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# Sustainability And Canada's National Parks: Suitability For Policy, Planning And Management

Stephen William Boyd

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SUSTAINABILITY AND CANADA'S NATIONAL PARKS: SUITABILITY FOR  
POLICY, PLANNING AND MANAGEMENT

by

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Department of Geography

Submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

Faculty of Graduate Studies  
The University of Western Ontario  
London, Ontario  
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## ABSTRACT

As a term, sustainability has often come to be adopted as the 'panacea' for many problems without any clear understanding that the solutions will vary given the nature of the problem, the scale involved and the goals and objectives set out. As a result, what has emerged in the literature has been many different 'pictures' of sustainability, all of which may be relevant in certain contexts. This research examined the potential of the concept within the context of Canadian national parks. Emphasis was directed toward understanding, through the perceptions of 'expert' groups knowledgeable about parks, the key elements needed to promote parks as sustainable landscapes.

The methodology used consisted of the implementation of self-administered questionnaires to policy makers and park superintendents, the development and testing of a model of sustainability applicable to parks, and the use of a modified-delphi process to establish areas of consensus between the responses of park superintendents and academics. Key aspects of sustainability for policy makers and superintendents included a suitable definition with goals that emphasized ecological aspects, landscape/resource characteristics which stressed resilience, stability and sensitivity in parks, a management focus on protection and preservation, and an involvement process including managers who were accountable and the general public. Perceptions on a myriad of themes, ranging from nature preservation to development issues showed there was much consensus between policy makers and superintendents. The results of the model suggested that the majority of themes examined fell within the same approximate level of sustainability. As a result, considerable variation was found to exist between the model in theory as compared to its

form after testing. A sustainability framework was produced from consensus statements between 'expert' groups, and included attributes of sustainability identified for the national park system as a whole, against which individual park superintendents could make comparisons with the specific nature of characteristics in each park.

Overall, the results of the thesis represent a starting point to address sustainability within the context of parks, and offer some understanding of what sustainability in national parks involves, which is a modified version of ecological sustainability accepting a certain amount of use in the form of recreation and tourism.

## ACKNOWLEDGEMENTS

I would like to take this opportunity to thank a number of people who were instrumental in assisting me in seeing this project through to completion.

First, and foremost, I am deeply indebted to my chief advisor, Professor Richard Butler, whose patience, understanding, co-operation, not to mention his attention to detail, has enabled me to complete what turned out to be a longer than planned study. I can only hope that his scholarship rubbed off on me, if only to a small extent. He has been a role model for myself and I know I will carry his influence with me throughout my academic career.

I would also like to thank Professor Gordon Nelson from University of Waterloo who was on my advisory committee and his input into the thesis, particularly in its latter stages. Thanks also are extended to Professor Dan Shrubsole who read a final draft of the thesis and offered useful suggestions to help clarify issues.

Appreciation is extended to former colleagues, in particular Darren Scott who offered so much advice on technical matters, as well as being a good friend to the family and to Dallen Timothy and family who at times displayed more enthusiasm for the research than I did! Thanks are also extended to Kim Holland, whose expertise on MacIntosh computers saved me many hours of problems and to Trish Chalk who offered ideas in how my results could best be portrayed.

I owe thanks to different family members: my sister Christine who gave up most of her holiday in Canada to type in last minute corrections; to Dad, who checked over all the diagrams for errors; and to Mum and Ian who provided support (some holiday!). Lastly, and most importantly, I want to take this opportunity to thank my wife Carla for believing in me, when many times I considered quitting. She has already endured eight years of my postgraduate studies and is looking forward with myself to future academic endeavours. Carla, Richard and now David, I dedicate this study to you and thank you for being there with me.

## TABLE OF CONTENTS

CERTIFICATE OF EXAMINATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
CHAPTER 1: INTRODUCTION	1
1.1. SETTING THE CONTEXT	1
1.2. GOALS AND OBJECTIVES	4
1.3. CONCEPTUAL FRAMEWORK	5
1.4. STRUCTURE OF THE THESIS	9
CHAPTER 2: LITERATURE REVIEW	12
2.1. INTRODUCTION	12
2.2. TRENDS IN ENVIRONMENTAL THINKING	13
2.2.1. Romanticism and Aesthetic views of environment	14
2.2.2. Government involvement and scientific focus on conservation	17
2.2.3. Post war growth and development	20
2.2.4. Increasing awareness for the environment	22
2.2.5. Development of a composite view of man and environment	23
2.2.6. Development of an alternative environmental paradigm - 1980s to the present	25
2.3. SUSTAINABLE DEVELOPMENT AND SUSTAINABILITY	27
2.3.1. Environmental economics	35
2.3.2. Synthesis	40
2.4. APPLICATION OF SUSTAINABLE DEVELOPMENT	44
2.4.1. Global and International	44
2.4.2. National (Canada)	45



2.4.3.	General	47
2.4.4.	Tourism, Recreation and Parks	47
2.4.4.1.	Alternative Tourism	56
2.4.4.2.	Recreation and Parks	59
2.5.	CONCLUSION	62
CHAPTER 3:	METHODOLOGY	64
3.1.	INTRODUCTION	64
3.2.	RESEARCH OBJECTIVES	65
3.2.1.	Non-Group processes	65
3.2.1.1.	Questionnaire design for policy makers and regional directors	67
3.2.1.2.	Questionnaire design for park superintendents	68
3.2.2.	Model Development	69
3.2.3.	Group Processes	74
3.3.	CONCLUSION	78
CHAPTER 4:	BACKGROUND TO PROBLEMS IN PARKS AND MODEL APPLICATION	79
4.1.	INTRODUCTION	79
4.2.	PARKS UNDER THREAT	80
4.3.	MODEL DEVELOPMENT	87
4.4.	CONCLUSION	95
CHAPTER 5:	ANALYSIS OF QUESTIONNAIRES: ISSUES OF SUSTAINABILITY FOR NATIONAL PARKS	96
5.1.	INTRODUCTION	96
5.2.	ISSUES OF SUSTAINABILITY FOR PARKS	98
5.2.1.	Definitions	98
5.2.2.	Goals (general and parks-related)	104
5.2.3.	Nature of Resource Base	108
5.2.4.	Principles	110
5.2.5.	Involvement	113
5.2.6.	Management Focus	113
5.3.	CONCLUSION	116
CHAPTER 6:	ANALYSIS OF QUESTIONNAIRES: PERCEPTION OF SUSTAINABILITY FOR THEMES WITHIN NATIONAL PARKS	117
6.1.	INTRODUCTION	117
6.2.	PERCEPTIONS OF SUSTAINABILITY BY THEME	118
6.2.1.	Nature Preservation/Wilderness	118
6.2.2.	Wildlife	122
6.2.3.	Interpretation and Education	125
6.2.4.	Research	132

6.2.5.	Aboriginal Interests and Traditional Activities	135
6.2.6.	Recreation	137
6.2.7.	Tourism	143
6.2.8.	Development-oriented Interests	158
6.2.9.	Management Planning	161
6.3.	TRADE-OFF RELATIONSHIP BETWEEN PRESERVATION AND USE	169
6.4.	RESPONSE TO THE SUSTAINABILITY SPECTRUM	171
6.5.	CONCLUSION	179
CHAPTER 7:	AREAS OF CONSENSUS AND DISSENSUS BETWEEN RESPONSES OF PARK SUPERINTENDENTS AND ACADEMICS: TOWARDS A SUSTAINABILITY FRAMEWORK	181
7.1.	INTRODUCTION	181
7.2.	COMPARISON OF RESPONSES TO ISSUES IDENTIFYING CRITERIA FOR SUSTAINABILITY	183
7.2.1.	Definitions	184
7.2.2.	General Goals	186
7.2.3.	Park Goals	186
7.2.4.	Nature of the Resource Base	189
7.2.5.	Principles	190
7.2.6.	Involvement	191
7.2.7.	Management Focus	192
7.3.	COMPARISON OF RESPONSE TO SUSTAINABILITY FOR THEMES WITHIN PARKS	193
7.3.1.	Nature Preservation/Wilderness	193
7.3.2.	Wildlife	195
7.3.3.	Interpretation and Education	195
7.3.4.	Research	198
7.3.5.	Aboriginal Issues/Traditional Activities	198
7.3.6.	Recreation	201
7.3.7.	Tourism	203
7.3.8.	Development-oriented Interests	205
7.3.9.	Management Planning	207
7.4.	SUSTAINABILITY SPECTRUM AND TRADE-OFF	210
7.5.	TOWARD A 'SUSTAINABILITY FRAMEWORK'	218
7.6.	CONCLUSION	229
CHAPTER 8:	POLICY DEVELOPMENTS	230
8.1.	INTRODUCTION	230
8.2.	CHANGE IN POLICY OVER TIME	230
8.2.1.	National Parks Policy - 1964	230
8.2.2.	Updating National Parks Policy - 1979	235
8.2.3.	Towards the current National Parks Policy - 1994	239
8.3.	CONCLUSION	248
CHAPTER 9:	CONCLUSIONS	253

APPENDIX 1	260
APPENDIX 2	262
APPENDIX 3	283
APPENDIX 4	312
APPENDIX 5	315
APPENDIX 6	317
REFERENCES	332
VITA	351

## LIST OF TABLES

2.1	Evolution of thought regarding sustainability over time	41
4.1	National Park Attendance 1983-84 to 1992-93	83
4.2	Percentage change in attendance to National Parks 1984-85 to 1992-93	84
4.3	Internal and external threats facing national parks	86
5.1	Content analysis results of definitions of sustainability/sustainable development stated by policy makers as being most appropriate for national parks	100
5.2	Content analysis results of key terms of definitions of sustainability/sustainable development stated by park superintendents as being most appropriate for national parks	101
6.1	Impacts from aboriginal practices and traditional activities and mitigation taken to limit impacts	136
6.2	Perception of park superintendents on recreational activities present in national parks	142
6.3	Mitigation taken to limit recreational impacts in parks	144
6.4	Problems anticipated by tourism growth and mitigation that may be taken to limit problems	156
7.1	Comparing responses on the suitability of definitions of sustainability for parks	185
7.2	Comparing responses with respect to general goals associated with sustainability	187
7.3	Comparing responses for park goals associated with sustainability	188
7.4	Comparing responses on the issue of the nature of the resource base	190
7.5	Comparing responses with respect to principles of sustainability	190
7.6	Comparing responses with respect to the issue of involvement	191
7.7	Comparing responses with respect to management focus	192

7.8	Comparing responses to issues of nature preservation and wilderness	194
7.9	Comparing responses to issues of wildlife	196
7.10	Comparing responses to issues of interpretation services and education	197
7.11	Comparing responses to issues of research	199
7.12	Comparing responses to issues of aboriginal and traditional activities	200
7.13	Comparing responses to issues of recreation	202
7.14	Comparing responses to issues of tourism	204
7.15	Comparing responses to issues of development-oriented interests	206
7.16	Comparing responses to issues of management and planning	208
7.17	Comparing responses to sustainability scores for themes present in national parks	211
7.18	Comparing responses to sustainability scores for types of tourism present in national parks	212
7.19	Comparing responses to sustainability scores for recreational activity present in national parks	213
7.20	Comparing responses to the trade-off between use and protection for park activities	217
8.1	Classification proposed in 1964 National Parks Policy	232
8.2	Guiding Principles outlined in the Parks Canada Policy - 1994	243
8.3	Comparison of format used in policies between 1964 and 1994	245

## LIST OF FIGURES

1.1	An integrative framework for sustainable resource management	7
1.2	Conceptual Framework	8
1.3	Outline of the process in developing the 'sustainability framework'	10
2.1	Time series chart showing key dates, events and issues regarding interest for conservation, the environment, the promotion of sustainable development, and the role played by the development of national parks and park policy	15
2.2	Conceptual diagram showing perceived impact of development on the environment over time, and implications for sustainable development	42
2.3	Principles for sustainable tourism	49
2.4	Relationship between sustainable tourism development, ecotourism, adventure travel, alternative tourism, and mass tourism	57
3.1	Balanced Approach Model	70
3.2	Model of perceived trade-off between development and preservation for potential interest groups and activities	73
3.3	The Closeness Continuum as it applies to a National Park setting	75
4.1	National Park attendance - 1955 to 1993	81
4.2	Modification of the Tourist Area Cycle of Evolution model	89
4.3	Application of the modified Tourist Area Cycle of Evolution Model to Canada's National Parks	91
5.1	Issues of sustainability: appropriateness of definition(s) for parks	103
5.2	Issues of sustainability: general goals	105
5.3	Issues of sustainability: park goals	107
5.4	Issues of sustainability: nature of resource base	109
5.5	Issues of sustainability: principles	112

5.6	Issues of sustainability: involvement	114
5.7	Issues of sustainability: focus on management	115
6.1	Responses to issues on nature preservation/wilderness	119
6.2	Responses to issues on wildlife	123
6.3	Responses to issues of interpretation and education	126
6.4	Aspects of interpretation and education perceived necessary to explain sustainability to park users	128
6.5	Modes of communicating the concept of sustainability to park users	130
6.6	Responses to issues of research	133
6.7	Responses to issues on recreation	139
6.8	Perception of function(s) of tourism within parks	147
6.9	Responses to issues of tourism impacts	150
6.10	Requirements for tourism to be perceived as sustainable within national parks	152
6.11	Responses to issues on development-oriented interests	159
6.12	Responses to issues on management planning - perception of parks as sustainable	162
6.13	Responses to issues on management planning - external factors	165
6.14	Responses to issues on management planning - potential strategies	167
6.15	Trade-off model applied to national park activities based on responses of park superintendents	170
6.16	Sustainability scores indicated by park superintendents: by theme	173
6.17	Application of Balanced Approach Model	177
7.1	Summary diagram of the 'sustainability framework'	219
7.2	The Sustainability Framework	220
7.2 cont'd	(Stage two - general attributes)	222
7.2 cont'd	(Stage three - specific attributes)	225
7.2 cont'd	(Stage four - strategies)	228
8.1	Shifts in emphasis in national parks policy between 1964 and 1994	249

## CHAPTER 1

### INTRODUCTION

"...the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity" (IUCN, 1980)

"...the whole process of economic progress in which economies contribute to improvements in human welfare" (Pearce, 1988b)

"...a long awaited call for political recognition of global environmental decay, economic injustice, and limits to material growth" (Rees, 1990)

#### 1.1. SETTING THE CONTEXT

Over the past decade and a half, the idea of sustainable development has probably received more attention than any other concept to date. First coined within a resource management/protection context as the objective of the World Conservation Strategy (I.U.C.N, 1980), it has since been transformed through the World Commission on Environment and Development (W.C.E.D, 1987) to reflect a global vision by which to restructure society, protect and enhance environments, and remodel economies. The concept has redefined the relationships that exist among environment, economy and society, placing environmental concerns within the political arena both at a national and international level. The extent to which the concept has received so much attention, for example, within the academic and business community, may lead one to believe that a paradigm shift has taken place in the



way that the relationships and linkages between environment, economy and society are viewed.

In a relatively short time period, a multiplicity of academic and other works has appeared, which have attempted to provide a suitable definition of sustainable development that has universal acceptance, offered critiques of the concept and its elements, suggested appropriate indicators and measures of the term, and provided insights into how the concept may be applied both at a general level and in specific settings (see Chapter 2, sections 2.3 and 2.4 for details). The three definitions of sustainable development listed at the beginning of the chapter help illustrate the lack of consensus about a definition. This is made even more apparent when one considers the fact that the definition most often used when referring to sustainable development is that which was coined by the Brundtland Commission report Our Common Future, namely, "...a process which meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987: 8). Add to this the concept of sustainability, a term related to sustainable development and often interchangeable with it throughout the literature, and it is clear why there is much uncertainty over the meaning. Given that there exists confusion over the meaning of sustainable development, it is perhaps more useful, as noted by Shearman (1990), for research to focus on the implications of sustainable development rather than attempt to offer any new insights into its meaning. To that end, a considerable amount of academic research is now applying and addressing its implications within specific settings (for examples see chapter 2, section 2.4).

Tourism is one area in which academic inquiry has sought to develop the principles associated with sustainable development and apply them to tourism development and planning in particular (Nelson, Butler and Wall, 1993). The aspect of parks and protected areas represents but one component of tourism and an area where the principles of sustainable development may have value. This research provides further discussion on

sustainable development and sustainability and the implications of these concepts when applied to the specific context of national parks.

For the purposes of this research, a distinction is viewed to exist between sustainability and sustainable development. Sustainability is taken to be a goal, an end state to be achieved. Smith (1993: 100), in redefining impact assessment suggested the concept to be "both useful and easily understood as a desired goal for resource management". Within the context of this thesis, the concept of sustainability is viewed to be more specific in nature, namely to mean the condition whereby the goals declared for a system, be they economic, ecological, social or a mix of these, are reached and maintained over time. Sustainable development, on the other hand, is viewed more as a process to operationalize sustainability, including addressing the importance of elements such as objectives, scale, the political structure needed to implement and control change, the reorientation of societal attitudes, issues of ethics and the promotion of equity. These ideas and others are taken up later in this chapter in the discussion on the conceptual framework used for the study.

Sustainability was addressed within the context of the Canadian national park system for a number of reasons. First, the landscape within the parks is distinctive, being representative of Canadian natural heritage (Environment Canada, 1990b). However, the reality of the juxtaposition of protection interests and development interests (often in the form of infrastructure for recreation and tourism) invites the question as to whether the goals declared for the system are being achieved. Second, national parks offer an appropriate environment for examination given that they have in place the necessary political structure (i.e., they are governed by specific legislation, with specific goals, plans and policies), which has been identified within the literature to be a vital component of sustainable development (Caldwell, 1984; O'Riordan, 1988). Third, national parks represent an element identified in Our Common Future (1987), representative of one type of environment in which the principles of the term may be applicable. Fourth, from a more pragmatic stance, the focus on the concept within this type of setting is justified as

information resulting from the study may be used by Parks Canada in managing the park system.

## 1.2. GOALS AND OBJECTIVES

At the outset, it should be pointed out that the overall goal of this research was not to specifically define sustainability for national parks, nor to search for the universally acceptable definition of the term as it applies within this context, if such even exists, nor to outline the possible steps required to achieve sustainability for national parks, but rather to examine the utility of the concept within a management context for national parks, noting the implications of the term. At the same time it should be noted that aspects of how the term is defined and possibly adapted by parks authorities in the future were examined as aspects of the overall problem. The specific research objectives were, first:

to identify and examine the perception of sustainability as it relates to Canadian national parks.

This objective is viewed as critical, for not only does it provide the opportunity to accumulate new specific information on sustainability but also because it represents the base on which the remaining objectives were set out.

The second objective was:

to develop a model of sustainability on the basis of a balanced approach between preservation and development-oriented interests, accounting for the trade-offs between protection/preservation and use.

The second objective pursued the potential of the concept of balance to redress conflicts within parks, and was based on the assumption that trade-offs between protection and use are required if the various goals of the system are to be realised. The potential to model the issues involved with the trade-offs perceived to occur at present, may go some way to further understanding how the often conflicting goals of national parks can be accommodated to suit most interests. A balanced approach was advocated on the basis that because there is no consensus over what sustainability means, it was necessary to show the

full range of choices available across a protection/use spectrum so people could choose the most appropriate mix given conditions and settings.

The third objective was:

to identify the components of a framework of sustainability suitable for a national park context.

This objective, offered the opportunity to explore the usefulness of sustainability within the national park system, outlining areas of possible consensus based on the understanding of a number of groups that were surveyed in this thesis (see chapter 3) based on their 'expert' knowledge of national parks. The overall purpose of the sustainability framework was to illustrate what aspects of sustainability are applicable to national parks and useful for purposes of management. The following section offers further discussion on what aspects of sustainability may have value in the development of such a framework.

### **1.3. CONCEPTUAL FRAMEWORK**

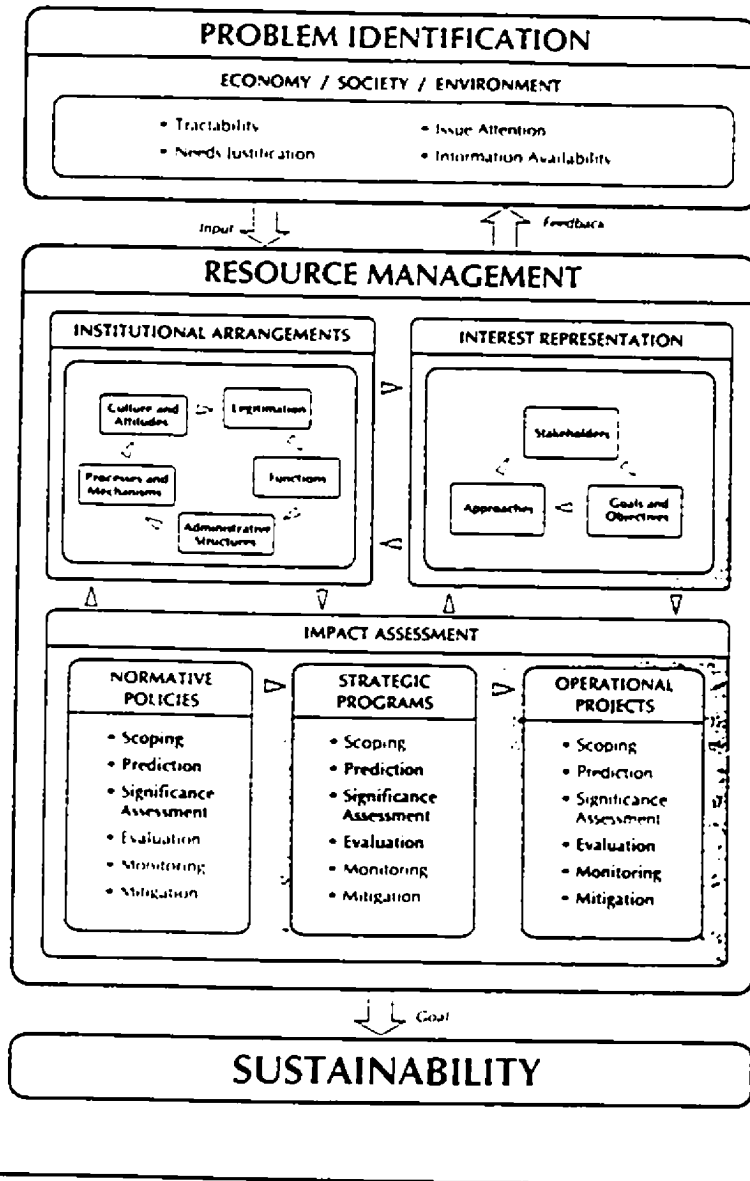
As a term, sustainable development has received much attention and evoked considerable debate (IUCN, 1980; Brown, 1981; Caldwell, 1984; Clark and Munn, 1986; Barbier, 1987; Brown et al., 1987; Redclift, 1987; WCED, 1987; O'Riordan, 1988; Pearce, 1988b; Turner, 1988; Cocklin, 1989; Daly and Cobb, 1989; Gardner, 1989; Simon, 1989; Daly, 1990; Dovers, 1990; Rees, 1990; Shearman, 1990; Gale, 1991; Dovers and Handmer, 1993; Goodland et al., 1993; Smith, 1993, Wilbanks, 1994). There remains, however, limited consensus on how the term is defined and what elements are involved in the process. As noted previously, with attention now focusing more on implications rather than redefining the concept to suit the particular environment in which it is promoted, there exists the need to identify those components of a sustainability framework that may be applied in whatever setting the concept is examined, in this case, the Canadian national parks system.

Gardner (1989) advocated the need for resource management studies to be more integrative, adaptive and interactive in nature (Gardner, 1989). Recently, integrative frameworks have been proposed for sustainable resource management, the most recent one being taken from the perspective of impact assessment (Smith, 1993). Smith argues that if resource management is to adopt sustainability as a guiding philosophy and principal goal, a conceptual framework is needed to "serve as the basis for initiating appropriate environmental planning and policy for sustainability" (Smith, 1993: 95). He noted that problem identification (tractability, needs justification, issue attention, information availability) and resource management (institutional arrangements, interest representation, impact assessment) are needed in order to achieve a goal of sustainability (see Figure 1.1). The framework developed for this thesis is more simplistic than that of Smith's, but incorporates a number of the ideas outlined in it.

A critique of the literature on sustainable development is provided in chapter 2. The parameters of the conceptual framework for this thesis are, however, developed from this overall discussion, by identifying those elements of sustainable development for which broad consensus exists. To this end, the conceptual framework as shown in Figure 1.2 integrates the elements of objectives, scale, appropriate political structure and societal attitudinal change, showing how they can be applied at both the general level and within the specific context of national parks. These elements are not mutually exclusive. Rather, positive and negative linkages are present among the elements. For example, the objectives of the study will determine the scale of inquiry. Also, the type of power structure in place will determine the degree to which aims (objectives) are met, and the nature of this linkage. A review of the literature suggests that the most preferred structure is a blend of both top-down and bottom-up measures (O'Riordan, 1989; Gardner and Roseland, 1989a, 1989b). The change, or lack of willingness for attitudinal change, will play an important role in meeting set goals; the type of political structure also having a varying impact on changing societal attitudes.

Figure 1.1

An integrative framework for sustainable resource management (from Smith, 1993: 102)



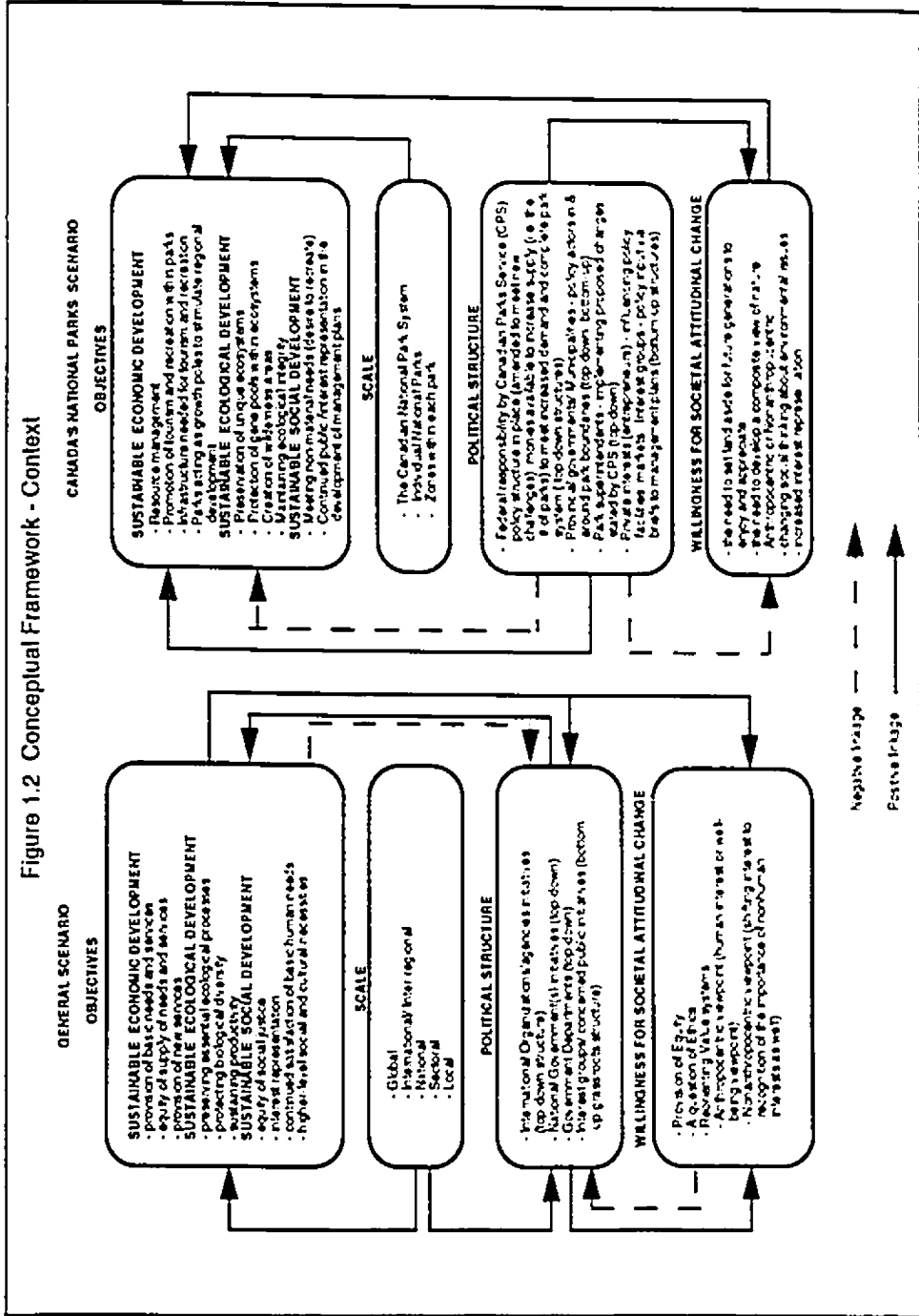


Figure 1.3 illustrates that these elements represent only the context in developing a suitable framework. Borrowing terminology used by Dovers (1990), the second and third stages in developing these elements, focuses on the identification of first, general and second, specific attributes of sustainability which relate to national parks. A fourth and final stage requires the formulation of strategies based on the attributes, noting possible outcomes for management of the park system.

The philosophical rationale supporting this conceptualization is based on thinking that is both eclectic and pragmatic. Eclecticism is evident in the willingness to use existing information in order to identify general elements and to employ techniques that are suited to the information assembled. A pragmatic approach is present in the realization that the framework can only be developed from the stated opinions and perceptions of selective populations considered to be knowledgeable to the issues involved.

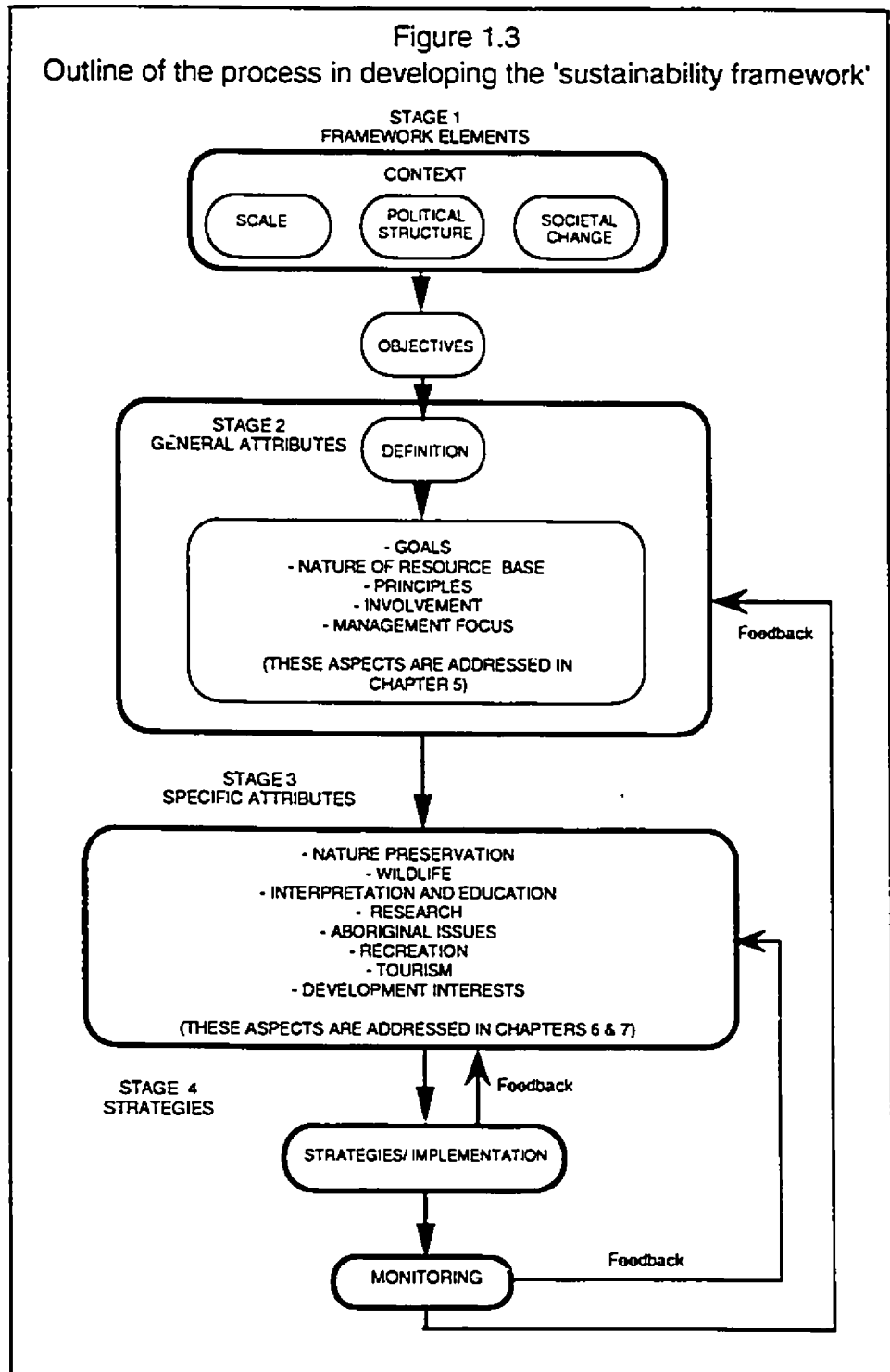
The conceptual framework was developed as a result of each research objective being accomplished. This "work in progress" approach implies a process which is highly adaptable, and in light of the number of issues involved and the various parties consulted, a process in which the end result, namely the sustainability framework, is determined by the integration of views held by participants. The interaction of participants involved in this thesis does not play a role in how the framework is developed but may play a key role in how the various strategies and outcomes are implemented, an issue beyond the scope of this research.

#### **1.4. STRUCTURE OF THE THESIS**

This thesis consists of nine chapters. This chapter has listed the goals and objectives of the research, focusing on the conceptual framework used. Chapter 2 offers a critique of literature pertinent to the study, with an emphasis on sustainable development and sustainability and how environmental thinking has changed through time. The third chapter addresses the methodology used for each research objective in turn, noting the various



Figure 1.3  
Outline of the process in developing the 'sustainability framework'



techniques that were employed in analyzing findings and the parties consulted. Chapter 4 provides background to the pressures parks face and presents a model that has implications to understanding sustainability as related to the national park system as a whole. The results of the first objective are discussed in chapter 5. Emphasis is placed here on identifying what issues/criteria are considered as important to sustainability in a national park context. Chapter 6 focuses in more detail on the implications of sustainability for specific themes within parks, and shows the results of the model that was developed for the second research objective. A seventh chapter identifies those components of a suitable sustainability framework for parks as developed from areas of consensus held by a number of selective populations consulted in the study. Chapter 8 traces the changes that have occurred in park policy over time, determining if a shift towards sustainability has occurred. Chapter 9 offers a summary, states some conclusions and suggests areas for further work.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1. INTRODUCTION

Environmental thinking regarding resource use and degradation was viewed by past generations as of secondary importance to economic growth and development (O'Riordan, 1989; Ruckelshaus, 1989). Only recently have these priorities been altered, and even then not completely or universally. A new environmental consciousness has developed over the past two decades which stresses the need to preserve, protect and sustain resources for future use, promoting economic development which is both compatible with available resources and which preserves ecological integrity. The issues shaping this new environmental consciousness are still not completely clear as many elements are still in stages of development or have only recently been perceived as having made an impact on peoples' attitudes. The idea currently receiving great attention, and growing in terms of popularity, is that of sustainable development. It is best defined by the statements in the report Our Common Future, as a process "which meets the needs of the present without comprising the ability of future generations to meet their own needs" (W.C.E.D., 1987: 8), and tourism research is one area of inquiry which has attempted to embrace the term.

This chapter, provides the reader with a review of pertinent literature related to sustainability and national parks. The chapter comprises a number of sections. The first section addresses trends in environmental thinking from a broad perspective with emphasis

directed at the evolution of interest in conservation, the development of national park systems as one specific thrust promoting conservation, and the increased awareness and heightened concern over the impact of development on the environment. Section two offers a critique of sustainable development. The review examines a variety of social, economic and ecological perspectives. Discussion is also presented on a growing body of literature focused on environmental economics. Section three focuses on the application of sustainable development within resources management, in particular for parks, recreation and tourism.

With respect to the first section, ideas promoting conservation are presented using a time chart, noting key issues and events leading to the emergence of the conservation movement in North America. Although emphasis is placed on a North American outlook, this discussion also incorporates relevant aspects which are European and international in nature, signifying the scope of interest for conservation. The development of national park systems, is also discussed using time charts. The Canadian national park system is compared to other systems, particularly the one in place in the United States. In addition, developments in park policy are noted for the Canadian park system and their impact on conservation interests are examined. Given the nature of the overall research topic, the interrelationships between the themes noted in the first section are explored with an emphasis placed on how they influenced the development of the Canadian national park system, and the subsequent development of park policy. A synthesis of the first two sections is offered in the form of a visual representation of the relationship between environment and development over time, which indirectly addresses the interest for conservation, the concept of sustainability and the process of sustainable development.

## **2.2. TRENDS IN ENVIRONMENTAL THINKING**

Ideas promoting conservation have been present for many centuries, taking many forms, and over the course of time have had a varied effect on how societies and

individuals value the need to conserve. In order to understand this variation over time, and to simplify the discussion on environmental thinking, a number of time periods are identified, starting with the emergence of a romantic and aesthetic view of the environment in the eighteenth and early nineteenth centuries and ending at the present time with a focus on conservation along the lines of sustainable development (see Figure 2.1).

Although absent from the time chart, the author acknowledges earlier ideas promoting conservation, for example, the establishment in an urban setting of gardens for purposes of recreation for the Egyptian, Assyrian, Babylonian and Greek civilizations, and later in the renaissance and reformation era in Europe the designation of formal and landscaped gardens (Chubb and Chubb, 1981). Early developments for conservation in a rural setting were evident in the setting up of game reserves, specifically Royal hunting reserves during the Middle Ages (Nelson and Butler, 1974). The above discussion, although representing early signs of conservation, has limited direct relevance to the idea of national parks, even though strict enforcement over the nature of use within, for example, the Royal hunting reserves, was practised.

#### **2.2.1. Romanticism and Aesthetic views of environment**

During the eighteenth and early nineteenth centuries, interests for conservation and specifically preservation were offered from a romantic and aesthetic perspective, often reflected in the writings of authors such as Byron and Rousseau who promoted the value of the simple life and the preservation of wilderness (Chubb and Chubb, 1981), and Catlin who expressed the desire to preserve the symbolic relationship the native American had with nature (Nash, 1967; Nelson, 1976). These ideas did not result in designating specific areas to be set aside as national parks, although Catlin did use the term "a nation's park" in 1833, but instead acted as precedents to promoting conservation, particularly in the United States as areas such as Yellowstone were discovered. The romantic and aesthetic ideals also influenced the development of parks within an urban setting, as for example

Figure 2.1 Time series chart showing key dates, events and issues regarding interest for conservation, the environment, the promotion of sustainable development, and the role played by the development of national parks and park policy.

