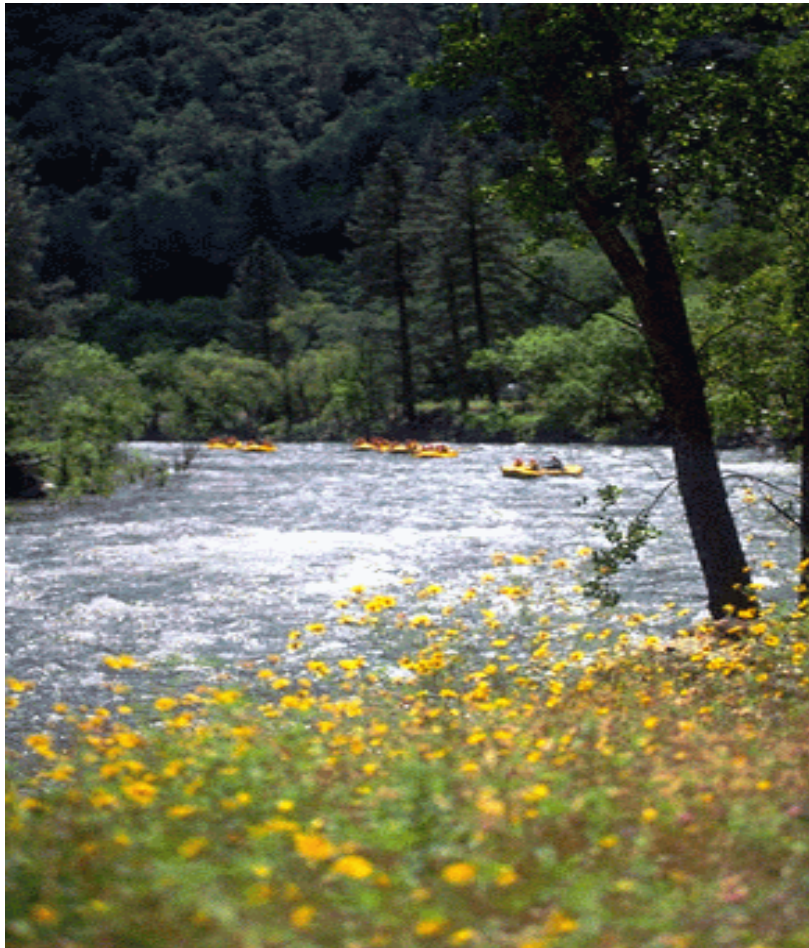


# Economic Impacts of Parks Canada



*The Outspan Group*

A Study of the  
Economic Impacts  
of Parks Canada

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# Economic Impacts of Parks Canada

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## Introduction

The Parks Canada program is implemented throughout Canada and reaches to some of the far flung corners of the country. In presenting its program and managing its facilities, Parks Canada spends a considerable amount of money on goods and services, as well as on wages and salaries. In addition, its sites and programs attracts millions of visitors each year; and these individuals also spend considerable sums in their enjoyment of the Parks Canada facilities, sites and services.

This study is concerned with the spending by both Parks Canada and its visitors. The expenditures and, in particular, the economic impacts associated with this spending are the subjects of this report.

This study has several objectives. Its primary objective is to estimate the economic impacts associated with spending attributable to the Parks Canada program at the national level and within each province and territory. In order to achieve this objective, however, two other issues had to be dealt with: a) documenting expenditures by Parks Canada, and b) estimating the expenditures of Parks Canada's visitors attributable to visits to national parks and national historic sites.

This report has five chapters. Following this introductory section is a discussion of the methodology employed to achieve the results. The third chapter of this report presents a summary of the spending of Parks Canada and its visitors within Canada. This chapter also describes the estimates of economic impacts associated with this spending nationally. The fourth and final chapter is a parallel to the third chapter, presenting results of the analysis within the provinces and territories.

Before looking at the specifics of the methods and results of the study, it is important to position the study within the recently adopted Economic Benefits Framework<sup>1</sup> of the Federal-Provincial Parks Council (FPPC). Economic impact analysis, the subject of this study, is an integral component of the Benefits Framework. But first, a brief overview of the benefits framework is helpful.

