businesses and colleges in these urban centers and several other counties that attract travelers during nonsummer months; and the Great Lakes fisheries that are active year-round, but particularly from April through October. In contrast, in Jefferson and St. Lawrence Counties, which are much more dependent on vacation-based tourism, employment in the summer was much greater than in the winter.

Seasonality coefficients for eating and drinking places were generally even lower than for lodging. This is probably because in addition to the factors stated above that hold down lodging seasonality coefficients, a moderate proportion of total eating and drinking trade is by local residents, which occurs year-round. The amusement and recreation services sector has the highest seasonality coefficients of the 3 major tourism sectors. Great Lakes-wide, peak summer employment in this sector was over twice that in the lowest nonsummer month (Table 9). These coefficients are lowest in the cities where year-round activities such as movies, plays and concerts, and bowling predominate and much of the trade is from local residents. As with lodging, these coefficients are highest in Jefferson and St. Lawrence Counties where the primary fisheries are warmwater and most travel occurs during the summer.

Selected Great Lakes counties that appear to be relatively dependent upon natural resource-based tourism are examined in more detail in the following sections.

Jefferson County

Growth in tourism from 1975 to 1985 has generally been strong in coastal Jefferson County (Table 10). The third quarter consistently has the highest employment and frequently has the highest net growth, but the most rapid proportional growth has typically been during other quarters. Lodging employment in particular, which in 1975 was almost nonexistent, has grown considerably during all quarters. Growth in eating and drinking establishments has also been strong in all quarters from 1980 to 1985, with strong proportional growth in the fall and winter quarters. Boat dealers employed less people in 1980 than in 1975 but grew moderately from 1980 to 1985. This is most likely related to the development of the salmonid fishery on Lake Ontario during this latter time period.

St. Lawrence County

The lodging industry employed more people along the coast in St. Lawrence County than in Jefferson County, probably due to the presence of the cities of Massena and Ogdensburg within the St. Lawrence County coastal zone. However, tourism growth in St. Lawrence County has been much slower than in Jefferson County. In fact, employment in lodging declined in the first quarter between 1980 and 1985 (Table 11). There were few people employed in amusement and recreation services and the number employed may be declining. Employment in eating and drinking establishments grew considerably from 1975 to 1980 and slightly less from 1980 to 1985. The percentage increase (growth) varied little between quarters. Such an even growth rate combined with slower growth in lodging may be indicative of a resident population using eating and drinking establishments on an increasing basis.

Table 10. Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 4 Employment Sectors in Coastal Jefferson County.

Employment Sector/ Quarters	Average Monthly Employment 1975	Percent Change 1975-80	Average Monthly Employment 1980	Percent Change 1980-85	Average Monthly Employment 1985
Lodging					
First Quarter	*	*	*	*	11
Second Quarter	*	*	28	121.4	62
Third Quarter	*	*	39	133.3	91
Fourth Quarter	*	*	16	118.8	35
Amusement & Recreation Services					
First Quarter	*	*	*	*	*
Second Quarter	*	*	*	*	43
Third Quarter	*	*	*	*	87
Fourth Quarter	*	*	*	*	10
Eating & Drinking Establishments					
First Quarter	55	45.5	80	131.3	185
Second Quarter	127	92.1	244	72.5	421
Third Quarter	206	60.2	330	92.1	634
Fourth Quarter	77	79.2	138	155.1	352
Boat Dealers					
First Quarter	37	-13.5	32	46.9	47
Second Quarter	61	-13.1	53	37.7	73
Third Quarter	74	-16.2	62	37.1	85
Fourth Quarter	49	- 8.2	45	48.9	67

*Withheld to avoid disclosing data for individual firms.

Table 11. Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 3 Employment Sectors in Coastal St. Lawrence County.

Employment Sector/ Quarters	Average Monthly Employment 1975	Percent Change 1975-80	Average Monthly Employment 1980	Percent Change 1980-85	Average Monthly Employment 1985
Lodging					
First Quarter	70	31.4	92	-22.8	71
Second Quarter	91	28.6	117	33.3	156
Third Quarter	102	21.6	124	34.7	167
Fourth Quarter	87	36.8	119	9.2	130
Amusement & Recreation Services					
First Quarter	*	*	6	0.0	6
Second Quarter	*	*	17	-11.8	15
Third Quarter	*	*	20	5.0	21
Fourth Quarter	*	*	12	-33.3	8
Eating & Drinking Establishments					
First Quarter	177	166.7	472	62.1	765
Second Quarter	194	146.9	479	77.9	852
Third Quarter	220	145.9	541	76.2	953
Fourth Quarter	192	179.7	537	60.3	861

*Withheld to avoid disclosing data for individual firms.

Niagara County

Lodging and eating and drinking establishments grew much more rapidly in coastal Niagara County between 1975 and 1980 than between 1980 and 1985 (Table 12). The growth in lodging can be attributed to firms inside the city of Niagara Falls, as lodging employment declined over the 10 year period outside the city. There is some seasonality in employment, which is more pronounced outside the city than within. Over the 1975-1985 decade, the most notable growth in lodging-related tourism has occurred in the nonsummer months; this growth has been sufficient to lower the quarterly seasonality coefficient from 2.2 in 1975 to 1.5 in 1985 (calculated from data in Table 12). The amusement and recreation sector has seen steady growth in the 20-30% range over each 5-year period. Although most people employed in amusement and recreation services work outside the city, most of the growth in employment for this sector has occurred inside the city.

Oswego County and the Salmon River Area

Coastal Oswego County employs about the same number of people in the 3 main tourism-related sectors, as does coastal St. Lawrence County, and has similar seasonality coefficients, except for a lower lodging coefficient (refer to Table 9). Of particular interest in Oswego County is the Salmon River area (consisting of Albion, Orwell, and Richland townships). This area has so few firms reporting to the DOL that only by combining all tourism-related sectors could employment be examined over time (Fig. 4). Tourism-related growth on the order of 10-fold has occurred in the Salmon River area from 1975 to 1985, reflecting both growth in the communities and in tourism. It is important to note that the highest tourism-related employment levels were most often not in

Table 12. Average Monthly Employment by Quarter and Percent Change from 1975 to 1980 and 1980 to 1985 for 3 Employment Sectors in Coastal Niagara County.