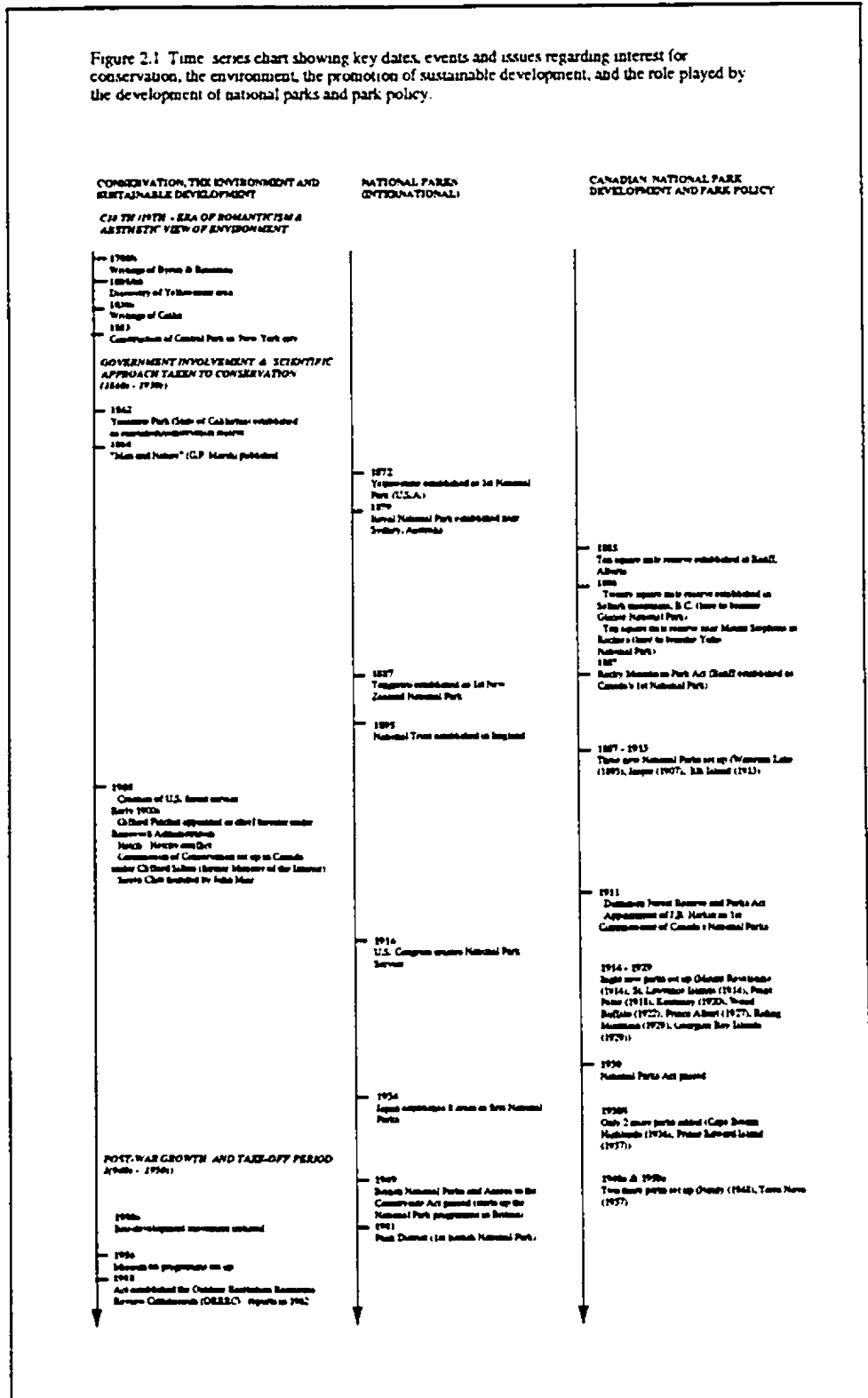


Figure 2.1 continued

**CONSERVATION, THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

**INCREASED ENVIRONMENTAL AWARENESS & CONCERN (1960s)**

- 1962 Silent Spring (R. Carson) published
- 1966 FW 112 Congress "Catastrophic Congress" passes 31 environmental laws
- 1968 "Smoking Earth" concept coined by E. Smealing
- 1967 Committee of Consultants for Science set up
- 1968 Committee of Consultants established for England and Wales
- 1968 "Program of the Commons" (C. Hurd)
- 1969 US National Environmental Policy Act passed making development projects require an EIA

**COMPOSITE VIEW OF MAN AND ENVIRONMENT (1970s - Early 1980s)**

- 1970 - US Environmental Protection Agency established
- 1970 - Report on oil spill as a milestone of UNEP/OCEAS
- 1971 Federal environmental departments created (Canada)
- 1972 World Earth Conference on the Human Environment
- 1972 Limits to Growth published (Club of Rome report)
- 1972 Blueprint for Survival published
- 1973 Shell vs Brent-Nel is published (H. Hesterman)
- 1973 Oil Discharge by OPEC
- 1973 One Health (L. Hesterman)
- 1973 Deep Strategy Investment (Hesterman)

**DEVELOPMENT OF NEW ENVIRONMENTAL PARADIGM - SUSTAINABLE DEVELOPMENT (1980s - PRESENT DAY)**

- 1980 Global 2000 published
- 1980 World Commission Strategy proposed
- 1981 Brundtland Commission set up
- 1981 Canadian Commission on Acid Rain formed
- 1982 Brundtland Commission set up
- 1982 Acid Rain Action Programme announced (with oil output double emissions to 30 per cent of 1962 levels by 1995) (Canada)
- 1983 - Quarterly acid rain damage
- 1983 - Base line monitoring programme begun in Ontario, Canada
- 1983 - Brundtland Commission set up for the first time in history (World Commission) (Canada)
- 1987 Our Common Future published - primary message of sustainable development
- 1987 - Report of Task Force on Environment & Economy (Canada)
- 1988 - Sustainable Development Branch at Environment Canada set up
- 1989 Canadian Environmental Protection Act strengthened
- 1989 Reason Vainok set up in Alaska
- 1990 Canadian Green Plan issued
- 1991 Clean Air Bill passed in US
- 1991 - Oil of War - 1980s earth and published new priority
- 1991 - Federal report prepared for clean up of the Canadian North
- 1992 United Nations Conference on Environment and Development (UNCED)
- 1992 Agenda 21 and Rio Declaration
- 1992 Remytholized Bill of Rights
- 1994 Crown Forest Sustainability Act

**NATIONAL PARKS (INTERNATIONAL)**

- 1963 Lafayette Conference during preparations for the grant of park management for US National Parks
- 1970 Continued on passage of the US National Park Service
- 1971 Legacy of Parks Programme started (1971) in
- 1971 Reproduction Project set up by US National Parks
- 1972 US management of National Parks
- 1973 Aquatic National Parks and Wildlife Service established
- 1974 US Park Service revised policies in
- 1974 - formation of new programmes, new developments and initiatives in order, emphasis on management
- 1977 3 year programme to primary nature
- 1978 National Parks in the US
- 1978 National Parks & Recreation Act passed in US (S. I. House gives to improve status & national parks)

1980 37 national parks in US created

**CANADIAN NATIONAL PARK DEVELOPMENT AND PARK POLICY**

- Early 1960s - early major Bestif Provincial Park for water conservation
- 1964 - early development of public participation in park management
- 1964 1st National Park Policy developed
- 1966 Park System Manual produced (first park system as part of the early national system)
- Early 1960s - 70 parks system (Krymchuk (1961), L. Hesterman (1961))
- 1968 - 1st of Management Plans for individual parks
- 1970 New parks added to National Park system (La Mauricie, Gros Morne, Pelly, Peace River)
- 1971 A new approach to develop National parks based on
- 1971 - Report of the Commission of Inquiry (M.A.C.I.)
- 1971 - National Park System established
- 1971 - First part of the report for park management proposed
- 1971 - Improved public participation
- 1972 New parks added to the national system (Edouard Hebert, Assiniboia)
- 1973 Environmental Impact Assessment implemented through EIA, R.F. grant to the establishment of new parks
- 1979 National Park Policy revised (from "interdisciplinary priority")
- 1980 Park Management Planning Manual issued
- 1980s 3 new parks set up (Stratton Airbase, Muskoka, Yukon, Vancouver Island, Sand's Mountain, Boreal Provinces)
- 1985 Canadian version of National Park Service added to the Park Management Planning Manual issued
- 1988 Administration of the National Park Act and Planning strategies through landscape preservation
- 1990 Initial draft of revised park policy
- 1990 - Proposed update the Canadian Crown Plan to cover 1
- 1990 - early parks by 1994 and completion of the park plans by 2000
- 1991 Proposed new park policy update
- 1994 New Park Policy update
- 1994 - 2nd National Environmental Strategy and sustainable development

with the construction of Central Park in New York City (Chubb and Chubb, 1981). It was not until later, with government involvement and a more scientific approach taken towards conservation, that a number of national park systems were established, however.

### 2.2.2. Government involvement and scientific focus on conservation

The book Man and Nature (1864) by George Perkins Marsh, often regarded as the father of conservation, espoused the view of humanity's responsibility toward nature, stating the role humans played in modifying and destroying the landscape. Marsh called for a greater awareness of the environment, and for careful resource husbandry to conserve for future use, thus challenging the myth of unlimited resources which was predominant in both the thoughts and actions of Americans of his generation.

Prior to this work, in 1862 the US Congress took the initiative in promoting conservation by establishing Yosemite Park, in the State of California, as a recreation/conservation reserve. The year 1872 saw Yellowstone established as the first national park, which would be followed in the next 15 year period by national park systems in Australia (Royal, 1879), Canada (initial reserve around Banff mineral hot springs, 1885) and New Zealand (Tongariro, 1887). With specific reference to Canada, the year 1887 marked the passing of the Rocky Mountains Park Act which established Banff as Canada's first national park. The similarity in terms of the wording used in the legislation developing Yellowstone and Banff, illustrates the early influence US thinking had on Canadian developments in view to national parks. Lothian (1977), however, notes that although there is every reason to believe that the framers of the Rocky Mountains Park Act had recourse to American legislation, Banff was not based on Yellowstone but, rather on the regulations governing the Arkansas Hot Springs, a public spa reserved by the US Congress in 1832.

Although an early emphasis was for Banff to be enjoyed by the Canadian public as a public park, private interests, namely the Canadian Pacific Railroad Company (CPR),



used the attraction of the mineral hot springs to promote tourism to the Canadian Rockies. This was facilitated by the construction of accommodation within the park for affluent members of society, and the completion of the CPR line in 1885, linking Eastern Canada with the Pacific coast (Bella, 1987).

Events occurring between the 1890s and 1930 would suggest that the concepts of conservation and preservation were being favourably received. In Britain, the National Trust was set up as a charity in 1895 to buy up beautiful areas to serve as "open air sitting rooms for the poor" (Chubb and Chubb, 1981: 27). The Canadian national park system expanded to thirteen parks as a result of legislation favourable to facilitate expansion (The Dominion Forest Reserve and Parks Act of 1911). This Act, with strong preservationist tones, provided the necessary legislation to protect large areas from mining and timbering activities (Nelson, 1973).

Varying views on conservation emerged at this time. The concept of conservation as involving the preservation of natural resources, emphasizing resource maintenance and the protection of resources from loss, waste or harm, but involving an element of usage and exploitation of the resource base was promoted by Gifford Pinchot, chief forester in the Theodore Roosevelt administration. This idea was based on the promotion within the U.S. forestry service of a guiding philosophy encouraging "the greatest good for the greatest number", based on the concept of sustained yield. Pinchot by advocating that the principle objective of conservation was the control over and the usage of natural resources for the benefit of all, alienated those who viewed conservation from a strongly preservationist stance (Pinchot, 1947).

This difference of opinion was epitomised in the Hetch Hetchy affair in the early 1900s between John Muir, a supporter for preservation, and Pinchot over the proposal to construct a dam and reservoir in the Hetch Hetchy valley to provide water for the city of San Francisco (Burton and Kates, 1965; Herfindahl, 1965; Nash, 1967; Nelson and Butler, 1974). Muir opposed the proposal stating that the "wilderness" should be

preserved, whereas Pinchot supported the construction of the reservoir on the basis that it would be utilizing resources wisely. In the end, Muir and his associates were defeated. Although this particular conflict helped pave the way for the creation of preservationist organizations such as the Sierra Club, support for preservation remained somewhat restricted, being promoted, in principle, within national park landscapes. Pinchot's views on conservation, remained as the status quo during the first half of the twentieth century, being popularized in quotes stating conservation to be "the foresighted utilization, preservation, and/or renewal of forests, waters, lands and minerals for the greatest good of the greatest number for the longest time" (Pinchot, 1947: 255).

Between the 1890s and 1930 a number of factors promoted early developments towards a park policy within the Canadian park system. Nelson (1976: 83) stresses that in the early years after the creation of western parks such as Banff (1885), Glacier (1886) and Waterton (1895), the focus on protection and preservation was minimal. Activities such as hunting, and lumbering were present. Unconventional methods of fishing such as using dynamite, were employed frequently. Timbering activities were permitted, and prospectors, developers and surveyors were engaged in deliberate and careless burning within the park boundaries. In addition, railroad construction, which caused further fires and the development of mining activities, both continued and were certainly not ascribing to early statements towards preservation.

Change which was positive resulted from (1) the presence of wardens (2) the establishment of the Dominion Parks Branch as the management unit for parks, and (3) and perhaps of most importance, the action taken by J.B. Harkin, as the first Commissioner of the Canadian National Parks between 1911 and 1936. Under his administration no explicit emphasis was made regarding park functions. A strong promoter of preservation and keeping parks in a true state of wilderness, Harkin also saw recreational developments within parks as a viable means of providing the interest and funding needed to develop the national park system (Nelson, 1976). The period after 1910 saw increased tourism from a

North American society which was becoming more mobile given the developments in the automotive industry. Associated developments such as further road expansion and upgrading occurred in the 1920s in the absence of preservation. It was not until the National Park Act (1930) that the "thread" of protection/preservation was given as the primary mandate of National parks (Nelson, 1973). However, the ambiguity of the phrasing of the Act, would plague national parks in terms of what were and what were not acceptable park functions (Nelson, 1973; Butler, 1986).

The 1930s represented a decade of few developments promoting a continued interest in conservation/preservation in Canada. Under the National Park Service, consolidation of national parks and national monuments in the US took place in 1933. Within Canada, legislation curtailed expansion of the system as the federal government, by handing over control of the natural resources and Crown lands within the prairie provinces, prevented any new parks being created in the west, until the 1970s. As a result, by the outbreak of the Second World War only two new parks had been created, Cape Breton Highland (1936), and Prince Edward Island (1937).

### **2.2.3. Post war growth and development**

The 1940s and 1950s can be characterized as the take-off period with regard to economic growth and development, with interests for conservation in North America being less prevalent. However, conservation was further encouraged in Britain with the passing of the British National Parks and Access to the Countryside Act in 1949, which started a national park programme, the Peak District becoming the first British national park in 1951 (Chubb and Chubb, 1981).

The post-war years saw conservationist thinking increasingly adopting an economic perspective. Conservation policy became aligned with economic analyses in which conservation became the adjustment of outputs over time and the maximization of return from all resources at the disposal of society (Herfindahl, 1965). Proper usage was

promoted whenever the benefits, in economic terms, outweighed the costs. It was only when a focus on economic gains alone was perceived to be inadequate, based on a price system and profitability which failed to account for those costs/benefits which could not be easily quantified, that traditional views on conservation were increasingly criticized.

One of the outcomes of this period of economic growth and development was new opportunities for expansion of national park systems. These decades brought increasing economic prosperity to a larger segment of the population than had previously been the case, and in turn, generated increasing demand from newly created markets. An expanding population, increased urban growth, and a buoyant economy, fuelled by automation and service-related occupations, better working conditions, more paid vacations, improved transportation, a better road network and more disposable income, all resulted in parks, once the domain of the elite elements of society, becoming destination areas for the public at large, where summer vacations could be spent, and where camping and picnicking activities could be entertained by the general public on a more frequent basis.

With increased demand for use of national park landscapes, a number of inventories noted the widening gap occurring between participation and the resources available for further development. In the US, under the label of "Mission 66", a ten-year programme was begun in 1956 to restore and improve the national park system. Aspects of capacity and recreational use within national parks were reviewed in light of concerns that if trends of the 1950s continued (e.g., increased mechanization of recreation and increased attendance, at an annual rate of 15 to 25 percent), many recreational facilities would be destroyed by overuse (Clawson, 1959; the Outdoor Recreation Resources Review Commission, 1962). The latter multi-volume report underscored the growing concern for conservation of the natural resource base. One specific outcome from the Outdoor Recreation Resources Review Commission (ORRRC) was the establishment of a zoning system to allocate land to different use classes according to the nature and intensity of demand and land character.

In contrast to these developments in the US, the managers of Canada's national parks were initially slow to meet the new demand of a society becoming more mobile and placing a greater emphasis on recreation and leisure. Only two more parks had been established by the close of the 1950s (Fundy, 1948; Terra Nova, 1957). No significant change would occur until the latter years of the following time period (1960s) when concern for the preservation/ conservation of natural resources manifested itself clearly in a heightened awareness by the general public of a multitude of environmental issues.

#### 2.2.4. Increasing awareness for the environment

The 1960s saw a number of studies address the impact of continued resource exploitation and overuse of specific environments. Boulding's (1966) "spaceship earth" concept and Hardin's (1968) "tragedy of the commons", outlined the view that natural resources of the earth were finite and required husbandry for future use. Rachel Carson's book Silent Spring (1962), alerted society to the dangers of chemicals in the environment, stating that spraying of pesticides and herbicides not only caused the wholesale destruction of wildlife and its habitat, but also endangered human life. Specific measures were taken in the US at the close of the decade with the National Environmental Policy Act (1968) requiring federal agencies to report environmental impacts on all development projects. In the same year, a Council on Environmental Quality was set up to co-ordinate national environmental programs.

With regard to Canada's national parks, a number of developments occurred which facilitated both the expansion of the park system and promoted ideas of park management. The first statement on park policy appeared in 1964 in response to increasing visitor pressure, and a concern for protection of natural resources. With the 1964 policy, the concept of systems planning was first introduced in parks in Canada (Eidsvik, 1983). Prior to the issuing of the policy, each national park was managed as an individual unit; with a systems approach, each park became part of the national whole. The first national

park system plan (1966) was based on the physiographic regions of Canada (Eidsvik, 1983). Specific management plans were also developed for individual parks in the late 1960s with public participation, in the form of public hearings, used as a mechanism to control developments within parks (Nelson, 1973; Nelson, 1976). For example, public pressure against plans to develop Lake Louise saw the rejection of a proposed village service centre concept. Early developments in zoning were first utilized as a management tool for winter recreation activities within Banff national park in the 1960s. Changing philosophies in the late 1960s, both in terms of a relaxation of jurisdiction by provincial governments over land, and increased government expenditure in creating new parks, saw further additions to the national park system. This impetus would be carried over into the next time period.

#### **2.2.5. Development of a composite view of man and environment**

A changing economic, social and political climate emerged in the 1970s and early 1980s. A composite view of man and the environment developed which had the potential for creating a positive symbiotic relationship. Organized efforts towards pollution control, the rejuvenation of interest towards preservation including the first Earth Day in 1970, and the establishment of biospheres, (a key component of UNESCO'S Man and Biosphere programs), promotion of a conserver type society, and the partial rejection of the "more is better" philosophy of exponential growth (Schumacher, 1973), are a few of the ideas which played key roles in promoting this new environmentalism. A gradual shift away from an aggressive attitude towards nature and the belief in the technological fix to one where values and beliefs were modified to promote a more harmonious relationship with nature, was recognized in the Gaia hypothesis, shallow and deep ecology, the green movement, and ecofeminism (O'Riordan, 1981).

The urgency for adopting a composite view of humankind and the environment was clearly demonstrated by events that occurred at a global scale. In particular, the oil crisis of

1973, and the Limits to Growth (Meadows et al., 1972) report on the findings of the "Club of Rome", attested to the fact that the resources of the world were finite, and that problems such as the depletion of non-renewable resources, and a deteriorating environment, could no longer be considered as national problems, but rather had taken on a global dimension. Although the Stockholm Conference on the Human Environment (1972), addressed several social issues pertaining to the human environment, it was perhaps best remembered by the quote made by Rene Dubois encouraging "global thinking, local acting" (Gardner and Roseland, 1989; Gerlach, 1991).

In line with this last statement, and with increasing global attention given to the need to preserve resources, national park systems underwent a period of expansion in the early 1970s. The American system was expanded through the Legacy of Parks programme initiated in 1971, whilst the initial expansion of the late 1960s of the Canadian system was continued. Under the direction of Jean Chretien, Minister of Indian Affairs and Northern Development, ten national parks were set up between 1969 and 1972.

Park policies became increasingly aligned with preservation. In the US, park policies were revised in 1974 to be more in line with preservation, with management planning ensuring that recreational use did not threaten scenic beauty and wildlife. In Canada, a more elaborate system plan was introduced in 1971 (Eidsvik, 1983) whereby terrestrial natural regions were identified and evaluated as potential sites for future parks, if existing parks were not already in place. By 1973, the federal Environmental Assessment and Review Process (EARP) was in place, requiring that environmental impact assessments (EIAs) were undertaken prior to the establishment of new parks (Eidsvik, 1983). The early 1970s also saw a more comprehensive zoning scheme developed, allocating land use priorities to different areas of a park (Murphy, 1985). It provided a broad framework for land management that attempted to balance the system's twin mandate of preservation and visitor access by setting aside some areas for primarily preservation purposes and others for recreation and visitor facilities.

A new park policy was published in 1979 to provide a more "integrated and comprehensive statement of broad principles to serve as a guide for future initiatives and for more detailed policy statements on specific areas" (Parks Canada, 1982: 8). Precise policy was formulated to (1) identify representative natural areas of Canadian significance (NACS), (2) select potential national parks, (3) establish new parks, (4) undertake zoning, and (5) protect national park resources. Policies were also outlined regarding issues such as public understanding, appreciation and enjoyment of national parks, focusing on access, accommodation, visitor services, visitor use, land tenure, national park towns and residency.

With the new policy, public participation moved from being undertaken primarily at the operational level, emphasizing the popular view that public involvement acted solely to gain public approval for projects, to assume a more strategic position. Whereas the former planning level focused on the decisions made to determine what will be done (operational), the latter centred on the decisions made to determine what can be done (strategic). This change of emphasis was reflected in the Parks Canada Master Planning Process (Parks Canada, 1980), which stated that the public would be involved from the early stages in key decisions involving the preparation of park objectives, the formulation of alternative park concepts, the selection of a final park management plan and any proposed major changes to that plan.

#### **2.2.6. Development of an alternative environmental paradigm - 1980s to the present**

The impact of development on the environment became a growing concern in the 1980s, evidenced by increasing awareness and concern for global environmental damage (e.g., Global 2000 (CEQ, 1980); World Conservation Strategy (1980)). With the concerns that were initially expressed by the "Club of Rome" becoming global issues, action was taken. Set up as an independent body in 1983, under the auspices of the United Nations, the members of the Brundtland Commission critically reviewed the problems facing the



environment and the development of the existing resource base for future decades. They proposed realistic policies (strategies) for future growth which they conceptualized as "sustainable development" (WCED, 1987), outlining five years later an agenda by which problems may be addressed and sustainable development strategies implemented (United Nations, 1993). The concept, although framed in an international context, has been translated into reality at a national scale.

Within a Canadian context, restructuring within the Canadian federal environment agency of Environment Canada saw the setting up of the Sustainable Development Branch, replacing the former Lands Directorate. In addition, the Report of the Task Force on the Environment and Economy (1988) and the recently issued Canadian Green Plan (1990) both made reference to the potential for sustainable development. Within the context of national parks, early drafts of the new park policy (1990) adopted the term. Canadian Parks Service (CPS) perceives its role as the agency to promote environmentally sound and ecologically sustainable programs. Specific contributions to conservation and sustainable use strategies would focus on: (1) protecting wilderness areas in national parks by maintaining ecological integrity; (2) contributing to a broadly-based conservation ethic through all its activities; and, (3) managing heritage areas so that would be sustained for the benefit of the present and future generations (Canadian Parks Service, 1990: 16). Under the Green Plan (Government of Canada, 1990), the federal government made a commitment to expanding the national park system by the year 1996, and to eventually completing the system by the year 2000, with 12 percent of the land base set aside as stipulated within the Brundtland Commission (1987). The period between 1990 and 1994 saw revisions made to the new parks policy, an emphasis on heritage with a new Department of Heritage established, and a focus on ecosystem management and protection within parks with priority given to maintaining ecological integrity (a concept which is discussed later in this chapter). The following section turns to examine the concept of sustainable development in more detail.

### 2.3. SUSTAINABLE DEVELOPMENT AND SUSTAINABILITY

The concept of Sustainable Development was first used in 1980 as a long-term development element of the World Conservation Strategy to protect specific ecosystems from continued use. In an attempt to halt the decline in global animal and plant diversity, all the global common lands, continental shelf regions and the Great Lakes system were identified as ecosystems that needed protection. The Brundtland Commission saw sustainable development as a legal and institutional framework with the flexibility to: (1) get at the sources of environmental issues through programs and institutions at the national, interregional and global level; (2) deal with the effects of environmental problems through strengthening the role and capacity of existing environmental protection and resource management agencies ; (3) assess the global risk to natural systems through better environmental assessment and monitoring; and (4) make informed choices from which humankind will be able to invest in the future by increasing the role of the scientific community, non-governmental organizations and by fostering better co-operation with industry (W.C.E.D., 1987: 319). They coined the term to mean "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987: 43). According to Smith (1993), the key aspects of sustainable development involve an understanding of the environment, development, society and linkages.

Ever since the Brundtland Commission conceptualized sustainable development as the future direction for the management of resources, it has become the new buzzword within resource management. Gibson (1989: 67) states that:

within the space of two years, sustainable development has become an exceptionally popular term, adopted rapidly in virtually all sectors".

Although the Commission provided a definition for the term which is often quoted, many scholars and commentators are unsure what is meant by it. Nelson (1990a: 1) has this to say:

Certainly we do not understand what it means in any detail, nor will we ever do so, if the history of past ideologies is any indication.

Others view the concept as:

an oxymoron - a self-contradiction that amounted to believing that you [can] have your cake and eat it too...but however illogical sustainable development may seem, the idea [is] clearly extraordinary and potentially very powerful (Gibson, 1989: 67).

Wilbanks (1994: 553) states that some prefer the term 'sustainability' to 'sustainable development' because it seems less oxymoronic in part because it "concentrates on continuity rather than change". Nevertheless, as the concept is built on sustainability and development - both poorly defined and misunderstood terms - the idea has been perceived as being powerful as it offers an accommodation of opposing forces, implying responsible stewardship of nature and continuing gains in human material well-being are compatible (Gibson, 1989: 68). Wilbanks (1994: 543) notes that with respect to sustainable development "ambiguity has the virtue of versatility in shaping a broad consensus about a need for global action, because different people can accept it sincerely while they mean somewhat different things by it". This author goes on to state, however, regardless of how the concept is viewed, "the use of the term sustainable development makes it more difficult to avoid the central challenge, which is to combine sustainable environmental management with sustainable human economic and social progress".

Other scholars are less optimistic in their outlook on the concept. O'Riordan (1989) posits the view that sustainable development may still be a distant dream as it involves the provision of basic needs for all in a form that is both ecologically and culturally acceptable. One may go even further by questioning if sustainable development is really any different from long-term conservation (author's own view).

Perhaps the problem in being able to define the concept, rests with the fact that the term is dynamic, changing according to the context and the interests involved. In addition, the term has come to be seen to represent many different ideas, and has been accepted and

promoted by groups with diverging viewpoints. From an economic perspective, sustainable development is perceived as the continued emphasis on economic growth (Rees, 1990; Barbier, 1987), with the belief that "all growth is good and that more growth is better" (Gardner and Roseland, 1989a: 28). In contrast, environmentalists view sustainable development to mean: (1) the preservation of essential ecological processes, (2) the protection of biological diversity, and (3) sustaining productivity (IUCN, 1980; Nelson, 1990b). With both perspectives, neither party has unilaterally conceded ground to the other. Gibson (1989: 69) foresees a possible search for initiatives which "simultaneously offer environmental and economic benefits".

The concept is still relatively new, if not overworked, and although it may be, to some, phrasings of old truths (Ruckelshaus, 1989), its full impact has yet to be determined. Recently it is true that the extent, depth and persistence of public concern about the environment has increased markedly (O'Riordan, 1989). This has forced action on the part of governments to be seen to address more seriously environmental abuses, to strengthen regulatory controls, to protect special areas, to encourage resource use efficiencies, and to appear to be devoted to environmental stewardship as noted in the Canadian Green Plan in 1990. It is important to be cognizant, however, that this increase in public awareness and support for environmentalism has not been solely the product of the sustainable development idea, but rather the positive results from two decades of environmentalists raising public awareness of environmental abuses and cajoling political authorities into taking corrective action (Gibson, 1989: 69).

Gardner and Roseland (1989a, 1989b) state that the mainstream interpretations of sustainable development pay too little attention to equity considerations and that acceptance of a scenario in which inequalities are solved through economic growth, particularly from the trickle-down-process, could jeopardize and threaten global ecological integrity. According to these authors, alternative paradigms - steady state, appropriate technology, conserver society, community economic development, social ecology, the green

movement, bioregionalism, deep ecology, and the gaia hypothesis - have greater potential to help redirect us toward sustainable development with equity.

The lack of a clear and accepted definition for the concept was evident at Globe 90, which was heralded as "one of the biggest and possibly most successful environmental trade show-convention ever held" (Corcoran, 1990: B2). Corcoran states that sadly the term has "become a dump site for ideas" as it was "deployed an estimated 4,279 times by 500 speakers during more than 100 seminars over five days" (Corcoran, 1990: B2). This author goes on to state that increasingly Canada's leading business executives now use the phrase, politicians can't form sentences without inserting it, bureaucrats and regulators are building new careers on it, and many people will get rich off it.

The time is right for academics to provide some leadership. As Nelson (1990b: 66) suggests, perhaps the term should be viewed as "a fundamental guide or ideal which promotes better planning and management of global systems, a process to achieve sustainability rather than any utopian end state". This begs the question, what does sustainability mean?

According to Gibson (1989: 67), no-one knows what sustainability means. Brown *et al.* (1987: 713) state that this concept is "rapidly becoming one of those transcendent terms like 'appropriate technology', or 'environmental quality', which are cornerstones of environmental policy and research but difficult to measure and rarely defined explicitly". However, they acknowledge that sustainability is increasingly being viewed as a desired goal of development and environmental management. Furthermore, they outline that a useful definition must specify explicitly the context (social, ecological or economic perspective), and the spatial and temporal scales involved. Used in a social context, sustainability might include "the continued satisfaction of basic human needs.... higher-level social and cultural necessities [as noted by Maslow, 1970]" (Brown *et al.*, 1987: 716). From an ecological stance, sustainability would focus on "natural biological processes and the continued productivity and functioning of ecosystems" (p. 716). Lastly,

these authors state that an economic definition of sustainability is more elusive given the fact that economists tend to assume "the inevitability of economic growth... [and fail to] address the issue of sustainability" (p. 716).

O'Riordan concurs with Brown *et al.* (1987) when he states that this term is "becoming accepted as the mediating term that bridges the gap between developers and environmentalists". However, he is critical of the term as its "beguiling simplicity and apparent self-evident meaning has obscured its inherent ambiguity" (O'Riordan, 1989: 67). He argues that a distinction must be made between sustainability and sustainable utilization. According to O'Riordan, the former is viewed as a phenomenon which consists of ethical norms, provides a structure and an arrangement to ensure that the latter actually takes place. In contrast, sustainable utilization comprises the precepts of: (1) knowability; amount and rate of renewal are known and can be calculated, (2) homeostasis; a position whereby nature and the renewable resource system are in equilibrium, and (3) ecosophy; the act of drawing upon a renewable resource even to the extent of being below the threshold of allowable take.

In contrast, Ruckelshaus (1989) advocates that this concept is as old as time; sustainability was the original economy of our species. He defines sustainability as basically a nascent doctrine in which:

economic growth and development must take place, and be maintained over time, within the limits set by ecology in the broadest sense by the interrelations of human beings and their works, the biosphere and the physical and chemical laws that govern it (Ruckelshaus, 1989: 167).

For Ruckelshaus, environmental protection and economic development are seen to be complementary rather than antagonistic processes.

Turner (1988) views sustainability as comprising two modes, a sustainable growth mode and a sustainable development mode. The former is viewed as a materials policy with conservation representing only one of the goals of a programme involving waste-

recycling options and waste-reduction strategies where policy analysis is determined using a monetary (cost benefit analysis) or a fixed standards (safe minimum standards) approach. Linked to this mode are what Turner terms the "conservation rules", rules which promote future economic growth as feasible only on the basis that resources are used efficiently. Emphasis is placed on maintaining the regenerative capacity of renewable resources, having acceptable pollution levels that do not threaten biospherical waste assimilation capacities and life support systems, and implementing planned technological changes to move from using non-renewable to renewable resources with a phasing policy for non-renewable resources based on scarcity. In turn, these rules are incorporated into related policies. The latter mode (sustainable development) is viewed as being more radical in nature as conservation becomes the only basis for defining criterion by which to judge policy. This mode involves an environmental ethic that takes into account human and non-human populations, incorporating the rights of present and future generations within the institutional arrangements and within policy.

As the result of an emphasis on attempting to define the concept, numerous definitions can be found within the literature (good discussion and summary of definitions is provided by Simon (1989) and Gardner (1989)). With goals and objectives varying along with the context in which they are set, it is unlikely that a universally accepted definition of the term can be found. The relevance of this may be called into question as it has been noted that it is possible to support varying and conflicting definitions of the term based on differing contexts.

An important element in the sustainable development discussion has been the attention given to the political implications of implementing sustainability. O'Riordan (1988), in his discourse on the politics of sustainability, argues that sustainable utilization (sustainable growth mode), based on the precepts of knowability and homeostasis is manageable and therefore politically acceptable, whereas sustainability (sustainable development mode) involving rights, obligations and the need for institutions and

mechanisms to use long-term analytical approaches to allocate resources, challenges the status quo as it focuses on economic and social ramifications of ecological disturbance, and is therefore politically treacherous. He argues that for sustainability to be accepted will require reforms within resource management institutions ensuring that the concept is taken seriously by those at the top of the political structure, and that agency alignments and priorities are reorganized to involve a degree of budget sharing and cross-organizational responsibilities. Similar conclusions were reached by Caldwell (1984: 305) when he outlined that one important condition that would permit ecological sustainability to become an objective of national policy and development planning was "government must have incentive to favour long-range ecological sustainability over short-range considerations".

A key aspect of sustainable development is that of equity, a concept that is implicit in the definition by the WCED. Defined simply to mean fairness or justice it may be taken to encompass more than only justice in respect to the socially disadvantaged, future generations (intergenerational equity), and the present generation, but also justice with respect to nature by ensuring the maintenance of ecological integrity (WCED, 1987; Pearce, 1988b). Gardner and Roseland (1989b) note that for sustainable development to be equitable, closer attention needs to be paid to issues of current inequities by ensuring that the full range possible of human needs are met and social self-determination (freedom for people and society to determine their own course of action without compulsion, involving community self-reliance, citizen participation, participatory governance, and decentralized management that involves grassroots activity) is achieved. However, as many researchers have pointed out (e.g., Redclift, 1987; Pearce, 1988a, O'Riordan, 1988, Dovers and Handmer, 1993) the imbalance in how resources are distributed within society and between the Developed and the Less Developing Nations, along with the political difficulties in assuring an equitable transfer of goods and resources, will probably result in inequity remaining. What is required is a re-orientation in the social and economic behaviour of the Developed Nations (the industrialized minority - the world's affluent) to shift towards a



"quality of life" which involves more than material goods, to address non-material human needs. Gardner and Roseland (1989b) argue that only such a willingness for societal attitudinal change will provide the opportunity to free up resources to allow them to be allocated to meet the needs of the developing nations.

Often linked to the issue of equity is that of ethics, a concept which has received attention within the sustainability literature. By stating sustainability to be a value-laden concept, Shearman (1990) addressed equity from both an anthropocentric (valuing human interest or well-being) and nonanthropocentric perspective (importance on nonhuman interests as well), concluding that the former perspective dominates the sustainable development paradigm. He ascertained that both perspectives would value sustainability as desirable but for two very different reasons. The nonanthropocentric position would be to stress the ethical relationship with the natural world and non-human beings, while the anthropocentric position would focus on the necessity of meeting needs and fulfilling moral obligations to others. Ethics are prominent in the key characteristics and principles of sustainability discussed by Robinson *et al.* (1990) in how a sustainable society might be defined. They also represent one component in the weak and strong sustainability paradigms that Turner and Pearce (1993) identify.

Other aspects of the discussion on sustainable development/sustainability have been to outline the contradictions implicit within the concept (Redclift, 1987; Barbier, 1987; Heuting, 1990; Dovers and Handmer, 1993). Other researchers have focused on the fact that while sustainability may be viewed as an attainable goal it has remained rather more of a theoretical construct, with no unifying theory emerging (Simon, 1989; Wilbanks, 1994). How the concept may be evaluated has also been an issue that has received little attention in the literature (Barbier, 1987; Cocklin, 1989). With respect to methodological developments, researchers within environmental economics have contributed much the overall discussion and it is to this subset of economics that attention now turns.

### **2.3.1. Environmental Economics**

Over the course of the past decade, researchers focusing on the environmental economics perspective have contributed significantly to the sustainable development debate. Although the number of researchers are few, found mostly within a number of British universities with a few in North America and Australia, the contribution they have made to research into sustainable development is far from small as they offer new opportunities to establish better links between economics and ecology, and those that hold to the environmental aspects found in sustainable development. Proponents working under this perspective have been quick to point out that they see links that can be made between the two disciplines and that recently they would argue that economists have started to appreciate and employ ecological principles in their thinking of environment and development, and that in turn ecologists are beginning to adopt economic thinking to bolster their perspective on such aspects (Turner, 1988; Daly and Cobb, 1989; Barbier, 1993).

According to Turner (1988: 2), the sub-discipline of environmental economics emerged in the 1960s as a reaction to the prevailing conventional paradigm of the time which stressed individualism, mechanicalism, self-interest, rationality and property rights. It quickly became an advocate of accommodating the implications of environmental systems suited to the fast-growth society of the 1960s within a modified, but not radically different, set of economic models. This approach was labeled by some researchers as holding to a cornucopian technocentrism world-view (O'Riordan, 1981; O'Riordan and Turner, 1983); in which market forces will correct themselves, and that it is taken as a self evident truth that the "market mechanism in conjunction with technical innovation will ensure infinite substitution possibilities to mitigate long-run resource scarcity" (Turner, 1988: 1), and where growth is viewed in material terms only as measured by indicators like Gross National Product (GNP).