The Economic Benefits Framework is based on two assertions: 1) that all economic benefits derived from parks and protected areas can be grouped into three mutually exclusive and, therefore, additive categories; and 2) that the value of benefits in these three categories changes with changing perspectives of assessment. The three benefit categories are:

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<sup>1</sup> See Benefits of Protected Areas, *The Outspan Group*, prepared for Parks Canada, Department of Canadian Heritage, 1996.

- Personal Benefits: benefits received by identifiable individuals or stakeholders,
- Commercial Benefits: benefits received by businesses as value added, and
- Societal Benefits: benefits received by all members of a society collectively.

These categories use and expand upon the economic values typically included in analyses currently termed in the literature: the Total Economic Value (TEV) framework. Examples of the TEV framework can be seen in several recent publications by the IUCN on the Economic Valuation of Wetlands<sup>2</sup> (Barbier, 1997), and Economic Assessment of Protected Areas<sup>3</sup> (IUCN, 1996).

In the FPPC Economic Benefits Framework, *personal benefits* are comprised of use and non-use benefits received by individuals; that is, they are the benefits received by both those who use the park and by those who do not (necessarily) use the park but place value on its preservation. This category of benefits is **not** the focus of this study.

*Commercial benefits* are those benefits to businesses which result from the additional commercial activity associated with spending within the area under study brought about by a park or protected area. This increased commercial activity, measured as the gross domestic product (GDP) at factor cost (or value added) retained within the economy being considered, comes about from spending which occurs because of the park or protected area. To be considered an economic benefit, most often this value added is derived from spending which comes from sources outside the study area. This spending from outside represents an injection of funds into the economy which will have an economic impact and is therefore considered a commercial benefit which is attributable to the park. GDP value added is the measure of economic impact used within the framework to be added with other economic benefits.

*Societal benefits* refer to those benefits a society gains collectively which can be attributed to a park or a protected area. Generally, these benefits exhibit public good characteristics, which means that consumption or use of the benefit by one person does not materially affect consumption or use by others. Examples of these benefits produced by parks include ecosystem services such as carbon sequestration, oxygen production, soil formation, water filtration and other similar services. There are many different societal benefits<sup>4</sup> produced by parks and protected areas, although, many defy measurement in quantitative economic terms. This category of benefits is **not** considered in this study.

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<sup>2</sup> Barbier, E., Acerman, M, and Knowler, D. 1997. Economic Valuation of Wetlands: A Guide for Policy Makers and Planners. Prepared for the Ramsar Convention Bureau. University of York, Institute of Hydrology and the IUCN, Gland, Switzerland.

<sup>3</sup> IUCN. 1996. Economic Assessment of Protected Areas: A Park Manager's Guide and Guidelines for Assessment. IUCN Commission for National Parks and Protected Areas. Gland, Switzerland.

<sup>4</sup> Benefits of Protected Areas, *The Outspan Group*, prepared for Parks Canada, Department of Canadian Heritage, 1996.

Key to the successful application of the framework is the adoption of an account register or several registers. The account register is the way of indicating whose benefits are being included in the analysis; it explicitly indicates the perspective being adopted for the assessment of benefits. Without an account register identified, any analysis of benefits is meaningless.

The Economic Benefits Framework is concerned with “benefits.” Economic impacts and commercial benefits are frequently considered as being the same. For example, it is often thought that the impacts from spending by tourists represent a benefit to an area. This may or may not be true, and usually depends upon the perspective (account register) adopted for the economic assessment. For example, frequently this type of spending is merely a redistribution of spending from one area to another with no overall benefit to the larger area.

Economic impact analysis is an analytical tool used by economists to determine (estimate) the total and cumulative effects of an injection of funds into an area’s economy. Interindustry relationships and employment characteristics within the area will have a bearing on the impacts felt within the area. Similarly, the extent to which the area depends on imports (goods and services from other areas) will have an effect on the ultimate effects of any spending in the area. These effects are real and measurable by different techniques. In Canada, a standard and useful tool is the input-output model (I-O model) of the Canadian economy. Essentially, the model generates specific multipliers that can be applied to an injection of funds to determine the total impacts. Total impacts reflect the cumulative re-spending associated with an initial expenditure.

When a public agency, such as Parks Canada, spends money, there are impacts associated with that spending, creating beneficial economic activity in the local economy which would not have been created without the public agency spending. But all expenditures, no matter what they are for or who makes them, have this (or a similar) impact. Spending by the public agency, therefore, means that impacts in one area will be offset by a ‘lack of impact’ in other areas. The net effect can be considered neutral; it really reflects a redistribution of impacts. On the other hand, federal spending within a local park area can clearly be seen as an injection of new funds into the local economy and with certain adjustments can be considered an economic benefit.