Employment Sector/ Quarters	Average Monthly Employment 1975	Percent Change 1975-80	Average Monthly Employment 1980	Percent Change 1980-85	Average Monthly Employment 1985
<u>Niagara County</u>					
Lodging					
First Quarter	184	110.9	388	6.2	412
Second Quarter	294	76.2	518	4.1	539
Third Quarter	401	44.1	578	3.6	599
Fourth Quarter	376	41.0	530	6.8	566
Amusement & Recreation Services					
First Quarter	109	28.4	140	18.6	166
Second Quarter	168	23.2	207	17.4	243
Third Quarter	190	24.2	236	33.1	314
Fourth Quarter	122	36.9	167	36.5	228
Eating & Drinking Establishments					
First Quarter	1,017	125.9	2,297	22.8	2,820
Second Quarter	1,148	122.6	2,555	19.7	3,059
Third Quarter	1,296	106.1	2,671	17.7	3,145
Fourth Quarter	1,229	101.2	2,473	13.0	2,795
<u>Niagara Falls City</u>					
Lodging					
First Quarter	84	239.3	285	35.4	386
Second Quarter	191	119.4	419	20.3	504
Third Quarter	287	67.6	481	15.4	555
Fourth Quarter	267	62.5	434	22.1	530
Amusement & Recreation Services					
First Quarter	*	*	61	54.1	94
Second Quarter	*	*	58	46.6	85
Third Quarter	*	*	56	105.4	115
Fourth Quarter	*	*	57	78.9	102
<u>Rest of Niagara County</u>					
Lodging					
First Quarter	100	3.0	103	-74.8	26
Second Quarter	103	-4.9	98	-64.3	35
Third Quarter	114	-14.9	97	-54.6	44
Fourth Quarter	110	-12.7	96	-62.5	36

Table 12. Continued

Employment Sector/ Quarters	Average Monthly Employment 1975	Percent Change 1975-80	Average Monthly Employment 1980	Percent Change 1980-85	Average Monthly Employment 1985
Amusement & Recreation Services					
First Quarter	*	*	79	-8.9	72
Second Quarter	*	*	149	6.0	158
Third Quarter	*	*	181	10.5	200
Fourth Quarter	*	*	110	14.5	126

*Withheld to avoid disclosing data for individual firms.

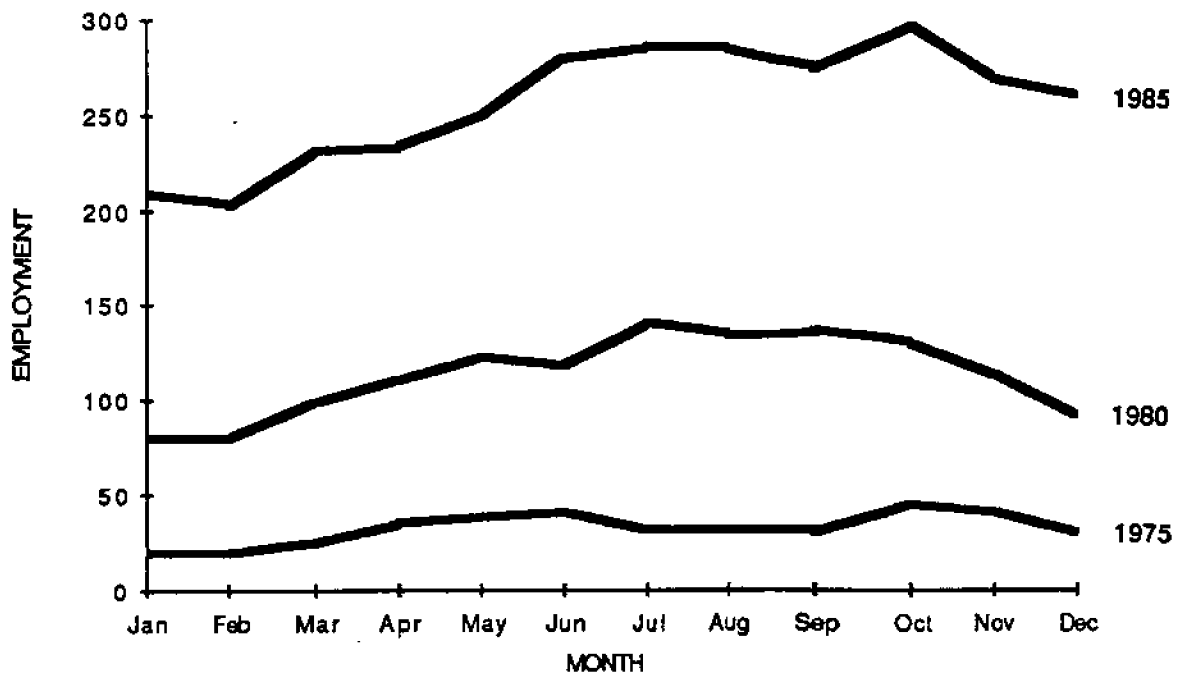


Figure 4. Employment in Tourism-related Sectors Near the Salmon River, 1975-1985.

the summer months but in October during the peak salmon fishing season. Thus, this recreational opportunity helps to keep employment high over a longer period of time than just the summer season. We know of no other documented case in the northern United States where fall tourism employment exceeds the summer level.

Estimating the Impacts of Overnight Travel

So far in this report we have assumed that all of the sectors we have discussed have been impacted to some degree by tourism. In this section we estimate quantitatively the impact tourism has on employment in the leading tourism sectors. We will start with the assumption that all lodging employment can be attributed to tourism, specifically overnight travel. For other sectors such as eating and drinking, some portion of employment can be attributed to tourists, with the remainder attributed to local residents.