This body of researchers entered the sustainable development debate even before the Brundtland Commission had produced their report. Environmental economics

researchers formed one of four groups that was established in Britain in 1983 to undertake research on environmental initiatives with Economic and Social Research Council (ESRC) funding. With the goals of the overall environmental research programme being to assess the state of the art for a number of environmental issues, develop innovative ideas, outline methodological approaches and discuss future research priorities, the environmental economics group under the leadership of Kerry Turner focused on the emerging concept of sustainability (the World Conservation Strategy had been published in 1980, with sustainability having being one of its major components). They outlined the contribution that economists and economic theory could play in explaining the term, indicating how resource managers can promote economic development which is not at the expense of the environment. The results of this group were presented at a workshop held at the University of East Anglia in the summer of 1986, and were formalised in the multi-authored text "Sustainable Resource Management: Principles and Practice" in 1988. This work provides a good synthesis of the ideas that were being expressed by researchers in the early 1980s on the relationship between economics, environment and development, as well as much more recent work within the sub-discipline, as the majority of new studies focus more on how to operationalize sustainable development, given that principles of what is meant by the term have been somewhat clarified and more appropriate techniques were in place. (Jacobs, 1991; Barbier, 1993). Recently more emphasis has been given to practical applications of new techniques in the context of, for example, tourism, outdoor recreation and the natural environment (Tisdell, 1991).

In essence, environmental economics involves two general areas of enquiry. The first is the study of externalities between different economic entities, in other words, "the effect of the economic activities of one set of economic entities on the environment of others and vice versa" (Tisdell, 1993). The second involves environmental sustainability which is viewed as dependent on the availability and quality of natural resources, knowledge and man-made capital. For the most part, the scale of inquiry of research

within this subdiscipline is more narrow than the approach taken by, for example, the Brundtland Commission, although some researchers address issues from a global perspective (Tisdell, 1991, 1993) or at the scale of the developing nations (Pearce, 1988a; Redclift, 1987). While much work attempts to apply economic measures to environmental issues, some researchers are mindful of the ideas such as intra and intergenerational equity, upon which the ideas of the Brundtland Commission report Our Common Future are based (Pearce, 1988b).

Although proponents within this field differ on the terminology used: sustainable growth (Turner, 1988), sustainable development (Redclift, 1987; Pearce, 1988b; Tisdell, 1991, 1993), sustainable utilization (O'Riordan, 1988) are the most commonly cited in the literature, consensus is found in the rejection of orthodox approach to economics and economic theory as it applied to environmental issues.

The cornucopian technocentric perspective has been replaced with one which is more accommodating. Changes include, no longer relying on market forces as corrective measures or the use of conventional techniques in their original form such as cost and benefits approach to measuring environmental assets; the GNP as an indicator of growth and development; and the shift away from valuing resources from only the 'optimal' perspective.

In a relatively short time frame, a number of new techniques have emerged offering utility to environmentalists from an economic perspective. Dorfman (1985) along with many other researchers challenged the usefulness of the benefit-cost analysis in deciding whether not projects should be accepted or rejected. He listed numerous weaknesses with the approach: the absence of standards, neglect of distributional effects, unpersuasive treatment of nonmonetary effects; neglect of uncertainty; inadequate attention to alternatives; superficial treatment of costs, and allowance for the degree to which they are effective. Nash and Bowers (1988), working within the context of land drainage and transportation projects, demonstrate that techniques such as the revealed preference approach, alternative

cost approaches, stated preferences, expert opinion and the use of political weights are useful in valuing the effects projects may have on the environment. Within the two areas they examined they concluded that a fixed standards approach (alternative cost approach) is preferable in the form of "shadow projects", the cost for which is designed to substitute for the environmental loss that may result.

The aspect of placing regulations and control over certain activities has received much attention (Rees, 1988; Jacobs, 1991). Rees (1988) noted that with respect to an issue such as pollution control, objectives on how the pollution ought to be controlled cannot be reached using a rational process. Instead he outlines a new and integrative "un-ideal" approach involving a mix of economic incentives, direct regulation, persuasion and information and, when appropriate, some form of collective action. Support of this approach is demonstrated through water pollution control in Britain and Australia, where the adoption of a mixed system serves to reduce resistance to the introduction of economic incentives and at the same time provides the polluter with appropriate information from which an informed response can be made. On the same topic of pollution control, one market oriented approach towards control is the introduction of the Polluter Pays Principle (PPP) and the extended PPP in which the polluter not only pays the control costs but also the damage costs (Pezzey, 1988). Problems, however, arise in determining who is doing the polluting, especially if the sources are non-point in nature.

Substantial progress has been made in the development of techniques that account for both the user value (derived from actual use of the environment) and non-user value of environmental resources (not associated with actual use or option to use, but rather reflect preferences such as concern for the rights of non-human beings). With respect to the former, many researchers have pointed out that not everyone views the user value from an optimal perspective, but rather from the position of "option" and "bequest" position (Turner and Pearce, 1993). Option values are those which are expressed through the option to use the environment and are often linked to preferences such as 'Willingness to Pay' (WTP)

principles for the preservation of an environment against the probability that the individual will make use of it at a later date. In contrast, "bequest" values relates to the willingness to pay for the preservation of the environment for the benefit of future generations. The development of Contingent Valuation Methods (CVM), such as 'willingness to pay' provide the opportunity to measure those aspects of environmental resources that have an intrinsic value assigned to them. Willis and Benson (1988) adopted the WTP principle in their analysis of the value people place on wildlife within the Special Scientific Interest site on Upper Teesdale in northeast England, while Brown and Henry (1993) used it in a study of the value of viewing elephants in Kenya.

Most environmental problems suffer from uncertainty (an event of unknown probability) as opposed to merely risk (event with a known probability). Because of the issue of uncertainty, many researchers have adopted approaches in which they apply the 'safe minimum standard' to avoid problems of irreversibility. This guarantees that the resource may be passed on to future generations in a condition which allows them to enjoy it at the same level as the previous generation. Toman (1992: 5) suggests, therefore that the safe minimum standard "posits a socially determined dividing line between moral imperatives to preserve and enhance natural resource systems and free play of resource tradeoffs". As a measure, it has found expression within the environmental economics arena.

The area of environmental economics is not without its problems. Redclift (1988) criticized conventional economics as not being well suited to analyzing complex environmental relationships, and to incorporating environmental values, but developments offered by this sub-discipline of economics go some way to addressing this lacunae and offer the means to build linkages between economics and ecology.

Environmental economics represents a major player in the sustainable development debate. While those approaching the concept from a social or ecological perspective stress the need for linkages and areas of common ground, researchers within this sub-discipline

have developed or modified existing techniques to offer actual measures of issues of interest within the environment. While it cannot be concluded that they represent the definitive works on the concept, the research undertaken in this manner is important to the overall discussion of sustainable development, especially as it is often scaled to specific problem areas within the environment such as waste management, pollution control and environmental impact assessments, with techniques developed for this level of inquiry. The issue of how the concept has come to be operationalised is taken up in a later section in the chapter.

### 2.3.3. Synthesis

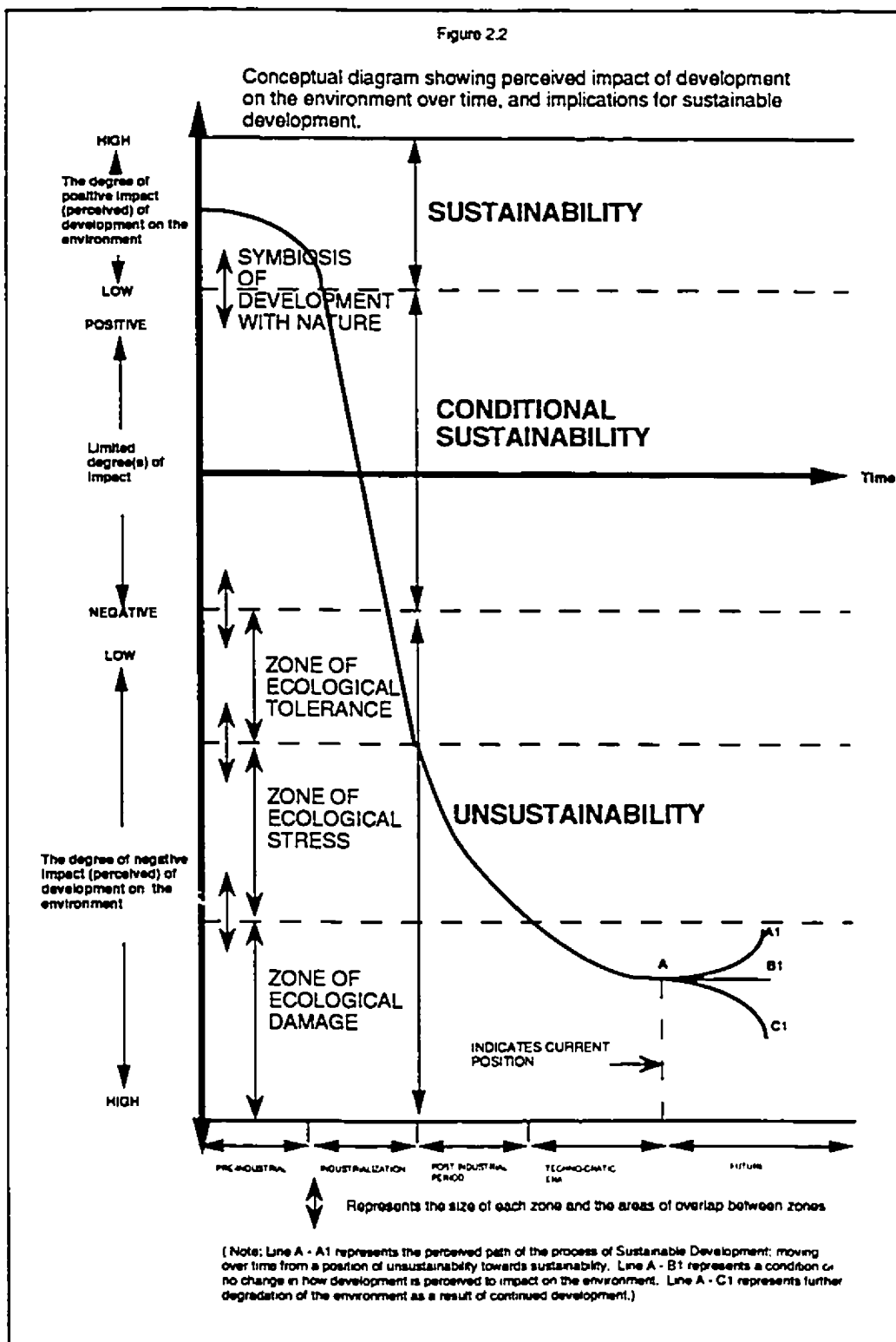
Although absent from the time charts (Figure 2.1), it is possible to imply that environmental thinking over time was representative of varying levels of sustainability. Sustainability, defined as a system's ability for renewal and maintenance, was, and is still, altered by the impact of economic growth and development on the environment, both human and physical. Table 2.1 shows this apparent change over time, noting the relationship between the economy and the environment for various stages of sustainability realized. The relationship found is one where a greater emphasis placed on the former (i.e., economy) resulted in a subsequent degradation of the latter (i.e. environment). The type of sustainability (initial sustainability to unsustainability) is perceived to "change" as the human and physical pressures placed on environments results in system's being pushed closer to the thresholds where their renewability and maintenance, over time, is reduced significantly. This idea is further illustrated in Figure 2.2, offering the reader both a spatial and temporal dimension of the various stages of sustainability.

The reversed S-shaped curve is representative of the perceived general impact (ranging from positive to negative) of development on the environment. Although the author remains cognizant that the relationships between development and the environment were not as simple as outlined, and that at various stages along the curve it could be argued

Table 2.1 Evolution of thought regarding sustainability over time

<b>PHASE 1</b>	<b>SUSTAINABILITY</b>
Time Period	• Pre-industrial Period
Reason	• People lived sustainably because they had to as over-use resulted in migration or starvation, because there were too few to matter, or because of the limited technology restricting the level of development possible (driven by the wish to survive).
Result	• Symbiosis of development with nature.
<b>PHASE 2</b>	<b>CONDITIONAL SUSTAINABILITY</b>
Time Period	• Industrialization Period
Reason	• Belief in the basic assumption of no limit to humanity's power over nature (economically driven).
Result	• Non-explicit emphasis for economic growth. Development promoted over the desire for conservation.
<b>PHASE 3</b>	<b>UNSUSTAINABILITY</b>
Time Period	• Post-Industrialization to the present
Reason	• Over-emphasis on economic growth without considering the environmental cost.
Result	• Explicit economic growth-oriented economy. Further depletion of the natural resource base needed for future generations.
<b>PHASE 4</b>	<b>RETURN TO SUSTAINABILITY</b>
Time Period	• The present and immediate future
Reason	• Economic and moral duty to provide for the needs of future generations, and because environmental problems are too severe to be ignored
Result	• Economic growth and development within ecological limits: complementarity of environmental protection and economic development





that the line would rise and fall, or remain stationary at particular times, it is nevertheless felt that by taking a generalized view of development and environment, the overall trend is one in which development has been perceived increasingly as having a negative impact on the environment over time.

Over the pre-industrial phase, development is perceived to have had a symbiotic relationship with the environment, but with conditions present, albeit deliberate or coincidental, that would force it to move towards a position of conditional sustainability. For example Greek and Roman society had within them the propensity for ecological scarcity and/or depletion of environmental resources (O'Riordan, 1989: 78). With industrialization, economic development was perceived increasingly to have a negative and unwelcome impact on the environment. Tolerance was evidenced by natural processes having to cope with, and diffuse, increasing levels of pollution. The post war era was characterized by the drive to develop at any environmental cost, and even with a composite view of humankind and the environment emerging in the 1970s, at the global scale, reports such as the Blueprint for Survival (Goldsmith, 1972), Global 2000 (CEQ, 1980) and the Worldwatch Institutes Annual State of the World (Brown, 1986, 1987), noted that society was still on unsustainable development paths. Ecological disasters like Bhopal, Chernobyl, and the Exxon Valdez oil spill in Alaska, only served to confirm this trend.

Given these facts and the consequent increased natural and human stresses, it is necessary that a major change be undertaken, moving nations and people away from unsustainability to a form of sustainability (Figure 2.2, phase 4), which incorporates equity and ethical issues and which is consciously suitable to our modern era, as illustrated by line A-A1 in Figure 2.2. The recent concept of sustainable development may offer this potential, whereby the transition may take place in a number of phases (Brown, 1981). Line A-A1 may represent the start of the early transition phase, as noted by Brown (1981), on which later phases (i.e., maturity) can be based.

Since the United Nations report on Environment and Development actions are

apparent, operating in both top-down and bottom-up manners to suggest that as a global society we have begun to move away from unsustainable activities towards more sustainable actions. Sustainable development has come to be part of an integral part of government policy where separate departments on sustainable development were established (e.g., Canada, New Zealand and Australia).

Recent ecological disasters, such as the scorched earth and polluted sea policy in the Gulf war, may lead one to question if any progress has been made and that a downward trend continues (Figure 2.2, line A-C1). International co-operation to address global problems, reflected in the United Nation's Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil in 1992, for example, would indicate that substantial progress has indeed been made (United Nations, 1993). Discussion on this and other commitments by international agencies are taken up in the following section which examines how sustainable development has been applied at the national and sectoral level, and for parks, recreation and tourism in particular given the focus of this research.

## **2.4. APPLICATION OF SUSTAINABLE DEVELOPMENT**

### **2.4.1. Global and International**

Taking the ideas outlined in Our Common Future one step further, the UNCED conference saw commitments from international leaders of 170 countries to sign legally binding international conventions (only two were signed and not by all participating countries, on climate change and biodiversity). Other important developments that came from this conference were the setting up of what was entitled the 'Agenda 21' which represented a framework among countries for unprecedented co-operation for sustainable development among all sectors of society to consciously create the future, and the creation by the United Nations of a Commission on Sustainable Development to examine progress made in implementing Agenda 21 globally (United Nations, 1993).

The International Union for Conservation of Nature and Natural Resources (IUCN)

responded to the report of the World Commission on Environment and Development in a report entitled "From Strategy to Action" (IUCN, 1988). In it, they build on the ideas noted by the Brundtland Commission, stressing the need to go beyond the sectoral approach to focus on cross-sectoral themes, to building on more effective international cooperation and building self-reliance (i.e., the recognition that conservation is part of development and needs to be integrated at the community level, and that choices made about paths of development need to fully involve those who are directly affected). The report presents recommendations for a diverse number of areas: human ecology, biological diversity, global commons, aid and trade, economics, national conservation strategies, building human capacity and legal mechanisms (IUCN, 1988: ix).

#### **2.4.2. National (Canada)**

The response to sustainable development has also been reflected in decisions made at the level of national governments. Canada responded to Brundtland by endorsing the principles of the commission, by setting up national round tables on the environment and the economy in 1988, and in putting forward an action plan to harmonize the environment with the economy (Green Plan, Government of Canada, 1990). The National Round Table on the Environment and the Economy (NRTEE) represents Canada's principal institutional response to the challenge of sustainable development. Its mandate was to play the role of catalyst in identifying, explaining and promoting in all sectors of Canadian society and in all regions of Canada, the principles and practices of sustainable development. Over the course of the past 6 years, over 150 national, provincial and local round tables on the environment and economy were set up that have directed attention to issues such as planning for a sustainable future, sustainability reporting, education, trade and sustainability, forestry, pulp and paper, consensus decision making, rural renewal, and economic instruments.

Other initiatives which have been undertaken by the Canadian government in

concert with many non-governmental and environmental organizing bodies include those of setting up National and Regional Conservation Strategies (NCS and RCS) (Manning, 1990; Nelson and Eidsvik, 1990) and producing State of the Environment Reports (SOER's) (Elkin, 1990). Broadly speaking, SOER's were prepared in order to assess the impact of the development process on the environment over time, to be updated on a regular basis. In contrast, the development of NCS's and RCS's provides the means of guiding development processes along a sustainable path, taking a community or region from where it is (as depicted in an SOER) to where it should be, in other words, committed to sustainable development. Conservation strategies were in place in the province of Prince Edward Island as early as 1987, with most provinces having made substantial progress to developing conservation strategies by 1989. The view still held today is that conservation strategies can act as a blueprints for sustainable development, but will only be achieved only if they involve participation from all sectors of society and economy.

Canada's Green Plan (Government of Canada, 1990) represented, at the time, the most definitive statement of willingness at the federal level to address the relationship between environment and the economy. It committed the government to a program to preserving life's three essentials of clean air, water and land; to sustaining renewable resources in the forestry, agricultural and fisheries sectors; to a concern for special spaces (ecological areas, national parks, wetlands) and species; to stewardship of the Arctic region of Canada, global environmental security and environmentally responsible decision making and minimising the impacts of environmental emergencies. Unfortunately, it seems that the goals achieved are far from those set almost five years ago. The money actually put into the Plan was less than the amount promised, and with a new federal government in place, with an emphasis on job creation through mainly capital infrastructure programs it seems unlikely that the vision of the Plan in all its separate and yet interconnected parts, will be achieved by the end of this century.

### **2.4.3. General**

The ideas implicit within sustainable development have been applied to many areas of human activity. The concept has been embraced by researchers in many fields of academic inquiry that were focused on problems set at the sectoral level. A few are singled out in this review. Within resources management in particular, the ideas of sustainable development and sustainability have been applied to impact and environmental assessment (Smith, 1993; Gardner, 1989); agriculture (Hill, 1988; Troughton, 1989, 1991; Murgueltio, 1990); aquaculture (Folke and Kautsky, 1992); water resource management (Sadler, 1990); tourism (Butler, 1991; Nelson, Butler and Wall, 1993) and institutional arrangements (Smith, 1993; Gardner, 1989; Kennett, 1990). The concept has also been applied to how societies should be defined (Robinson, Francis, Legge and Lerner, 1990) and adopted as the basis for conducting research agendas (Hanson, 1990; Sly, 1989). The objective of providing the above list illustrates that, despite the confusion and disagreement over the meaning of the concept, these terms have been used to rally efforts to address areas and issues of concern within many sectors of activity. The remainder of this chapter, given the focus of the thesis, comments on the contribution of sustainable development in the areas of tourism, recreation and parks.

### **2.4.4. Tourism, Recreation and Parks**

A copious literature exists on the relationship between the environment and tourism (e.g., Budowski, 1976; Wall and Wright, 1977; Mathieson and Wall, 1982, Inskip, 1987; Romeril, 1989; Butler, 1991; Farrell and Runyan, 1991; May, 1991; McKercher, 1993). It is not the intention here to provide a critique of relevant literature, but rather to note that the debate on sustainable development has directed researchers within the parks, recreation and tourism sector toward appropriate application of the concept and it is to these developments that this section of the literature review is focused.

It is somewhat surprising that tourism was not officially addressed in the

Brundtland Commission (WCED) report, Our Common Future (1987), given that tourism is regarded as the second largest industry in the world today and possibly will be the largest by the year 2000. By its very nature of often total reliance on the environment for its continued well being and existence, many have noted that tourism often lends itself well to the idea of sustainable development (Wall, 1993a; Sadler, 1988). However, as Butler, (1991) pointed out, the enthusiasm for linking sustainable development with tourism may need to be tempered by the reality that there is still a lot that is not known about tourism, its linkage with the environment, and that there is still a paucity of empirical information to demonstrate clearly that tourism can be sustainable in nature. While it can be suggested that certain forms of tourism such as ecotourism, nature tourism and alternative tourism may lend themselves more to sustainability than others, other forms of tourism do not, for example, mass or conventional tourism. He suggested the following as prerequisites to successfully link tourism and sustainable development: co-ordination of policies, pro-active planning, acceptance of limitations on growth, and commitment to a long-term viewpoint.

The development of an "Action Strategy for Sustainable Tourism Development" presented at Globe '90, represented one of the first initiatives to apply the concept to tourism. Formulated by an interdisciplinary body of Canadian researchers with expertise in tourism and environmental management, the Strategy was framed within a context of sustainable development, tourism, tourism as an industry, tourism effects and planning, and addressed the following: (1) the major issues and needs, (2) the principles for sustainable tourism (see Figure 2.3), and (3) recommended action to be taken, both short and long term.

One collaborative initiative, commencing in the late 1980s with researchers from Waterloo, Ontario and various universities within Indonesia, was the development of the Bali Sustainable Development Project (BSDP), of which tourism represented one component. Following three years of research, workshops and exchanges the Strategy was tabled in June 1991, with a refined version presented in Bali in June 1992, leading to

Figure 2.3

## Principles for sustainable tourism

Sustainable tourism development can fulfill economic, social, and aesthetic needs while maintaining cultural integrity and ecological processes. It can provide for today's hosts and guests while protecting and enhancing the same opportunity for the future. But sustainable tourism development also involves making hard political choices based on complex social, economic, and environmental trade-offs. It requires a vision which encompasses a larger time and space context than that traditionally used in community planning and decision making. The local planner can use the following principles as basic guidelines when attempting to incorporate this broader vision into local policies and practices.

- Tourism planning, development and operation should be part of conservation or sustainable development strategies for a region, a province (state) or the nation. Tourism planning, development and operation should be cross-sectoral and integrated, involving different government agencies, private corporations, citizens groups and individuals thus providing the widest possible benefits.
- Agencies, corporations, groups and individuals should follow ethical and other principles which respect the culture and environment of the host area, the economy and traditional way of life, the community and traditional behaviour, leadership and political patterns.
- Tourism should be planned and managed in a sustainable manner, with due regard for the protection and appropriate economic uses of the natural and human environment in host areas.
- Tourism should be undertaken with equity in mind to distribute fairly benefits and costs among tourism promoters and host peoples and areas.
- Good information, research and communication on the nature of tourism and its effects on the human and cultural environment should be available prior to and during development, especially for the local people, so that they can participate in and influence the direction of development and its effects as much as possible, in the individual and the collective interest.
- Local people should be encouraged and expected to undertake leadership roles in planning and development with the assistance of government, business, financial and other interests.
- Integrated environmental, social and economic planning analyses should be undertaken prior to the commencement of any major projects, with careful consideration given to different types of tourism development and the ways in which they might link with existing uses, ways of life and environmental considerations.
- Throughout all stages of tourism development and operation, a careful assessment, monitoring and mediation program should be conducted in order to allow local people and others to take advantage of opportunities or to respond to changes.

Source: Sustainable Tourism Development: Guide for Local Planners (WTO, 1993: 40)



the submission of a final document to the Bappeda Bali (planning department) in November 1992 (Wall, 1993a). Sustainable development within the BSDP placed emphasis on culture, both in terms of its continuity and in the balances within cultures and also addressed features such as the continuity of natural resources and production, viewing development as the process which enhances the quality of life. Several criteria were developed in order for sustainable development to be realised which included ecological integrity, efficiency, equity, cultural integrity, community, integration-balance-harmony and development as realization of potential (Wall, 1993b). These criteria were best viewed to be "standards against which the achievement of sustainable development can be assessed" (Wall, 1993a: 56) and used within the context of tourism in Bali to be applied to different forms of tourism, and their suitability within specific settings.

Another initiative in an Australian context, was the development of a National Strategy for Ecologically Sustainable Development (ESD) in 1992, of which tourism represented but one of a number of sectoral issues (others included agriculture, energy use, energy production, fisheries, forest use, manufacturing, mining, and transport). The goal of ESD was stated to be "development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends" (ESD, 1992: 7), with objectives which addressed the following: (1) enhancing individual and community well-being and welfare, (2) providing equity within and between generations, (3) protecting biological diversity and maintaining ecological processes and systems, and (4) recognizing the global dimension. The report that focused on tourism (Ecologically Sustainable Development Working Groups -Tourism, 1991) identified principles of ESD applicable to tourism within the framework of the above stated objectives. The report outlined that tourism could move towards ecological sustainability if it:

- develops in accordance with the wisest use of environmental resources and services at the national, regional and local levels;
- operates within the biophysical limits of natural resource use;

- maintains a full range of recreational, educational and cultural opportunities across generations;
- maintains biodiversity and ecological systems and processes; and
- develops in a manner which does not compromise the capacity of other sectors of the economy to achieve ecological sustainability (Ecologically Sustainable Development Working Groups - Tourism, 1991: 41-42).

Recommendations listed in the report focused on integrated regional land-use planning including strategic tourism plans; development of a national representative system of protected areas; funding for protected area management; involvement of indigenous people in tourism industry; development and adoption of industry codes of environmental practice and impact minimisation programs; examination of regulatory mechanisms for the industry; and an improved research capability covering marketing, visitor use and economic and environmental impacts.

A request for ideas and information on monitoring and on useful indicators of sustainability by Industry, Science and Technology, Tourism Canada resulted in a seminar and workshop being held in October 1991 on Tourism and Sustainable Development at the Heritage Resources Centre at the University of Waterloo, Ontario, Canada. The workshop brought together many researchers, mostly within tourism, to discuss these issues, the result of which was the publication of Tourism and Sustainable Development: Monitoring, Planning, Managing (Nelson, Butler and Wall, 1993). According to the editors, the volume "provides a useful basis for thinking about planning, management and decision-making in tourism and related activities" (pg. vii). The papers that comprise the volume provided a good understanding of the history and character of tourism and its challenges towards sustainable development, reflecting experiences from Canada, the United States, Mexico, Indonesia, Thailand, Europe and other parts of the world. A few papers are singled out for discussion as they are considered to be important in gaining overall understanding of the linkages between tourism and sustainable development.

Nelson (1993a) sees a set of interactive processes consisting of understanding, communicating, assessing, implementing, monitoring and adapting to have value in linking many of the definitions and concepts of tourism and development. He suggests that they should not be viewed as separate steps, but rather as ones which interact with one another, overlapping both in terms of meaning and in action. Understanding is viewed to involve all the other processes, in which communication, assessment and monitoring are key to understanding, with monitoring and assessment being viewed as inseparable from one another (Nelson, 1993a: 5).

The difficulty of linking tourism with sustainable development stemmed in part from the lack of a clear definition of sustainable tourism development. To that end, Butler (1993) offered the following definition "...tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and well-being of other activities and processes." (Butler, 1993: 29). This should not be seen to be the same as sustainable tourism. According to Butler (1993: 29), sustainable tourism may be thought of as "a form of tourism that is able to maintain its viability in an area for an indefinite period of time". Despite the lack of a universally accepted definition, the concept continues to be applied in varied settings, with direct relevance to tourism, in particular in the context of parks and protected areas (Woodley, 1993a), wildlife (Gauthier, 1993), community development (Woodley, A. 1993), Northern Ontario (Payne, 1993a), culture and the hilltribes of northern Thailand (Dearden, 1993).

Perhaps one of the most important developments that stemmed from the seminar on Tourism and Sustainable Development was the search for appropriate indicators by which tourism could be monitored. Butler (1993) and Wall (1993a) pointed out, however, that there are a lack of acceptable indicators of the health of tourism, although a number of specific ideas regarding indicators to monitor tourism development were debated. For

example, Kreutzwiser (1993) argued that sustainability indicators must be sensitive to temporal change and spatial variation; have predictive or anticipatory capability; provide relative measures of conditions based on reference or threshold values previously determined; be practical to apply; have conceptual validity or relevance. Marsh (1993) developed a tourism sustainability index comprising 4 areas (ecological, social, economic and institutional), whereas Payne (1993b) presented ideas on monitoring and indicators in terms of the tourism industry, and tourism opportunities, as well as sustainability. Nelson (1993b) questioned whether the objectives of tourism growth and sustainability are compatible. He suggested that a civics model, comprising assessment and informed choice to be a more productive route for tourism in the context of sustainable development, compared with management. Civics was taken to be "an informed, open participatory public process for decision making" (Nelson, 1993b: 259) whereby all parties involved with tourism work towards often similar and different goals in the context of sustainability.

The World Tourism Organization (WTO) in a recent newsletter (1993) noted the concept of "Sustainability" to be a powerful one for defining an appropriate approach to tourism development, listing six principles of how to implement the concept involving: (1) more comprehensive planning, (2) more consultative and democratic planning, (3) forming new institutional relationships between government, industry, and destination communities, (4) measuring the environmental impacts of sustainable tourism in physical, social and cultural terms, (5) measuring the economic impact of proposed tourism development, and (6) the calculation of carrying capacity at tourism destinations. Many of these principles are easier in their formulation than in actual implementation, especially the latter ones. The absence of benchmarks and acceptable indicators by which to measure sustainability, along with the inadequacies of techniques to measure intangible assets of the resource, which play an important role when tourism settings are considered, are all items that have been noted throughout the literature (Nelson, Butler and Wall, 1993). The last principle focuses on a concept that has been around for many decades, but about which the

majority of researchers are now in agreement, namely, that there is no universal magic number that constitutes the carrying capacity for a setting, but that the capacity will vary according to the type of setting and the nature of the capacity being measured, and that change will occur as a result of both natural and human-induced changes. Therefore, in light of this, as has been noted by many researchers, it is best to view carrying capacity, not as a quantitative measure but from the perspective of how best can the area be managed to avoid over capacity (however defined). A number of ideas have been developed over the past two decades to address this latter fact which include the Recreation Opportunity Spectrum (ROS) (Clark and Stankey, 1979), Tourism Opportunity Spectrum (TOS) (Butler and Waldbrook, 1991), Limits of Acceptable Change (LAC) (Stankey et al., 1985), Ecotourism Opportunity Spectrum (ECOS) (Boyd and Butler, 1995), Visitor Activities Management Planning (VAMP) (Graham, Nilsen and Payne, 1988), Visitor Impact Management Process (VIMP) (Loomis and Graefe, 1992), and the POLAR framework (Prioritising the Operational Limits for the Administration of Rivers (Butler, Fennell and Boyd, 1992).

Many of the above principles are expounded on in a recent publication of the WTO (McIntyre, Hetherington and Inskip, 1993) which was viewed as a guide to assist local planners at the community level in sustainable tourism development. With an emphasis on the development of an appropriate plan, this work outlines how development plans are prepared, implemented and marketed using case studies of tourism destinations around the world, but also offers a good synthesis on tourism in general, its impacts and the various sectors of the tourist industry and how they can be managed. It outlines the necessity for partnerships between the tourism industry, environment supporters, and the community in order for sustainable tourism development to evolve. The major strength of this report is that it represents a how-to-book on sustainable tourism development, and although many of the issues remain only principles with difficulties in their implementation, it represents a useful contribution written at the level to which those involved in the day to day operation

of tourism can relate.

Other developments at the national level within Canada that have emerged and which indicate that substantial progress has been made toward examining sustainable development in the context of tourism are the codes of ethics and guidelines for sustainable tourism. The Tourism Industry Association of Canada (TIAC) as part of the National Round Table on the Environment and the Economy, outlined codes of ethics for the tourists and the industry and guidelines for the industry, the tourism industry associations, accommodation, foodservice, tour operators, and ministries of tourism. The popularity of the term is evidenced by its frequent use as the theme of major conferences on tourism, in which the Second Global Conference: Building a Sustainable World Through Tourism, held in Montreal, Quebec, September 1994, is a case in point, even although a review of the conference suggests that it is often used as merely a platform to debate other issues, e.g., in this case the over-reaching goal of tourism as an advocate for peace within nature and amongst all peoples (Boyd and Butler, forthcoming).

Other, more positive and useful developments are proposals for the establishment of Cooperative Research Centres (CRC) for sustainable tourism such as in Australia. With a stated aim of providing a national focus for user-driven research and education fostering ecologically sustainable and commercially viable tourism development, five major programs of research are proposed: (1) resource conservation and reclamation in tourism, (2) tourism land management, (3) coastal engineering for tourism development, (4) the impacts of nature-based tourism and (5) scientific assessment of tourism management tools. It may be argued that the ability to formulate complex proposals such as the CRC illustrates the potential of sustainable tourism being a vital component of tourism development within Australia. Indeed perhaps what is needed are more interdisciplinary centres that link academic experts with industry and relevant government agencies and departments as they may provide a productive frame of reference towards a better understanding of tourism in order to be able to implement and propose development which

is indeed sustainable.

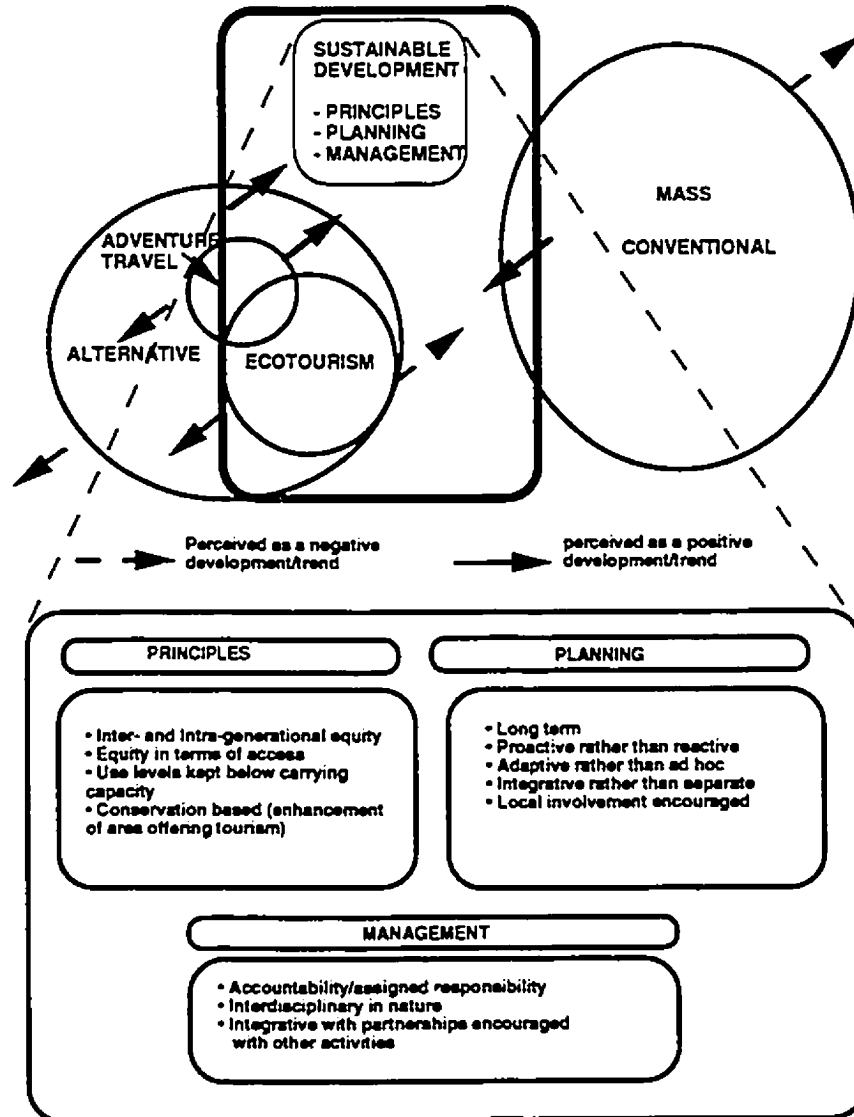
It is possible to suggest that implicit within the above examples of linking sustainable development to tourism are the following elements of sustainable tourism development: (1) *principles* (inter- and intra-generational equity, equity in terms of access, use levels kept below carrying capacity limits, conservation based [i.e., enhancement of area that offers tourism]); (2) *planning* (long term, proactive rather than reactive, adaptive rather than ad hoc, integrative rather than separate, local involvement encouraged); and (3) *management* (accountability/assigned responsibility, interdisciplinary in nature, integrative with partnerships encouraged with other activities). The above three elements determine the extent to which types of tourism conform to sustainability principles as demonstrated in Figure 2.4. The discussion of new forms of tourism or alternative forms of tourism is one issue which has been debated alongside that of sustainable tourism development, as many of the new forms of tourism are best viewed as examples or types of sustainable tourism, or forms of tourism that have the most potential of being sustainable on a long term basis. This aspect is discussed next.

#### 2.4.4.1. Alternative Tourism

Alongside the debate between sustainable development and tourism the issue of alternative forms of tourism emerged to provide specific examples of tourism which may support sustainability principles. In the past few decades, concern over the impacts that tourism generates, whether they are of an environmental, social or economic nature, led to the search for alternative types of tourism which were considered to have minimal impact (Smith and Eadington, 1992). In recent years a multiplicity of work has emerged on the topic, focused on defining it, outlining its various elements, questioning its usefulness, and describing research of actual case studies of different types of alternative tourism. Examples of alternative forms of tourism include responsible tourism, adventure travel or

Figure 2.4

Relationship between sustainable tourism development, ecotourism, adventure travel, alternative tourism, and mass tourism



Source: Boyd and Butler, 1993



tourism, nature tourism, sustainable tourism and ecotourism. Scace *et al.* (1992) in their research on ecotourism, identified over thirty-five terms that could be linked to ecotourism, of which alternative and sustainable tourism represented only two. In saying this, the majority of research on alternative forms of tourism has tended to focus on ecotourism, nature tourism and special interest tourism (Inskeep, 1987; Boo, 1990; Fennell and Eagles, 1990; Farrell and Runyan, 1991; Whelan, 1991; Dearden and Harron, 1992; Weiler and Hall, 1992).