Visitor spending on tourist services also creates economic impacts. These impacts occur whether the visitors are from the local area or some distance away. However, the spending by tourists also represents expenditures that were not made elsewhere, so that one area’s gain is another’s loss. Once again, the overall effect is a redistribution of impacts. On the other hand, once again, this spending can be considered a commercial benefit to an area if it would not have occurred without the park.

In summary, the impacts associated with spending by public agencies and tourists visiting the park can be considered benefits when they originate from outside the area being assessed. The Benefits Framework documentation describes this distinction in greater detail.

Further, while not all impacts are necessarily benefits, the impacts occur nonetheless. They are real and measurable. It is these broad economic impacts on which this study concentrates.

## Methodology

Estimation of economic impacts requires good information on expenditures. This study clearly requires data on expenditures of Parks Canada on operations and development, as well as the attributable spending of Parks Canada's visitors.

In order to undertake an estimation of expenditures by the Parks Canada organization and those of its visitors, various sources of information have been used. The methods used, sources of information and necessary assumptions to undertake the analysis of economic impacts associated with the Parks Canada program are described briefly in this chapter.

## Impact Measures

This report presents the results of an analysis of the estimated economic impacts of Parks Canada nationally and within each province. The national analysis incorporates all impacts associated with the spending occurring in all provinces, whereas the provincial analysis includes only those impacts felt within the province where the expenditure was made.

The measures of economic impacts used in this study and their definitions are as follows:

Gross Domestic Product -	GDP includes labour income and the net income of incorporated businesses (profits) - it actually represents the net value of production (or value added) resulting within defined geographical boundaries.
Labour Income -	This includes workers wages (amount of wages and salaries paid to individuals), supplementary labour income and the net income of unincorporated businesses.
Employment -	Employment, measured as Full-Time Equivalents : FTEs, are the equivalent of one year of work for one person (for example, three individuals working for a four-month period would equal one FTE, or five FTEs could represent one individual holding a full-time position for five years.

It is important to note that there are many different measures of economic impact possible. This issue becomes particularly significant in the comparison of new studies and the results of previous analyses. In some of the past work conducted for Parks Canada, the measures employed and their definitions are not always made clear. The impacts reported in this study, however, are derived directly from Statistics Canada measures of economic impact; these are now the commonly accepted standards within federal agencies, and have been calculated using the latest available data on the



economy. It is possible, therefore, that due to different approaches to the measurement of impacts between this work and earlier studies the resulting impacts reported here may differ from the figures produced in those earlier analyses.

## National Impacts

The national analysis of impacts uses impact multipliers derived from the Statistics Canada Input-Output Model for Canada. These multipliers last updated in 1996 are the latest ones available. While this may appear quite old, the truth is that the structure of the Canadian economy has not changed significantly in the last five years. As a result, the multipliers used in the analysis reflect current inter-industry relationships within the Canadian economy very well.

Economic impacts are derived from expenditures; any and all spending within the business sector for the purchase of goods and services will have an economic impact associated with it. In the case of Parks Canada's program, expenditures are derived from two sources: Parks Canada spending and from attributable visitor expenditures. Thus, to estimate the economic impact of Parks Canada detailed information on its spending and the spending of its visitors is required.

Parks Canada budget information was obtained for the year 2000/01. This detailed information was available by 'cost centre' across Canada. The expenditure information was available as a spreadsheet: a consistent listing of 210 different expenditure types for each of the 46 cost centres, covering categories for operations, maintenance and capital. In addition, expenditures on wages and salaries paid by Parks Canada was also provided per cost centre.

A first step was to amalgamate the expenditures per cost centre into discrete provincial totals and to create a single national total. The same activity was undertaken for the salaries and wages data. Expenditures and wages which were identified within one cost centre but were spent in several provinces had to have the provincial figures adjusted to reflect this fact. Only information supplied by Parks Canada was used to make these adjustments.

