

An Economic Impact Analysis of Recreational
Events
Held in the Town of Berwick

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Study Objective

The purpose of this study was to estimate the economic impact resulting from expenditures by visitors attending recreation events in the town of Berwick (and surrounding area).

Event Description

This report relates to four different types of tournaments held in the town of Berwick, from the period of February, 1988 to February, 1989. The tournaments were comprised of such sports as slowpitch, ball hockey, hockey, tennis and curling. The study area is defined as the town of Berwick. In determining the economic impact resulting from visitor expenditure, however, the study recognizes that only a portion of the total impact estimate will actually accrue within the town of Berwick. Thus, this study also observes the economic impact resulting from visitor expenditure on the area surrounding Berwick.

Visitors to the study area defined as out-of-town participants who make expenditures in the local economy. Visitors are broken down into three types: overnight visitors using motels, overnight visitors using campgrounds, and non-overnight visitors. Visitor expenditure is broken down into the following seven categories: food, beverages, entertainment, miscellaneous, accommodations, transportation, and registration fees.

Estimating Direct Expenditures

Data Collection

This study identifies 2801 visitors (defined as out-of-town participants) to the town of Berwick. This number was derived from information supplied by the town of Berwick's Recreation Department, which stated that 182 out-of-town teams visited the town of Berwick during the study period. A survey of 35 visiting teams showed an average of 17 persons per adult team for those requiring overnight accommodations and 15 persons per adult team for those not requiring overnight accommodations. Non-adult tournaments estimate 20 individuals per team (comprised of 15 children and 5 adults). By multiplying the number of out-of-town teams by the number of persons on each team, a figure of 2801 visitors was derived.

This study surveyed visiting recreation event participants during four tournaments held in the town of Berwick, from the period of February, 1988 to February, 1989. The survey questionnaire asked participants to estimate their average per weekend expenditure in the categories of food, beverages, entertainment and miscellaneous, and asked participants whether they required overnight accommodation when participating in the recreation event. A total of 110 questionnaires were successfully completed via a random sample distribution during the selected tournaments.

Average Direct Expenditure

Direct expenditures by recreation event visitors were broken down into the following categories: food, beverages, entertainment, miscellaneous, accommodations, transportation, and registration fees. The first five categories are estimated on a per person basis and are referred to as “everyday expenditures”. The final two categories are examined separately and are estimated on a per team basis for most events.

Questionnaire responses to estimates of average per weekend expenditure in the categories of food, beverages, entertainment and miscellaneous propose the results found in Tables 1 and 2.

Accommodation prices for motels and campgrounds located near Berwick were obtained in order to estimate average accommodation expenditure. The average motel price was found to be \$61^{.00}, while the average campground price was \$9^{.75}. Questionnaire responses noted the average number of occupants per motel room to be 3.1, and per campsite to be 2.3, thus translating into an average motel cost of \$19^{.67} per person and an average campsite cost of \$4^{.23} per person. Survey data indicated that the average overnight stay was 1.5 nights. Estimates of average per weekend expenditure on accommodations may be found in Table 3.20. Average everyday expenditures per weekend for persons requiring accommodations were not broken down by motel and campground visitor type in order to minimize the sampling error.

The study also realized that some recreational events held in Berwick included out-of-town participants who were children. Estimates showed total weekend expenditure per child to be \$10^{.00} when not requiring accommodation and \$20^{.00} when requiring accommodation. Total weekend expenditure per adult travelling with these teams was estimated to be \$20^{.00} when not requiring accommodation and \$50^{.00} when requiring accommodation.

As well, no direct expenditure data was available for tennis or curling event participants. Thus, total weekend expenditure per tennis participant was estimated to be \$20^{.00} for those not requiring accommodation and \$50^{.00} for those requiring accommodation. Total weekend expenditure per curling participant was assumed to approximate that of slowpitch and hockey participants. Accommodation costs for tennis and non-adult events was estimated to be \$15^{.25} per person per night.

Table 1.
**Average Everyday Expenditure Per Weekend for
Persons Requiring Overnight Accommodation**

	Using Motel	Using Campsite
Food	\$34.95	\$34.95
Beverages	\$40.74	\$40.74
Entertainment	\$6.81	\$6.81
Miscellaneous	\$8.68	\$8.68
Accommodations	\$19.67	\$19.67

Total	\$110.85	\$95.41
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Table 2.