Alternative tourism is generally accepted to represent a departure away from the characteristics that have become synonymous with mass forms of tourism such as, large numbers, significant environmental and social impacts, emphasis on western ideals, ugly developments, architectural styles that do not suit the landscape, and limited, generally exploitive interaction with the local community. In contrast, alternative tourism is viewed as small-scale tourism, developed by local people and based on local nature and culture. In particular, special attention is paid to functioning within an area's environmental and social carrying capacity (Krippendorf, 1987; Jones, 1992).

While any departure away from the negative aspects of mass tourism may be considered as a laudable goal, alternative tourism is not without criticism. Comparisons like those noted above are criticized on the basis that they are too simplistic and often idealistic. Wheeler (1991, 1992) argues that alternative forms of tourism are not a solution to mass tourism, given the numbers of people that are involved. Alternative forms of tourism involve small numbers, whereas mass tourism operates at a much larger scale. Furthermore, he views alternative forms as being no more than precursors to mass tourism. Butler (1990a) points out that alternative tourism is not always planned, that comparisons fail to be made between alternative tourism and having no tourism at all, that it is elitist in nature, and worse of all, it spreads tourism to areas that have not yet been spoiled by tourism. In essence, he argues that the problems, the implications, and the potential costs have generally been ignored, and that in some situations the cure may be worse than the

symptom (Butler, 1990a: 40). Cohen (1989) sums up these concerns when he states that the problems associated with alternative tourism are the consequences of ideals that were set too high with unrealistic hopes for them.

Despite such criticisms, it should be pointed out that the types of tourism which can be categorized under this umbrella term are those types which frequently have witnessed the greatest growth in recent years. For example, Whelan (1991) notes that the magnitude of the ecotourism industry is well illustrated by the reality that over 25 billion dollars are transferred from the northern to the southern hemisphere annually. The reality that more and more people are seeking alternatives to more conventional tourism suggests that these forms should be developed and promoted along the lines of sustainable development.

#### 2.4.4.2. Recreation and Parks

This review has focused on the application of sustainable development to tourism, with little attention given to recreation and parks. The emphasis on tourism is nevertheless justified on the basis that the majority of recreation more often than not takes place within a tourism setting of which parks and protected areas represent one landscape that features highly in areas tourists wish to visit. A few comments are needed, however, that outline specific examples of sustainable development and how the concept relates to parks and recreation. Reference has already been made to the development of the World Conservation Strategy and the usefulness of conservation strategies to operationalize sustainable development (Nelson, 1987).

Within a Canadian context, a number of useful ideas have emerged in the development of suitable indicators of sustainability for parks. Woodley (1993a) puts forward the argument that if there is to exist any type of sustainability, then it must first be based on ecosystem sustainability. He states further that terms like sustainable tourism are more likely to be misnomers as tourism operates within actual ecosystems and therefore any impacts generated by tourism are essentially ecosystem impacts. As a result, the key

then must be to ensure that park ecosystems are maintained on a long-term basis through monitoring the state or condition of parks ecosystems. Woodley (1993b) outlines 4 approaches that may be used in developing a monitoring program. The four approaches are (1) reductionist, (2) integrated, (3) threat specific and (4) hypothesis testing. Using a combination of these four approaches, Woodley (1993b) developed a monitoring scheme specific for national parks that was both integrated and threat specific. In developing the monitoring program, he placed at the core of his system of monitoring an integrated approach that was referred to by the author as "ecosystem integrity monitoring" which aimed to understand changes at the ecosystem level. Specific stresses such as wildlife-human interactions were to be addressed by monitoring on a threat-specific or individual basis.

Five key considerations were suggested by the same author in how to design a monitoring program which addressed the issue of ecosystem integrity: (1) acceptance that basic deficiencies exist in ecosystem science, (2) that most ecosystems are characterized by catastrophe and surprise, (3) that stresses on ecosystems operate differently at various spatial and temporal scales, (4) that many related social factors should also be monitored and (5), that measures must be customized for specific ecosystems.

In terms of monitoring for threat-specific aspects, Woodley (1993b) suggests the following measures as appropriate: (1) primary productivity, (2) nutrient cycling and losses, (3) the rate of decomposition, (4) species diversity or species richness, (5) retrogression, (6) habitat fragmentation, (7) minimum viable population, (8) minimum area requirements, and (9) population dynamics of selected species. Overall, he concluded that monitoring is an integral part of the management of natural systems and is essential if parks are to maintain ecological integrity as required under the amendment to the National Parks Act in 1988. In specifically linking tourism and sustainable development in parks and protected areas he proposed four indicators of sustainability, namely that indicators must account for ecosystems as hierarchies, including cells, organisms, populations,

communities and landscapes; that they account for both ecosystem structure and function at each hierarchical level; that ecosystem management must deal in parts and think wholes; be adaptive with boundaries to ecosystems defined when setting goals and indicators. Overall, he proposes an ecosystems approach to management within parks in which preserving the ecological integrity becomes the most important issue.

This focus toward ecological integrity (which will be discussed in a later chapter) and management on an ecosystems approach, in other words, the focus on ecological sustainable development, is supported in the guiding principles of the Strategic Framework to Sustain the Integrity of Ecosystems (1992) put out by Environment Canada Parks Service, and also found expression in the long awaited Policy for Parks Canada released in the spring of 1994.

## 2.5. CONCLUSION

A number of themes have been presented in this chapter. The development of Canada's national park system was addressed within the context of being one specific thrust within the overall evolution of interest in conservation within North America. Ideas, issues and events in support of conservation were depicted using a time series chart, in which the development of the Canadian park system is also described in detail. The argument put forward is that over time it is possible to determine a number of time periods in which thinking regarding the environment, economy and society changed. Presently, the concept of sustainable development or sustainability has been adopted to outline the linkages present among these settings or contexts. In light of this, considerable discussion was given over to addressing these concepts. Discussion addressed the lack of consensus over a definition, the reality that the term varies given the context it is placed in and the scale of the issues involved, but also noted how measures are being developed and how the term is coming to be applied in very different settings and areas of academic inquiry.

The argument put forward in this research is not to search for the definition of the term (although it is important to have a definition for working purposes alone), but rather to accept that definitions will vary according to the goals (objectives) set and the context (scale) in which the term is used and applied. Implicit within much of the discussion on sustainable development is the recognition of the need to have an appropriate political structure by which changes can be implemented given the scale of inquiry (Roseland and Gardner, 1989a/b; Simon, 1989). Added to this is an acceptance across the literature for the need for change to occur within society to embrace the concept itself. These four elements of Objectives, Scale, Political Structure and Societal Change were incorporated into the conceptual framework outlined in the previous chapter. They represent key areas of consensus within the sustainable development literature which offer the opportunity to develop a framework to best understand the implications of the concept whenever translated within a specific setting (Smith, 1993; Shearman, 1990). By moving away from a pre-

occupation on definitions to exploring the potential that a framework may offer provides new ground with which the concept can be operationalized.

The next chapter focuses on the methodology that was used to undertake this research where the development of a sustainability framework was sought as an end goal.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1. INTRODUCTION**

Human-oriented research is often plagued by limitations of existing databases in terms of the paucity of data available or because data which are available are at the wrong scale (Richardson, 1965; Moser and Kalton, 1971; Johnston, 1986). Given the specific nature of the research in question, it was necessary to generate a database, for although Canadian national parks have received much research attention, and databases exist on user numbers for parks, there is virtually no information on sustainability and what this means within the park system. The overall research design used in this study utilised non-group processes (self-administered questionnaires) an element of model building and group processes (modified delphi technique).

Questionnaires are a well established method of collecting data within social science research (Blalock, 1970; Dixon and Leach, 1982; Oppenheim, 1992). A mailed self-administered questionnaire format was chosen to be the most appropriate for the type of research undertaken as logistical aspects such as time and cost prevented the author from traveling to each national park and regional office and interviewing park superintendents and policy makers. A telephone survey was not considered as the questionnaire format was too complicated for it to be answered well using this type of medium (Dillman, 1987).

A major strength in utilizing a mailed survey was that it provides the opportunity to

gather information which can record the strength of response of respondents for issues. At the same time, the author remains cognizant that mailed surveys can be problematic, often containing ambiguity, which in turn is often reflected in the replies received. Questions which are not concise, simple, and which contain technical terms and jargon, are often poorly answered (Belson, 1981). In addition, the absence of pre-coded questions allow for multiple responses which are difficult to analyze as often replies cannot be compared (Oppenheim, 1992).

Despite these limitations, the questionnaire was still considered as the most suited for the research. The absence of a body of research on the perception of sustainable development, one exception being the work of Kuhn (1988), resulted in the questionnaire being designed around many of the issues and terms that are often linked with the concept in the academic literature.

Overall, this chapter describes the various components of the methodology for each objective in turn, comments on the emphasis on qualitative techniques as opposed to quantitative techniques, and concludes with remarks on the appropriateness of the methodology in realizing the research objectives.

### **3.2. RESEARCH OBJECTIVES**

#### **3.2.1. Non-Group Processes**

Non-group processes, namely questionnaires, were used to achieve the first objective:

to identify and examine the perception of sustainability as it relates to Canadian national parks.

Opinions and perceptions about sustainability were solicited from amongst policy makers, regional directors and individual park superintendents within Parks Canada. The author made the assumption that the degree of familiarity on issues of sustainability within parks would vary among these groups, and therefore two questionnaires were designed in order to collect useful information. One questionnaire was addressed to the policy makers and



regional directors, and their collective response to issues is referred to within the thesis as the response of policy makers. A second questionnaire was designed for the park superintendents of each national park.

The overall goals of these questionnaires were similar, that being to obtain perceptions of the term (sustainability), examine it within a number of themes, note those influences on parks which prevent them from being sustainable and to suggest possible measures of control/mitigation that may promote a more favourable situation whereby sustainability could be realized. The two questionnaires only differed in terms of the detail of information requested, and in that the park superintendents responded to the questions as they related to their particular park(s), whereas the policy makers and regional directors gave responses that could be applied to the park system overall. Secondary goals of the surveys were to identify the suitability and/or feasibility of achieving sustainable landscapes within parks as an overall goal, possible direction for parks, and their contribution to the larger resource management issue of sustainable development.

Both questionnaires were designed in a manner as to assist participants in their response. Definitions of key terms and concepts were provided, with the majority of questions precoded using Likert scales. Participants were asked to place a tick in the appropriate box to indicate their response, and to rank responses, when required, to specific questions.

The questionnaires were developed in consultation with Parks Canada. The initial drafts were reviewed by a management group within Parks Canada headquarters that was set up by and included the former Director General of Parks Canada (Dr. Ian Rutherford) which also acted as a pre-test of the questionnaires developed. Based on their recommendations, revised questionnaires were submitted and approved by the current Director General (Ms. Jane Roszell). A cover letter, written in both English and French, was attached to each questionnaire to inform participants of the process that had been gone through in developing the survey instrument and to assure them that responses would

remain confidential and that analysis would be undertaken at an aggregate level (see Appendix 1). Included with each questionnaire was a stamped addressed envelope for replies to be returned to the author. The entire process, from designing the questionnaires, having them reviewed, sending them out, to receiving them back, took over one year to complete. Details regarding the design of the questionnaires are outlined in the following subsection. Prior to discussing the questionnaire design, it is necessary to provide a brief comment about the change of name to the federal agency responsible for Canada's national parks. Known in the 1970s and 1980s as Parks Canada, the name was changed in the late 1980s to the Canadian Parks Service, only to be recently (within the past year) changed back to Parks Canada. This study was undertaken over a time period where the agency's name was changed, and therefore for part of this thesis reference is made to the Canadian Parks Service with the latter sections of this thesis addressing the agency as Parks Canada.

#### 3.2.1.1. Questionnaire design for policy makers and regional directors

This questionnaire consisted of two sections (see Appendix 2). In the first section, a list of criteria of sustainability were provided pertaining to: (1) the nature of the resource base (the condition of the park landscape; the totality of the natural resources present at a specific point in time and space), (2) park management, (3) sustainability principles, (4) park goals, (5) involvement (those involved in promoting sustainability), and (6) definitions of sustainable development/ sustainability. A list of attributes were provided for the first five themes and respondents were asked to indicate the level of importance they would attach to each in terms of their appropriateness in promoting a sustainable landscape within parks using a Likert scale that ranged from highest priority to no relevance. The last theme (definitions of sustainable development/sustainability) was treated differently, as a number of definitions were taken from the literature and respondents were asked to comment on their appropriateness when translated to a park setting, indicating their response on a Likert

scale that ranged from strongly agree to strongly disagree. The results of this section of the questionnaire are analyzed and discussed in chapter 5.

Section two of the questionnaire focused on the perception of policy makers and regional directors about sustainability as it applied to a number of themes within parks, ranging from protection issues at one end of a spectrum to issues of development at the opposite end. The themes that were addressed along this spectrum included: (1) nature preservation/wilderness, (2) wildlife, (3) interpretation and education, (4) research, (5) recreation, (6) tourism, (7) development-oriented interests, and (8) management planning. In the context of each theme, participants were asked to respond to various issues by indicating their perception along a five point Likert scale of strongly agree, agree, no opinion, disagree, and strongly disagree. The results of this section of the questionnaire are described in chapter 6.

#### 3.2.1.2. Questionnaire design for park superintendents

This questionnaire was very similar to the one administered to the policy makers and regional directors. It comprised three sections (see Appendix 3). The first section was identical to the first section of the policy makers' questionnaire and the results are presented in chapter 5. Section two, which addressed the issue of sustainability within a number of themes, was similar to that of the questionnaire given to policy makers except that an additional section was included on aboriginal interests and traditional activities, involving questions, both precoded and open ended, about potential and resulting impacts and mitigation measures taken to control impacts. Questions on mitigation were also asked for the themes of recreation, tourism and development-oriented interests. An additional section explored the trade-off relationship that exists between protection and use for a variety of park activities. The results of the second and third sections of the questionnaire are presented in chapter 6.

### 3.2.2. Model Development

Model building was used to achieve the second objective:

to develop a model of sustainability on the basis of advocating the need for a balanced approach between preservation and development-oriented interests, accounting for the trade-off between protection/ preservation and use.

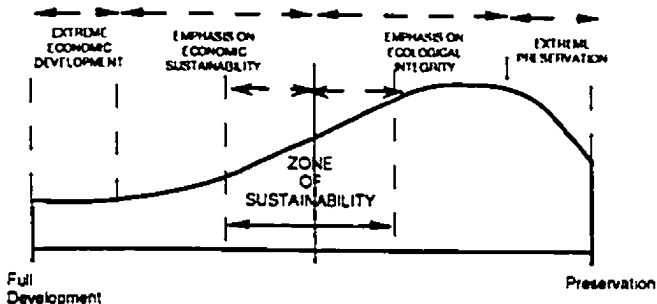
This objective was approached through utilizing the responses to the above questionnaires. A model was developed to measure the perception (of participants) regarding the nature of sustainability and was applied at the scale of both regions within the national park system and individual parks. The model was based on the premise that sustainability could act as a central fulcrum or pivot in balancing the diverging perspectives (ranging from extreme preservation/protection through to extreme economic development) present within parks. In light of the foregoing comments, the model developed was labeled the "balanced approach" (see Figure 3.1), being fashioned from existing balanced land use models (Bastedo et al., 1984; Nelson, 1987).

Figure 3.1 outlines three possible scenarios depending on how the themes outlined in section 2 of both questionnaires are viewed. The top two graphs illustrate what may be termed negatively and positively skewed perception curves, representative somewhat of parks that were created for opposing reasons, for example, protection of unique ecosystems as compared to growth poles to stimulate regional economic development. In contrast, the third graph represents a scenario of balance in which sustainability accepts the need for trade-offs between extreme protection/preservation on the one hand and extreme development on the other. In so doing, what may be termed "the zone of sustainability" moves towards activities and themes that reflect the middle position within the spectrum, which ranges from a high level of development to a high level of conservation and no development.

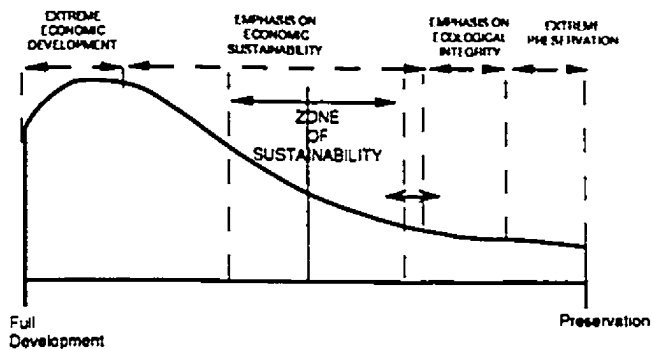
It was anticipated that the goal of achieving sustainability represented a strong enough incentive for perceptions of extreme polarity (the top two graphs) to move toward

Figure 3.1  
Balanced Approach Model

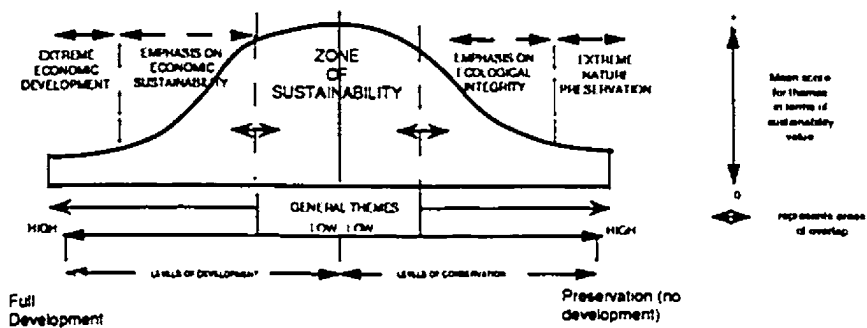
Plot 1. Preservation /conservation scenario (negatively skewed perception curve)



Plot 2. Development (economic/infrastructure) scenario (positively skewed curve)



Plot 3. Balanced scenario (acceptance of trade-offs between protection/usage)



the centre of the spectrum (the bottom graph) and thereby accommodating initially diverging interests. In theory the potential for this may hold true, but reality often shows that perceptions of issues rarely change despite the end goal, in this case sustainability. Furthermore, the questionnaires were not designed to account for changes in participants' perceptions of themes, and this may be taken as an apparent weakness in the choice of survey instrument used. Instead, the model was used to identify the degree to which participants perceived themes, found along the spectrum, to be sustainable and the nature of this perceived sustainability. This was accomplished by developing what was termed a "sustainability spectrum", and asking respondents to indicate where on the spectrum each theme could be positioned with respect to this spectrum.

The "sustainability spectrum" in essence, addressed the nature and level of sustainability perceived to be possible for any given theme, comprising of five stages or conditions of sustainability and one stage indicating that the situation did not apply as the theme in question was not present within the park of the respondent. The sustainability spectrum was developed as follows:

**Stage 1. Unsustainability** (impacts and threats result in ecological damage of the various components within parks which cannot be corrected; the degree of negative impact (perceived) of development on the park environment is high)

**Stage 2. Intermediate stage between conditional sustainability and unsustainability** (increasing stress placed on park systems; low tolerance present; impacts still perceived as negative, but no ecological damage occurs)

**Stage 3. Conditional Sustainability** (stress placed on the park environment by the activities present, high tolerance within park systems; the degree of impact is limited and can be perceived as positive or negative)

**Stage 4. Intermediate stage between sustainability and conditional sustainability** (limited stress is being placed on the park environment, very high ecological tolerance within systems, the degree of positive impact (perceived) of development on the environment is low)

**Stage 5. Sustainability** (minimal stress placed on the environment; the degree of positive impact (perceived) of development on the environment is high; a symbiosis of development with nature is present)

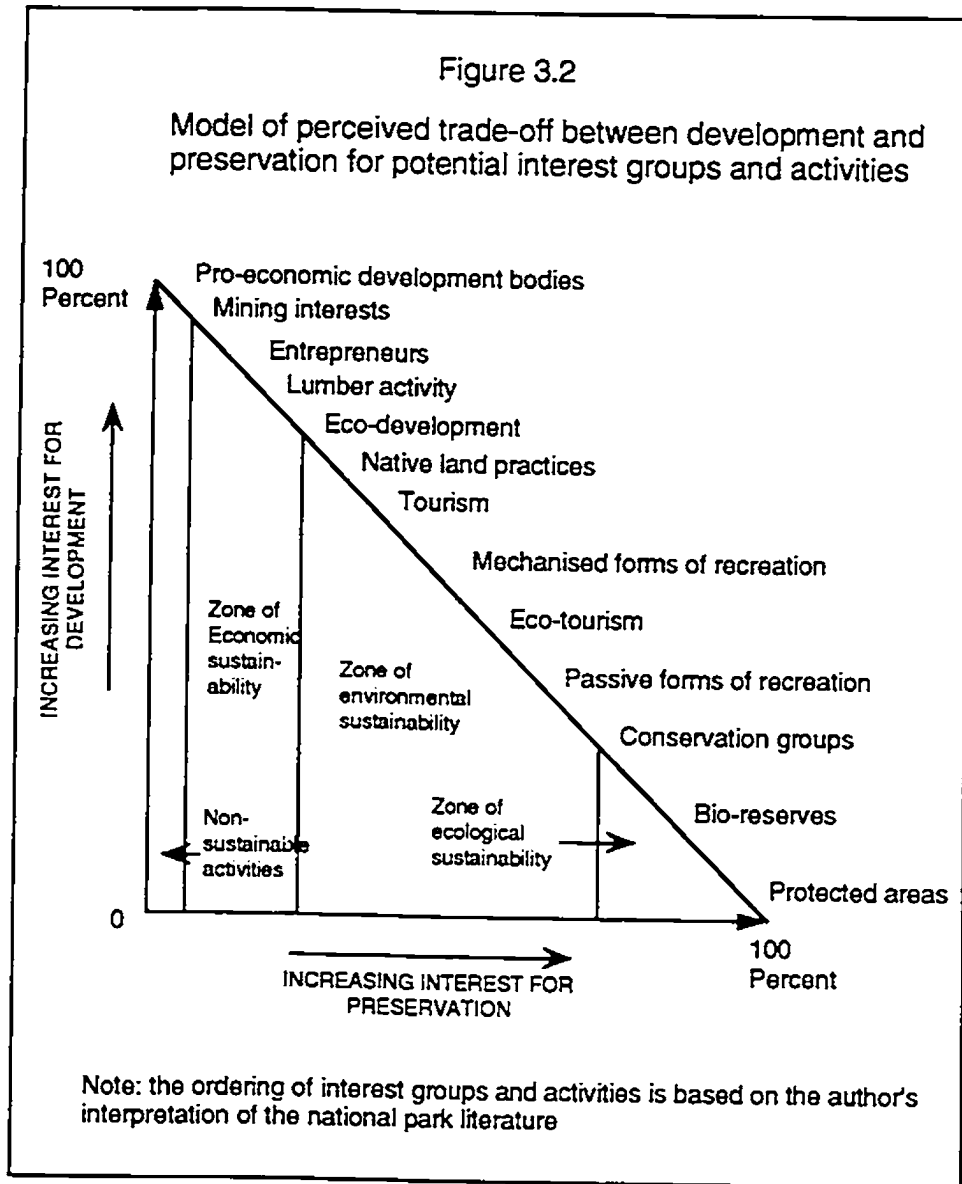
**Stage 6. Situation does not apply** (i.e., the theme in question is not present within the park of the respondent)

Respondents were asked to score each theme addressed in section two of the questionnaires based on the answers they gave to questions asked on each of the themes, their general knowledge and experience of parks, and their knowledge of each theme as it applied to their respective park(s).

The responses to the sustainability spectrum were used to plot the shape of the curve of the balanced approach model for all parks combined and on a regional basis within the national park system. Plotting curves for each park individually was not feasible as it would have meant violating the promise of maintaining the confidentiality of views expressed. The shape of the curve was used to indicate the perceived trade-offs made between protection and development.

This concept of trade-offs was further explored in a separate model as depicted in Figure 3.2. The position of each theme or activity within the figure are hypothetical, based on the type of activity or nature of the theme and whether they were focused on use/development or on protection/preservation. This trade-off was examined for a variety of themes and activities present in national parks by asking park superintendents only, to indicate, using a rating scale of zero to ten, the position of each theme or activity in terms of the degree to which emphasis was given to preservation or use (i.e., development) within their specific park. Only those activities present within the respondents' park(s) were scored.

This rating scale requires elaboration. The rating scale represented the degree of emphasis on preservation. A zero score represented 0 % emphasis on preservation while a score of ten represented 100 % emphasis on preservation. Therefore, a score of 4 represented a 40 % emphasis on preservation/protection (no development) but a 60 % emphasis on use (development) for the activity in question. The trade-off relationship between preservation and use comprised a third section to the questionnaire designed for the park superintendents. This relationship was not addressed to policy makers or regional





directors as it was assumed that these latter groups' non-managerial role would make it very difficult for them to reply. It was believed that the park superintendents represented a body of individuals close enough to the issues who are actively involved in trade-offs to make this population (park superintendents) the most suited to respond to this type of question. The response to and discussion of objective two of the overall research is presented in chapter 6.

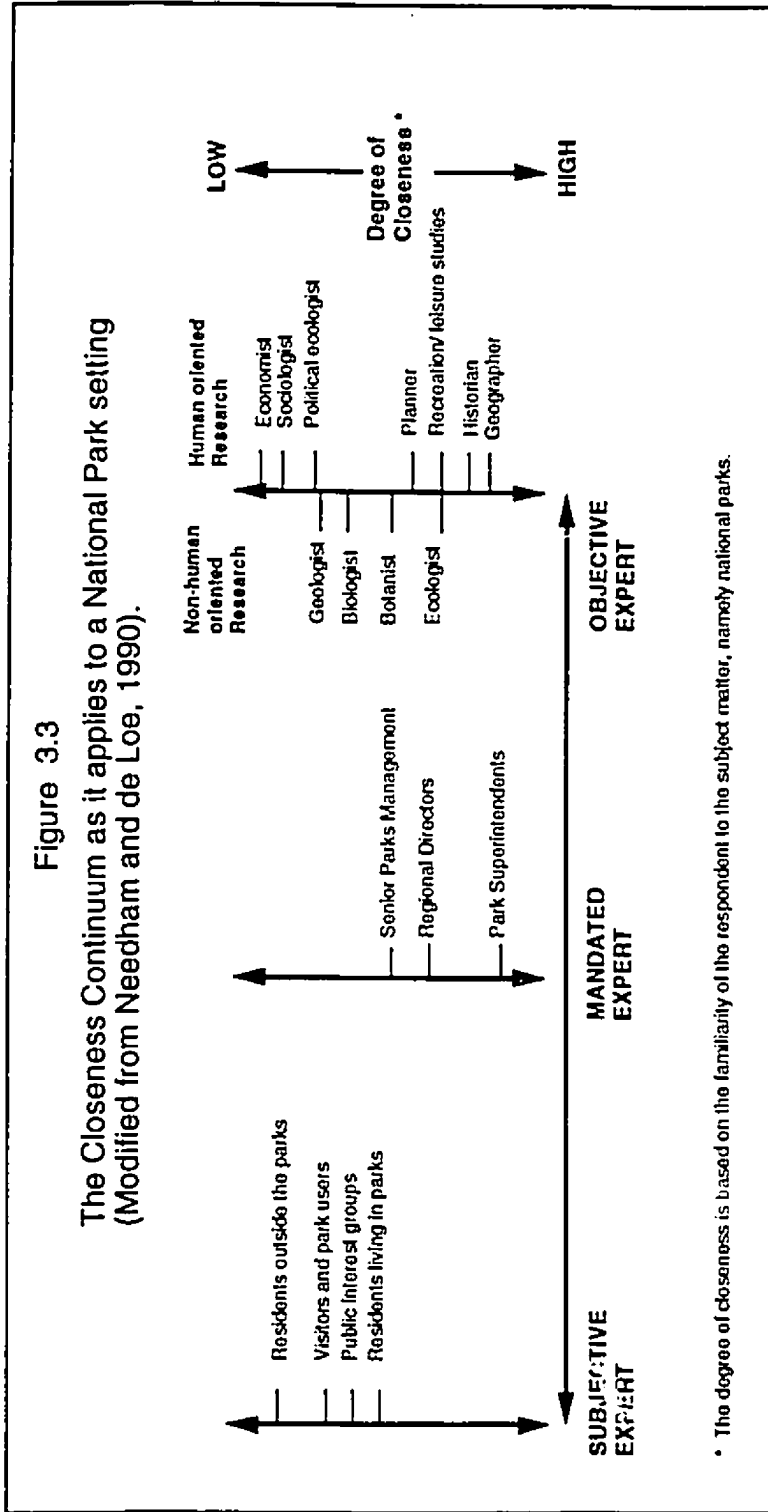
### 3.2.3. Group Processes

Group processes (modified delphi technique) were used to accomplish the third research objective:

to identify the components of a framework of sustainability suitable for the national park context

Although the survey instrument used in this third objective is referred to above as a modified delphi technique, a more accurate label would be a questionnaire which was directed at a particular group, seeking reaction to perceptions of another select group, to issues of sustainability as they relate to national parks. The details of this will be explained later in this section.

The original intention had been to run a conventional delphi of possibly three rounds with participants being selected to represent interested parties that closely related national park philosophy, park management personnel, and academics involved in research associated with parks. These varied groups would serve to represent what Needham and de Loe (1990) termed as the "subjective", "mandated" and "objective" experts, respectively in their development of the "closeness continuum". Figure 3.3 places different populations, viewed as having some degree of familiarity with national parks, into these three categories of experts. The figure represents a slight modification of Needham and de Loe's closeness continuum, by illustrating that within each category, groups or selective individuals, may also be arranged according to the extent of their "closeness" to the subject matter ranging from high to low.



A number of criteria were identified in order to select participants for each category of "expert". It was determined that individual participants and participants representing organizations should have an understanding of national park mandates and be familiar with how the parks are managed. Also, it was considered necessary that individual participants should have some degree of involvement with the process of park management, such as academics as consultants, park management as policy makers and interest groups as representators of public opinion on issues within parks. However, problems resulted in being able to select participants for certain expert types.

It was the intention of this researcher to use the list of interest groups who had recently participated in public consultation programmes across the various regions of Parks Canada. A request for this information was officially denied in two of the five regions (the reason cited was that the addresses of participants could not be released without their prior consent). The request was accepted and information provided in one region, but two regions did not reply to the request at all. On the basis of achieving only a limited list of public interest groups that represented only one Parks Canada region, and with the already existing concern that the responses given by the interest groups may not actually represent the views of the group but rather more those of the individual chosen for the delphi, it was decided to remove from the delphi representation the subjective "expert" group. The "mandated" experts (policy makers, regional directors and park superintendents) were consulted on their willingness to be involved with the delphi through a question at the end of the questionnaires. The lack of willingness on the part of the policy makers and park superintendents (only one policy maker (8.3 %) and two park superintendents (9.1 %) agreed) resulted in the "mandated" experts also being eliminated from the proposed delphi. As a result, this researcher had to commit to a delphi of academics alone or modify the survey instrument to achieve the same objective as if a delphi had been used. The latter of these two alternatives was chosen.

A questionnaire was compiled which contained a summary of the responses to the questionnaire that had been completed by park superintendents across Canada to which academics were asked to respond to and comment. In particular they were asked to state their agreement or disagreement on many issues, and to assign new rankings or accept those chosen by the park superintendents to various aspects concerning sustainability within a national park setting. This questionnaire comprised three sections, one on criteria of sustainability and how it may be interpreted within various themes within parks, one on the results of the sustainability spectrum and the issue of trade-offs, and a last section of opened ended questions on the new park policy and the direction(s) implied by the perceptions reported in this questionnaire. The survey instrument is labeled as a modified delphi, for although the conventional steps of a delphi were not adhered to (Linstone and Turoff, 1975; Sackman, 1975; Mitchell, 1989; Needham and de Loe, 1990), asking one group to comment on the responses of another group and state their opinion(s) provided a means to achieve what would have required a number of rounds in a delphi, that being identifying areas of agreement and/or disagreement between groups. The degree of consensus or dissensus, however, can only be implied from responses, as the absence of an iterative process offers no opportunity for participants to modify or change their response.

Participants of the "objective" expert category were restricted to members of the academic community, in particular individuals within geography, environmental studies, tourism, recreation and leisure studies departments across Canada. These were felt to represent a group of individuals knowledgeable about national parks and able to offer an objective response to the issues. In particular, academic participants were selected from the following sources: (1) the members of the Heritage Resources Centre, University of Waterloo; (2) those involved with the development of the Action Plan for sustainable tourism development; and (3) the parks, recreation and tourism group within the Canadian Association of Geographers. The results of this questionnaire including inferences made to

components of a sustainability framework as an outcome of this process are shown in chapter 7.

### **3.3. CONCLUSION**

The research techniques used in this study focus on qualitative rather than quantitative methods, with emphasis on utilizing non-parametric tests to analyze the findings. This was for a number of reasons. First, descriptive statistics were considered to be suitable to discuss the phenomena under examination as perceptions are often best revealed from qualitative techniques such as questionnaires and content analysis. Second, in all cases, potential participants were taken from a limited and selective audience. Therefore, the bulk of the analysis does not go much beyond noting percentages, and mean scores. Where appropriate, a non-parametric test known as the Wilcoxon T-test was used in the analysis of responses and is included in the analysis chapters.

In light of the specific research objectives, the author is cognizant of the limitations of components of the research design. However, it is felt that given the constraints imposed on this research that the methodology used offers the best potential to examine and accomplish each objective in turn. This information serves to make inferences concerning sustainability in the context of national parks. This chapter has outlined the overall research design, specifying the techniques that were used to address each objective. The next chapter provides some background to the threats parks face and the potential of sustainability in developing a model applicable for the park system as a whole.

## **CHAPTER 4**

### **BACKGROUND TO PROBLEMS IN PARKS AND MODEL APPLICATION**

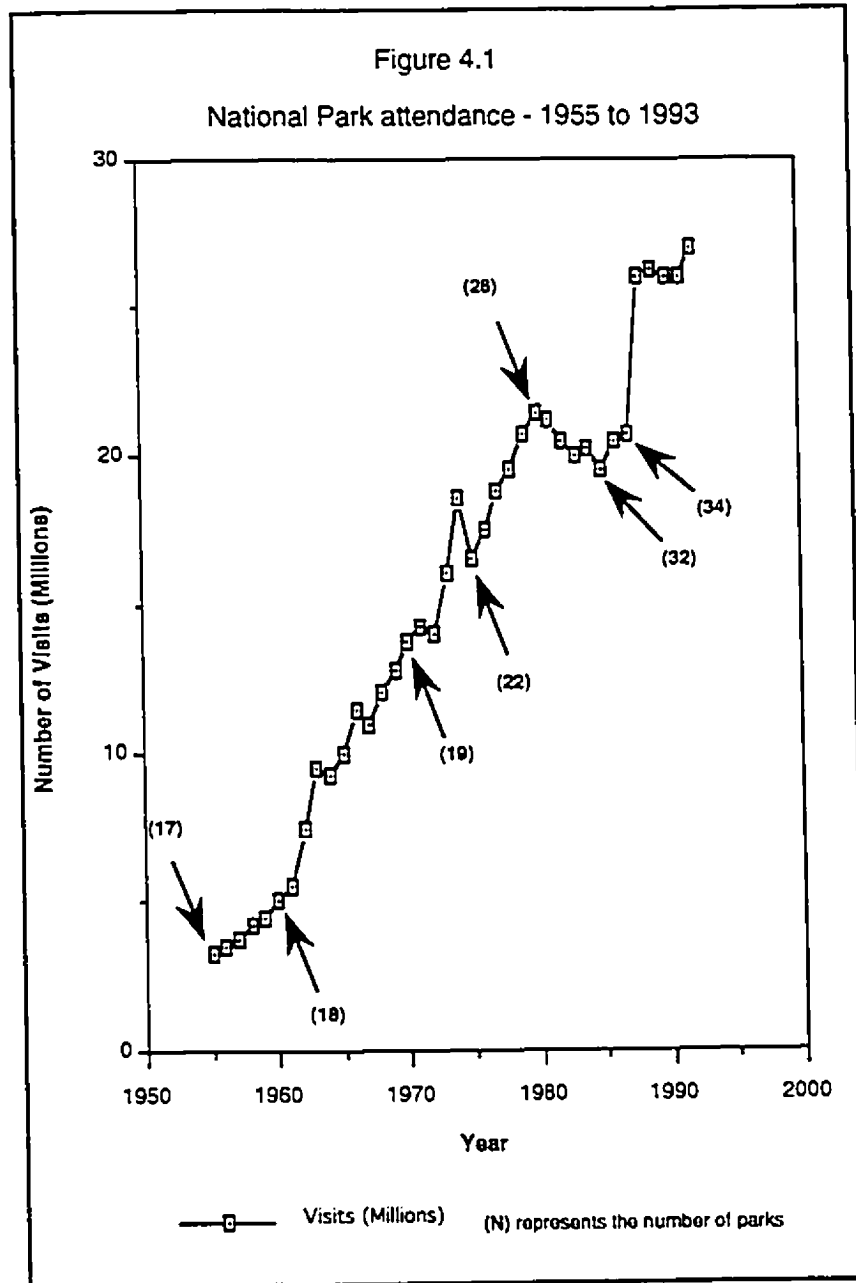
#### **4.1. INTRODUCTION**

This chapter offers a brief review of the pressures facing Canadian national parks over the past decade to illustrate the potential that sustainability offers the system. The period from 1983 to 1993 was selected in part because information on visitation rates to parks during this period was available from annual publications by the Socio-economic branch of CPS. This time period also represents the time period when the idea of sustainability was receiving increasing attention within the literature and by government agencies. The approach taken in the second section of the chapter is to develop a model that identifies those parks that are facing increased problems and pressures both from within and outside park boundaries and for which the goal of sustainability may be a realistic and necessary one to pursue. A modified version of the tourist area cycle of evolution curve, as developed by Butler (1980), is presented. The percentage of change in visitation numbers over the period (1983-1993), the type of threats parks face (both internal and external) and the extent to which managerial action can address many of them are used as crude indicators of carrying capacity, from which it is argued that the stage of development and current "health" of each park may be determined according to those levels Butler (1980) identified in his model. The model offers the potential to assess sustainability at the level of the overall park system prior to focusing on the responses received in the questionnaires given to policy makers and park superintendents.

#### 4.2. PARKS UNDER THREAT

Nelson (1984) in a study undertaken for Parks Canada, provided an external perspective on future strategies that the agency should embark upon for the 1986-2001 period, and listed 17 issues requiring policy attention. Using the issues, a workshop was held and a delphi was undertaken involving senior officials of Parks Canada and academics (Green, 1984). The four most important issues that came out of the delphi, were: (1) parks were increasingly facing additional pressures, (2) the extent to which parks could be effective in the future, (3) the role parks played in economic development and (4) the growth of tourism within the parks. These issues, among others, it was argued, may have a bearing on how the national parks within the system adapt overall to changes. The extent of the impacts on parks is argued here by the author to be influenced by the number of visitors they receive and the type of pressures resulting from activities occurring inside and external to park boundaries. Attention now turns to discuss the first of these two aspects.