A second step was to determine which expenditures to include in the analysis of impacts. In examining the expenditures of Parks Canada it was found that not all of the organization's spending generates an economic impact, since not all of it was within the business sector. Some categories of spending are transfers between public agencies and other similar transactions which create no economic impact on the economy. While the dollar amount of these transfers is significant (just over \$58 million), only those expenditures which enter the business economy can be used to estimate impacts upon the economy. Some examples of the type of expenditures which were excluded from the calculations of impacts include:

- < incentive awards
- < payments to Public Works and Government Services Canada
- < claims against crown

- < lease buyouts
- < payment in lieu of taxes

These transfer expenditures (or transfer-like expenditures) were removed from the expenditures used for further analysis.

The final step in data preparation was to reclassify Parks Canada's remaining categories of expenditures into the corresponding categories of goods and services used in the Statistics Canada Input-Output model. The model uses data at the most detailed (disaggregated) level: there are 679 categories of goods and services used by the input-output model<sup>5</sup>. The reclassification of Parks expenditures resulted in seventy-five (75) input-output model goods and services categories being used. The expenditures grouped into these 75 I-O commodity categories were used to estimate the economic impacts associated with the spending by Parks Canada.

The other major source of spending is derived from visitors to the National Parks and National Historic Sites. When undertaking an economic impact analysis for a specific park or site, visitor spending information is usually derived from recent visitor surveys. At the national level when examining the system as a whole, this is not an option due to the time and cost involved in amalgamating individual surveys, even if the survey data were available. In this study an alternate and reliable source of visitor spending was used: tables produced from a harmonization of data from the 1998 Canada Travel Survey and 1998 International Travel Survey<sup>6</sup>. These tables produced information on visitors throughout Canada by major origin (Canada, USA and overseas) for the country as a whole and by province. Information was also available on visitors on same day trips and overnight trips.

Information on spending was available for major traveller groups in six categories: public/local transportation; private/auto transportation; accommodation; food and beverages; recreation and entertainment; and retail and other expenditures. Using this expenditure data and adjusting it for inflation (4%) visitor spending attributable to national parks and sites were calculated. In order to accomplish this, Parks Canada's estimates of visits to each national park and national historic site in 2000/01 were used. Separate estimates were made for those visiting National Parks and those visiting National Historic Sites. The two types of establishments were kept separate because different assumptions<sup>7</sup> were used about the attribution of spending by visitors to each.

The result of this data preparation was a series of estimates of spending by Parks Canada site visitors by origin (Canada, USA, overseas) and the six expenditure categories. The Statistics Canada I-O

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<sup>5</sup> See appendix 1 for a listing of these I-O commodities.

<sup>6</sup> Reference: 1998 Canadian and International Travel Surveys - Special Tabulations: Technical Appendix. January, 2000, Research Resolutions and Consulting Ltd. Toronto.

<sup>7</sup> See Appendix 2 for a detailed listing of assumptions and other research and methodological notes.

model was run six (6) times - once for each of the expenditure categories - to calculate the multiplier coefficients for each category of visitor expenditure. These multipliers were then entered into a spreadsheet where impacts associated with spending by visitors from each of the major origins were calculated.

## Provincial Impacts

The same basic approach to expenditure data preparation was used in developing the input data at the provincial and territorial level. The same adjustments and assumptions were applied at the provincial and territorial level as at the national level. However, a somewhat different approach was used to estimate the economic impacts at the provincial/territorial level.

Parks Canada has created an economic impact model for estimating the economic impacts associated with spending by parks organizations and their visitors at the provincial and territorial level - the Provincial Economic Impact Model (PEIM). This model uses a more amalgamated set of expenditure categories (19) as input data than the 75 used in the national I-O analysis used for the Parks Canada operations and development expenditures. As a consequence, the expenditures at the provincial level had to be amalgamated further into those nineteen categories used by the PEIM. An additional adjustment had to be made to the data for Ontario and Québec: Parks Canada expenditures from the National Office were run through the PEIM for Ontario but the impacts were split evenly between the provinces of Québec and Ontario. In the absence of better information, this was viewed as a reasonable approach to the allocation of these expenditures and impacts between these two provinces.

The PEIM uses fairly detailed expenditure categories for visitor spending - eight in all. The visitor expenditure data from the International and Canadian Travel Surveys were in a form generally suitable for incorporation into the PEIM. However, one category of expenditure (spending on rental vehicles) was not represented in the data from these surveys; and only one category of spending for food and beverages was given whereas the PEIM uses two (purchases from restaurants and from stores). The assumption was made that restaurant expenditures would reflect the spending in this category.