We start with the impact of tourism on employment in the eating and drinking establishments sector. The month with the lowest employment in eating and drinking establishments along the Great Lakes Coast in 1985 was January, with 27,195 employees. We assume that the increases in employment during the other months were due to tourism (which is not entirely true because there was some increase in manufacturing and other activities during the summer which resulted undoubtedly in spending in eating and drinking places). The average amount of monthly eating and drinking employment above the January level was 6.9%. However, substantial tourism also occurred during January because there were 3,521 lodging employees that month. What is now needed is a relationship between lodging and eating and drinking employment (Fig. 5). From employment

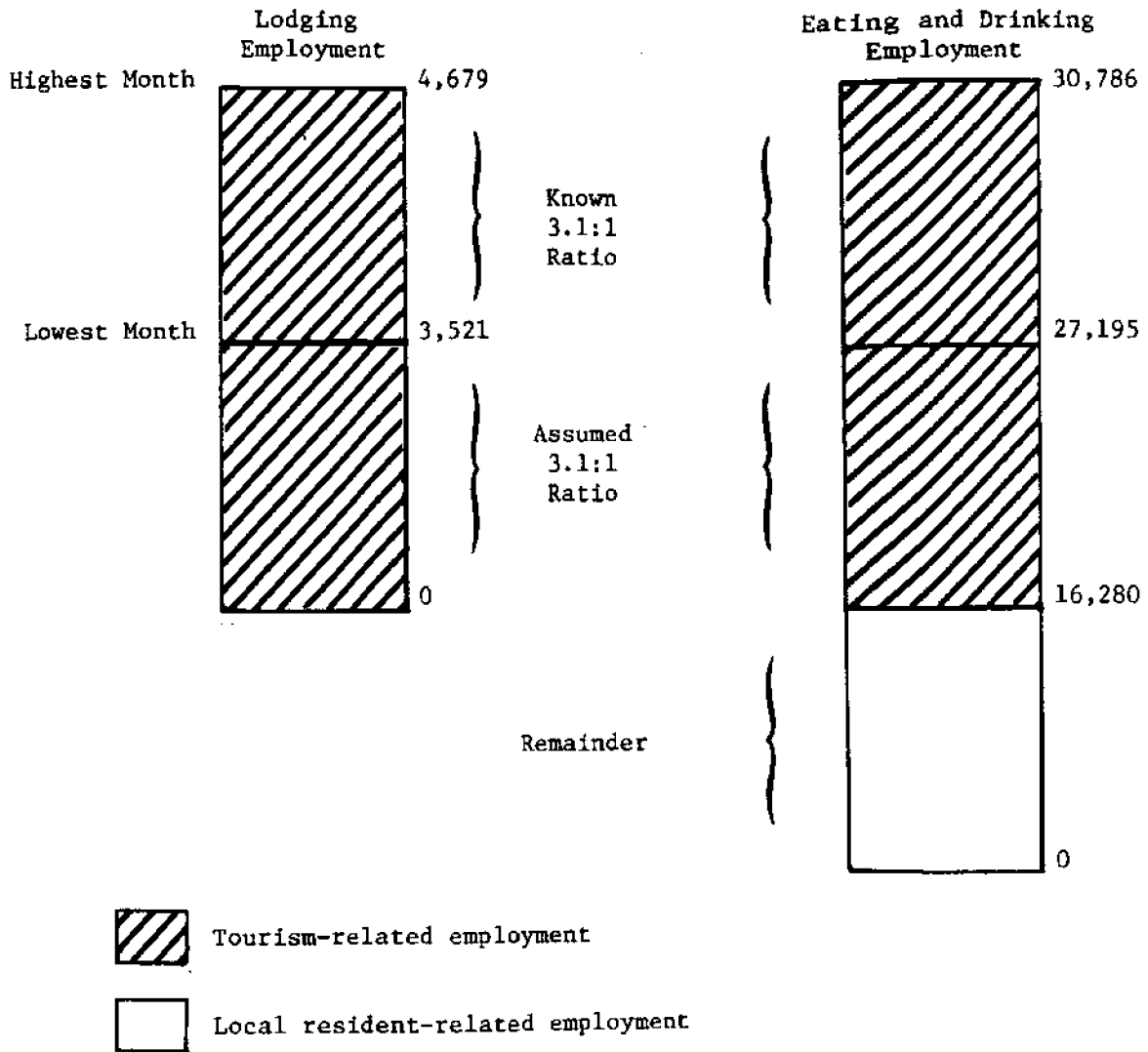


Figure 5. Proportion of Eating and Drinking Employment Which is Tourism-related as Calculated Using Lodging Employment.

levels between the month of lowest to the month of highest employment, an increase of 1,158 lodging employees was accompanied by an increase of 3,591 eating and drinking establishment employees. Remembering the assumption that this increase is largely tourism-related, we can derive by division that 3.1 eating and drinking jobs were associated with every new lodging job.

If the above proportion holds for the initial levels of employment, we can see that if lodging employment were to drop from the January low of 3,521 to 0, eating and drinking employment would drop by approximately $3,521 \times 3.1 = 10,915$ employees per month. This amounts to 37.4% of average monthly eating and drinking employment. Adding this to the percentage derived previously for employment above the lowest monthly level (6.9%), we find that approximately 44.3% of all eating and drinking employment was tourism-related. This is a conservative estimate because most of the eating and drinking employment has been related to lodging employment. Day visitors and overnight visitors who stay with friends or relatives but spend money in eating and drinking establishments are not taken into account using this procedure.

An analogous procedure can not be applied to relate amusement and recreation services employment to lodging employment because the calculated amusement and recreation services employment related to lodging below the lowest monthly level would be greater than employment during the lowest month. Reference back to Figure 3 may help to explain why this method does not work in this case. The rise and fall of amusement and recreation employment from spring through autumn was more pronounced than with lodging. A likely explanation is that summer day-use visitors were strongly affecting amusement and recreation, but not lodging employment.