Figure 4.1 provides an overview, based on a period of reliable data, of how the number of parks within the system has increased over time, and the phenomenal growth in the total number of visitors despite some years of decline in total visitations and periods where attendance levelled off. For the purposes of the remaining discussion in this chapter, attention is focused only on the past decade (1983-1993) which, as mentioned above, represents an appropriate time frame in which to assess the relative "health" of national parks within the overall system. It represents a period during which total visitation numbers are the highest on record for the parks, with most years seeing more people visiting parks with the slight exception of the fiscal years 1985-86 and 1991-92. As well, the availability of the State of the Parks - 1990 Report (Environment Canada, 1991b) offer insight into the pressures that parks face. The 1983-1993 period was also selected on the basis that it represents a time frame when concepts such as sustainable development and





sustainability became popular and were viewed to be potentially useful with respect to park management (Nelson, 1987).

Attendance figures for the park system are shown in Table 4.1 and are broken down by Region and for individual parks within each of the Regions for the time period. The trend emerging from Table 4.1 is a pattern of increased attendance within the overall system, influenced heavily by the increased attendance to parks in the Western Region and the dominance of a number of parks particularly Banff, Jasper, Kootenay, Yoho, and more recently Pacific Rim. The pattern of growth in visitor numbers to parks within other Regions is more sporadic. Care should be taken not to infer that a continuous pattern exists over the entire period as a change in 1988 in how public attendance was reported (three different statistics were reported (1) entries, (2) visits and (3) visit-days or hours which received further modification in 1990) meant that data for 1988-89 and 1989-90 are not directly comparable with data from previous years (Canadian Parks Service, 1989-1990). The dramatic increase in attendance to parks between 1988 and 1989 are the result of changes in how attendance was recorded. Prior to 1988-89, attendance was measured as number of visits per day for each park. In 1988-89 and onwards, the statistic most similar to visits per day was that of person-visit-day which recorded not only the number of visitors who stayed in a reporting unit for a day but also those who visited areas for only a portion of a day. As a result, the numbers attending the parks in the latter time period appear to be somewhat inflated. This is illustrated in Table 4.2 which shows the percentage change in attendance on a year-to-year basis. The degree of change (positive or negative) recorded for 1988-89 across the entire system, is not comparable to what was found to be present in the system before or after this fiscal year. The extremely large positive and negative values resulted not from an influx of new visitors or major loss of existing markets, but rather the result of change in how attendance was recorded.

Table 4.2 shows the absence of any trend in attendance for the Atlantic and Ontario Regions. With respect to the Prairie/Northern Region, attendance declines from 1983-84 to

Table 4.1 National Park Attendance 1983-84 to 1992-93

REGION	PARK	NUMBER OF VISITS										
		1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	
ATLANTIC REGION	CAPE BRETON HIGHLANDS	820,000	850,000	850,000	820,000	910,000	1,170,000	1,170,000	1,110,000	1,116,000	1,150,000	
	PRINCE EDWARD ISLAND	1,610,000	1,700,000	1,620,000	1,620,000	1,530,000	1,090,000	1,090,000	760,000	733,000	880,000	
	FUNDY	860,000	860,000	740,000	770,000	890,000	370,000	380,000	360,000	358,000	340,000	
	TERRA NOVA	400,000	330,000	350,000	330,000	460,000	270,000	260,000	320,000	324,000	340,000	
	KEJIKOJIK	210,000	210,000	210,000	200,000	220,000	370,000	160,000	370,000	370,000	370,000	
	KOCHIBOUGUAC	350,000	380,000	490,000	450,000	530,000	190,000	280,000	260,000	268,000	270,000	
	GROS MORNE	250,000	250,000	280,000	290,000	270,000	130,000	220,000	240,000	178,000	170,000	
	REGIONAL TOTAL	4,500,000	4,580,000	4,540,000	4,480,000	4,810,000	3,590,000	3,760,000	3,420,000	3,347,000	3,500,000	
	QUEBEC REGION	TORILLON	610,000	660,000	640,000	680,000	740,000	250,000	270,000	240,000	231,000	210,000
		LA MAURICIE	250,000	230,000	260,000	240,000	270,000	390,000	410,000	410,000	371,000	360,000
MINGAN ARCHIPELAGO		11,000	18,000	20,000	21,000	20,000	24,000	26,000	29,000	28,000	27,000	
REGIONAL TOTAL	860,000	900,000	920,000	940,000	1,030,000	660,000	710,000	680,000	630,000	600,000		
ONTARIO REGION	ST. LAWRENCE ISLANDS	220,000	210,000	200,000	190,000	190,000	75,000	87,000	86,000	99,000	78,000	
	POINT PELEE	480,000	500,000	510,000	490,000	530,000	790,000	620,000	1,400,000	610,000	610,000	
	GEORGIAN BAY ISLANDS	130,000	130,000	130,000	120,000	140,000	120,000	130,000	110,000	123,000	120,000	
	HUKASKWA	11,000	9,900	9,900	9,900	9,900	17,000	28,000	35,000	42,000	36,000	
	BRUCE PENINSULA	840,000	830,000	830,000	810,000	870,000	1,090,000	980,000	1,840,000	1,035,000	1,250,000	
	REGIONAL TOTAL	2,300,000	2,900,000	2,500,000	2,700,000	3,400,000	7,900,000	7,200,000	8,100,000	8,700,000	7,800,000	
	WINDYBUEFFALO	280,000	280,000	310,000	220,000	200,000	680,000	770,000	800,000	736,000	670,000	
	PRINCE ALBERT	970,000	890,000	810,000	860,000	950,000	1,440,000	1,300,000	1,040,000	967,000	880,000	
WESTERN REGION	REDWING MOUNTAIN	51,000	60,000	65,000	69,000	82,000	85,000	79,000	83,000	75,000	95,000	
	KILIANE	770	890	930	720	450	3,300	5,200	2,900	2,700	7,400	
	NAHANNI	450	580	530	350	450	2,500	2,000	4,100	4,100	2,700	
	AUYTUQU											
	GRASSLANDS											
	NORTHERN YUKON											
	ELLSMERE ISLAND											
	REGIONAL TOTAL	1,300,000	1,230,000	1,190,000	1,150,000	1,240,000	2,220,000	2,170,000	1,940,000	1,802,600	1,670,000	
	DANFORTH	3,130,000	3,200,000	3,290,000	3,400,000	3,310,000	9,250,000	9,550,000	9,630,000	10,050,000	10,150,000	
	WATERLOO LAKES	670,000	640,000	600,000	580,000	610,000	750,000	740,000	730,000	748,000	710,000	
PASPER	1,900,000	1,860,000	1,790,000	2,000,000	1,940,000	2,890,000	3,000,000	2,950,000	3,190,000	3,190,000		
YUKON	1,190,000	1,180,000	1,230,000	1,380,000	1,400,000	1,100,000	1,140,000	1,090,000	1,162,000	1,220,000		
GLACIER	1,060,000	1,180,000	1,240,000	1,270,000	1,280,000	200,000	210,000	190,000	204,000	210,000		
ELK ISLAND	370,000	370,000	340,000	330,000	340,000	340,000	330,000	320,000	326,000	280,000		
MOUNT REVELSTOCK	980,000	1,010,000	990,000	1,430,000	1,310,000	160,000	160,000	160,000	238,000	240,000		
KOOTENAY	2,290,000	2,150,000	2,020,000	1,990,000	2,150,000	2,210,000	2,380,000	2,480,000	2,388,000	2,340,000		
PACIFIC RIM	510,000	530,000	470,000	490,000	520,000	880,000	920,000	940,000	960,000	1,680,000		
REGIONAL TOTAL	12,100,000	12,120,000	11,910,000	12,870,000	12,860,000	17,780,000	18,430,000	18,490,000	19,240,000	20,020,000		
NATIONAL TOTAL	19,610,000	19,670,000	19,470,000	20,250,000	20,810,000	25,260,000	25,930,000	26,370,000	26,000,000	27,030,000		

Note: No statistics available for South Moresby, Western Region.  
Attendance totals for Bruce Peninsula, Ontario Region, from 1990-91 onwards include those for Fathom Five national marine park

Source: Canadian Parks Service; overview and statistics on visitor participation 1987-1988; Canadian Parks Service; visitor participation statistics 1989-90, 1990-91, 1991-92, 1992-93

Table 4.2 Percentage change in attendance to National Parks 1984-85 to 1992-93

REGION	PARK	PERCENT CHANGE IN ATTENDANCE FROM PREVIOUS YEAR										
		1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93		
ATLANTIC REGION	CAPE BRETON HIGHLANDS	+3.7%	0.0%	-3.7%	+10.9%	+28.6%	0.0%	-5.1%	+0.5%	+3.0%		
	PRINCE EDWARD ISLAND	+5.6%	-4.7%	0.0%	-5.6%	-29.4%	-30.3%	-30.3%	-3.5%	+20.0%		
	FUNDY	0.0%	-13.9%	+4.1%	+15.6%	-58.4%	-3.7%	+23.1%	+1.3%	+4.9%		
	TERRA NOVA	-17.5%	+6.1%	-5.7%	+39.4%	-41.3%	-2.7%	+2.7%	0.0%	0.0%		
	KEJMIKULIK	0.0%	0.0%	-4.8%	+10.0%	+68.1%	+47.4%	+7.1%	+3.1%	+0.7%		
	KOCCHIBOGUAC	+8.6%	+28.9%	-8.2%	+17.8%	-64.1%	+69.0%	+9.1%	-25.8%	-4.5%		
	GROS MORNE	0.0%	+12.0%	+3.6%	-6.9%	-51.9%	+4.7%	+9.0%	+2.1%	+4.6%		
	REGIONAL TOTAL	+1.8%	+0.8%	+1.3%	+7.4%	+25.4%	+4.7%	+9.0%	+2.1%	+4.6%		
	QUEBEC REGION	FORTIION	+8.2%	-3.0%	-7.7%	+8.8%	-66.2%	+8.0%	-11.1%	-3.7%	-9.1%	
		LA MAURICIE	-8.0%	+13.0%	-7.7%	+12.5%	+44.0%	+5.1%	0.0%	-9.5%	-3.0%	
MINGAN ARCHIPELAGO		+63.6%	+63.6%	+16.7%	-4.8%	+20.0%	+8.3%	+11.5%	-3.4%	-3.6%		
REGIONAL TOTAL		+4.6%	+2.3%	+2.2%	+9.6%	+35.9%	+7.6%	-4.2%	-7.4%	-4.8%		
ONTARIO REGION	ST. LAWRENCE ISLANDS	-4.5%	-4.7%	-5.0%	0.0%	-60.5%	+16.0%	-1.1%	+15.1%	-21.2%		
	FOUNTAINBLEAU	+4.2%	+2.0%	-3.9%	+8.2%	+49.0%	-21.5%	+125.8%	-55.0%	-3.2%		
	GEORGIAN BAY ISLANDS	-15.4%	+18.2%	-7.7%	+16.7%	-14.2%	+8.3%	-15.4%	+11.8%	-2.4%		
	PUKASKWA	-10.0%	0.0%	0.0%	0.0%	+71.7%	+64.7%	+25.0%	+20.0%	-14.3%		
	BRUCE PENINSULA	-1.2%	+2.4%	-4.7%	+7.4%	+25.3%	+18.0%	+159.2%	+32.9%	+181.6%		
	REGIONAL TOTAL	+2.4%	+2.4%	-4.7%	+7.4%	+25.3%	+18.0%	+87.8%	+32.9%	+20.8%		
	PRAIRIE/NOVIA SCOTIA REGION	WOODBUFFALO	+26.0%	-13.8%	+8.0%	+25.9%	+129.0%	-7.7%	+12.5%	-7.5%	-10.3%	
		PRINCE ALBERT	0.0%	+10.7%	-29.6%	-9.1%	+240.0%	+13.2%	+3.9%	-8.0%	-9.0%	
		RIDING MOUNTAIN	+8.2%	-8.9%	+6.2%	+18.8%	+3.6%	-7.1%	+5.1%	-9.6%	+26.7%	
		KLUANE	+17.6%	+8.3%	+6.2%	+18.8%	+3.6%	-7.1%	+5.1%	-9.6%	+26.7%	
NAHANNI		+15.6%	+4.5%	-22.6%	+18.1%	+288.0%	+57.6%	-44.2%	+151.7%	+1.4%		
AUDYUTTIQU		+28.9%	-8.6%	-33.9%	+28.6%	+455.0%	-20.0%	+105.0%	0.0%	-34.1%		
GRASSLANDS							+18.9%	+169.8%	-58.8%	+185.7%		
NORTHERN YUKON							+35.3%	-17.4%	-31.6%	+30.8%		
ELLESMERE ISLAND							+2.5%	+10.6%	-7.1%	-7.4%		
REGIONAL TOTAL		-5.4%	+3.3%	-3.4%	+7.6%	+79.0%	+2.5%	+10.6%	-7.1%	-7.4%		
WESTERN REGION	BANFF	+2.2%	+2.8%	+3.3%	-2.6%	+279.0%	+3.2%	+0.8%	+4.4%	+1.0%		
	WATERFON LAKES	-4.5%	-6.3%	-3.3%	+5.2%	+23.0%	-1.3%	-1.4%	+2.5%	-5.1%		
	JASPER	-2.1%	-3.7%	+11.7%	-3.0%	+49.0%	+3.8%	-1.7%	+8.1%	0.0%		
	YOHO	-0.8%	+4.2%	+12.2%	+1.4%	-21.4%	+3.6%	-4.4%	+6.6%	+5.0%		
	GLACIER	+11.3%	+5.1%	+2.4%	+0.8%	-84.4%	+5.0%	-9.5%	+7.4%	+2.9%		
	EIK ISLAND	0.0%	-8.1%	-2.9%	+3.0%	0.0%	-2.9%	-3.0%	+1.9%	-14.1%		
	MOUNT REVELSTOCKE	+3.1%	-2.0%	+44.0%	-8.4%	-87.8%	0.0%	0.0%	+48.8%	+0.8%		
	KOOTENAY	-6.1%	-6.0%	-1.5%	+8.0%	+2.8%	+7.7%	+4.2%	-3.7%	-2.0%		
	PACIFIC RIM	+3.9%	-11.3%	+4.3%	+6.1%	+69.2%	+4.5%	+2.2%	+2.1%	+75.0%		
	REGIONAL TOTAL	+0.2%	-1.2%	+7.5%	-0.1%	+38.3%	+3.6%	+0.3%	+4.1%	+4.0%		
NATIONAL TOTAL	+0.3%	+1.2%	+4.0%	+2.8%	+21.4%	+2.6%	+1.7%	+1.4%	+4.0%			

Note: this table is derived from the attendance figures listed in Table 4.1. the percentage change values for Bruce Peninsula for 1991-92, 1992-93 take into account attendance for Fathom Five marine National Park.

1986-87, with noticeable (7.8 %) increase in 1987-88 over the previous fiscal year. Not counting the period 1988-89 to 1989-90 which attendance values would appear to be inflated (+79% increase between 1987-88 and 1988-89), although maximum numbers were higher than prior to 1987-88, the trend is once again showing decline in overall attendance as compared with the previous years' attendance figures. Quebec is seen to have increased attendance in the earlier years (1983-84 to 1986-87), but dominated by a continuous loss in visitor numbers during the latter years, particularly from 1989-90 onwards. The table shows that the pattern in the Western Region, for the majority of the period, mirrors that found for the system overall, namely one consisting of modest percent increases with minimal decline.

Table 4.3 lists impacts facing the parks as noted by the State of the Parks - 1990 Report (Environment Canada, 1991b). It should be pointed out that the State of the Parks Report does not provide an extensive list of all the impacts or threats on the parks, but rather states the type of threat present. This information was used by the author as the best available means, given the logistical constraints of the thesis recently commented on, to determine the ability of management to address the problems that face them. Threats or impacts were categorized as internal or external, where emphasis for the former addressed issues such as natural threats, and impacts resulting from type of use, particularly recreation and tourism-related. The latter stressed threats from non-conforming landuses outside of parks, economic development, and conditions influenced by climate change. The table shows that a large mix of threats exist. The response within the State of the Parks - 1990 Report listed many management programs that are currently in operation or soon to be implemented to address mostly those threats that are internal to the parks. The Report listed the lack of co-operation with surrounding areas and lack of jurisdiction over areas adjacent to the parks as the main reasons for being unable to adequately address external-related threats to the parks.

Table 4.3 Internal and external threats facing national parks

REGION	PARK	INTERNAL THREATS											EXTERNAL THREATS									
		A	B	C	D	E	F	G	H	I	J	K	L	M								
ATLANTIC	CAPE BRETON HIGHLANDS	X	X	X	X								X									
	PRINCE EDWARD ISLAND	X				X						X										
	HUNSDY	X	X											X								
	TERRANOVA	X	X											X								
	KEJIKULUK	X	X											X								
	KOMCHIBOUGUAC	X	X											X								
	GROS MORNE		XX	X										X								
QUEBEC	TORILLON								X					XX								
	LA MAURKITE	X							X					X								
	MANGAN ARCHPELAGO								XX					X								
ONTARIO	ST LAWRENCE ISLANDS	X												X								
	FORT BELLE	XXX												XX								
	GEORGIAN BAY ISLANDS							X						X								
	TUKASKWA							X						X								
	BRUCE PENINSULA																					
	WOOD BUFFALO	X													XX							
	PRINCE ALBERT	X	X												X							
NORTHERN	RUBEN MOUNTAIN		X											X								
	KILDANE		X											XX								
	NAIYANSI		X											X								
	AUTUITUQ							X														
	GRASSLANDS	X													X							
	NORTHERN YUKON														X							
	ELTSMERE ISLAND							X							X							
WESTERN	BANFF	X	X												X							
	WATERENLAKES	XX	X																			
	JASPER	XX						X														
	YOHO	X													XX							
	GLACIER														XX							
	ELK ISLAND	XXX																				
	MOUNT BELLESTUQUE																					
ROOINAY	ROOINAY	XX					X															
	PACIFIC RIM		X																			
	SOUTH MORIESDY	XX																				

KEY

- INTERNAL THREATS**  
A. natural threats  
B. Tourism and recreation related  
C. Waste management and services  
D. Heavy use/over use of areas  
E. Traditional activities/commercial activities  
F. Conflict between wildlife and users  
G. Modification of the physical environment of parks

**EXTERNAL THREATS**

- H. Removal of buffers around parks, foreign species  
I. Nonconforming uses outside park boundaries  
J. Climatic influences (e.g., acid rain)  
K. Pollution  
L. Community development  
M. Accessing parks from areas outside parks

Source: table derived from information contained in State of the Parks - 1990 Report (Environment Canada, 1991).

### 4.3. MODEL DEVELOPMENT

Within tourism research, the Tourist-Area Cycle of Evolution model, developed by Butler (1980), has probably received more attention than any other model to date. The model suggested that tourist destinations develop over time in an evolutionary manner for which a number of stages may be identifiable (exploration, involvement, development, consolidation, stagnation, decline or rejuvenation). Based on two very different principles, those of the product life-cycle and animal population growth, the pattern of development resembled that of an S-shaped curve where growth was finite and dependent upon a recognition that there existed capacity limitations beyond which growth could not be sustained, that this capacity would vary according to type of setting, and that stagnation or possible decline in tourism would result if capacity limitations were indeed exceeded.

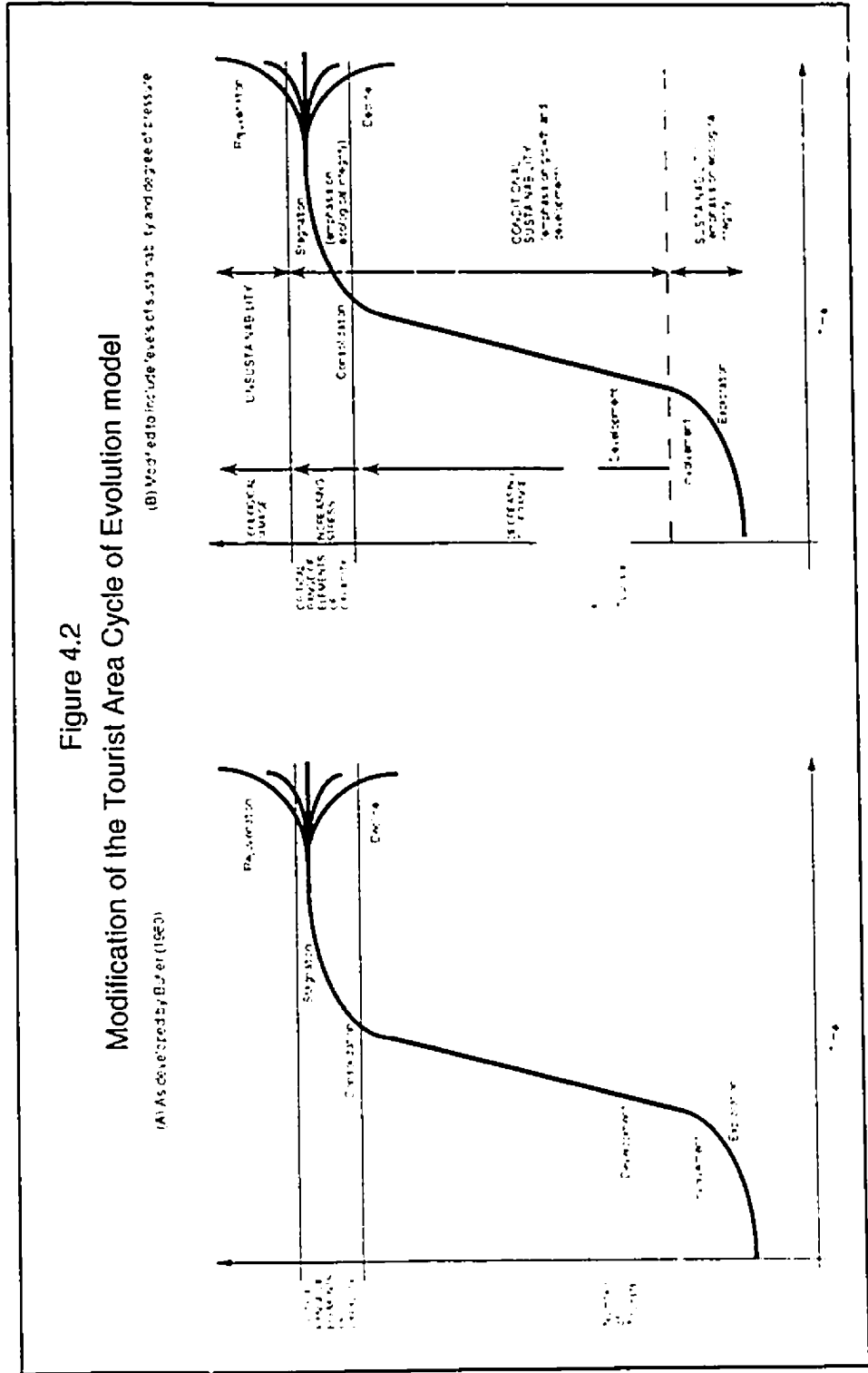
As noted by Butler (1990b) in a review and update, the majority of the discussion concerning the model has been focused on applying it in various locations from which the findings have been compared and contrasted with the original postulations made by that author in 1980. It is not the intention here to go into the details of the similarities and difference other than to note, that for the most part, research has been generally supportive of the model, with the exception of Wall (1982) and Heywood (1986) who raised a number of issues with respect to identifying actual stages of development and the use of the product life-cycle itself, respectively, the latter being more critical than the former. Support of the model has come from a number of case studies: Lancaster County, Pennsylvania (Hovinen, 1982); Grand Isle, Louisiana (Meyer-Arendt, 1985); Canada's Northwest Territories (Keller, 1987); Second homes at Sauble Beach, Ontario (Strapp, 1988); the Isle of Man, England (Cooper and Jackson, 1989); the Bahamas (Debbage, 1990); Grand Cayman Islands (Weaver, 1990). Those interested in how well the model holds up in these different locations are referred to these respective publications. Support for the model is also evidenced by the model's inclusion within major tourism textbooks (Murphy, 1985; Pearce, 1987, 1989) and the fact that a number of articles have appeared which provide an

update and review (Agarwal, 1994; Cooper, 1994). While the model was developed primarily for tourist destinations and for tourism in a region in general, a number of studies have utilised it in other leisure environments such as national parks (Eidsvik, 1983) and provincial parks (McKay, 1990). It is on the basis of this latter focus that the model is used in this thesis, and modified to include ideas associated with sustainability, and applied to Canada's national parks in order to identify discernible stages of development for the parks and to comment in general terms of the extent to which the parks are sustainable.

Figure 4.2 outlines the model as it was first developed in 1980 (figure A), and how it has the utility to be modified to include issues of sustainability (plot B). A number of ideas are outlined in figure B. One is the idea that a number of types or stages of sustainability may exist and second, that these types or stages may be discernible on the basis of the ability of the parks to cope with pressures, economic, environmental or social, that are placed upon them from the mix of activities present and the various functions of the parks themselves. These ideas have been presented earlier in the thesis in chapter 2 when a evolutionary model was discussed on the perceived impact of development on the environment (see Table 2.1 and Figure 2.2).

The modified model (Figure 4.2 (B)) implies that for both the 'exploration' and 'involvement' stages, initial sustainability is evident with an emphasis on maintaining ecological integrity. User levels are low and no noticeable impact occurs on the environment. Between the 'development' and 'consolidation stages', it may be argued that conditional sustainability exists. More specifically, the nature of this sustainability is perceived as, first, moving in the direction of achieving economic sustainability with an emphasis on growth and, second, returning to maintaining ecological integrity as decreasing tolerance and increasing stress placed on parks from both greater development and continued high visitor counts may lead to exceeding the capacity limits of some parks. Parks that may be placed between the stages of 'consolidation' and 'stagnation', and thus fall within the critical range of capacity, may be perceived as having a focus which has been

Figure 4.2  
Modification of the Tourist Area Cycle of Evolution model



(B) Modified to include events of sustainability and degree of pressure

(A) As observed by Butler (1980)



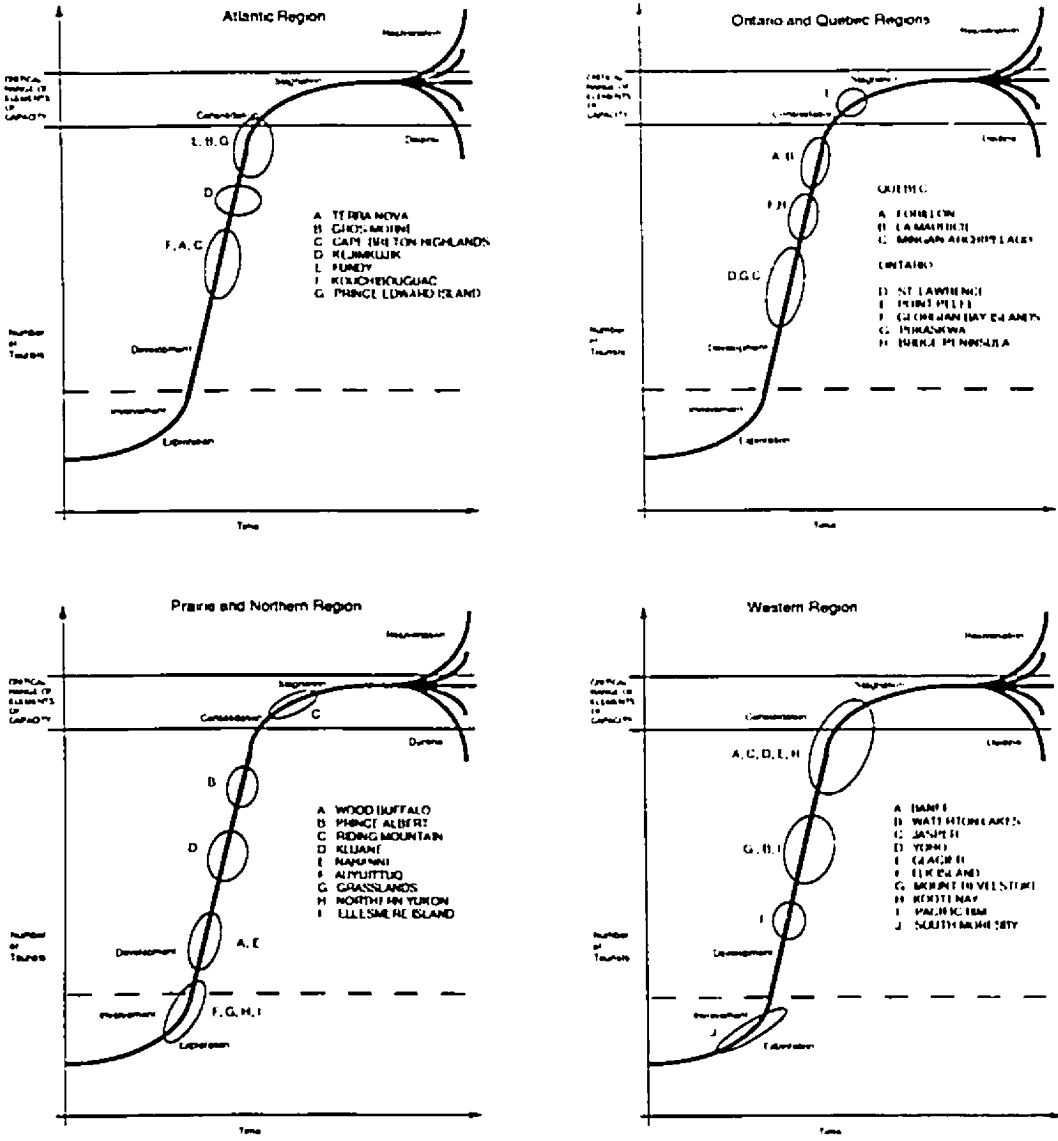
placed on maintaining ecological integrity as the increased stress, threats and impacts on parks may result in carrying capacity being exceeded. Parks found beyond the carrying capacity ceiling may be perceived as being managed in an unsustainable manner.

It should be pointed out that the model is conceptual in nature but was utilised using the following information: (1) length of time since the park was created, (2) the physical size (in square kilometers) of the park, (3) visitation counts over the past decade (see Table 4.1), (4) the percentage of change in visitation over the past decade (see Table 4.2), (5) the type of impacts facing parks, and (6) the ability of managers to address them (State of the Parks - 1990 Profiles). It is argued that this type of information may provide, at best, crude indicators of physical and environmental carrying capacities of parks which in turn enables one to determine the general position of parks along the curve. Due to the fact that these measures provide only a general impression of each park, their position is shown not as a specific point but as falling within a certain range. The results of applying the model to Canada's national parks are shown in Figure 4.3. As there are 34 parks within the overall system, the results have been illustrated on a regional basis, as it was believed that a plot representing the approximate location of all parks would be logistically impossible, difficult to visualize and conceal regional differences. National parks within Ontario and Quebec regions were shown on the same plot as both regions contained few parks.

For the Atlantic Region, all parks are believed to lie between the 'development' and 'consolidation' stage, a fact not surprising given that the age of parks range from 21 years (Kejimikujik) to 59 years (Cape Breton Highland). A pattern of decline in visitation, increased threats and the lack of attention to external pressures for some parks may imply that the positions along the curve may be closer to 'consolidation' than that of 'development'.

The plot for parks in Ontario and Quebec reveal a similar pattern to the Atlantic Region with a number of exceptions. Point Pelee is a park with an ecologically sensitive environment, and a long history (created in 1929), small in size (only 16 square kms) but

Figure 4.3  
Application of the modified Tourist Area Cycle of Evolution Model to Canada's National Parks



Note: the detailed labels for the modified model (diagram B, Figure 4.3) are left off to leave sufficient room to apply the model to the Canadian national park system. Given the data, it is impossible to accurately position each park on the curve. Therefore, the region of the curve considered most applicable to each park is shown instead.

one that has to cope with development (cottaging), and seasonal variation in visitation counts (dramatic increase during the birdwatching season). With increased stress placed on the natural environment from overuse and pressure from outside interests, it could be argued that this park is between 'consolidation' and 'stagnation'. However, it should also be pointed out that management within the park (e.g., presence of boardwalks and the absence of motorised transport) may help to ensure that 'stagnation' is not reached and instead a 'rejuvenation' stage is reached. At the opposite scale, parks which are more recent (Pukaskwa, Mingan Archipelago, and Bruce Peninsula) could be argued to be in the 'development' stage. Of these three, 'development' is more noticeable for Bruce Peninsula, a relatively small park (270 square kms) and environmentally sensitive (much of the park is made up of small islands). Tables 4.1 and 4.2 reveal an explosion of growth in visitation to this park in recent years, which is explained in part by visitation counts to Fathom Five Marine Park, located within the park and the fact that the park is accessible to a large urban market in southwestern Ontario. Given the dramatic increase in attendance and the absence of management plans, it may fast be approaching 'consolidation' especially given the type of environment that is present. In contrast, Pukaskwa is an older park, extensive in size (1878 square kms) and isolated from major urban settlements. Recently, a dramatic increase in attendance has occurred (Tables 4.1 and 4.2) from the growth of nature-based tourism that is being promoted and which may ensure future growth. Although this park is far from 'consolidation', the pressure of overuse that can occur from this tourism could result in reduced tolerance and increased stress placed on the park environment in the future.

The Prairie and Northern Region may be categorised into a number of divisions. First, Prince Albert and Riding Mountain which have had a long history (greater than 60 years) of recreation and tourism, with large visitation counts, noticeable decline in visitation over time and severe external pressures, are seen to approach 'consolidation' and 'stagnation', respectively. Second, parks established in the North over the past 20 years

(Auyuittuq, 1974; Nahanni, 1976; Kluane, 1976; Northern Yukon, 1984; Ellesmere Island, 1988), where visitor counts are low, growth moderate and impacts minimal, are seen as falling between the 'involvement' and 'exploration' stage with some approaching the level of 'development'. Wood Buffalo, is one park that resembles the pattern identified for the latter category, but with a number of differences, namely, a longer history (73 years), being developed as an animal sanctuary, with the greatest impact coming not from outside the park from non conforming landuses but from within the park in the form of an outbreak of disease amongst the bison herd, and indigenous uses. Grasslands (created in 1981, but only recently been formally established) is seen as falling between the 'involvement' and 'exploration' stages of the model.

The Western Region reflects parks that may be categorised as falling between 'development' and 'consolidation', with the exception of South Moresby which has not advanced much beyond the 'involvement' stage as it has only recently been established (1992). Parks such as Banff, Jasper, Yoho, Glacier and Kootenay, are seen as having reached or close to 'consolidation'. With the exception of Glacier, these parks have continued to attract large numbers of visitors (see Table 4.1) over time, and with the development of specific management strategies to address internal problems and the co-operative arrangements existing with neighbouring jurisdictions for many external issues, it may be implied that these parks have not yet reached the point of 'stagnation'. The large numbers of visitors and the conflicts between wildlife and visitors would suggest, however, that capacity limits have been reached and exceeded for some sections within these parks (e.g., Lake O'Hara (Yoho) and the montane valley section (Banff)). The history of tourism in specific parks (e.g., Banff), the attraction of recreation within a Rocky Mountain setting, and the presence of a large urban market in the Calgary-Edmonton corridor would also suggest that these parks will continue to receive large numbers of visitors. The remaining parks (Mount Revelstoke, Waterton Lakes, Pacific Rim and Elk Island) are seen as less developed. It should be pointed out that the growth in visitor

numbers and the impacts resulting from overuse and capacity of campsites being exceeded for Pacific Rim is quite dramatic and a cause of future concern given that the park is relatively young (25 years of age) when compared to the other western parks (ranging from 81 to 110 years).

For all four plots in Figure 4.3, the axes were kept constant, as well as the portion of the y-axis that represented the critical range of elements of capacity. With hindsight, it may be argued that given the variation in the type of parks present within the system that the size of both axes would vary along with their capacity range. The shape of the curve may be influenced by various factors, such as, park size, the nature of the environment in which the parks are located, the history of the parks with respect to tourism, recreation and general visitor use, and the ability of management to address problems both within and external to the parks. By grouping parks on a regional basis, parks which were very different in nature were assessed on axis that remained constant, and as a result this may have distorted the pattern of the stage of development that parks were viewed to have reached in the model.

The overall exercise of applying a modified Butler curve to Canada's national parks may reveal the extent of "development" that each park has reached, which in turn may indicate their potential to be sustainable. Although different stages of sustainability are intuitive along the curve, the absence of any information that could indicate what 'level' or 'type' of sustainability exists within the model resulted in no discussion of this aspect shown as part of the modified model (Figure 4.2 (B)). However, it may be assumed that parks found in the latter stages of "development" reflect parks where the problems and pressures may be the greatest and where the ability of management to adequately address them, will be key to ensuring they are sustainable on a long-term basis.

#### 4.4. CONCLUSION

This chapter provided a brief background to the Canadian national park system, showing the pattern of visitation, change in the percent of attendance over the past decade and noting the types of threats (internal and external) facing the parks. The Tourist-Area Cycle of Evolution model, developed by Butler (1980) was modified to include ideas associated with sustainability and applied to Canada's national parks in order to identify discernable stages of development for the parks. The model provided the opportunity to address sustainability as it applies to the park system as a whole. The extent to which discussion was possible on sustainability was limited due to a lack of data that would support the various stages or levels of sustainability believed to exist along the curve. Nevertheless, it may be argued that where sustainability has a role to play in the model it would be for those parks that are found to lie along the upper sections of the curve. This issue of sustainability was taken up as the central focus of the thesis, the results for which are presented in the next three chapters. In particular, the next chapter compares the responses of selected populations (policy makers and park superintendents) to issues of sustainability in an effort to understand what is meant by the concept when translated into a national park context.

## **CHAPTER 5**

### **ANALYSIS OF QUESTIONNAIRES: ISSUES OF SUSTAINABILITY FOR NATIONAL PARKS**

#### **5.1. INTRODUCTION**

In this first analysis chapter, the emphasis turns to an examination of the responses given by policy makers, regional directors and park superintendents to questions regarding issues of sustainability as they relate to national parks. Attention focuses on defining sustainability for parks, and the nature of the actual park landscape perceived as suitable for sustainability. Issues of management, park goals, the principles associated with sustainability and those involved in promoting and achieving this end-state, are also addressed.

Before the responses of the above groups are examined in detail, a number of points need to be made. First, it is not the deliberate intention of the author to highlight differences in the responses participants gave to issues and in so doing show a lack of consensus on issues within the same federal agency (the Canadian Parks Service). Instead, the responses of the two groups (the responses of regional directors are grouped with those of policy makers) provide a unique opportunity to examine issues from both a specific (individual parks) and overall (national park system) perspective. The responses are useful in and of themselves in gaining a better understanding of the implications of sustainability when applied to the context of Canada's national parks. A comparative approach is used to

discuss the results. This approach was chosen as it was believed to be the most appropriate method to present results, as the first sections of both questionnaires, which dealt with issues of sustainability, were identical.