These visitor expenditure data were then run through the PEIM, along with the Parks Canada program spending, to determine the economic impacts within each province and territory. It is worth noting that the PEIM uses multipliers derived from 1990, whereas the national impact analysis used multipliers from 1996. This may have resulted in some inconsistencies between the two analyses and make them not entirely comparable.

## National Economic Impacts

In this chapter the national level expenditures are summarized and the estimated national economic impacts presented.

### Expenditures

Expenditures of Parks Canada on development, operations, maintenance and repair, and those expenditures by visitors attributable to visits to National Parks and National Historic Sites are included in the analysis.

The expenditures included in the analysis of impacts are estimated at the national level to have been just under \$1.9 billion in 2000/01. This is comprised of \$332.2 million in Parks Canada spending and over \$1.5 billion in attributable visitor spending. Visitor spending is approximately five times that of Parks Canada itself. Table 1 presents a summary of these expenditures. The detailed expenditures are presented in Appendix 3.

Table 1 Parks Canada and Visitor Spending in Millions, 2000/01	
Expenditure Source	Total Spending
Parks Canada	
Capital and Operations	\$155.1
Salaries and Wages	\$177.1
Sub-Total	\$332.2
Visitor Group	
Canadian	\$759.6
USA	\$659.0
Overseas	\$113.7
Sub-Total	\$1,532.3
Total National Spending	\$1,864.5

Excluded from the expenditures presented here and excluded from the analysis of impacts are those expenditures on transfers between public and/or private agencies. These transfers are calculated to have been just over \$58 million in 2000/01.

## Economic Impacts

Expenditures of approximately \$1.9 billion have a substantial impact on the Canadian economy. These impacts have been measured in this study in terms of Gross Domestic Product (GDP), Labour Income, and employment (full time equivalents). Using the detailed expenditures of Parks Canada and the visitor spending indicated above, these impacts have been calculated through the Statistics Canada I-O model. These impacts are summarized in Table 2. More detailed economic impact information and ratios from the I-O model run are contained in Appendix 4.

Type of Economic Impact	Impact Source		Total Impacts
	Parks Canada	Visitors	
Gross Expenditure:	\$332.2 million	\$1,532.3 million	\$1,864.5 million
Gross Domestic Product (GDP)			
Direct	\$236.0	\$541.1	\$777.1
Indirect	\$112.6	\$294.6	\$407.2
Total	\$348.6	\$835.8	\$1,184.4
Labour Income			
Direct	\$218.6	\$401.1	\$619.7
Indirect	\$88.5	\$161.0	\$249.5
Total	\$307.1	\$562.1	\$869.2
Employment (FTE)			
Direct	7,921	21,942	29,863
Indirect	2,300	5,489	7,789
Total	10,221	27,430	37,652

The measures of economic impact used in this analysis (GDP, labour income and employment) indicate the economic impacts retained in the Canadian economy. The GDP is a value added measure which will always be less than the original expenditure, but is still a large value: approximately \$1.2 billion. In addition, approximately \$870 million is retained as income to labour (73% of GDP), and approximately 37,600 jobs are created.

Table 3 provides a breakdown of the economic impacts from visitor spending by major origin. The

spending estimate from each of these origins (as indicated above and in the table) on which these impacts are calculated indicate that visitor spending attributable to National Parks and National Historic Sites is an important source of economic impacts associated with the Parks Canada program.

Expenditure and Impact	Visitor Origin			Total Impact
	Canada	USA	Overseas	
Expenditure (millions)	\$759.6	\$659.0	\$113.7	\$1,532.3
Gross Domestic Product (millions \$)				
Direct	271.4	230.1	39.7	541.2
Indirect	148.9	124.3	21.5	294.6
Total	420.2	354.4	61.2	835.8
Labour Income (millions \$)				
Direct	201.4	170.3	29.4	401.1
Indirect	81.2	68.1	11.7	161.0
Total	282.6	238.4	41.1	562.1
Employment (FTE)				
Direct	11,009	9,323	1,609	21,942
Indirect	2,758	2,328	402	5,489
Total	13,768	11,652	2,011	27,430

The value added retained within the Canadian economy from visitor spending is estimated to be over \$835 million; income to labour is estimated to be over \$560 million and full time equivalent jobs are estimated to be over 27,000. These are significant impacts associated with the spending by park visitors.