Thus, summer increases in amusement and recreation employment, which amounted to 32.1% of average employment, can be attributed to both day-use and overnight visitors. We realize that attributing all of this 32.1% to tourism is somewhat liberal because local household habits may change with more leisure time in summer (although some of this time is spent away on vacation) and more amusement and recreation services may be purchased by residents than at other times of the year. But we do not believe this to be a strong bias. Even if we accept the liberal estimate that all of the 32.1% of amusement and recreation service employment above the lowest monthly employment level is attributable to tourism, we have no simplified method of estimating the proportion of the remaining 67.9% of amusement and recreation service employment that is tourism-related.

Only a few of the useful interpretations have been illustrated here. Each of the tables and figures in this report contains valuable information and implications for those who work in or with the tourism industry and should be examined more closely by the reader. Seasonality within a group of sectors may be of more interest or a closer examination of county-specific data may be more valuable.

Growth and Impact of Tourism on Long Island/New York City Coastal Employment

The number of tourism-related firms on Long Island increased by a factor of 2.4 from 1975 to 1985, from 1,891 in 1975 to 4,467 in 1985 (Table 13). The rate of growth in the number of firms declined by over 20%, however, from 1,405 in 1980 over 1975, to 1,171 in 1985 over 1980. In general, the largest growth between 1980 and 1985, compared to the 1975 to 1980 period, was not in the primary sectors such as lodging, eating and drinking establishments, amusement

Table 13. Number of Firms and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Long Island Coastal Zone.

<u>Employment Sector</u>	<u>Number of Firms 1975</u>	<u>Net Change 1975-80</u>	<u>Number of Firms 1980</u>	<u>Net Change 1980-85</u>	<u>Number of Firms 1985</u>
Selected Manufacturing	21	8	29	4	33
Transportation	37	31	68	16	84
Wholesale Sporting Goods	17	8	25	11	36
Food Specialty Stores	116	74	190	131	321
Gas Stations	336	181	517	151	668
Boat Dealers	49	20	69	27	96
Recreational Vehicle Dealers	6	0	6	1	7
Eating & Drinking Establishments	918	803	1,721	616	2,337
Retail Sporting Goods	71	54	125	45	170
Gift Shops	67	65	132	81	213
Lodging	37	67	104	12	116
Amusement & Recreation Services	216	94	310	76	386
Totals	1,891	1,405	3,296	1,171	4,467

and recreation services, and gas stations, but in wholesale and specialty areas that would be expected to develop later in support of a large tourism industry. These sectors include wholesale sporting goods, food specialty stores, and gift shops. In addition, the number of boat dealers grew more rapidly from 1980 to 1985 than from 1975 to 1980.

With the exception of the selected manufacturing sector (boats, sporting and athletic goods), the average number of employees per firm remained remarkably constant over time for each sector (Table 14). The lodging sector, which almost tripled from 1975 to 1980, dropped from an average of 18 to 13 employees per firm due to smaller new firms during this period, but the average number of employees rebounded to 15 during the slower growth from 1980 to 1985.

Employment in the major economic sectors impacted by coastal tourism on Long Island and New York City for 1985 are shown in Table 15. Recall, however, the difficulties in defining a "coastal zone" around New York City; as a result these data are more nearly an estimate of tourism generally than coastal tourism. In 1985 the New York City-Long Island regions had an average monthly employment of over 175,000 in tourism-related sectors of the economy. Roughly two-thirds of this employment was in the eating and drinking establishments sector.

We have seen that the number of firms on Long Island grew more rapidly from 1975 to 1980 than from 1980 to 1985. Employment grew slightly more rapidly from 1980 to 1985, however (Table 16). With the exception of selected manufacturing, employment increased in all tourism-related sectors from 1980 to 1985. Particularly large increases occurred in eating and drinking establishments, amusement and recreation services, and food specialty stores. The lodging sector gained only half as much growth from 1980 to 1985 as from

Table 14. Average Number of Employees per Firm for Various Tourism-related Employment Sectors in the Long Island Coastal Zone; 1975, 1980, and 1985.

<u>Employment Sector</u>	<u>Average Number Employees/Firm 1975</u>	<u>Average Number Employees/Firm 1980</u>	<u>Average Number Employees/Firm 1985</u>
Selected Manufacturing	19	10	6
Transportation	5	6	8
Wholesale Sporting Goods	14	12	10
Food Specialty Stores	8	7	8
Gas Stations	4	4	4
Boat Dealers	6	6	7
Recreational Vehicle Dealers	4	4	5
Eating & Drinking Establishments	10	9	10
Retail Sporting Goods	4	4	4
Gift Shops	4	4	3
Lodging	18	13	15
Amusement & Recreation Services	15	15	15

Table 15. Average Monthly Employment in the Long Island/New York City Area by Various Tourism-related Sectors, 1985.

<u>Employment Sector</u>	<u>1985 Average Monthly Employment</u>	
	<u>Long Island Coastal Zone</u>	<u>New York City Area</u>
Selected Manufacturing	187	253
Transportation	635	2,788
Wholesale Sporting Goods	368	405
Food Specialty Stores	2,472	5,128
Gas Stations	2,417	2,828
Boat Dealers	717	144
Recreational Vehicle Dealers	34	15
Eating & Drinking Establishments	23,596	86,802
Retail Sporting Goods	676	1,086
Gift Shops	701	2,373
Lodging	1,764	21,762
Amusement & Recreation Services	5,687	12,512
Totals	39,254	136,096

Table 16. Average Monthly Employment and Net Change from 1975 to 1980, and from 1980 to 1985 for Various Tourism-related Employment Sectors in the Long Island Coastal Zone.