A second point should be made concerning the various sectors (populations) that were surveyed within the Canadian Parks Service. The groups selected to receive the questionnaires represented actual populations and not a sample of each population. Therefore, matters relating to sampling were not a concern in the study. Policy makers and regional directors were identified from the list that was then current (1992) for the Canadian Parks Service in the *Corpus Administrative Index* publication of that year. In particular, those individuals responsible for policy matters were selected from the branches within the National Parks Directorate (Policy, Planning and Legislation; and Visitor Activities) and the Canadian Parks Service (Program Policy Group, Strategic Planning and Socio-Economic Branch). Regional directors were selected from all five regions of Parks Canada (Atlantic, Quebec, Ontario, Prairies and Northern, and Western Region). Also at the regional level, individuals responsible for matters of policy were also identified as participants for this first population. With respect to the questionnaire designed for the Park Superintendents, an updated list (February 1991) of names and addresses was provided by the Canadian Parks Service for 33 of the 34 national parks in the system; no park superintendent was named for Ellesmere Island National Park Reserve. As one superintendent was responsible for the management of two parks (Mount Revelstoke and Glacier in the Western Region) a total of 32 questionnaires were sent out.

The response rate to both questionnaires was extremely high for a mailed survey. Studies have shown that surveys which are mailed out and therefore self-administered, in the majority of cases, receive a poorer response compared to those personally administered by the researcher, often with returns of less than 30 percent of the total surveyed (Moser and Kalton, 1971). The questionnaires were sent out at the start of September, 1992 with a requested return date of October 26 of the same year. A follow-up letter to remind



participants to complete the survey was sent out on November 5th, 1992. By the end of December 1992, 22 of the 32 questionnaires sent out to the park superintendents had been returned giving a response rate of approximately 69 per cent. Of the 20 questionnaires sent out to the policy makers/regional directors, 12 were returned by the same date, giving a response rate of 60 per cent.

A number of factors may account for these comparatively high level of returns. The study benefited from receiving approval from the Director General of CPS, which may have possibly allayed fears by some participants concerning the research and the extent to which responses would remain confidential. The fact that CPS (headquarters) were aware of the study and had also been involved in the later stages of the questionnaire design may also have encouraged participants to respond. Second, in addition to sending out a reminder letter, telephone calls had initially been made to the offices of each superintendent, policy maker and regional director to notify them that they would shortly be receiving a questionnaire, ensuring them that it had been approved by CPS, and requesting that it be returned, if possible, by the deadline indicated on the survey.

The rest of this chapter is given over to examining in detail issues associated with sustainability by comparing the responses of policy makers and park superintendents to the first section of the questionnaires designed for these groups.

## **5.2. ISSUES OF SUSTAINABILITY FOR PARKS**

### **5.2.1. Definitions**

The problems in defining a concept like sustainability have attracted much academic debate, resulting in numerous works (e.g., Brown *et al.*, 1987; Cocklin, 1989; O'Riordan, 1989; Dovers, 1990; Simon, 1989). The focus on definitions here, as noted earlier in the thesis, is not to attempt to provide a universally accepted definition of the term as it relates within a national park context but rather to understand those aspects associated with it that may be

seen as appropriate within this setting, as determined by the views of the participants surveyed.

Two approaches were used to obtain information with respect to definitions. First, respondents were asked, through an open-ended question at the start of both questionnaires, to provide what they considered to be an appropriate definition of sustainability/sustainable development for national parks, based on their knowledge of the terms. Second, respondents were provided with a list of definitions of sustainable development/sustainability that have appeared within the literature and asked to evaluate and rank them as to their appropriateness when translated to a park setting, indicating their response on a 5-point Likert scale that ranged from strongly agree to strongly disagree. The definitions that resulted from the first approach were analyzed using a content analysis to determine the key terms or ideas that emerged.

The results of the content analysis are shown in Tables 5.1 and 5.2 for the policy makers and park superintendents, respectively. A number of points can be made from these tables. First, an obvious one is that the definitions of the policy makers provided fewer terms (23) than those stated by park superintendents (38). A probable explanation for this may rest in the fact that the latter population had a greater number of respondents (22) as compared to the former (12) and so the likelihood of newer terms appearing would have been greater. However, it should be noted that not all participants provided a definition. Thirteen (59%) park superintendents answered the request but six (27.3%) made a statement instead, leaving three (13.6%) who chose not to answer. Of the policy makers, ten (83.3%) provided a definition, one (8.3%) made a statement about the terms and one did not answer the question. In light of this, the fact that some policy makers gave the most quoted definition of sustainable development (that coined by the Brundtland Commission) as their answer, while no park superintendent gave this as their response may explain part of the variation in the number of terms that appeared in the content analysis between the two groups.

Table 5.1 Content analysis results of definitions of sustainability/sustainable development stated by policy makers as being most appropriate for national parks.

TERM(S)	Number of Mentions	% of Total Mentions	Ranks (top 5)
Maintain (maintenance)	13	20.6	1
Environment	12	19.0	2
Economic Activity	6	9.5	3 =
Impacts (user)	6	9.5	3 =
Ecosystem(s)	2	3.2	4 =
Ecological integrity	2	3.2	4 =
Future generations (long term)	2	3.2	4 =
Present needs	2	3.2	4 =
Ability	2	3.2	4 =
Compromising	2	3.2	4 =
Development	2	3.2	4 =
Sustainable development	1	1.6	5 =
Sustainability	1	1.6	5 =
Perpetuation	1	1.6	5 =
Landscape use	1	1.6	5 =
Natural processes	1	1.6	5 =
Principles	1	1.6	5 =
Representation (representativeness)	1	1.6	5 =
Accommodating	1	1.6	5 =
Enhance (enhancement)	1	1.6	5 =
Protection (protected)	1	1.6	5 =
Use	1	1.6	5 =
Comprehensive	1	1.6	5 =
TOTAL	63	100.0	

A second point is that there appears to be a high degree of similarity between populations as to the terms mentioned. All but six of the 23 terms listed by the policy makers (present needs, principles, accommodating, comprehensive, use and enhancement) were also noted by the park superintendents in how they defined sustainability. There is, however, less of a similarity when those terms that received 6 or more mentions are considered. Policy makers mentioned 'maintenance', 'environment', 'economic activity' and 'user impacts' the most, accounting for approximately 59 per cent of total mentions. Of these four terms, all scored well in the responses of the park superintendents, except 'economic activity' (receiving one (0.9%) mention) but when combined only accounted for 17 per cent of total

Table 5.2 Content analysis results of key terms of definitions of sustainability/ sustainable development stated by park superintendents as being most appropriate for national parks.

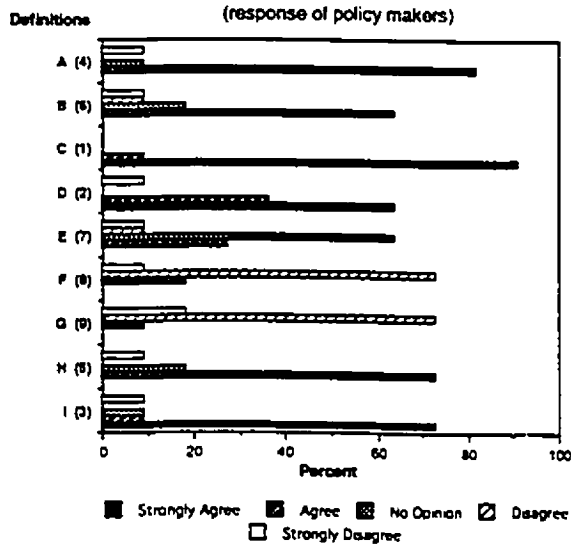
TERM(S)	Number of Mentions	% of Total Mentions	Ranks (top 5)
Protection	9	8.0	1 =
Ecological integrity	9	8.0	1 =
Ecosystem(s)	7	6.2	2 =
Environment	7	6.2	2 =
Visitor use	7	6.2	2 =
Sustainability	6	5.3	3 =
Maintain (maintenance)	6	5.3	3 =
Impacts (user)	6	5.3	3 =
Development	5	4.4	4
Natural resources	4	3.5	5 =
Management	4	3.5	5 =
Human activity	3	2.7	
Visitor experience	3	2.7	
Ability	2	1.8	
Sustainable development	2	1.8	
Perpetuation	2	1.8	
Natural processes	2	1.8	
Representation	2	1.8	
Historical/cultural integrity	2	1.8	
Knowledgeable	2	1.8	
Values	2	1.8	
Unaltered	2	1.8	
Biodiversity	2	1.8	
Co-operative management	2	1.8	
Mandate	2	1.8	
Economic activity	1	0.9	
Future generations (long term)	1	0.9	
Compromising	1	0.9	
Impair	1	0.9	
Mitigatable	1	0.9	
Integrated manner	1	0.9	
Limits	1	0.9	
Balance	1	0.9	
Preservation	1	0.9	
Eco-management	1	0.9	
Sustainable existence	1	0.9	
Heritage	1	0.9	
Natural state	1	0.9	
TOTAL	113	100.0	

mentions, as other terms such as 'ecosystems', 'ecological integrity', 'protection', 'visitor use' and even 'sustainability' figured prominently in the park superintendents' responses.

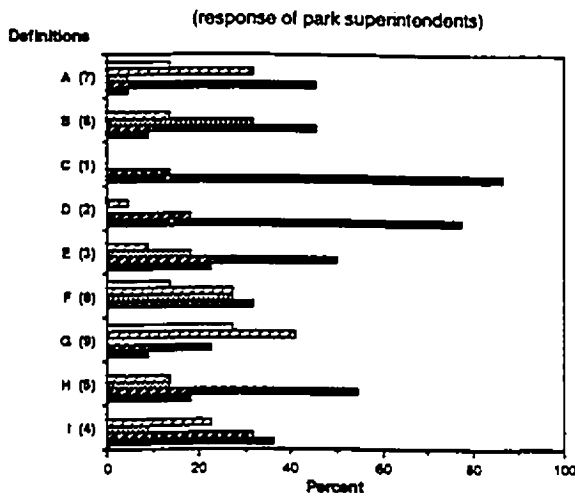
Some similarity exists in the ranks of the top five responses for both populations. Terms such as 'ecological integrity', 'ecosystems', 'maintenance', 'environment', 'user impacts', and 'development' are found to be in the top five ranks in both populations. The position of the ranks for these terms are different for all terms except 'environment', which is ranked 2<sup>nd</sup> by both groups. The overall impression from the outcome of the content analysis is the dominance of ecologically-related terms, and the attention to items such as the impacts of use, the condition of park environments, and the type of management required to ensure 'protection' and 'ecological integrity' of resources, both natural and cultural. What are absent are references to terms associated with aspects such as economic development, even though the role of parks in economic development was one of the more important items identified as requiring policy attention in the future.

The results of the second approach, in which respondents were asked to comment on the appropriateness of a number of given definitions of sustainability when translated into the context of national parks are provided in Figure 5.1. Nine definitions were selected from current literature on sustainable development, representing a mix in which the emphasis on the ecological, social, economic and political dimensions of the term varied. From Figure 5.1 it may be determined that both populations were in strong agreement over definitions which emphasised ecological aspects (definition C), or where they were viewed as necessary in the overall decision-making process (definition D), assigning these the top two ranks with respect to their appropriateness as definitions of sustainability for national parks. The most often quoted definition of sustainable development (definition I), received an almost similar high ranking of 3 and 4 for policy makers and park superintendents, respectively. The two groups differed more in the range of responses that were given to this definition with the policy makers indicating stronger agreement than that of the park superintendents. From the ranks assigned to the remaining definitions, a high degree of

Figure 5.1  
Issues of sustainability: appropriateness of definition(s) for parks



- KEY
- A "the fundamental of balancing environmental considerations with economic growth and development"
  - B "the condition whereby the goals declared for a system are reached and maintained over time"
  - C "the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity"
  - D "activity in which the environment is fully incorporated into the economic decision making process as a forethought, not an afterthought"
  - E "a fundamental guide or ideal for better planning and management of systems, a process to achieve sustainability rather than any utopian end state"
  - F "development which is based on the sustainable use of indigenous resources in association with inter-regional exchange of resources"
  - G "the ability of a system to maintain productivity in spite of a major disturbance such as that caused by intensive stress or a large perturbation"
  - H "development that means more than seeking a compromise between the natural environment and the pursuit of economic growth, but one which recognizes that the limits to sustainability have structural as well as natural origins"
  - I "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"



Note: the bold numbers in brackets represent the rankings derived from scores using assigned weights

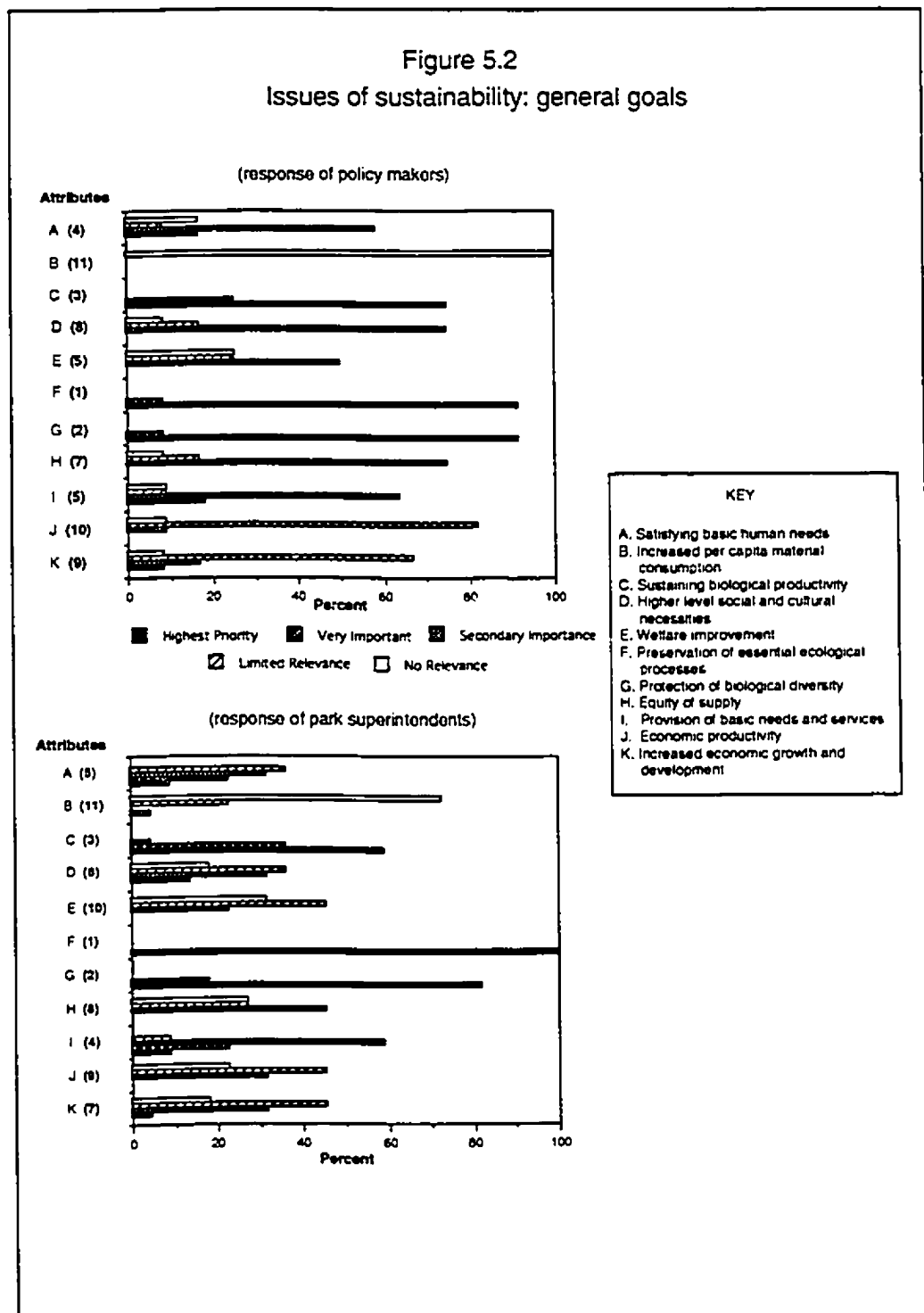
similarity exists for both populations, the one exception being the almost reversal of positions for definitions (A) and (E). Policy makers assigned more importance to definition (A), perhaps because aspects such as economic growth and development, terms contained within it, are ones not particularly regarded by park superintendents as relevant to sustainability in parks. In contrast, the management implications associated with definition (E) may hold greater significance to park superintendents than policy makers. Definitions (F) and (G) were assigned the lowest rankings by both groups. Figure 5.1 shows more varied perceptions by park superintendents of these definitions as compared to policy makers, who were more negative with respect to these categories.

A Wilcoxon T test was carried out using the incomplete set of rankings assigned to the definitions by respondents within both groups (see Appendix D). The results of the test concluded there to be no difference at the 0.05 level of significance as to how the groups replied to this issue, an outcome which was expected given the high degree of similarity of response to the majority of the definitions.

### **5.2.2. Goals (general and parks-related)**

Discussion of sustainable development is often associated with the identification of goals. Throughout the literature many goals have been linked with sustainable development, stressing the social, economic, ecological and political issues associated with the concept. For the purposes of this thesis, these goals are termed "general goals". In order to determine their appropriateness within a park context, eleven goals were selected from the literature in which the emphasis on social, economic, ecological and political issues varied. Respondents were asked to indicate the level of importance they would place on each definition in terms of their appropriateness in promoting a sustainable landscape within parks. The responses of the policy makers and park superintendents are shown in Figure 5.2.

Figure 5.2  
Issues of sustainability: general goals

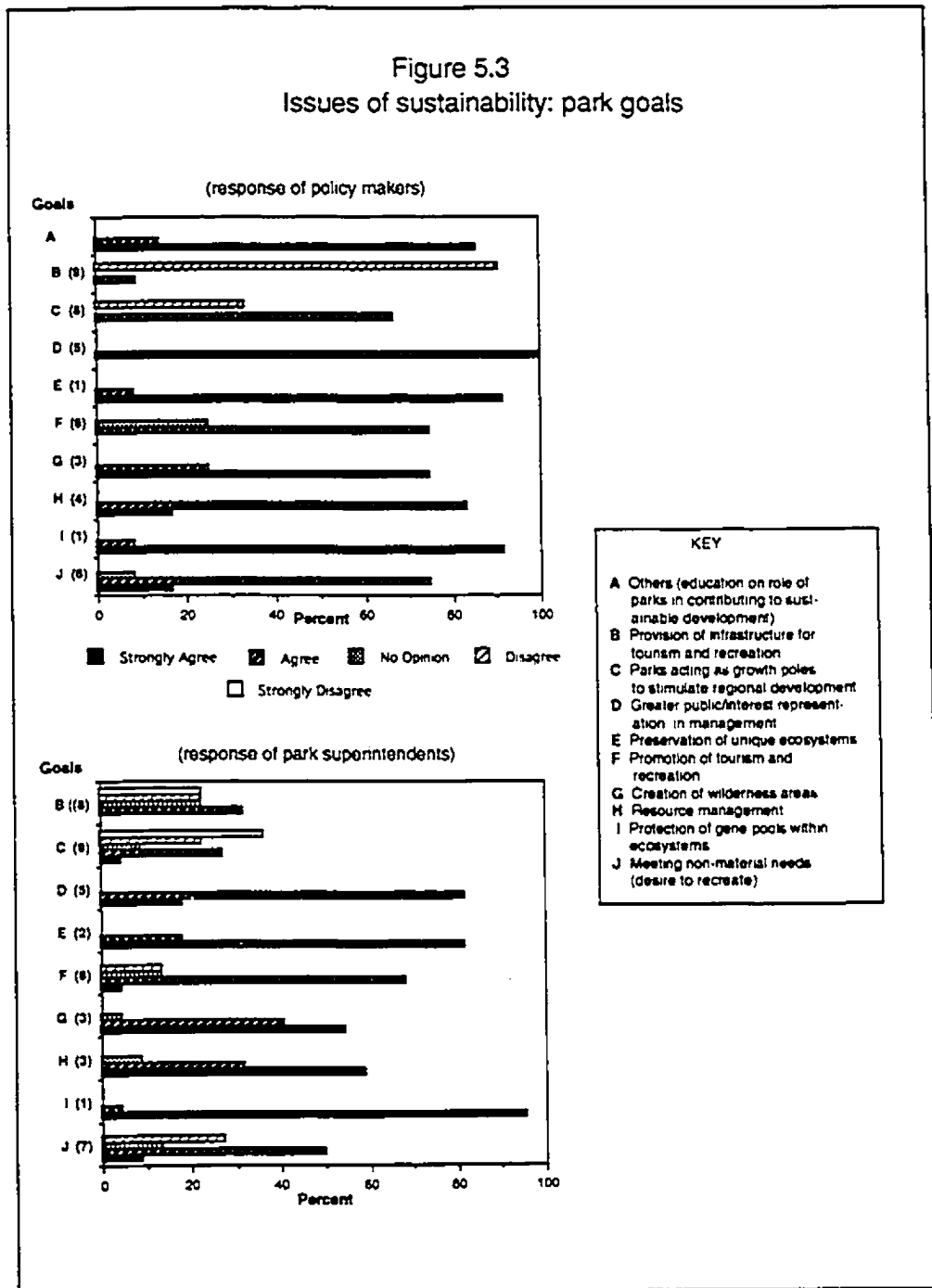




Goals of an ecological nature (F), (G) and (C) received the highest priority by both groups and were assigned the top three rankings. Goals which addressed the provision of basic human needs and services (A) and (I), were ranked the next highest by both populations, but only a portion of the park superintendent population accorded these as receiving highest priority. Goals that focused on economic growth and development (B), (J) and (K) were identified by both populations as having either limited or no relevance to parks and received low rankings, particularly from the policy makers. Only for one goal, that of (E) which emphasizes welfare improvement do the rankings between groups differ remarkably (5 for policy makers and 10 for park superintendents) as a higher proportion of policy makers than park superintendents are seen as viewing it as of secondary importance. Given the high degree of similarity in the ranks assigned to these goals, it is not surprising that a Wilcoxon T-test concluded there to be no significant difference to how both groups replied to this question. Given recent changes, such as, the creation of the new Heritage department, a new administration with less dollars, facing budget cuts, and more emphasis in policy toward heritage tourism, it would be interesting to see if the above rankings would still hold.

In terms of goals that may be perceived as more parks related, Figure 5.3 lists the responses of policy makers and park superintendents, ranking responses to their appropriateness for sustainability. Park goals which emphasized ecological aspects (I), (E), (G) and to a certain extent (H), saw strongest agreement by all respondents and as such were assigned the highest rankings in the order they are listed. For both groups, the goal of greater public participation and interest representation in management (D) was viewed to be more important than goals that centred on promoting recreation and tourism (F) and (J). Both populations stressed disagreement with goals that focused on development-oriented issues with respect to either providing the necessary infrastructure for recreation (B) or serving as growth poles in stimulating regional development (C) and as such received the lowest rankings. Under the 'other' category, policy makers listed a

Figure 5.3  
Issues of sustainability: park goals



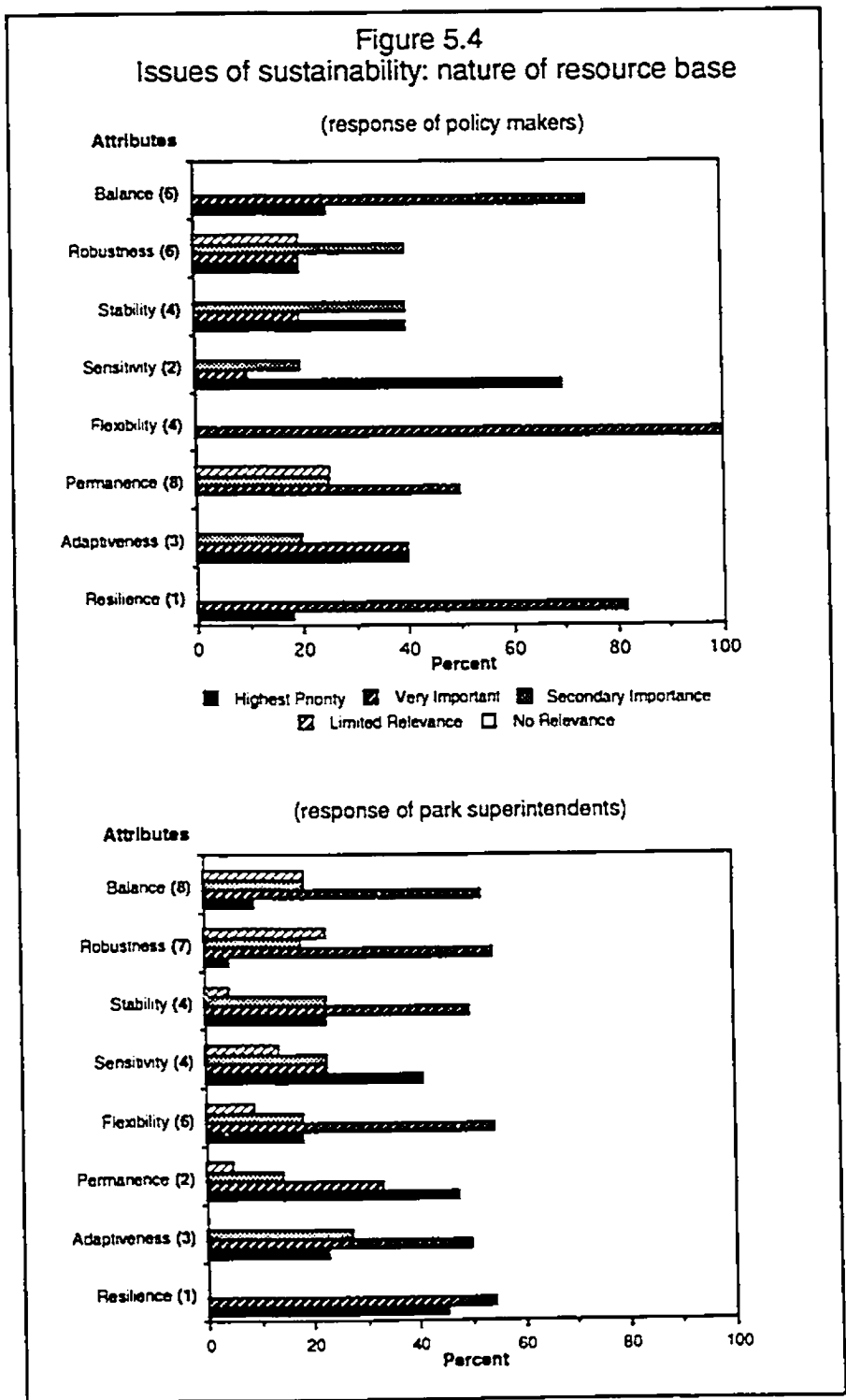
tenth goal as providing education on the role of parks in contributing to sustainable development. A Wilcoxon T-test conducted on the scores derived from the rankings of respondents once again concluded there to be no significant difference as to how the policy makers and park superintendents responded when asked to comment on these park goals.

### 5.2.3. Nature of Resource Base

In order to understand sustainability within a park context, it is argued by the author that it is important to identify those characteristics needed within the resource base itself to ensure sustainability. For this task, a number of attributes (often associated with the ecological integrity literature) were selected as useful indicators of the overall "health" of the park landscape. For the purposes of this thesis, the nature of the resource base was defined to mean the actual condition of the park landscape itself. The responses of the policy makers and the park superintendents are shown in Figure 5.4. Before comparing results for this issue it is important to point out that the total number of policy makers responding to criteria under this heading varied (resilience, n=11; adaptiveness, n=5; permanence, n=4; flexibility, n=5; sensitivity, n=10; stability, n=5; robustness, n=5; and balance, n=4).

Given the variation in response to this issue by the policy makers, the following analysis may be seen to conflict with the results displayed in Figure 5.4. Based on scores derived from assigned weights, both groups identified 'resilience', defined as the degree to which the resource base can recover, as the most important aspect needed if a park's resource base could be viewed as sustainable. This finding for policy makers would seem to contradict the graph displaying this group's perceptions of this issue (Figure 5.4). The graph for policy makers would appear to show the attribute of 'sensitivity' as the most important and not 'resilience'. The rankings were derived from cumulative scores on the total response to each criterion, it did not take into consideration the number of responses made to each criteria. As a result, 'resilience' which was given a 'highest priority' twice and a 'very important' nine times, had a slightly higher cumulative score than 'sensitivity'

Figure 5.4  
Issues of sustainability: nature of resource base



which was assigned 'highest priority' seven times, 'very important' once and 'secondary importance' twice. Attributes such as 'adaptiveness' (the ability to adjust to a new or different condition), 'stability' (the condition whereby a landscape is constant, firm, durable and able to become stable), and 'sensitivity' (responsive to slight change and able to register very different differences or change of conditions) were also given the highest priority in terms of level of importance respondents placed on them (ranking second and fourth for policy makers and park superintendents, respectively) with regard to their appropriateness in promoting a sustainable landscape within parks. The populations were markedly different in how they viewed 'permanence'. Figure 5.4 indicates that park superintendents ranked it as the second most important attribute of a park's resource base. Policy makers assigned it the lowest rank, as many of this group viewed it to be of secondary importance having limited relevance, the low ranking remaining even although many also saw it as being very important. Somewhat surprising is the low rankings given to attributes such as 'robustness' and 'balance' by both groups as they were viewed by the author as important characteristics of a resource base which was sustainable in nature. Once again, the latter comment may seem to be in conflict with the results displayed in Figure 5.4. 'Balance' for the policy makers would appear to be in the top four, however, a ranking of 6th place was as the result of only four responses, one assigning it as 'highest priority' the other three assigning it to be 'very important'. The cumulative score this criterion received placed it 6th, while the graph shows the response of only those that assigned a level of importance of the criterion. The poor response by policy makers to this whole issue of the nature of the resource base, meant that no Wilcoxon T-test could be carried out as too few policy makers ranked these attributes.

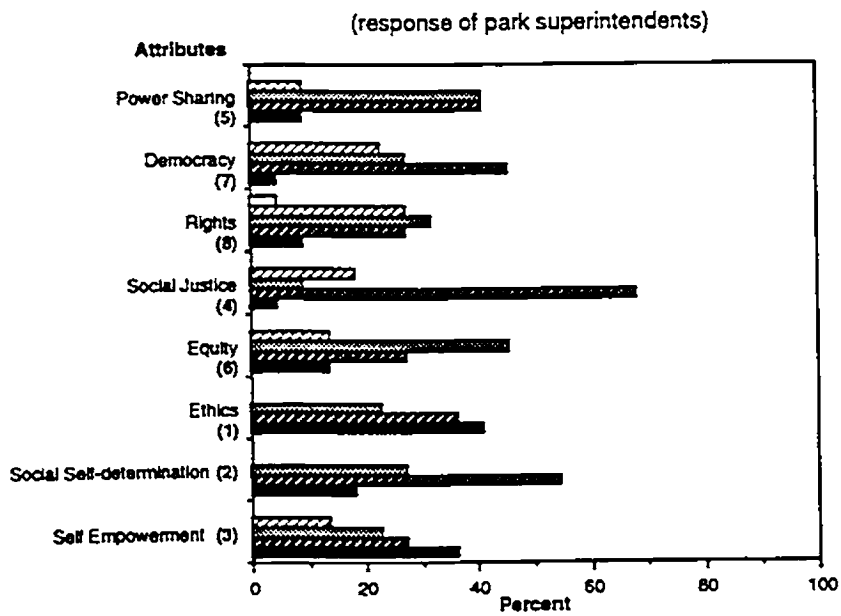
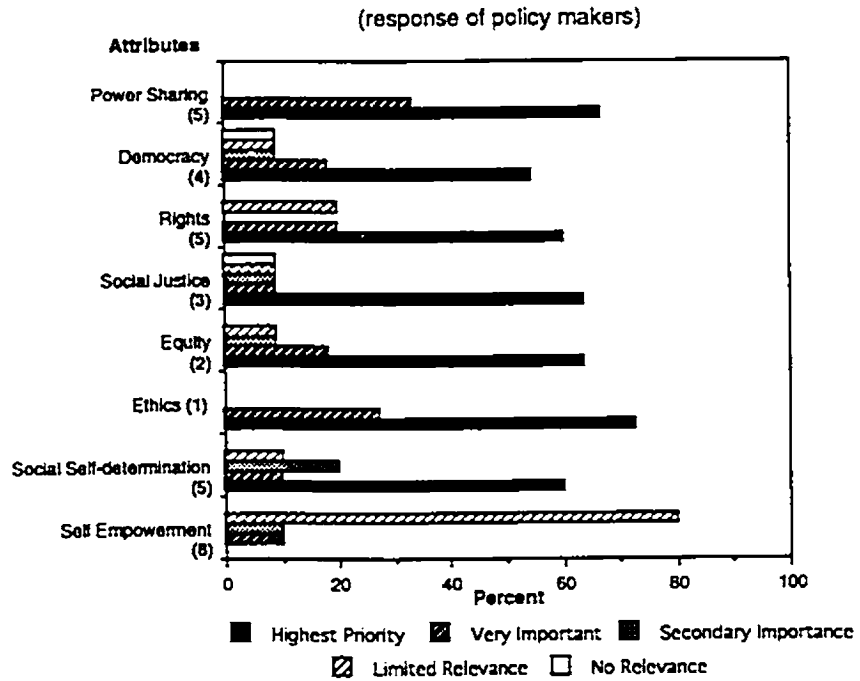
#### **5.2.4. Principles**

A number of principles often associated with sustainability were presented to policy makers and park superintendents, and their responses on how appropriate each was in terms of

promoting sustainable landscapes in national parks are recorded in Figure 5.5. Before discussing the results, the same situation that developed for the issue of 'nature of the resource base', is present in Figure 5.5 for the response of the policy makers. Rankings were derived from cumulative scores based on assigned weights which did not take into account that the number of responses given to each criterion varied (self empowerment, social self-determination, equity, and rights, n=10; ethics, social justice and democracy, n=11; and power sharing, n=9). As a result, the response of policy makers to 'ethics' and 'powersharing' appeared similar, yet their rankings were very different (it should, however, be pointed out that in terms of total scores criterion received there was only a six point difference in the top five criteria).

Figure 5.5 shows there to be considerable difference in how sustainability principles were perceived. For the majority of policy makers, 'ethics', 'equity', 'social justice', 'democracy', 'self-determination', 'rights' and 'power sharing' were seen as principles which should be given high priority, and for which the top five rankings were assigned, respectively. For the most part, park superintendents did not perceive sustainability principles as receiving high priority except for 'ethics' and 'self empowerment'. Groups varied in what principles were least important to parks. Policy makers were seen to be in agreement that 'self empowerment' had limited relevance and thereby assigned it the lowest ranking. This is in contrast to the perceptions of park superintendents who considered this as one of two principles that should receive high priority. Park superintendents perceived the principles of 'equity', 'democracy' and 'rights' to be of least relevance, assigning them with the lowest three ranks, respectively, and in contrast to the policy makers who, as noted above, viewed them as priority principles. A Wilcoxon T-test showed there was no significant difference in how the groups perceived sustainability principles.

Figure 5.5  
Issues of sustainability: principles



#### **5.2.5. Involvement**

For the purposes of this study, involvement was taken to mean the various parties involved in promoting sustainability with respect to decision making. Three distinct groups were identified (managers, the general public and interest groups). Under an open category entitled 'other' policy makers indicated that politicians should also be involved. Figure 5.6 records the level of importance that was attached to each and the ranks they received. The majority of responses by both policy makers and park superintendents assigned the highest priority to managers who were accountable for the action they took. The views of the general public, as expressed through public participation exercises, were ranked second with both groups regarding them to be very important. Policy makers perceived interest group representation also to be very important while park superintendents varied in their responses. Both groups assigned this category the lowest of the three. Politicians were viewed by policy makers as having an important role to play in promoting sustainability in parks. Given that the rankings were the same for both policy makers and park superintendents, it is not surprising that a Wilcoxon T-test on these outcomes showed there to be no significant difference in their responses to this aspect.