## Economic Impacts by Province / Territory

### Expenditures

The expenditures reported nationally in the previous chapter are actually made within each of the provinces and territories. This spending by Parks Canada and those of its visitors is summarized by province and territory in Table 4. Detailed expenditure data by province and territory are contained in Appendix 5.

Province/Territory	Parks Canada	Visitor Group				Total Spending
		Canadian	USA	Overseas	Total	
Newfoundland	14.7	16.1	17.4	2.1	35.6	50.3
Nova Scotia	27.9	26.5	24.1	4.1	54.7	82.6
Prince Edward Island	6.2	17.8	26.5	13.2	57.5	63.7
New Brunswick	10	15.8	11.1	2.1	29	39
Québec	47.1	79.4	103.4	16.5	199.3	246.4
Ontario	45	73.1	75.5	12	160.6	205.6
Manitoba	17.6	14.1	15	1.9	31	48.6
Saskatchewan	11.4	7.2	6.7	0.9	14.8	26.2
Alberta	46.1	274.2	259.6	45.5	579.3	625.4
British Columbia	34.5	144.7	131.6	44	320.3	354.8
Yukon	7.8	3.3	2.7	0.5	6.5	14.3
Nunavut	6.1	0.02	0.02	0	0.04	6.14
Northwest Territories	7.9	0.2	0.2	0.04	0.44	8.34
National Office	49.9	-	-	-	-	49.9

## Economic Impacts

The economic impact of the spending within each province and territory is substantial. Clearly, those provinces or territories having the greater spending within their boundaries will feel the greater economic impact. In each case however, the underlying structure of the economy dictates how much of the impact will be retained within the province or territory.

Table 5 summarizes the economic impacts associated with the spending in each province and territory described in Table 4. The impacts are derived from both Parks Canada spending and visitor spending.

Province/Territory	Economic Impact		
	Gross Domestic Product (Millions)	Labour Income (Millions)	Employment (FTE)
Newfoundland	\$28.5	\$21.7	864.4
Nova Scotia	\$53.6	\$42.6	1739.1
Prince Edward Island	\$28.3	\$21.2	1157.6
New Brunswick	\$21.0	\$16.0	694.9
Québec*	\$202.8	\$151.1	5635.9
Ontario*	\$181.5	\$139.9	4887.3
Manitoba	\$33.7	\$25.4	1056.5
Saskatchewan	\$18.5	\$14.0	563.9
Alberta	\$397.8	\$253.8	9789.6
British Columbia	\$221.3	\$157.1	5767.1
Yukon	\$9.2	\$7.6	283.6
Nunavut	\$5.4	\$4.1	144.7
Northwest Territories	\$7.1	\$5.5	185.8

\* the totals for these two provinces include the impacts associated with Parks Canada's National Office spending.



Appendix 6 contains the detailed calculations of economic impacts and the input data on which they are based by province and territory. The economic impacts reported here are those retained within the province or territory and do not include any impacts which might have been felt in other provinces or territories.

Table 6 provides a further breakdown of the total economic impacts shown above. This table indicates the impacts by source: Parks Canada and visitor spending for each province and territory.

Table 6 Parks Canada and Visitor Spending Impacts by Province and Territory, 2000/01				
Province/Territory	Impact Source			
	Parks Canada		Visitor	
	GDP (Millions)	Employment (FTE)	GDP (Millions)	Employment (FTE)
Newfoundland	\$13.1	412.5	\$15.4	451.9
Nova Scotia	\$30.1	984.8	\$23.5	754.3
Prince Edward Island	\$6.2	255	\$22.1	902.6
New Brunswick	\$9.9	312.2	\$11.1	382.7
Québec*	\$80.5	2146.4	\$122.3	3488.6
Ontario*	\$82.9	2214.3	\$98.6	2673
Manitoba	\$19.3	586.3	\$14.4	470.2
Saskatchewan	\$11.8	347.9	\$6.7	216
Alberta	\$50.9	1443	\$346.9	8346.6
British Columbia	\$37.8	970.9	\$183.5	4796.2
Yukon	\$7.0	222.3	\$2.2	61.3
Nunavut	\$5.4	144.3	\$0.02	0.4
Northwest Territories	\$6.9	181.4	\$0.2	4.4
* the totals for these two provinces include the impacts associated with Parks Canada's National Office spending.				