Employment Sector	Average Monthly Employment 1975	Net Change 1975-80	Average Monthly Employment 1980	Net Change 1980-85	Average Monthly Employment 1985
Selected Manufacturing	405	-113	292	-105	187
Transportation	205	222	427	208	635
Wholesale Sporting Goods	246	55	301	67	368
Food Specialty Stores	919	458	1,377	1,095	2,472
Gas Stations	1,403	509	1,912	505	2,417
Boat Dealers	309	112	421	296	717
Recreational Vehicle Dealers	25	-1	24	10	34
Eating & Drinking Establishments	9,055	7,304	16,359	7,237	23,596
Retail Sporting Goods	266	235	501	175	676
Gift Shops	252	225	477	224	701
Lodging	657	745	1,402	362	1,764
Amusement & Recreation Services	3,289	1,246	4,535	1,152	5,687
Totals	17,031	10,997	28,028	11,226	39,254

1975 to 1980. This suggests that much of the recent gains in tourism in Long Island have been in day-use rather than overnight travel.

The summer seasonality of the 3 primary tourism sectors can be seen in Figure 6. The 3 traditional sectors of eating and drinking establishments, amusement and recreation services, and lodging are included because of the importance of lodging to overnight travel whereas food specialty stores and gas stations are excluded because substantial portions of sales are to local people and commuters. The lowest employment in each of the 3 sectors occurred in the late winter months. The greatest change in employment from winter to summer occurred in the amusement and recreation services sector. However, the seasonality coefficient for this sector improved from 3.7 in 1975 to 2.4 in 1985 (Table 17). This type of decline in seasonality over time, which was also seen in the lodging sector, implies more expansion of tourism into the 3 nonsummer seasons.

Table 18 shows the differential growth pattern by quarter for lodging, amusement and recreation services, and eating and drinking establishments. Lodging employment, which is a good index of overnight tourism, at least doubled in every quarter from 1975 to 1980. Growth since 1980 has been much slower, but importantly, increases have been in the nonsummer months. This type of increased growth results in the lowering of the seasonality coefficient. Growth in the other 2 tourism sectors shown in Table 18 have also been more gradual from 1980 to 1985, and they have been at more similar levels for each quarter, although their growth has been slightly more rapid during the first quarter.

Impact of Tourism at the County Level

Nassau and Suffolk Counties were examined in terms of the proportion of county employment involved in the tourism sectors as well as the proportion of

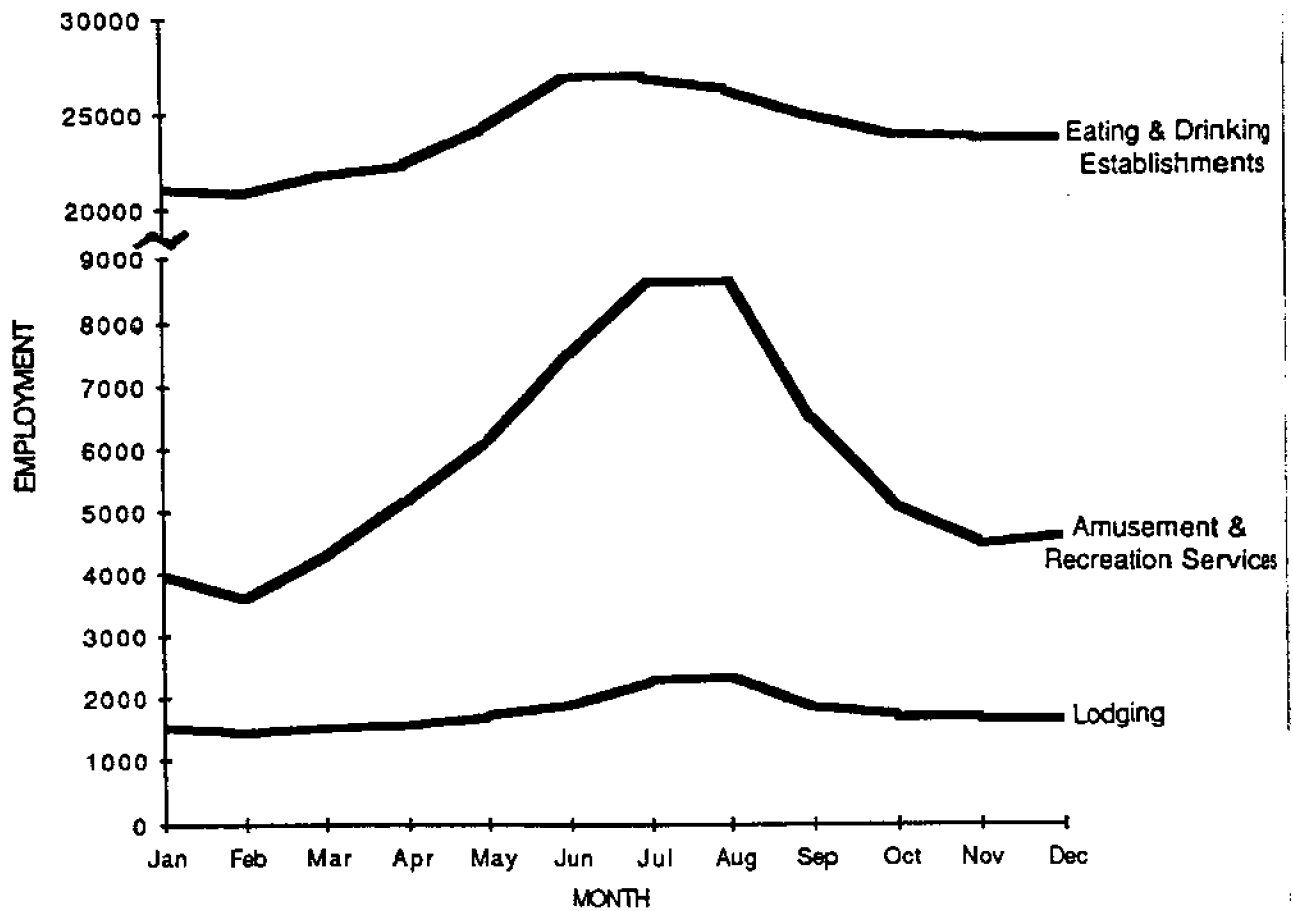


Figure 6. Monthly Employment for 3 Tourism-related Sectors of the Long Island Coastal Zone, 1985.