**Average Everyday Expenditure Per Weekend for
Persons Not Requiring Overnight Accommodations**

Food	\$19.06
Beverages	\$24.38
Entertainment	\$3.75
Miscellaneous	\$1.81
Total	\$49.00

The categories of transportation and registration fees are estimated on a per team basis for most events. Thus, the study does not estimate average expenditure per weekend for these two categories. A discussion of direct expenditure from these two categories is discussed below.

Total Direct Expenditure

Estimates of transportation expenditure are a function of the return distance teams must travel to participate in recreation events in the town of Berwick, the average number of vehicles per team, the average gasoline cost and the proportion of transportation expenditures made in the Berwick area.

From the survey data, it was found that each team uses an average of five vehicles, with average gasoline expenditures of .04[¢] per kilometer. Participants are assumed to make half of their total transportation expenditures in the Berwick area. In light of these conditions, transportation expenditures may be estimated by aggregating the distance each team travels multiplied by the costs of gasoline per kilometer and the number of vehicles used per team. Total transportation expenditures may thus be determined, based on the assumption that participants make half of their total transportation expenditures in the Berwick area. The study estimates total transportation expenditures resulting from all recreation events to be \$2,589^{.00}.

Registration fees for recreation events vary with the event type and number of teams participating. Since these fees are frequently used to offset operating expenses of a tournament, such fees are thus likely to be re-spent in the Berwick area. Registration fees associated with various types of events are noted in the study. Fees for non-team sports are estimated to be \$10^{.00} per person. Thus, from the data provided, total registration fee expenditure is found to be \$33,610^{.00}.

Survey data indicated that teams travelling a round trip of 250 kilometers or more generally required accommodations. Applying this assumption to the available visitor origin data, it was found that of the 182 out-of-town teams (2801 visitors), 44 teams (715 visitors) required lodging. Using additional data, it was found that 60 percent of teams

use motels and 40 percent use campgrounds when participating in summer events. Applying these percentages to the number of teams requiring accommodations and making necessary adjustments for non-summer events, it may be estimated that 498 visitors use motels and 217 visitors use campground accommodations.

To find total everyday expenditures, the number of each visitor type was multiplied by the associated expenditures by each visitor type. Thus, total weekend expenditures is \$50,224⁰⁰ by visitors using motel accommodation, \$20,704⁰⁰ by visitors using campground accommodation and \$61,928⁰⁰ by visitors not requiring accommodation. Thus, total expenditures may be found by aggregating total transportation expenditure, total registration fee expenditure and total everyday expenditures for each visitor type. Total expenditures are found to be \$169,055⁰⁰.

Indirect Multiplied Impacts

In order to determine the indirect impacts of recreation event visitor expenditures, this study attempted to estimate: 1. the proportion of income earned by local residents that is re-spent in the local area (K1), and 2. the proportion of local business sales paid out to local employers and employees (K2).

Since no direct data existed on K1, estimation of this figure was obtained from Statistics Canada's *A Summary of Family Expenditures for Nova Scotia (1984)*, publication number 62-555. This publication details the percentage of expenditure made on various goods and services by a typical Nova Scotian family. Based on these statistics, establishments available within the town of Berwick only allow for 80.1 percent of resident income to be spent within the town of Berwick. However, the following factors exist that further reduce the proportion of resident incomes re-spent within the town of Berwick: 1. the relative proximity of more diversified shopping areas, 2. the lack of service stations located in Berwick, 3. the proportion of Berwick residents employed outside the town, and 4. the evidence of recreation expenditures spent outside of the town are all factors that reduce the proportion of resident income re-spent within the town of Berwick. The study then estimated that 70 percent of resident income is spent on goods and services available in the Berwick area, and assumed that 100 percent of resident income is spent on shelter and tobacco and alcoholic beverages. Summing these percentages of expenditures, weighted by the proportion of total family expenditures given by Statistics Canada, it is thus estimated that 63.7 percent of resident income is likely to be spent within the town of Berwick. Thus, K1 is determined to be .64 so that 64¢ of every dollar earned by a resident of Berwick will be re-spent at establishments within the town.

To estimate K2, an accurate assessment was required to determine how much was returned by local businesses as a result of visitor expenditures. This process required the identification of: 1. total sales of businesses and services in the area, and 2. the value of wages and other incomes paid out to area residents from the sale of goods and services to recreational event visitors.