It is clear from this table that both organizational and visitor spending is important in most provinces and territories. In fact, in almost half (6 out of 13) of the jurisdictions, the GDP impact of Parks Canada's spending exceeds that from visitors to the parks and sites. In only three cases (Alberta, British Columbia and Prince Edward Island) does the impact of Parks Canada spending result in less than 30% of the impacts associated with visitor spending. In the remaining four jurisdictions, there is a more equal balance between the impacts of the organizational spending and the impacts of visitor spending. However, in particular, it is very clear that Parks Canada spending is very important in northern areas where the economic impacts of the spending by the organization far exceed those of the visitors.

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## APPENDICES

1. Statistics Canada Input-Output Model Commodity Classification\*
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\* Not included as part of this electronic document.

Please contact Brian Evans, Manager, Performance, Audit and Review at (819) 997-9920 if you wish to obtain a copy of any of these appendices.

APPENDIX 2

Research and Methodological Notes

Parks Canada Economic Impact Assessment 2000 - 2001

Methodological Notes:

These notes were prepared throughout the study process to document specific findings, problems, assumptions or other research note. They should be useful to the researcher who wishes to delve more deeply into the reported results.

1. The financial management/reporting system changed in 1997 from “Fincon” to SAP which may have resulted in some new twists to the classification of expenditures compared to earlier economic impact analyses.
2. The change to a “parastatal” organization appears to have resulted in some changes in the way financial information is reported and amalgamated, so that there may be some minor changes in the classification (categories used) of expenditures between the current analysis and previous analyses of the economic impacts of Parks Canada. The categories and categorization of expenditures by Line Object from previous impact analyses were examined and compared with the currently available data. Some differences were noted, but these are not believed to be significant. (A detailed review and comparison was undertaken for Jasper National Park.) However, insufficient detail was available for some of the categories of expenditures and further more detailed expenditures were requested which had the level of detail as indicated in the Jasper sample comparison. This latter request necessitated some extra time and work by both Parks Canada staff and the consultant.
3. The 1994 analysis used the Tourism Canada Visitor Impact Model to estimate the economic impacts of visitor spending. The current analysis does not use that model which may result in different multipliers and methodologies being used; thus somewhat different results may expect to be obtained.
4. There were some reporting anomalies in the financial statements provided (e.g. negative values) which may lead to some small differences from previous EIA analyses.
5. Parks Canada no longer maintains information on the number of full time equivalent person-years of employment. As a result the model had to estimate this statistic based on the wages and salary information.
6. Information on wages and salaries paid by Field Unit / Cost Centre required some adjustment when amalgamating to the provincial level. In particular, the Western Canada Service Centre had staff in Winnipeg (its headquarters), Calgary and Vancouver. In addition, the National Capital Region office required an assumed distribution of where the wages and salaries were actually paid - Ontario and Quebec. In this latter case, the assumption was made that the economy of the NCR more closely reflects that of Ontario and therefore the wages/salaries were run through the Ontario model and then impacts were split evenly between Ontario and Quebec.

7. The expenditures of the Western Canada Service Centre were allocated to each of the three provinces on the basis of the reported expenditures within each province. If no province was identified, then it was assumed to have been spent in Manitoba. The result was that expenditures were allocated to three provinces as follows: Manitoba - 60.16%, Alberta - 25.42%, BC - 14.42%.
8. The expenditures of the Highways Service Centre were allocated to each of the two provinces on the basis of the reported expenditures within each province. The result was that expenditures were allocated to the provinces as follows: Alberta - 73.8%, BC - 26.2%.
9. The Statistics Canada Input-Output model classification of commodities had been amended in recent years so that care had to be exercised in specifying the correct commodity class for each expenditure for the national level analysis. The commodity numbers given in the specifications of the PEIM were incorrect usually at the W level of aggregation (i.e. at the most disaggregated level). However, it is at this, the most detailed level, that the I-O model operates. See the summary of commodities and PEIM expenditure categories in “Stats\_Can\_Specifications” file.
10. Assumptions, calculations and adjustments made regarding visitor expenditures:
  1. Since the data were for the 1998 CTS and ITS an inflation factor of 4% was added to the data to more closely reflect 2000/01 prices.
  2. Since no data was available on the proportions of park visits which were part of overnight trips and same day trips, it was assumed that for national park visitors 65% of visits were part of overnight visits and 35% were same day trips; for national historic sites, it was assumed that half (50%) the visits were part of overnight trips and half (50%) were same day trips.
  3. Expenditures by same day trip visitors were adjusted by excluding the accommodation costs of overnight trip visitors and by reducing their food and beverage costs to 60% of that spent by overnight visitors.
  4. Attributable expenditures were assumed to be 100% for national park visits (i.e. the full amount of average spending per person per day, or one visit equalled one day's expenditures). For national historic site visits, the assumption was made that in the case of both overnight trip visits and same day trip visits only 50% of expenditures were attributable to the NHS (or the average visit was approximately a half day)
  5. Based on discussions with DOCH researchers, it was assumed that the following origins characterize national park and national historic site visitors: Canada - 70%, USA - 25%, and overseas - 5%.
  6. The ITS/CTS surveys excluded specific data on spending on rental vehicles, and as a result this category of expenditure was left blank. In addition, only one category of spending on food and beverages was reported whereas the PEIM uses two (restaurants and from stores). The assumption was made that restaurant expenditures would reflect the spending in this category and all expenditures were placed in this expenditure category for the analysis.