Table 17. Summer Seasonality Coefficients for Various Tourism-related Sectors in the Long Island Coastal Zone for 1975, 1980, and 1985.

<u>Employment Sector</u>	<u>Summer Seasonality Coefficient^a</u>		
	<u>1975</u>	<u>1980</u>	<u>1985</u>
Selected Manufacturing	1.1	1.2	1.5
Transportation	1.1	1.1	1.3
Wholesale Sporting Goods	1.1	1.1	1.1
Food Specialty Stores	1.2	1.2	1.1
Gas Stations	1.1	1.1	1.1
Boat Dealers	1.4	1.7	1.3
Recreational Vehicle Dealers	2.2	1.4	1.5
Eating & Drinking Establishments	1.3	1.3	1.3
Retail Sporting Goods	1.3	1.3	1.6
Gift Shops	1.1	1.2	1.2
Lodging	2.4	2.2	1.6
Amusement & Recreation Services	3.7	2.8	2.4

^aThe Summer Seasonality Coefficient was calculated by dividing employment in the high, summer month by the low, nonsummer month.

Table 18. Percent Growth in 3 Tourism-related Sectors of Employment by Quarter in the Long Island Coastal Zone, 1975-1980 and 1980-1985.

<u>Employment Sector</u>	<u>Percent Change</u>			
	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>	<u>Fourth Quarter</u>
Lodging				
1975-1980	136.6	118.1	101.8	110.3
1980-1985	41.7	41.0	6.2	29.2
Amusement and Recreation Services				
1975-1980	56.1	43.4	26.2	40.9
1980-1985	36.9	25.6	20.0	25.8
Eating and Drinking Establishments				
1975-1980	81.4	81.5	79.5	80.5
1980-1985	48.1	42.9	44.2	42.2

employment within the coastal zone. Seven to eight percent of total county employment is in tourism-related sectors (Table 19). There was slightly more tourism-related employment in Nassau County than Suffolk County.

Over half of the tourism-related employment in Suffolk County was in what we have defined as the "coastal zone" (Table 20). Seventy-four percent of amusement and recreation services and 70% of lodging employment took place in the coastal zone. As would be expected, almost all of the boat dealers in both counties were located in the coastal zone. For Nassau County, most of the tourism-related employment was not along the coast. Only 25% of lodging employment and 42% of eating and drinking establishment employment was in the coastal zone.

Long Island/New York City Subregions

The coastal zone of Long Island was broken into 3 parts - Northshore, Southshore and Eastern Long Island. The Northshore and Southshore were also broken down further into their Nassau and Suffolk County sections. Greater seasonality coefficients were found for Southshore communities, particularly the Nassau County portion, where twice as many people were employed in lodging and amusement and recreation services in the summer than in the winter (Table 21).

The New York City area was also broken down into subsections to permit more useful analysis of a possible coastal zone in the 4 boroughs excluding Manhattan. (Recall that because of the zip code structure in Manhattan, areas along the water could not be differentiated and so no true "coastal zone" could be identified.) The coastal area of the 4 boroughs had much smaller employment levels in the 3 main tourism sectors than Manhattan (Table 21). However, summer seasonality was strong for the 4 boroughs area in amusement and

Table 19. Average Monthly Employment for 3 Tourism-related Sectors and Percent of Total Employment that is Tourism-related, by Long Island Counties, 1985.

County	Total Employment	Percent Tourism-Related Employment	Lodging Employment	Eating & Drinking Employment	Amusement & Recreation Services Employment
Nassau	581,613	7.7	2,295	27,921	5,572
Suffolk	466,328	7.3	1,685	20,902	3,433

Table 20. Percent of Average Monthly Employment that Occurs in the Long Island "Coastal Zone" by County, 1985.

<u>Employment Sector</u>	<u>Nassau County</u>	<u>Suffolk County</u>
	<u>Percent</u>	
Selected Manufacturing	88.8	64.5
Transportation	34.3	87.9
Wholesale Sporting Goods	18.1	52.5
Food Specialty Stores	42.4	47.0
Gas Stations	43.7	46.7
Boat Dealers	98.1	96.3
Recreational Vehicle Dealers	100.0	54.9
Eating & Drinking Establishments	41.7	57.2
Retail Sporting Goods	35.3	53.5
Gift Shops	42.0	58.3
Lodging	25.2	70.4
Amusement & Recreation Services	56.4	74.0
Totals	42.6	59.1

Table 21. Average Employment and Seasonality in 3 Tourism-related Sectors for Areas Within the Long Island/New York City Coastal Zone, 1985.

Location	Avg. Lodging Employment	Lodging Seasonality Coefficient	Avg. Amusement & Recreation Services Employment	Amusement & Recreation Services Seasonality Coefficient	Avg. Eating & Drinking Establishment Employment	Eating and Drinking Establishment Seasonality Coefficient
New York City Area	21,762	1.0	12,512	1.4	86,802	1.1
Manhattan	20,772	1.0	11,012	1.3	69,015	1.0
4 Other Boroughs Coastal Area	990	1.3	1,416	3.1	17,779	1.2
Long Island Coastal Zone	1,764	1.6	5,686	2.4	23,596	1.3
Northshore	767	1.2	3,243	2.1	9,125	1.2
Nassau Co.	333	1.4	1,910	2.1	4,848	1.2
Suffolk Co.	434	1.1	1,333	2.0	4,277	1.2
Southshore	469	2.1	1,792	2.4	11,827	1.2
Nassau Co.	244	2.9	1,231	3.4	6,784	1.2
Suffolk Co.	225	1.5	561	1.8	5,042	1.3
Eastern Long Island	528	1.9	648	5.8	2,645	2.5

recreation services. The lack of corresponding seasonality in lodging implies that most of the seasonality in amusement and recreation services can be attributed to day-use of the area.