#### **5.2.6. Management Focus**

A final issue of sustainability requiring attention is that concerning the focus of management within the parks. Eight different aspects of management were provided to participants and their responses are recorded in Figure 5.7. A cursory glance at the rankings, assigned to each type of management, would indicate a very strong degree of similarity of response with only slight differences noticeable for 'goal integration' and 'integrative planning'. As expected, given the mandate of parks, the focus on 'protection' and 'preservation' were viewed as having highest priority and were assigned the top two ranks, respectively. 'Integrative management', 'integrative planning' and 'goal compatibility' were perceived by the majority of respondents in both populations as very



Figure 5.6  
Issues of sustainability: involvement

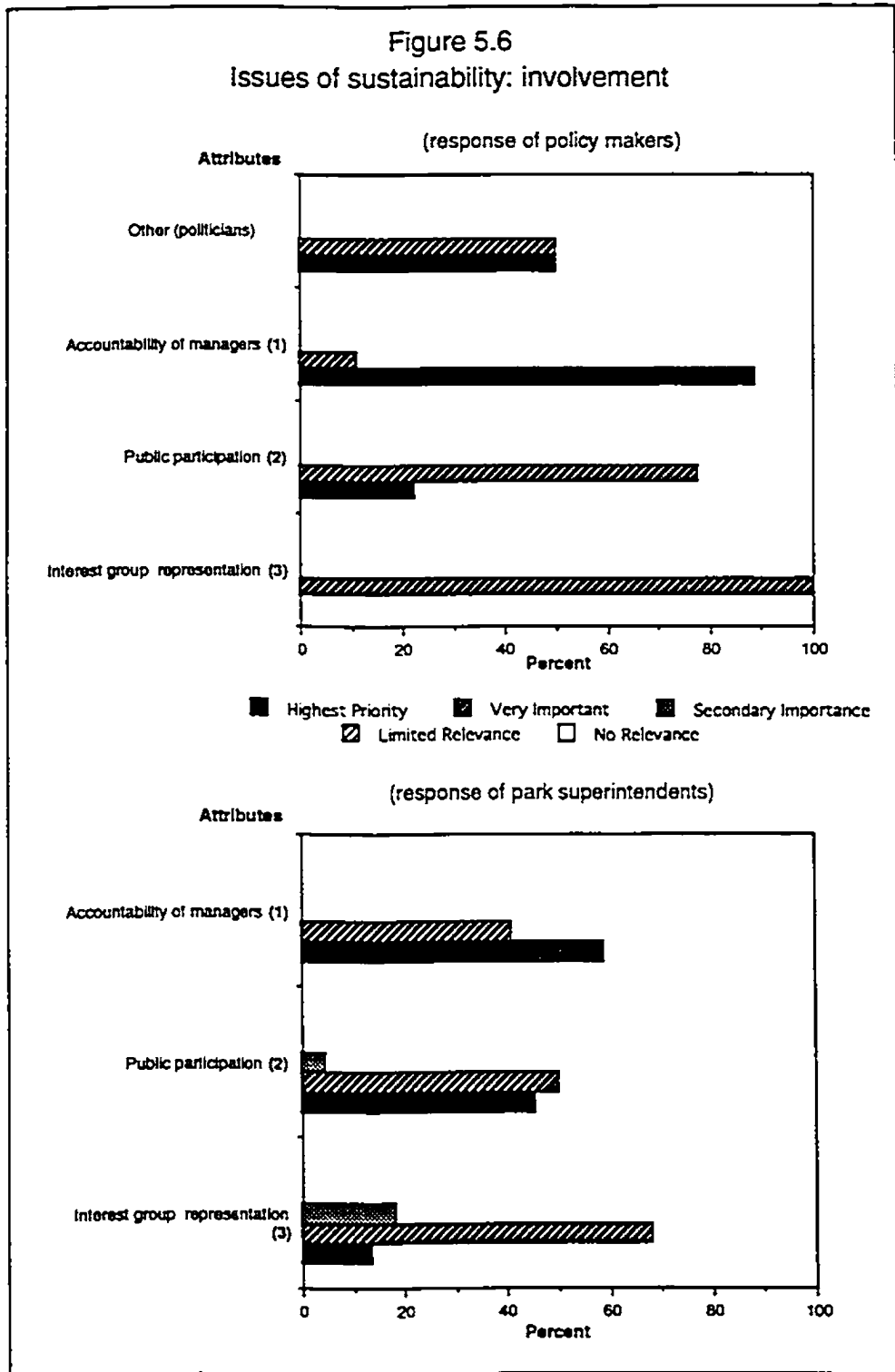
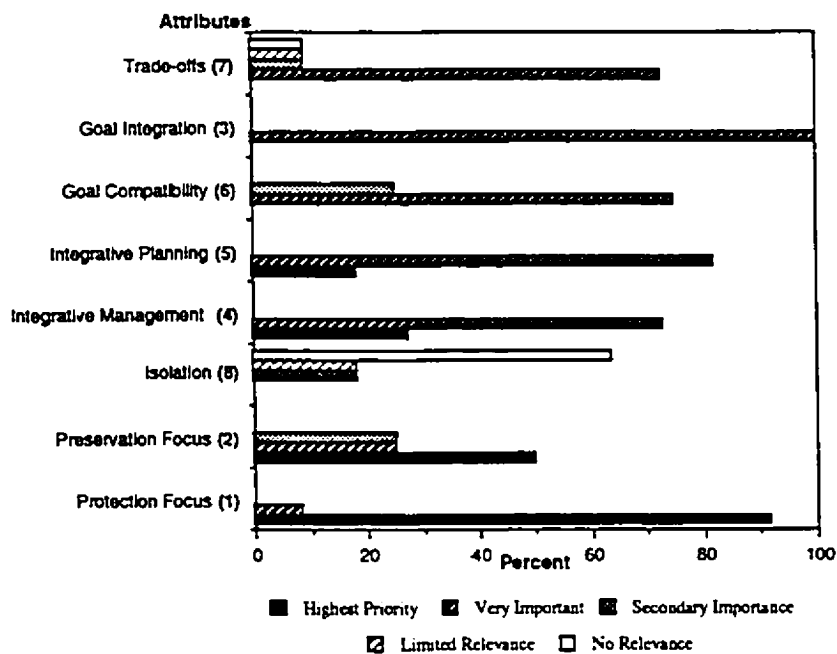
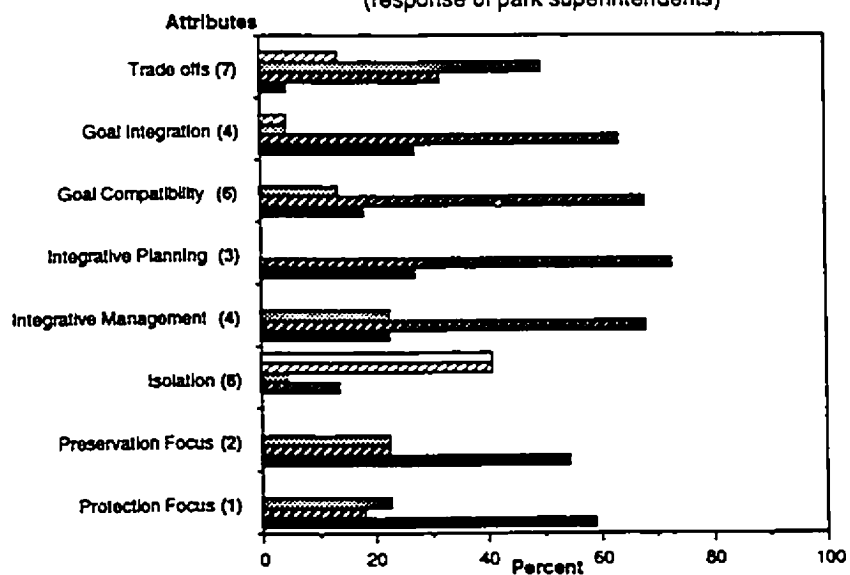


Figure 5.7  
 Issues of sustainability: focus on management

(response of policy makers)



(response of park superintendents)



important although their order of rank differed between populations. Somewhat surprising is the poor scoring of 'trade-offs' by both policy makers and park superintendents, given that reality often requires a trade-off between protection and the acceptance of use in how the parks function. Not surprising is the response to management in 'isolation', as the idea of management separate from activities around it is not a current viewpoint. Once again, a Wilcoxon T-test on the rankings of respondents showed there to be no significant difference in how the two populations responded to management focus for national parks.

### 5.3. CONCLUSION

This chapter provided analysis on the first section of the questionnaires that were received by policy makers and park superintendents. The objective in the first section of the questionnaires was to identify what criteria were appropriate within a number of issues of sustainability (definitions, goals, the nature of the resource base, principles, involvement and management focus), considered to be related to national parks. The overall response by the policy makers to these issues was somewhat disappointing, particularly for the issues of 'the nature of the resource base' and 'principles' where the level of response varied, more so for the former. As a result, the rankings that were assigned to criteria often appeared to contradict the nature of responses depicted in the respective figures. Accepting that the range of responses to each of these issues varied between the two populations, a statistical test (Wilcoxon T-test) revealed no significant differences in how each of the issues were perceived. The findings in this chapter serve to fulfill part of the first objective of the research, namely, to 'identify and examine the perception of sustainability as it relates to Canada's national parks'. The following chapter builds on the findings of this chapter by providing in depth analysis of sustainability as it applies for various themes present in national parks that range across a spectrum from nature preservation to development-oriented interests.

## **CHAPTER 6**

### **ANALYSIS OF QUESTIONNAIRES: PERCEPTION OF SUSTAINABILITY FOR THEMES WITHIN NATIONAL PARKS**

#### **6.1. INTRODUCTION**

This chapter reports on three elements. First, the perceptions of policy makers and park superintendents are examined for a number of themes present within parks, and which were taken from the national park literature specifically, that cover the spectrum from nature preservation to development-oriented interests. Second, the 'balanced approach model' developed in chapter 3 (see Figure 3.1, p.70) is tested using the responses to questions that focused on the sustainability spectrum, was also described in detail in the third chapter. Third, the trade-off relationship, believed to exist between protection/ preservation interests and types of use within parks, is explored. The analysis of responses within each of these tasks is at the aggregate level so as to assure confidentiality of response. Only the responses of the parks superintendents are used in the second and third tasks. With respect to the former, the response rate for policy makers to questions about the sustainability spectrum was too small to imply anything meaningful about the results. The latter task uses the responses of park superintendents only, as questions concerning trade-offs were not asked to the policy makers. It was considered that superintendents were best suited to answer questions on this type of issue as management often requires that trade-offs be made between different interests depending on the function(s) of the parks. A regional

approach is used for the second task as it is argued that this allows for diversity of opinion among park superintendents to be shown, and at the same time ensures responses made by individual park superintendents remain anonymous. The next section discusses the results of the first issue.

## **6.2. PERCEPTION OF SUSTAINABILITY BY THEME**

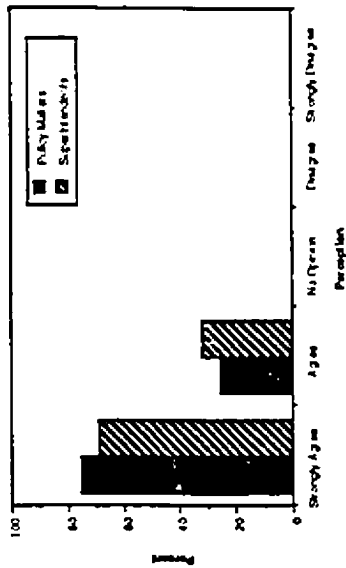
### **6.2.1. Nature Preservation/Wilderness**

The response to a variety of questions addressing the themes of nature preservation and wilderness are depicted by Figure 6.1 (A-H). Both the responses of policy makers and park superintendents are shown, as the same question was asked of each group. A 5-point Likert scale is used to record responses. The various graphs within the overall figure reveal a high degree of consensus between groups, regardless of the nature of opinions expressed.

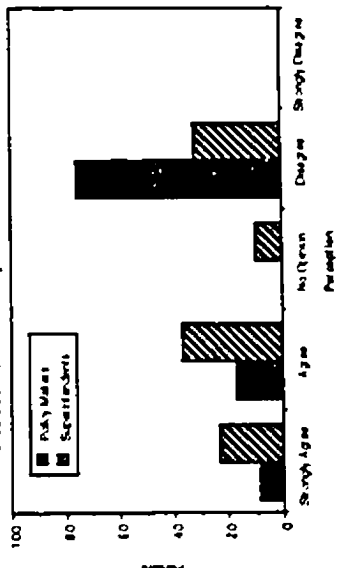
In response to the general question that asked if there was a need for more attention to be given to preservation and protection of natural areas (Graph A), the majority of respondents indicated strong agreement, with the remainder stating they agreed. Opinions were mixed as to whether more restrictions than presently exist are needed on access to unique and fragile areas within parks (Graph B). While the majority of both groups indicated some form of agreement (75% of policy makers and 82% of park superintendents) to the issue, a greater proportion of superintendents (45%) were seen to voice strong agreement than was noted by policy makers (8%), a result not surprising given that park superintendents have to deal with these issues and this may have influenced their response. A small portion of both groups disagreed with the statement (14% and 25% for superintendents and policy makers, respectively). A similar response was found when asked to comment on whether recreational activities were increasingly encroaching on wilderness areas and becoming an area of increasing concern by managers (Graph D); the

Figure 6.1 Responses to issues on nature preservation/wilderness

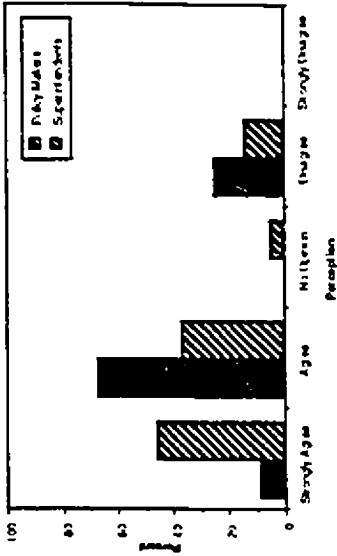
(A) Given the increased concern and awareness over environmental degradation, the emphasis in parks law should be on preserving and protecting natural landscapes rather than further urbanization



(C) A greater area than parks, that is commonly found today, should be laid aside from any form of use and left in a natural state



(B) For nature preservation to be sustainable requires more restrictions placed on access to unique and fragile areas than are operating at present



(D) Recreational activities are increasingly encroaching on wilderness areas within parks and are becoming an area of increasing concern by managers

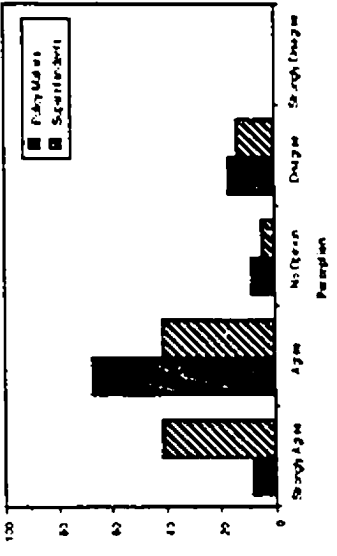
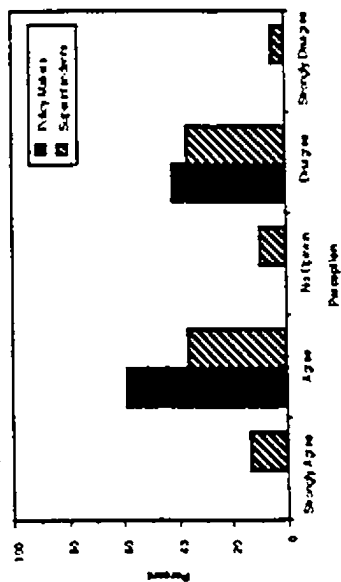
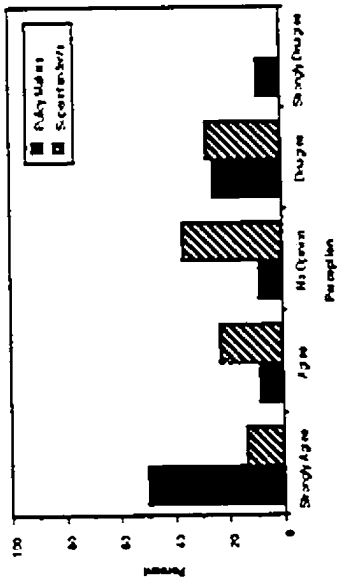


Figure 6.1 continued

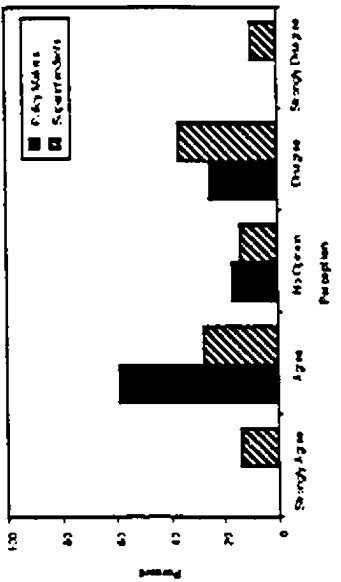
(E) Native preservation would be best served if a buffer zone was constructed between those areas set aside for the purpose of preservation and those used by visitors



(D) A low of wilderness areas should be compensated for by the establishment of others elsewhere in the park



(F) With an emphasis now placed on maintaining ecological integrity, more areas of wilderness will be awarded of remaining in a natural and unimpacted state



(H) The ecological component of wilderness areas must receive a priority over an economic or social component if sustainability can be realized



statement received stronger agreement from park superintendents (41%) than policy makers (8%).

Disagreement was the predominant opinion of policy makers (75%) to a statement suggesting that more areas than exist at present should be put aside from any form of use and be left in a natural state (see Graph C). The opinions of superintendents ranged from strongly agreeing to disagreeing, with the largest group indicating agreement (36%). Policy makers indicated both agreement (58%) and disagreement (42%) to the view that nature preservation would be best served if a buffer zone was constructed between those areas set aside for the purpose of preservation and those areas used by visitors (see Graph E). Once again, the perceptions of park superintendents varied on this aspect, as the same percentage (36%) indicated agreement and disagreement. Graph F illustrates that policy makers, for the most part (58%), voiced agreement regarding the importance of maintaining ecological integrity to ensure more areas of wilderness remained in a natural and unimpaired state. As with many of the issues under this overall theme, the park superintendents' opinions were more varied, with the largest portion disagreeing (36%) and agreeing (28%) to it.

When asked to comment on whether a loss of wilderness areas should be compensated for by the establishment of others elsewhere within a park (Graph G), the majority of policy makers were in strong agreement (50%) but half of those remaining disagreed (25%). Park superintendents response to this issue was mixed, the majority indicating no opinion (36%), with minor variation between those strongly agreeing, agreeing and disagreeing with that viewpoint (14%, 23% and 27%, respectively). A consensus of viewpoints was expressed to giving priority to ecological components of wilderness areas over economic or social ones in order for sustainability to be realized (Graph H). The two populations differed noticeably in the level of agreement assigned, with the majority of superintendents (64%) stating stronger agreement than noted by policy



makers (33%), a finding that once again may be explained by the degree to which park superintendents are closer to the issue involved than the policy makers.

### 6.2.2. Wildlife

Figure 6.2 records the collective response of both groups to issues that were grouped under the theme entitled Wildlife. Issues ranged from giving more attention to wildlife management (Graph A) to what is involved in sustaining wildlife (Graphs B-E) and to the impacts facing wildlife (Graphs F and G).

With respect to the first aspect, namely that of assigning more attention to wildlife management (Graph A), general agreement was the expressed opinion of the majority of policy makers (91%). Superintendents were also seen to agree with the statement, but the extent of their agreement was much stronger with 36 % indicating they strongly agreed with the statement.

Perceptions among the two groups varied whenever factors associated with what was involved in sustaining wildlife are concerned. Both policy makers and park superintendents favoured restricting access to wildlife habitats (Graph B), although a good portion of both groups (27%) indicated disagreement with this viewpoint. Graph C records opinions regarding restricting access to both mating and breeding grounds in order to sustain wildlife numbers and diversity. Once again, the majority to half of the respondents were in agreement with such an objective (64% and 50% for policy makers and park superintendents, respectively) with the remaining policy makers noting no opinion or disagreement, while the other half of the superintendents responses indicated strong agreement, no opinion, disagreement and strong disagreement. The responses in Graphs D and E illustrate that wildlife sustainability should not just focus on maintenance of animal population numbers alone (Graph D), but rather address both numbers and the diversity of species present within the parks.

Figure 6.2 Responses to issues on wildlife

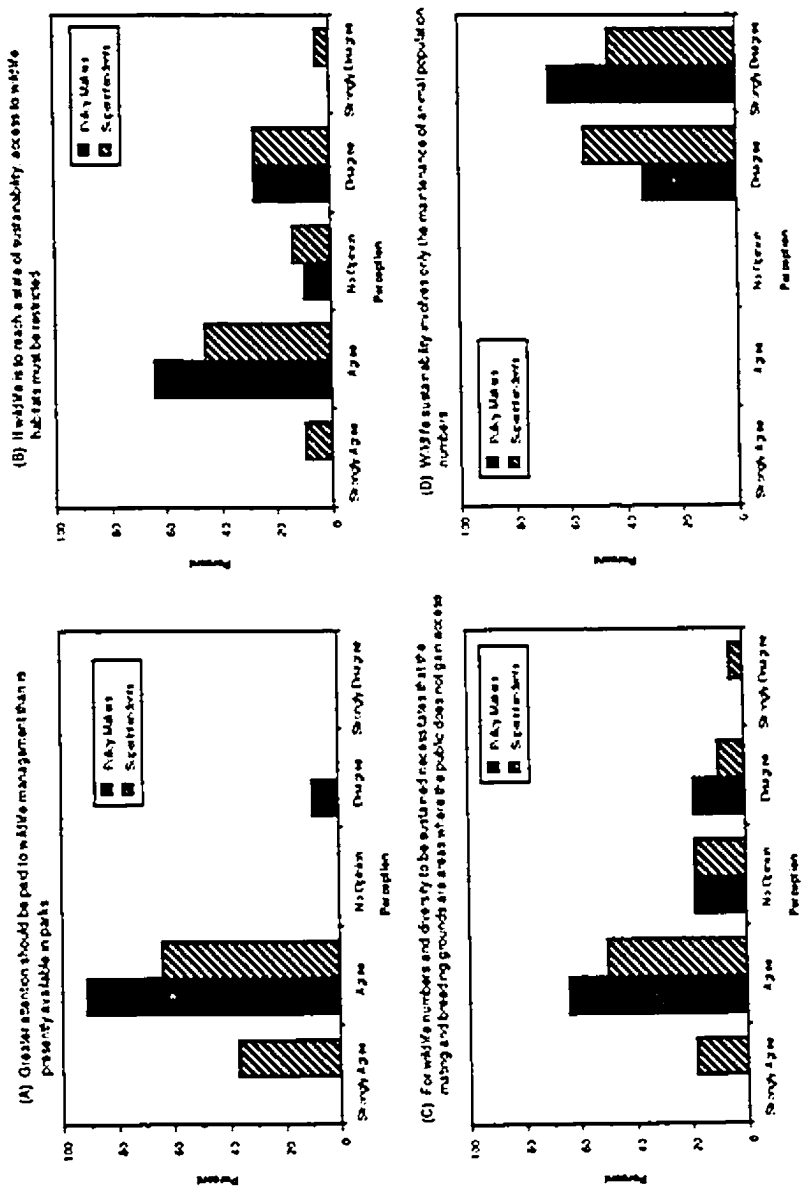
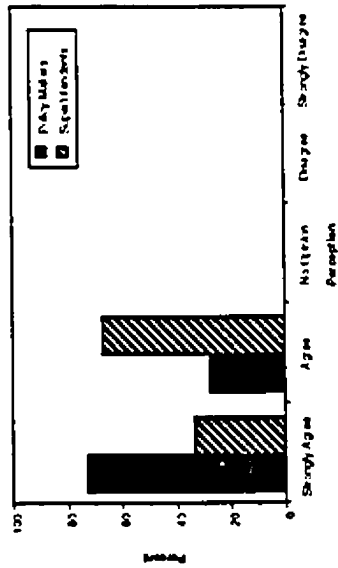
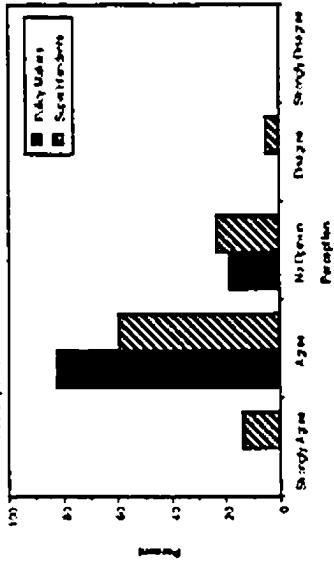


Figure 6.2 continued

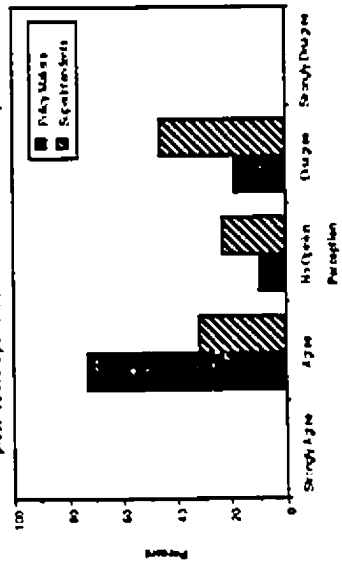
(E) Wildlife sustainability involves both numbers and the diversity of species present within the park



(F) Encouragement of recreation activities on wildlife regions within parks impacts on the potential of managers being able to sustain wildlife inside of parks



(G) The relationship exists at present between wildlife and human presence in the parks in conducive for the sustainability of wildlife



In terms of impacts on wildlife, both policy makers and park superintendents noted that recreation activity encroachment on wildlife areas has impacts on the sustainability of wildlife (Graph F). A different impression arises when the relationship between wildlife and human presence, existing at present, and how conducive it is for the sustainability of wildlife, is addressed. While policy makers are seen to agree that the relationship is conducive in terms of sustainability, the majority of park superintendents (45%) believe it not to be the case.

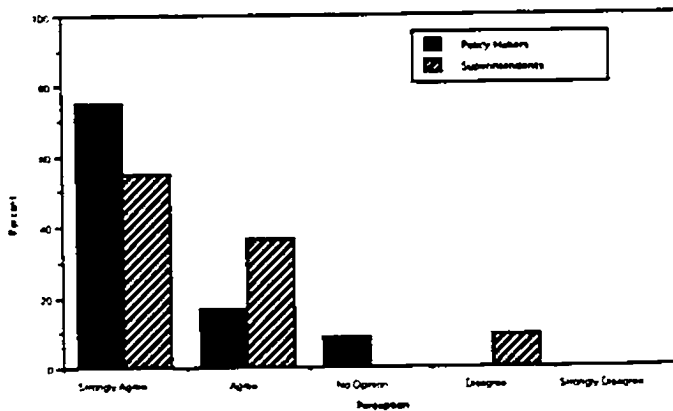
### **6.2.3. Interpretation and Education**

A number of questions were asked under the general rubric of Interpretation and Education with the express purpose of identifying how the parks are suited to explaining the concept of sustainability, and to what aspects of the concept the focus should be directed, along with identifying the best means of communicating ideas of sustainability.

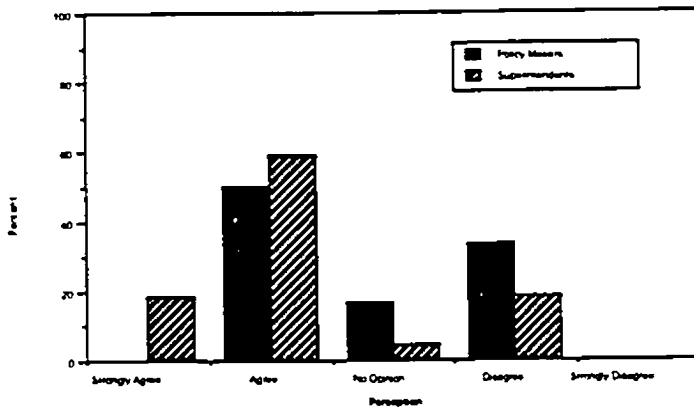
Figure 6.3 (A-C) shows results for general issues of interpretation, education and sustainability. Graph A illustrates strong agreement on the part of both policy makers (75%) and park superintendents (55%) for interpretation services and education to be suitable mediums to communicate the principles of sustainability to park users. However, as Graph B suggests, the majority of both groups (50% of policy makers park and 77% of park superintendents) are of the opinion that interpretation facilities, at present, are not focused to explain sustainability principles. This finding should be balanced by the fact that 33% and 18% of policy makers and park superintendents, respectively, believed the opposite to be true. When asked if interpretation and educational services within the parks focus more on explaining park programs and activities that are available to users rather than outlining the relationship that exists between users and the park environment and the impacts users make on the park landscape (Graph C), the majority of respondents disagreed with this position, more so for policy makers (75%) than for park superintendents (50%). The fact that half of the superintendents viewed the opposite to be

Figure 6.3 Responses to issues of interpretation and education

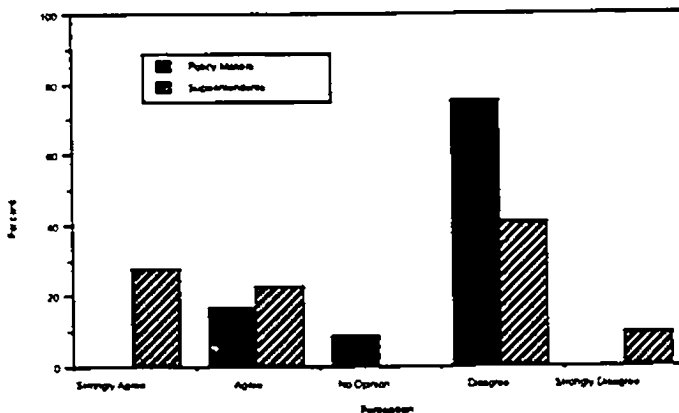
(A) Interpretation services and education as suitable mediums for communicating principles of sustainability to visitors



(B) At present interpretation facilities are not focused toward explaining sustainability principles



(C) Interpretation and educational services focus more on explaining park programs and activities rather than explaining relationships between users, park environment and impacts

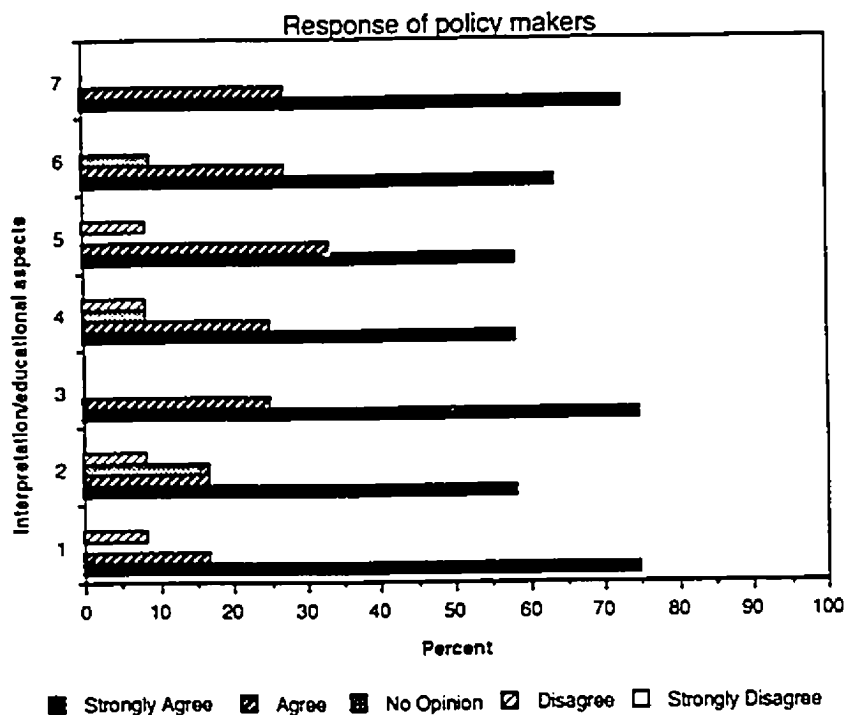


accurate, implies that, at least for this group, sustainability is a concept needing explanation. Understanding the relationships among users, the park environment and the subsequent impacts resulting from these linkages, is an important aspect that has a bearing on sustainability. This point is even more critical given that, according to park superintendents, 82% of the parks represented by this group claimed to offer services and information to visitors about sustainability.

Attention now turns to focus on how sustainability is explained to park users using interpretation and educational facilities. From the responses displayed in Figure 6.4, it would seem that all seven aspects are highly valued as opinions of both groups, with few exceptions, are found to agree with each one in turn. While the pattern of response of policy makers does not vary much between these seven aspects, the ideas of 'making people aware of the impacts that human activities make on the park environment' and the need to be 'educating users of indicators which would suggest and reveal that impacts and threats may result in irreversible ecological damage', reflect the strongest opinions of this group. This latter idea along with the importance of educating users on 'the fact that sustainability involves management of ecosystems on a long-term basis', are the ideas most strongly agreed to by park superintendents.

In terms of what are the most effective modes of communicating the concept of sustainability to park users, Figure 6.5 shows that for policy makers the three most important channels of communication are felt to be 'educational programs within parks', 'workshops in communities' and 'presentations in schools and universities' and in that order. The three least important are 'advertisement on television and radio', 'ad campaigns' and through 'videos and films available for public rental'. These findings would suggest that policy makers favour a "hands on approach" where there is greater contact with the public. As for park superintendents, the figure reveals a similar situation where all six modes, stated previously, were also regarded by park superintendents as being important or least effective, but in a different order. The three most important being,

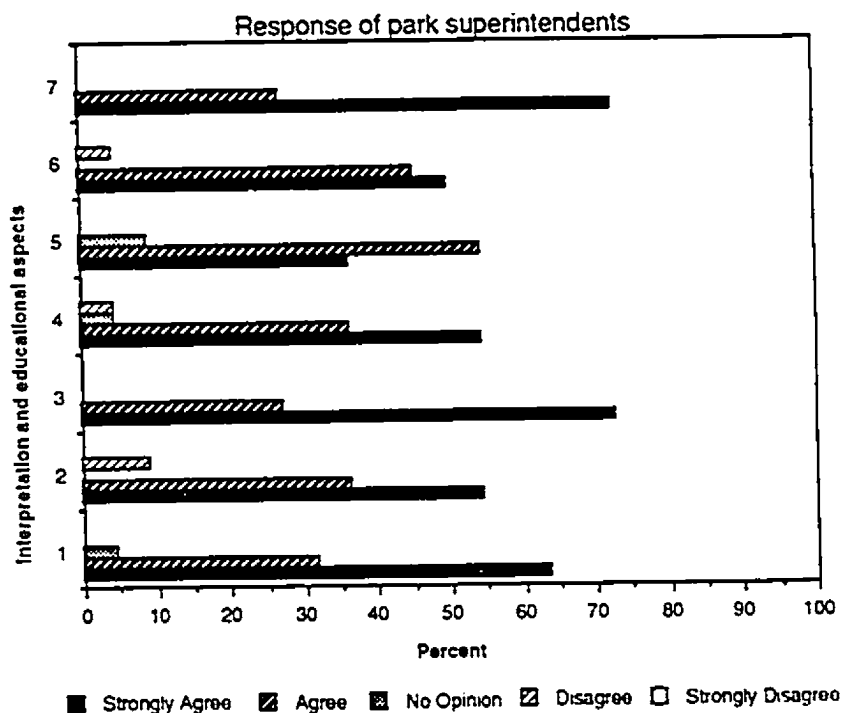
Figure 6.4  
Aspects of interpretation and education perceived necessary to explain sustainability to park users



Aspects of interpretation and education

7. Educating users of indicators which would suggest and reveal impacts and threats that may result in irreversible ecological damage
6. Educating users of the limits to which certain environments can sustain particular activities
5. Understanding that sustainability involves the ecological, economic and social components of parks
4. The necessity of restricting access to unique and fragile areas in parks
3. The fact that sustainability involves management of ecosystems on a long-term basis
2. Making users aware of the thresholds of ecosystems to accommodate human use
1. Making people aware of the impacts that human activities make on the park environment

Figure 6.4 continued  
Aspects of interpretation and education perceived necessary to explain sustainability to park users



Aspects of interpretation and education

7. Educating users of indicators which would suggest and reveal impacts and threats that may result in irreversible ecological damage
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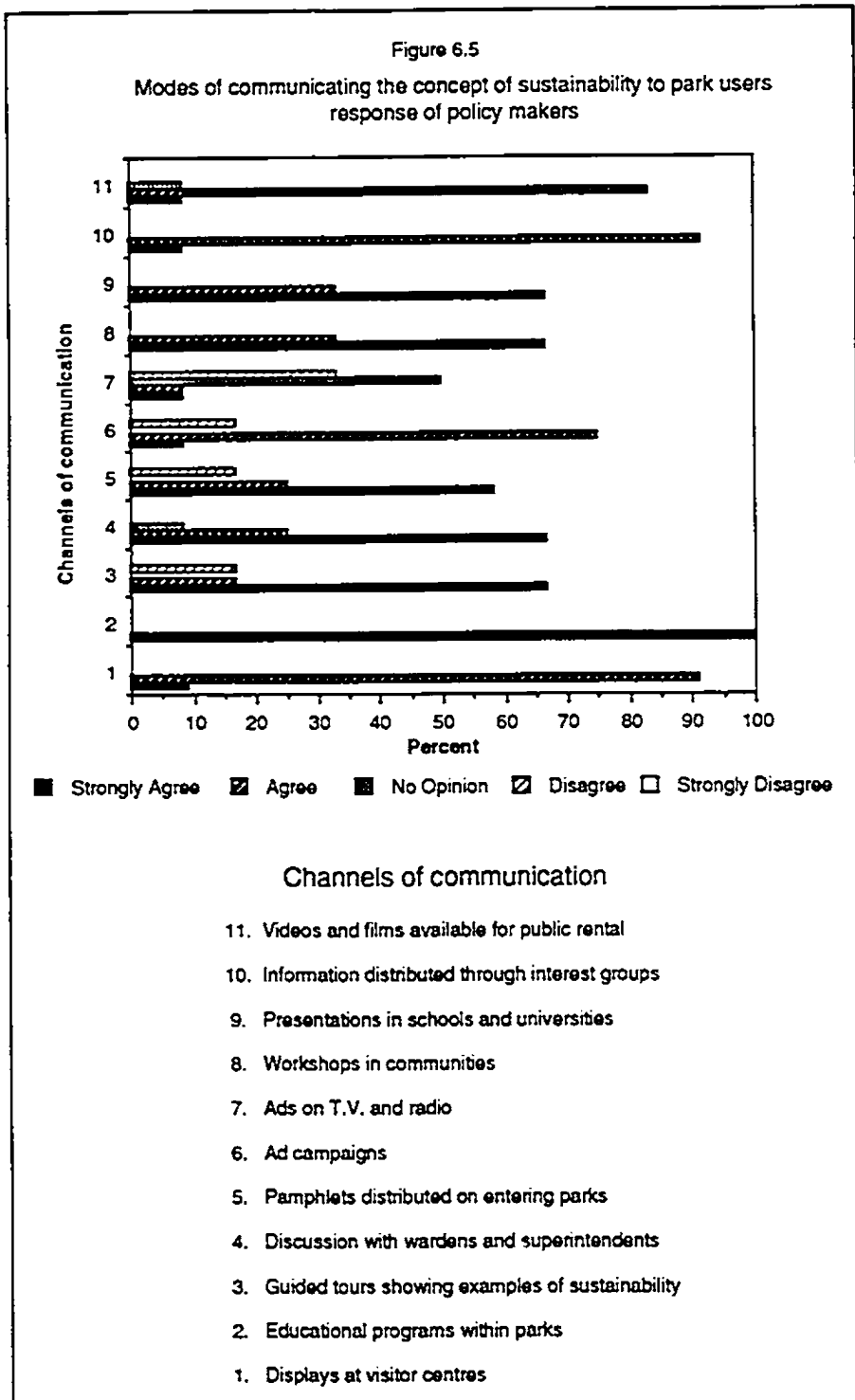
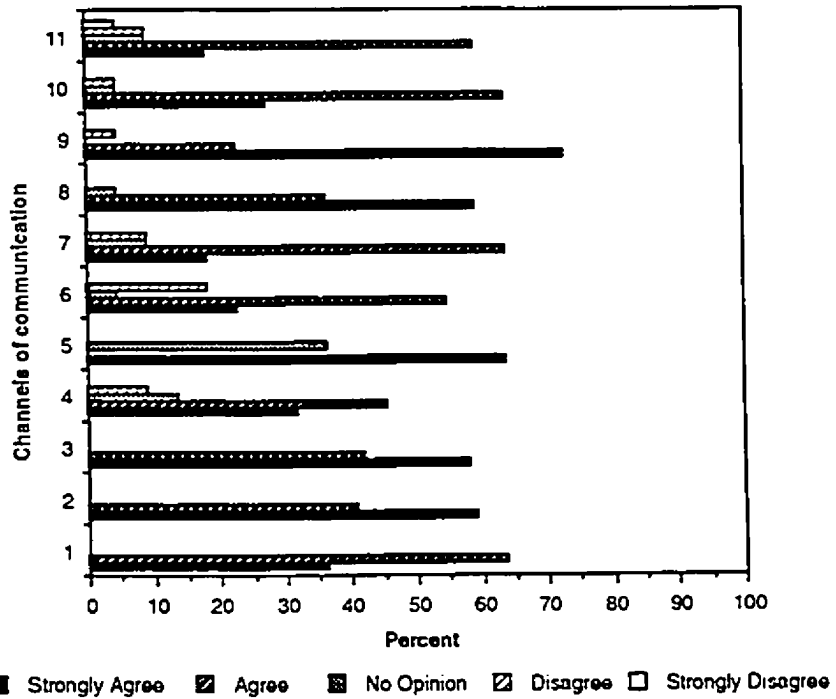


Figure 6.5 continued

Modes of communicating the concept of sustainability to park users  
response of park superintendents



**Channels of communication**

- 11. Videos and films available for public rental
- 10. Information distributed through interest groups
- 9. Presentations in schools and universities
- 8. Workshops in communities
- 7. Ads on T.V. and radio
- 6. Ad campaigns
- 5. Pamphlets distributed on entering parks
- 4. Discussion with wardens and superintendents
- 3. Guided tours showing examples of sustainability
- 2. Educational programs within parks
- 1. Displays at visitor centres

in order of importance, 'presentation in schools and universities', 'educational programs within parks' and 'workshops in communities'. The three least important modes of communication being 'videos and films available for public rental', 'ad campaigns' and 'advertisement on television and radio'.