11. Due to the magnitude of the numbers reported in the harmonized tables from the CTS and ITS, and their inevitable rounding, there was a difference between the calculations for the national total expenditures for each of the three origins used. When the national total was calculated in the manner used for each province, the total value for Canadian visitors was larger than the sum of the individual values calculated for each province. The reverse was true for USA and overseas visitors: their calculated total was smaller than the sum of each provincial total. This was not considered a problem since the national analysis was to stand on its own, as was each provincial analysis. However, researchers should be aware of this small inconsistency in the data.
12. The harmonized data from the ITS and CTS resulted in some results which appeared questionable at the provincial and territorial level. National survey data does not always disaggregate very accurately which results in some values being either overstated or understated at the provincial or territorial level. For example, the estimated spending by overseas visitors in Nunavut was only estimated at a little over \$4,000. This would appear to be an underestimate. There are other examples.
13. Discussions were held with DOCH experts (Andrew Leuty) in developing the assumptions to be applied to the visitor expenditure data. In addition, communications were held with Parks Canada administration staff to make sure there was a clear understanding of the expenditure categories. Discussions were also held with Statistics Canada Input-Output staff to ensure that correct procedures were followed in preparing the data for input for the running of the I-O model.
14. Two different approaches to the calculation of economic impacts are represented in the analysis: the national economic impact has been done using the W level commodity categories (679 commodities) of Statistics Canada I-O model. In order to do this all the expenditures of Parks Canada were transformed into I-O commodities. These were then aggregated by I-O commodity. In this national analysis 75 different I-O commodities were used to calculate economic impacts (i.e. Parks Canada expenditures were reclassified into 75 commodities). See Appendix 2 for a listing of I-O model commodities and numbers used to classify the Parks Canada expenditures. Visitor expenditures were available at a high level of aggregation (6 categories). These were also reclassified into I-O model commodities. Five of the six expenditure categories were fairly easily reclassified, but one had to use the I-O model itself to develop proportions based on final output ratios. The following table summarizes the reclassification.



<b>Visitor Expenditure Category</b>	<b>I-O Model Commodity Category</b>	<b>I-O Model Commodity Number</b>
Public/Local Transport	air, water, rail, bus, urban, taxi	551, 560, 564, 568, 570, 571
Private/Auto Transport	motor gasoline	437
Accommodation	accommodation	625
Food/Beverages	meals	626
Recreation/Entertainment	other recreational services	620
Retail/Other	retail margins	587

15. A total of seven (7) runs of the national I-O model were required, all related to the national analysis of impacts. One run was the complete set of 75 expenditure categories for Parks Canada's expenditures and six runs (one for each visitor expenditure category) to obtain multipliers for each of the commodity groups in which visitor expenditures were recorded. These latter multipliers were entered into a spreadsheet and used to calculate economic impacts associated with visitor expenditures by origin.
16. For the analysis of impacts at the provincial level, the Provincial Economic Impact Model (PEIM) was used. This required the reclassification of Parks Canada expenditures into the commodity categories used by this model. The seventy-five I-O commodity groups were collapsed into those of the PEIM. The only problem classification was "travel" since the PEIM has travel broken down into its component parts (whereas the I-O model did not). In this category, the following assumed distribution of expenditures by Parks Canada spending was: accommodation - 40%, meals - 20%, and transportation - 40%.