Lodging employment and growth by quarter for the 3 Long Island coastal regions is shown in Table 22. Each area grew at a faster rate during 1975-1980 than during 1980-1985. In fact, lodging employment showed a decline on the Southshore between 1980 and 1985. However, other tourism-related employment sectors on the Southshore were growing during this period, implying increased day-use of the area. Eastern Long Island continued a steady growth from 1980 to 1985, although not quite as strong in the third quarter. Similarly, lodging employment along the Northshore grew very rapidly from 1975 to 1980 (-200%), but slowed greatly from 1980 to 1985, especially for the third quarter. Thus overnight travel on Long Island continued to grow, but more so in the nonsummer periods.

Impact of Overnight Travel

The impact of overnight travel on eating and drinking establishment employment in 1985 was estimated. Of the average monthly eating and drinking employment (23,596), 53.4% was lodging-related. A similar calculation performed for food specialty store employment, which seems to be growing on Long Island, indicates that approximately 25% of employment in this sector is related to lodging. As in the Great Lakes region, the percent of amusement and recreation services employment that was lodging-related could not be calculated because day-use tourists have such a strong influence on the seasonality of that sector. However, at least 36.8% of average amusement and recreation

Table 22. Average Monthly Employment in Lodging by Quarter and Percent Change, 1975-1980, and 1980-1985 for 3 Regions of the Long Island Coastal Zone.

<u>Location/Quarters</u>	<u>Average Monthly Employment 1975</u>	<u>Percent Change 1975-80</u>	<u>Average Monthly Employment 1980</u>	<u>Percent Change 1980-85</u>	<u>Average Monthly Employment 1985</u>
Northshore					
First Quarter	142	202.1	429	65.5	710
Second Quarter	157	186.0	449	69.3	760
Third Quarter	179	231.8	594	39.4	828
Fourth Quarter	181	171.8	492	56.5	770
Southshore					
First Quarter	231	82.7	422	-5.2	400
Second Quarter	293	65.5	485	-13.2	421
Third Quarter	662	53.0	1,013	-35.0	658
Fourth Quarter	320	64.1	525	-24.2	398
Eastern Long Island					
First Quarter	76	178.9	212	87.3	397
Second Quarter	114	160.5	297	86.2	553
Third Quarter	163	157.1	419	58.7	665
Fourth Quarter	112	142.0	271	83.4	497

services employment can likely be attributed to tourism because this percentage occurred above the lowest month's employment.

Regional Comparisons

The Great Lakes, Long Island and New York City are each large enough to have an impact on statewide tourism. The New York City area employs almost one-third of all lodging employees in the state (Table 23). The 2 coastal zone areas employ much lower percentages. Comparing the Great Lakes with Long Island, the Great Lakes has more employment in lodging, while Long Island has more in amusement and recreation services.

The Great Lakes coastal zone had more of an emphasis on overnight travel. The region employed more people in lodging and eating and drinking establishments than coastal Long Island. The number of lodging employees per firm was greater in the Great Lakes zone, implying larger businesses. For counties bordering the Great Lakes, lodging and eating and drinking sector employees represented a greater percentage of total county employment than on Long Island. However, growth rates for sectors were similar between Long Island and the Great Lakes for 1975-1985.

The Long Island coastal zone could be characterized by more summer day-use tourists, using the beaches and other coastal natural resources. The area had higher summer seasonality coefficients in the 3 major tourism sectors. Long Island had more employees in amusement and recreation services, food specialty stores, and boat dealers, than the Great Lakes.

These 2 coastal areas differed from the Adirondack region which was analyzed by the authors previously for the years 1975 and 1981 (Brown and Connelly 1984). That analysis revealed that 7% of all employees in the

Table 23. Employment in 3 Major Tourism Sectors in Various Regions of New York State, 1985.

Tourism Sectors	1985 Average Monthly Employment						
	New York State	Great Lakes Coastal Zone		Long Island Coastal Zone		NYC area	
		n	%	n	%	n	%
Lodging	70,035	4,241	6.1	1,764	2.5	21,762	31.1
Amusement & Recreation Services	72,619	2,791	3.8	5,687	7.8	12,512	17.2
Eating & Drinking Establishments	344,186	29,205	8.5	23,596	6.9	86,802	25.2

Adirondacks were employed in lodging firms in 1981 as compared with Long Island and the Great Lakes which employed <1% in lodging firms in 1985. The Adirondacks is an area visited mostly by overnight tourists coming to enjoy the natural resources. Tourism there has occurred primarily in the summer season; seasonality coefficients exceeded 4 for lodging and amusement and recreation services, and 2 for eating and drinking establishments. These coefficients were 2 to 3 times higher than those found in the coastal zones. Lodging in the Adirondacks had actually shown a decline in growth during the third (summer) quarter (1975-1981). The coastal regions all showed growth in the third quarter but somewhat slower than at other times of the year. Each region saw growth in the 3 nonsummer seasons implying the development of tourism into more of a year-round activity. The reduced seasonality contributes to a more stable economy and is a typical objective of economic development in rural areas (Szold 1983).

SUMMARY AND IMPLICATIONS

Tourism businesspeople, planners, and elected officials at all levels need additional information for assessing the local and regional impacts of incremental tourism development. Ideally, they would like to know exactly how businesses in each sector are affected, and from indirect benefits that accrue to the entire economy how the community or region as a whole is affected. On the one hand, accurate information of this type at a high level of precision is rarely ever affordable. On the other hand, the fallacious statement so often heard in coastal communities that "a dollar spent in a community is respent 7 times" is worse than having no information because it is totally inaccurate.