In estimating K2, this study relied on the data and analysis reported in the Foster and Harvey (1976) study of the regional economic impact of Kejimikujik National Park. This report aggregated the individual sector's proportion of sales paid out to employers and employees as income from visitor sales, weighted by the proportion of spending in each sector by visitors. Multiplying the figures identified for: 1. employer and employee income as a percentage of sales for service stations, and 2. average grocery stores, tourist services and other businesses and services, by the appropriate expenditure totals for the two sectors, K2 is determined to be .2620^c. Thus, every dollar of expenditure made by recreation event visitors results in .2620^c being returned to local residents in the form of wages and other income payments.

Total impacts are determined through the model:

$$Y = \frac{Y1}{1 - (K1 * K2)}$$

where Y = total impact of visitor expenditures in the local area.
 Y1 = direct expenditures made by non-area recreation visitors.

Thus,

$$Y = \frac{\$169,055^{.00}}{1 - (.64 * .2620)}$$

$$= \$203,118^{.00}$$

Subtracting total direct expenditures from total impact of visitor expenditures in the local area results in total indirect impact expenditures. Total indirect impact expenditure is estimated to be \$34,063^{.00}.

The indirect expenditure multiplier is found by dividing Y by Y1. The indirect expenditure multiplier is estimated to be 1.2.

Total Impacts

According to the mode in Section 4, total impact expenditure accruing to the town of Berwick and surrounding areas is estimated at \$203,118^{.00}. However, it is important to realize that only a portion of total impact expenditure will be accrued by establishments within the town of Berwick. Since accommodations comprise a proportion of total spending, and since the town of Berwick does not provide accommodation establishments, the town of Berwick does not receive any benefits from accommodation expenditure, or from expenditures made on food and beverages made at, or nearby, the place of accommodation.

Total expenditure by recreation event visitors on accommodation is found by multiplying the visitor type to the cost of accommodation for that visitor type. A total of 498 visitors used motels at a cost of \$19^{.67} per person, resulting in a total motel expenditure of \$9,796^{.00}. A total of 217 visitors used campgrounds at a cost of \$9^{.75} per person, resulting in a total campground expenditure of \$918^{.00}. Thus, total accommodation expenditure is estimated to be \$10,714^{.00}, whereby all of this expenditure is received outside the town of Berwick.

Survey respondents indicated that 46 percent of total everyday expenditures made by visitors requiring accommodation, and 77 percent of total everyday expenditures made by visitors not requiring accommodation, took place within the town of Berwick. Applying these percentages to the total everyday expenditure figures given in Section 3.3 estimates total everyday expenditures made at Berwick businesses. Thus, total everyday expenditures accruing to Berwick establishments is estimated to be \$80,312⁰⁰.

Assuming that 50 percent of area gasoline expenditures and 80 percent of registrations fees are accrued within the town of Berwick, an additional \$28,183⁰⁰ is made in expenditures in the town of Berwick.

Aggregating total everyday expenditures, total transportation expenditure and total registration fee expenditure within the town of Berwick, a total of \$108,495⁰⁰ will accrue to establishments, organizations and individuals within the town of Berwick as a result of the tournaments.

Conclusions

This study thus concluded that the economic impact on the town of Berwick and surrounding area of 2801 visitors to recreation events held in Berwick from the period of February, 1988 to February, 1989 was approximately \$203,118⁰⁰. However, since the town of Berwick lacks accommodation establishments, it is successful in capturing just over half of this total economic impact in the amount of \$108,495⁰⁰.

This study suggests that, despite the lack of accommodation facilities within the town of Berwick, existing establishments may capture a greater proportion of realized total economic benefits in several ways. Existing establishments may offer special attractions or promotions aimed at capturing a greater proportion of all recreation event visitors food and beverage expenditures. As well, tournament sponsorship by Berwick businesses may promote visibility, thus increasing the proportion of visitor expenditures spent in the town of Berwick. Special evening events at local establishments can also provide incentive for event visitors to frequent the town of Berwick after participating in their specific events. Thus, the conclusion of this study encourages Berwick businesses to become involved in co-ordinating and sponsoring local recreation events and emphasizes the need for increasing awareness of the results reported in this study.