Until a better accounting means is devised and implemented to monitor tourism impacts comprehensively, which is a difficult and costly undertaking, the available options involve supplementing what primary data exist, often from site-specific studies, with available secondary data. If the secondary data has been collected monthly or quarterly over time, they permit one to estimate growth in the economic sectors that are most closely related to tourism. Furthermore, monthly or quarterly fluctuations in these data permit analysts to estimate the portion of change that is due to changes in local trade patterns and that which is due to changes in tourism levels.

The results of this study show the value of a secondary employment data base despite all of its problems in using it for the purpose of estimating tourism impacts. There is wide general agreement that although virtually all paid employment is legally required to be reported, a great deal is not reported. Thus the employment estimates are conservative. Beyond this, they do not differentiate part-time from full-time employment. Furthermore, they do not include the many firms that are individual or family owned and operated and have no paid employees. Finally, there is no direct way to distinguish the portion of employment that occurs incrementally because of tourism.

Despite these shortcomings, which are substantial, the DOL data base used in this study provides many insights. Even if total employment in these tourism-related sectors is understated, the data are collected using the same definitions and rules over time; thus the rates of growth in employment in particular sectors and the comparisons of growth between sectors as shown on the DOL data base should approximate the true situation. Similarly, the degree to which tourism employment is relatively more important along the coastal portions than the inland portions of the Great Lakes and Long Island counties

is well illustrated by these data. Finally, these data should portray the seasonality aspects of coastal tourism adequately.

Tourism along the Great Lakes Coast grew steadily and strongly from 1975 to 1985, more than doubling in the number of both firms and employees. Most individual tourism-related sectors grew by roughly doubling in size. Those that did not grow to that extent included gas stations, transportation services, and boat dealers. The population along the Great Lakes coast is large enough that we would not expect the employment demand in gas stations to increase as rapidly as that in sectors more heavily utilized by tourists. Transportation services (taxi and air charter service) have not increased as rapidly because the growth in tourism, even in the urban areas, appears to be due to trips taken in passenger vehicles. The demand for boats has been strong, particularly from 1980 to 1985 as the salmonid fisheries blossomed, but lack of available berths in marinas and other shortages in boating facilities almost certainly dampened this demand (Brown and Connelly 1987).

One of the most remarkable aspects of the fairly rapid tourism growth along the Great Lakes, in the authors' opinion, is the relatively low seasonality of employment in the tourism-related sectors. The seasonality coefficients of Great Lakes employment are almost identical to those on Long Island. Considering the warmer climate on Long Island and its much larger commuter population that undoubtedly makes substantial purchases in sectors such as gas stations, eating and drinking establishments, and food specialty stores, it is a notable accomplishment that tourism employment along the Great Lakes is substantial in the nonsummer months. Much of this can be attributable to the development of the Great Lakes salmonid fisheries. In the Adirondacks,

in contrast, the summer seasonal dominance of tourism-related employment is 2 to 4 times as pronounced as it is along the Great Lakes coast.

The cities along the Great Lakes coast, in particular, have the employment diversification necessary for stable economies. However, this tends to be less the case as one moves toward the actual coastline. Commercial fisheries, shipping, and other traditional sources of coastal employment are relatively unimportant along the Great Lakes coast. Tourism has begun to fill in this gap in coastal economic activity. This study demonstrated that for many tourism sectors, upwards of half of total county-wide employment occurred along the coast.

The overall growth in tourism on Long Island was very similar in magnitude to that along the Great Lakes coast; the number of both firms and employees more than doubled from 1975 to 1985. The average monthly employment of 39,254 on Long Island is only slightly less than the comparable figure of 42,405 along the Great Lakes coast. The most pronounced difference between tourism employment along the 2 coastlines appears to be that Long Island is substantially more day-use oriented. Long Island had average monthly employment in the lodging sector of only 1,764 in 1985, compared to 4,241 along the Great Lakes coast. On the other hand, Long Island had average monthly employment in amusement and recreation services, gift shops, boat dealers, and wholesale sporting goods that approached twice the magnitude of that along the Great Lakes coast.

Summer seasonality coefficients for tourism-related employment on Long Island have been low, with the exception of the amusement and recreation sector. Although the 1985 seasonality coefficient for this sector was 2.4, it

has declined from 2.8 in 1980 and 3.7 in 1975. Seasonality in this sector is still high (5.8 in 1985) on Eastern Long Island.

For what we regard as the 3 major tourism-related sectors (lodging, amusement and recreation services, and eating and drinking establishments) the combined coastlines of the Great Lakes and Long Island account for approximately 18% of employment statewide. Another 25% of the total statewide employment in these sectors occurs within New York City. The New York City portion that was analyzed is heavily influenced by Manhattan, which has 83% of New York City's combined lodging, amusement and recreation services, and eating and drinking establishments employment. Manhattan's zip code structure does not allow for a further coastal segmentation, as is the case with the other New York City boroughs.

FUTURE RESEARCH NEEDS

We still have few studies that examine tourism by economic sectors and by season. Additional studies of this type are needed to be able to arrive at tourism typologies with respect to seasonality, day-use versus overnight, and temporal stages of development.

This study and the preceding study in the Adirondacks (Brown and Connelly 1984) illustrates means of estimating from fluctuations in monthly employment data and from employment ratios the portion of employment in particular sectors that is attributable to tourism. While we believe that such estimates are sufficiently close to the true direct effects of tourism, we must note that these are strictly estimates. More work is needed to improve the accuracy of such estimates. A number of groups and panels who have worked on the development of the new statewide tourism plan in New York have recommended a

major study to determine more accurately the proportion of employment, payroll, or sales in particular sectors that are attributable to tourism. We concur with the need for this research.

Finally, we have not attempted to estimate any indirect or induced effects of tourism employment. Several national input-output studies provide county-level multiplier estimates; however, it is common for these to provide only 1 or 2 estimates for all of retail trade and 1 or 2 estimates for all services. These data have been too highly aggregated to provide reasonable multiplier estimates for particular sectors within tourism. A further disaggregation into sectors involved in tourism is needed.

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