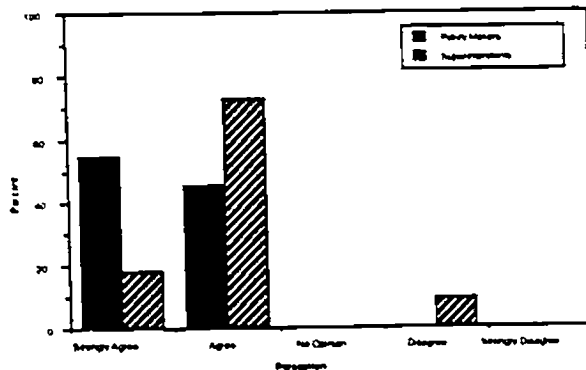
#### 6.2.4. Research

This subsection has its focus on the role of research within parks and the extent of its importance in contributing to an understanding of sustainability in this context. The opinions of both groups are shown in Figure 6.6 (A-E).

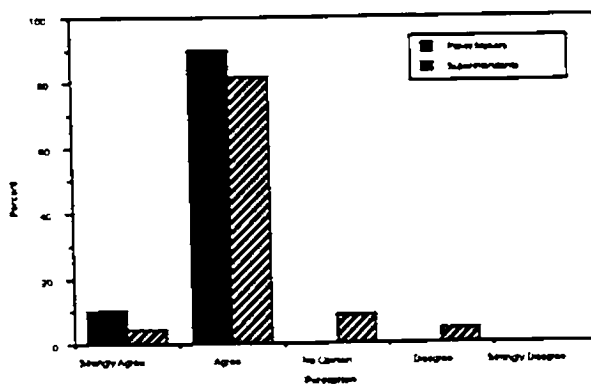
When asked to comment on the need for research to address the issue of balance between preservation interests and those interests and activities that are perceived as more development-oriented in nature (Graph A), both policy makers and park superintendents noted agreement. In terms of strength of agreement, over 50% of policy makers said they strongly agreed with this perspective, compared to only 18% for park superintendents. A second question within this section of the questionnaires asked for opinions on human-oriented research that focused on the ability of natural systems to withstand human interference and overuse. Graph B illustrates that with respect to this both groups of respondents agreed on the need for research in this area (90% and 82% of policy makers and park superintendents, respectively). In light of the previous response, it is not surprising that both groups expressed disagreement about the impact research has (both human and physical) on the parks in terms of its affect on the level of sustainability in parks. From Graph C it is evident that the strength of this opinion is greater for park superintendents (32% stated they strongly disagreed) than for the policy makers who indicated only disagreement. Disagreement was also the consensus of both groups when asked to comment about focusing research only on promoting better management of the parks (Graph D); the strength of disagreement being greater for policy makers than for park superintendents.

Figure 6.6 Responses to issues of research

(A) Need for research to address balance between preservation interests and development-oriented interests if parks are to reach a sustainable state



(B) Need for non human-oriented research to focus on resilience, robustness, and adaptiveness of natural systems to human interference and overuse



(C) Research viewed as having limited impact on parks and little affect on sustainability in parks

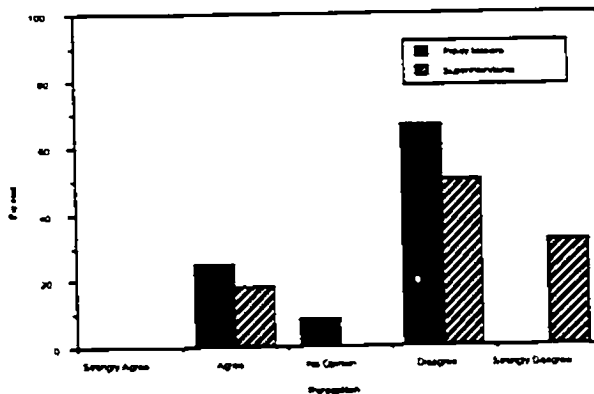
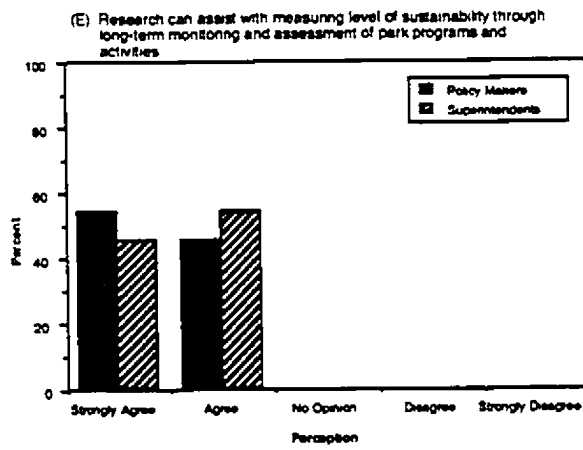
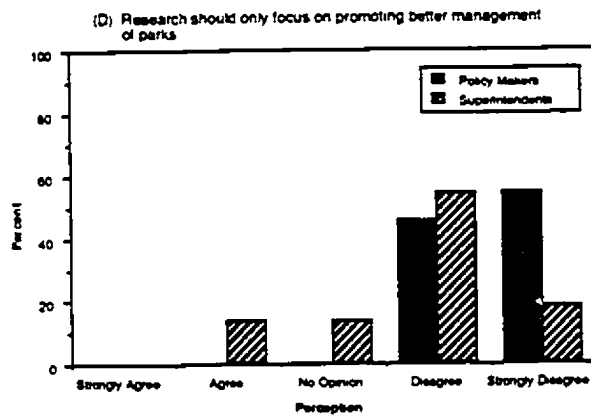


Figure 6.6 continued



In terms of the contribution that research can make for sustainability within parks, both the policy makers and park superintendents favoured measuring the level of sustainability through long term monitoring and assessment of park programs and activities (Graph E).

#### **6.2.5. Aboriginal Interests and Traditional Activities**

The role played by aboriginal populations and the impacts generated by them within national parks are important elements that require attention if parks are to be viewed as having the potential to be sustainable. When the questionnaire was first reviewed by a management group within CPS, comments that resulted suggested that policy makers would answer questions supporting current practices as these were part of accepted park policy, or refuse to answer because of their political nature. In light of this last point, a smaller section than had initially been proposed was presented in the questionnaire to the park superintendents. Only those park superintendents in whose parks aboriginal interests and traditional activities were management considerations were asked to respond to questions in this section.

Thirteen park superintendents (59 %) indicated the presence of aboriginal practices and/or traditional activities within their park. Table 6.1 illustrates the type of impacts, their nature and possible steps for mitigation for a number of native practices and traditional domestic activities. The table shows that the majority of impacts mentioned are felt to have a negative impact on the park environment. The types of action taken to reduce their impact vary, include law enforcement, regulation, imposing quotas, allocating permits, educating the public and the development of awareness programs, as well as management within the boundaries of the park and which promotes co-operative arrangements, when possible, with surrounding jurisdictions.

No mention was made by park superintendents that aboriginal activities should be removed from the parks. Instead, responses were that aboriginal activities should remain,

Table 6.1 Impacts from aboriginal practices and traditional activities and mitigation taken to limit impacts

TYPE OF ACTIVITY	TYPE OF IMPACTS	NATURE OF IMPACTS	MITIGATION TAKEN TO LIMIT IMPACTS
GATHERING	<ul style="list-style-type: none"> <li>potential timber harvesting medicinal and ceremonial reasons</li> <li>berry picking</li> </ul>	<ul style="list-style-type: none"> <li>positive</li> <li>neutral</li> <li>negative (ATV use)</li> </ul>	<ul style="list-style-type: none"> <li>regulations imposed/education</li> <li>law enforcement, increase warden presence, education of public</li> </ul>
	<ul style="list-style-type: none"> <li>illegal hunting (moose and deer)</li> <li>overhunting</li> <li>poaching, hunting around parks</li> </ul>	<ul style="list-style-type: none"> <li>negative</li> <li>negative</li> </ul>	<ul style="list-style-type: none"> <li>education, develop common harvest objectives externally</li> </ul>
TRAPPING	<ul style="list-style-type: none"> <li>hunting deer</li> <li>overtrapping</li> <li>illegal snaring</li> </ul>	<ul style="list-style-type: none"> <li>positive</li> <li>negative</li> <li>negative</li> </ul>	<ul style="list-style-type: none"> <li>impose quotas and seasons</li> <li>monitoring, permit sales and law enforcement</li> </ul>
	<ul style="list-style-type: none"> <li>food fish activities (commercial)</li> <li>stocking loss of native populations from recreational fishing</li> <li>overfishing</li> </ul>	<ul style="list-style-type: none"> <li>negative</li> <li>negative</li> <li>negative</li> </ul>	<ul style="list-style-type: none"> <li>awareness programme for overharvesting</li> <li>selective fishing</li> <li>impose quotas (daily and seasonal limits) and seasons</li> </ul>
DOMESTIC ACTIVITIES	<ul style="list-style-type: none"> <li>harvesting timber and logging (permitted)</li> </ul>	<ul style="list-style-type: none"> <li>negative</li> </ul>	<ul style="list-style-type: none"> <li>permits issued to original residents; snaring and logging in domestic harvesting plots permitted for a finite period</li> </ul>
	<ul style="list-style-type: none"> <li>polar bears and garbage</li> <li>occupying of campsites for periods of time</li> <li>operating resorts and townships and transportation corridors</li> <li>introduction of exotics; conflict with native species</li> </ul>	<ul style="list-style-type: none"> <li>neutral</li> <li>neutral</li> <li>negative</li> <li>negative</li> </ul>	<ul style="list-style-type: none"> <li>education concerning keeping campsites clean</li> <li>better management, working within natural boundaries of parks</li> <li>better management, removal of foreign species</li> </ul>

Source: Table is compiled from responses by park superintendents to questions #2 and #3 in "Aboriginal interests/traditional activities" section of questionnaire designed for park superintendents.

provided their level of use stayed within the carrying capacity of the respective park. Little consensus was found for restricting these practices from a management perspective in order to promote sustainability. These responses may have been influenced by the reality inherent within park policy of the awareness of the rights of aboriginal peoples to engage in such activities, a viewpoint strongly acknowledged by the responses of park superintendents.

Aboriginal practices play an important role in affecting whether a park can be sustainable or not. In the past, many of these practices were viewed as being undertaken on a sustainable basis. The reality today, however, is that the activities are present in many parks and are undertaken with few limitations being able to be imposed by park management particularly in the case of remote northern parks, unless specifically indicated in the Amendment of the National Parks Act in 1988, Northern Yukon being one example. Overall, however, there still exists the vast potential for native practices to influence a park's environment negatively on a long term basis and as a result become a major problem to a park achieving a sustainable environment.

#### **6.2.6. Recreation**

The opportunity for using parks for recreation has varied across the national park system, with intensity of recreational use being least in parks established in the extreme north. The problems associated with recreation in parks have long historical roots. Marsh (1983) notes that, since its creation, the national park system has been plagued by a historical relationship where recreation and tourism were promoted from the origins of the system along with nature preservation, each often at the expense of the other. Others have commented on the ambiguity present in the National Park Act (1930) that allowed for varying interpretations of 'unimpaired', 'enjoyment' and 'benefit' that resulted in recreation being an acceptable activity in parks even although the overall mandate of the act stressed preservation (Markle, 1975; Butler, 1986). According to Wall (1989), as long as park



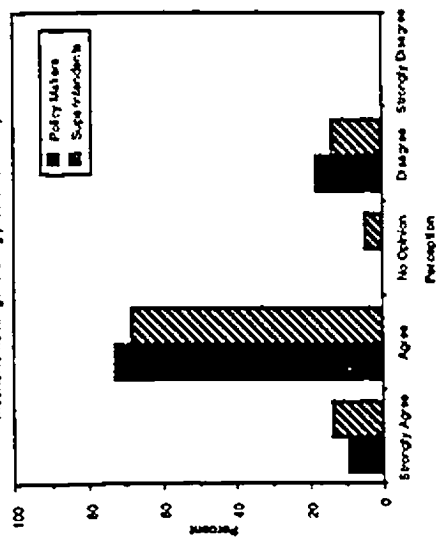
superintendents remain committed to the preservation of significant Canadian landscapes for future generations, as well as the provision of recreational opportunities for the enjoyment of present generations, a lack of symbiosis will remain. In light of the foregoing, the importance that is placed on recreation, in the opinion of the author, has an important bearing on the ability of parks to be sustainable.

A number of issues were examined under the general heading of Recreation. The perceptions of the policy makers and park superintendents are shown below (Figure 6.7 (A-H)). Asked if recreation represents one of the trigger mechanisms for generating problems within parks (Graph A), the majority of respondents (82 % for both policy makers and park superintendents) agreed. In light of this finding, it is not surprising to see that all respondents held the view that, within the context of sustainability, recreational activities offered by parks require re-evaluation (Graph B), the strength of this sentiment being greater for policy makers than park superintendents (66 % and 32 %, respectively, stating strong disagreement). Examples of what may be involved in a re-evaluation are illustrated by graphs C and D in which support is given by both populations to promote only low impact recreational activities in pursuit of sustainability (Graph C) and to place quotas on numbers participating in recreational activities in an attempt to aid in reducing impacts and maintaining carrying capacity (Graph D).

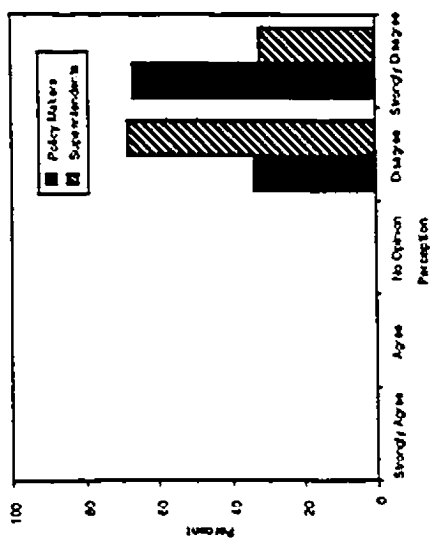
The perceptions shown in the next number of graphs within Figure 6.7 (E-H), would indicate the extent to which there exists a lack of clear consensus within the various levels of the Canadian Parks Service over what is acceptable policy for recreation within the parks. Graph A illustrated that recreation was a problem, yet the responses shown on Graph E indicates strong agreement, especially by park superintendents (77 %), not to exclude from parks those recreational activities that could be enjoyed and provided elsewhere. This scenario, however, must be balanced by the fact that 36 % of policy makers disagreed with the position taken by the majority of park superintendents. When the same question was asked in a slightly different way (Graph F), the vast majority of

Figure 6.7 Responses to issues on recreation

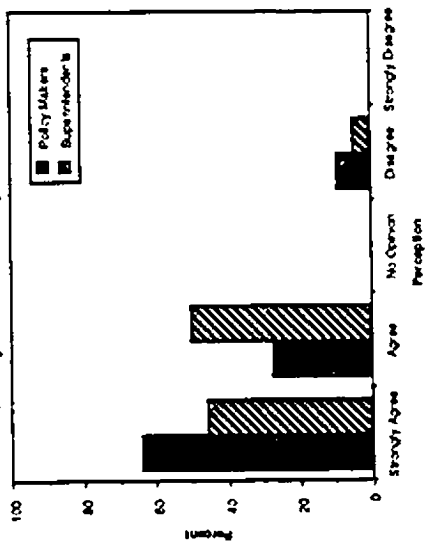
(A) Recreation represents one of the major trigger mechanisms for generating problems in the parks



(B) With the context of sustainability, recreational activities offered in parks do not require any re-evaluation



(C) If parks are to be sustainable, only recreational activities that are low impact in the nature, with the potential of remaining so should be encouraged and promoted



(D) Quotas of numbers participating in recreational activities, may be necessary in order to reduce any environmental impacts and maintain carrying capacity

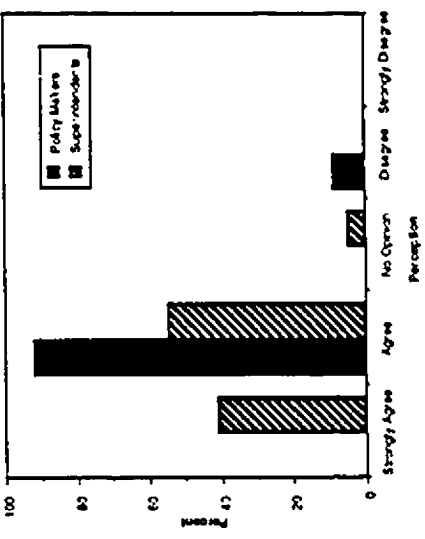
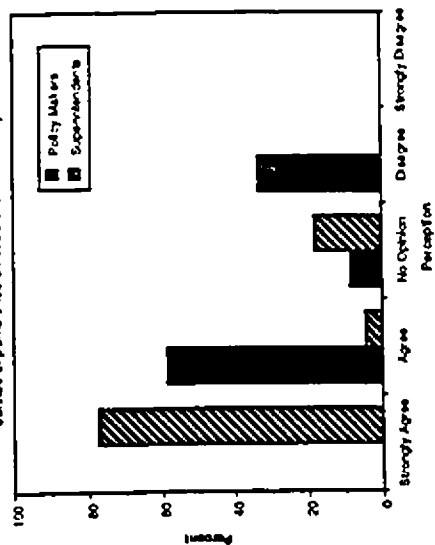
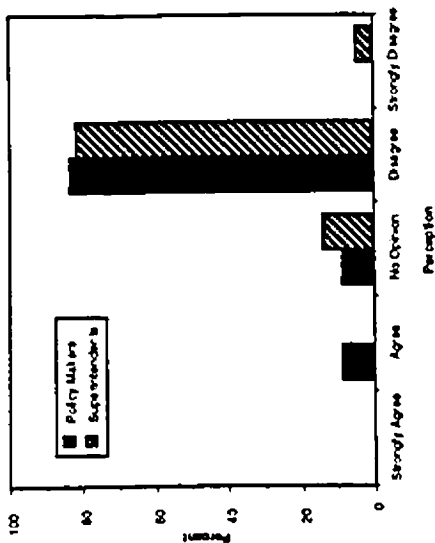


Figure 6.7 continued

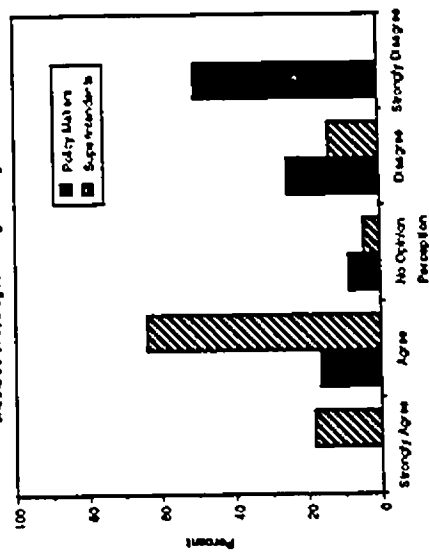
(E) Recreational activities that can be enjoyed and provided outside of parks should not be excluded from parks



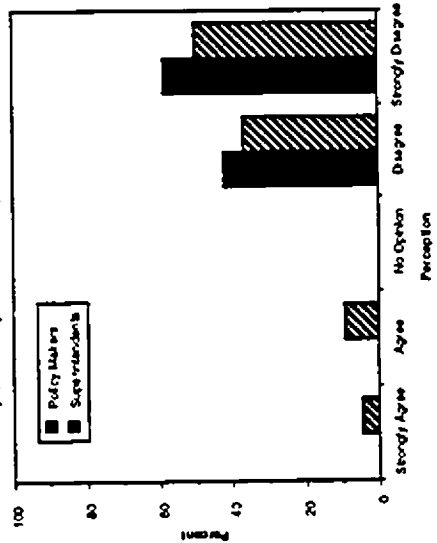
(F) Recreational activities that can be enjoyed and provided outside of parks should be excluded from parks



(G) Recreational activities perceived as undesirable for parks should be encouraged in neighbouring areas



(H) All forms of recreation are acceptable within parks provided they remain low in impact and numbers



both groups (83 % of policy makers and 82 % of park superintendents) disagreed that recreational activities that can be enjoyed and provided outside parks be excluded from parks. These perceptions of both groups are even more confusing given the responses to the position that recreational activities, perceived as unsuitable for parks, should be encouraged in neighbouring areas (Graph G). Park superintendents, for the most part, agreed (64 %) with 18 % stressing strong agreement, whereas the majority of policy strongly disagreed (50 %) or noted general disagreement (25 %) with only 17 % saying they agreed with this position. A possible explanation for this variance in response may be attributed to the reality that park superintendents are closer to the issues and have to cope with the problems and impacts that unsuitable types of recreation cause. In contrast, policy makers who are further from the issues may have responded to the matter with the perspective of accepting that recreational activities are permitted within parks as part of their overall mandate to the public. Yet, on saying that, the responses contained in the final graph (H) of figure 6.7 would suggest that both policy makers and park superintendents, disagreed that all forms of recreation are acceptable within parks even though they remain low in both impact they generate and the numbers involved. In response to this somewhat confusing picture, it is appropriate to focus on what are acceptable and non-acceptable types of recreational activity.

Park superintendents were asked to state which recreational activities present within their park(s) they considered to be acceptable. Table 6.2 reveals their response. Not all 22 respondents answered this request, the fact that not all recreational activities listed in the table are present for each park, explains some of the variation in response. The table reveals that for air-related activities, all five types of recreational activity are considered as not acceptable. In terms of land-based activities, only recreational snowmobiling is considered as a non-acceptable form of recreation within parks. Downhill skiing was an activity where park superintendents were undecided, with equal numbers stating it to be acceptable and non-acceptable. With respect to water-based activities only jet skiing was

Table 6.2 Perception of park superintendents on recreational activities present in national parks

RECREATIONAL ACTIVITY	ACCEPT IN PARKS # of replies (Max=22)	NOT ACCEPT IN PARKS # of replies (Max=22)
<b>Air-Based Activities</b>		
Sky Diving		6
Parascending		5
Gliding		5
Hang Gliding		5
Heli-biking	1	4
<b>Land-Based Activities</b>		
Hiking/Walking	19	
Camping	18	
Viewing & photograph plants & wildlife	18	
Backpacking	17	
Guided Nature Touring	16	
Cross Country Skiing	15	
Cycling	15	1
Recreational Walking	15	
Picnicking	15	
Touring	11	
Visiting Historic Sites	11	1
Motorcycling	10	2
Trail Biking	10	3
Orienteering	10	
Mountaineering	10	2
Ice Skating	10	
Golfing	7	2
Tennis	7	3
Horseback Riding	7	5
Downhill Skiing	4	4
Recreational Snowmobiling	3	9
<b>Water-Based Activities</b>		
Canoeing	17	
Fishing	15	2
Swimming	12	
Sailing	11	
Scuba Diving	10	1
Beachcombing	10	4
Snorkeling	9	
Diving	7	1
Motorboating	7	4
Clam Digging	4	4
Water & Jet Skiing	2	7

Source: Table is compiled from responses by park superintendents to question 10 in Recreation section of questionnaire designed for park superintendents.

regarded as unacceptable. The overall results would suggest that the majority of mechanised forms of recreation were perceived as non-acceptable, a few exceptions being motor boating and motorcycling. Passive forms of recreation, perceived as having the least impact are seen by the majority of respondents to be the type of activities most preferred in parks. Examples here include, hiking, recreational walking, backpacking, guided nature tours, viewing and photographing plants and wildlife and canoeing.

All types of recreational activity results in generating impacts on the park environment to varying degrees. Table 6.3 outlines the various measures that are being taken by park superintendents to limit recreational impacts. Dependent on the type of impact, mitigation measures are seen as ranging from educating visitors, implementing zoning, closure of areas, controlling visitor access and numbers, imposing quotas, to hardening of sites, trails, undertaking rehabilitation of areas, prescribed burning, implementation of EARP (Environmental Assessment and Review Process) and strict enforcement of regulations listed within the National Parks Act. For many of the parks within the national park system, impacts from recreational activities arise from the presence of tourism in the park. Like recreation, the role of tourism has an important role to play in parks being sustainable and it is to this issue that attention is focused next.

#### **6.2.7. Tourism**

Tourism has a long history in parks. Many of the early parks in western Canada were used for profit by the railroad companies, building luxury hotels in idyllic settings and catering to the desires of society's elite (Bella, 1987). With the advent of the automobile era, parks once inaccessible to the majority of society, became a new playground for the urban populace, and with that change came a growth in domestic tourism with national parks becoming popular destinations. The growth of international tourism in the latter part of this century and the image that went along with certain parks, resulted in the majority of attendance for some parks being made up almost exclusively by tourists. With the recent

Table 6.3 Mitigation taken to limits recreational impacts in parks

RECREATIONAL IMPACTS	MITIGATION TAKEN TO LIMIT IMPACTS
1. Loss of species diversity/removal of species	<ul style="list-style-type: none"> <li>• research: population habitat and mortality; control of introduced species impact on endemic species; reestablishment of representative forest cover</li> <li>• co-operative management-intervention with surrounding agencies</li> <li>• limiting access, specially motorised access and trail closure in places</li> <li>• enforcement by wardens in restriction on collecting species</li> <li>• study impact of snowmobiles and ATVs</li> </ul>
2. Habitat and site disruption	<ul style="list-style-type: none"> <li>• improved planning and facility design (appropriate facilities,e.g., hardened trails)</li> <li>• site rehabilitation</li> <li>• limiting access, limiting recreational activity, closure and zoning</li> <li>• quotas on numbers of visitors permitted</li> <li>• application of EARP (Environmental Assessment and Review Process)</li> </ul>
3. Disturbance/conflict with wildlife	<ul style="list-style-type: none"> <li>• public education</li> <li>• limiting visitor access to certain areas (e.g., nesting sites, breeding areas)</li> <li>• closure/seasonal closure</li> <li>• EARP management, park management review</li> <li>• limit activity to non-critical periods of the year, limit motorised access/activity</li> <li>• enforcement of visitor access controls, more patrolling</li> </ul>
4. Soil compaction/erosion	<ul style="list-style-type: none"> <li>• active management (divert use to hard areas, hardening of sites)</li> <li>• site rehabilitation (planting, boardwalks, site plans developed for heavy use areas)</li> <li>• limiting numbers, placing quotas for areas, zoning</li> <li>• EARP</li> <li>• education</li> </ul>
5. Burning vegetation/starting fires	<ul style="list-style-type: none"> <li>• prescribing burning</li> <li>• forest fire suppression</li> <li>• ban campfires, smoke patrols, increased enforcement during dry season</li> <li>• education</li> </ul>
6. Trampling/damaging of vegetation	<ul style="list-style-type: none"> <li>• designated trail quotas (enforcement of access controls)</li> <li>• trail signage and keeping on trails</li> <li>• change trails to restrict flow</li> <li>• trail planning to minimize impact (rehabilitation, boardwalks, shuttle bus service)</li> <li>• EARP application</li> <li>• education (media and interpretative programming)</li> <li>• zoning</li> </ul>

Table 6.3 continued

RECREATIONAL IMPACTS	MITIGATION TAKEN TO LIMIT IMPACTS
7. Heavy visitor use	<ul style="list-style-type: none"> <li>• controlling numbers of visitors to heavily used sites</li> <li>• upgrade facility (improved planning and facility design)</li> <li>• quotas (controlling access)</li> <li>• zoning</li> <li>• defer large groups</li> </ul>
8. High noise level of users/vehicular noise	<ul style="list-style-type: none"> <li>• campground enforcement only (no control over boat motors)</li> <li>• restrict helicopter height</li> <li>• enforcement of speed limits on transportation corridors passing through parks</li> <li>• zoning</li> </ul>
9. Heavy vehicular traffic	<ul style="list-style-type: none"> <li>• no control over Trans Canada Hwy (increase of 3% per year)</li> <li>• controlled access</li> <li>• close roads in backcountry areas by leaving roads rough</li> <li>• trail maintenance</li> </ul>
10. Widening trails/creating new one /overuse of existing paths	<ul style="list-style-type: none"> <li>• development of boardwalks in wet terrain, develop seasonal footpaths</li> <li>• restrict horse use during wet conditions</li> <li>• zoning and placing quotas on trails</li> <li>• no new trails developed</li> <li>• visitor education</li> </ul>
11. Increasing garbage	<ul style="list-style-type: none"> <li>• pack in/pack out garbage</li> <li>• recycling programmes in campgrounds</li> <li>• bear proof containers</li> <li>• education</li> </ul>
12. Decline in scenic value because of presence of structure	<ul style="list-style-type: none"> <li>• reduce the number of hydro lines</li> <li>• site design</li> <li>• E/ARP application</li> <li>• removal of redundant buildings</li> <li>• mitigation through development of vision statement for parks</li> <li>• establish architectural motif and design guidelines</li> <li>• minimize structures</li> </ul>
13. Vandalism	<ul style="list-style-type: none"> <li>• enforcement/stakeouts</li> <li>• increased warden presence</li> <li>• liquor bans on long weekends</li> </ul>

Source: Table is compiled from responses by park superintendents to question #9 in "Recreation" section of questionnaire designed for park superintendents.



growth in alternative forms of tourism, parks have become landscapes where the numbers engaged in types of tourism perceived to be environmentally friendly or at least sympathetic with the environment they are based on and often dependent upon for their continued existence, have increased substantially over the recent decade.

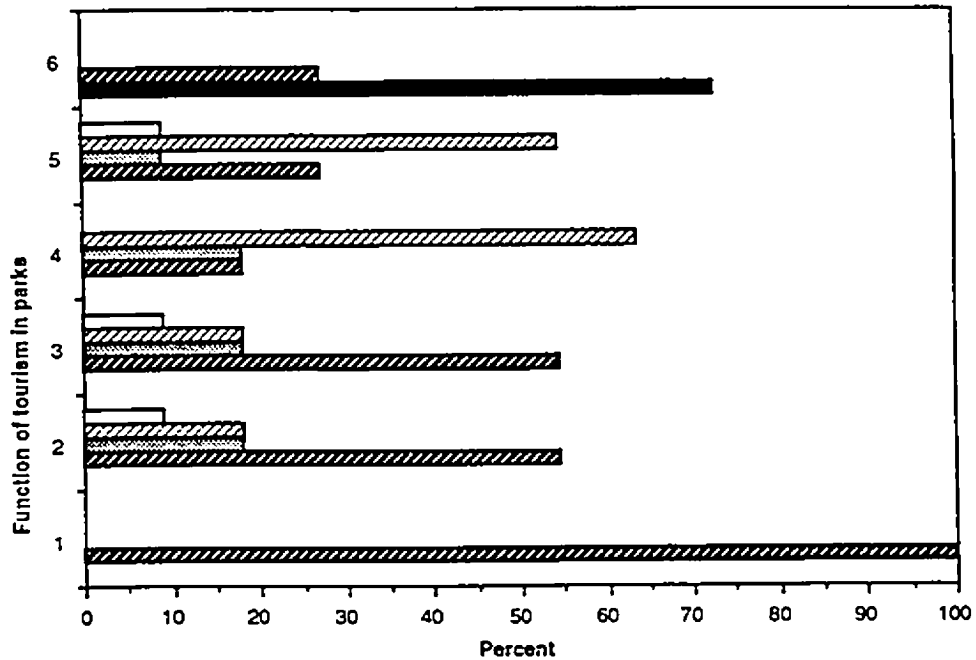
Tourism has been considered a potential threat within parks on the basis that tourists cause environmental and ecological degradation. Species habitats are often altered with possible elimination of wildlife, soil becomes compacted and general erosion of the environment, that initially encouraged tourism, occurs (Speight, 1973; Wall and Marsh, 1982; Mathison and Wall, 1982; Wall and Wright, 1977). Although this paints a negative picture, Innskeep (1987) offers some positive news when he argues that tourism can actually be a positive force in achieving conservation objectives and maintaining or even improving environmental quality. Recently, a new strategy has been suggested (Nelson, Butler and Wall, 1993) in which tourism, by being linked with sustainable development, can promote environmental conservation through more ecologically conscious planning, development, monitoring and management. A framework of this nature has potential in fostering a symbiotic relationship between tourism and environmental quality and was discussed at some length in chapter two of the thesis.

In light of the foregoing, a better understanding of tourism is needed for parks, especially given recent policy developments to expand on this activity and further develop the market to attract environmentally conscious forms of tourism. Questions were asked of policy makers and park superintendents concerning three aspects: (1) the function of tourism within parks, (2) recognition of impacts and (3) characteristics of tourism which may be perceived to be sustainable.

With respect to the first issue of the function of tourism within parks, Figure 6.8 indicates that both groups state that the functions are first, to be a showcase for the natural and cultural heritage of parks, and second, to satisfy the 'enjoyment and benefit' mandate of the National Parks Act. This figure also reveals that least accepted functions, on the part

Figure 6.8

Perception of function(s) of tourism within parks  
response of policy makers



Strongly Agree
  Agree
  No Opinion
  Disagree
  Strongly Disagree

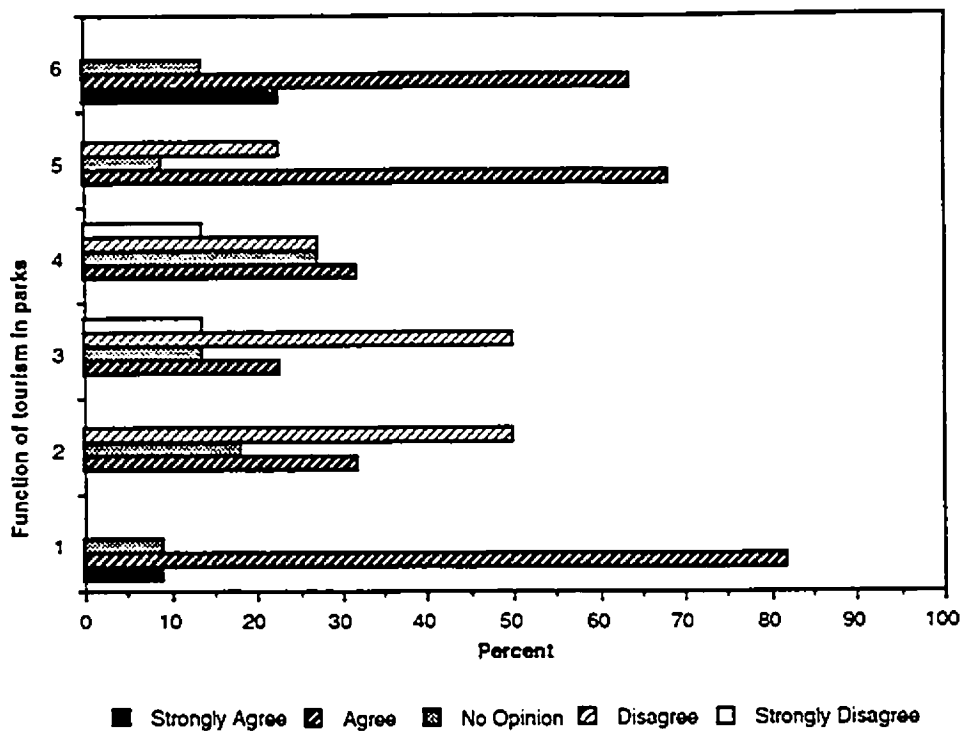
Functions of tourism within parks

Scores received

6. Showcase for the natural and cultural heritage of parks	+ 19
5. Provide tourism opportunities within aesthetically pleasing setting	- 5
4. Provide tourism facilities for a domestic and international market	- 5
3. Generate capital for local areas, acting as a growth pole	+ 2
2. Provide employment for locals	+ 2
1. Satisfy the mandate of "enjoyment and benefit"	+ 11

Figure 6.8 continued

Perception of function(s) of tourism within parks  
response of park superintendents



Functions of tourism within parks

Scores received

6. Showcase for the natural and cultural heritage of parks	+ 24
5. Provide tourism opportunities within aesthetically pleasing setting	+ 10
4. Provide tourism facilities for a domestic and international market	- 5
3. Generate capital for local areas, acting as a growth pole	-12
2. Provide employment for locals	- 4
1. Satisfy the mandate of 'enjoyment and benefit'	+ 22

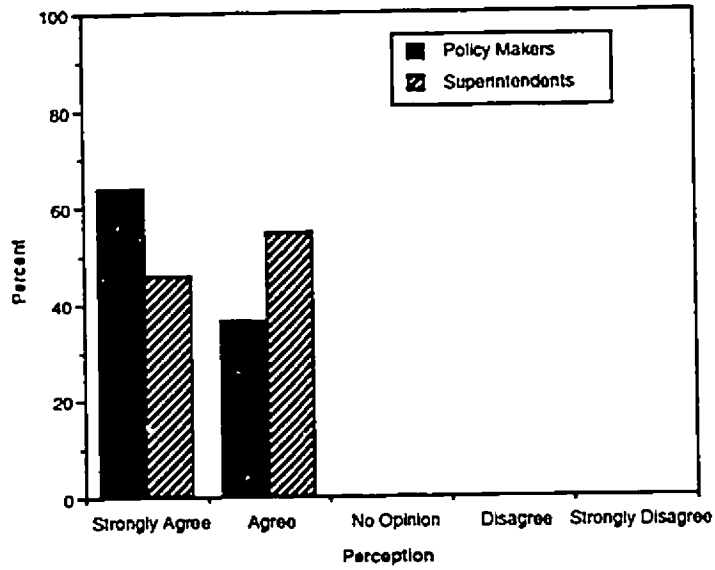
of policy makers, involve the provision of tourism facilities for a domestic and international market and the provision of tourism opportunities within an aesthetically pleasing setting. Park superintendents noted that the tourism function should not be focused on providing only appropriate facilities to accommodate demand, and stated as their least preference, 'tourism as a generator of capital for local areas and acting as a growth pole to stimulate regional economic development', even although a number of parks were created for that precise reason (Nelson, 1973). The response given to the question: 'Tourism should be promoted in national parks as it is an effective means of generating revenue' had over 60 % of park superintendents (18 % had no opinion) and 90 % of policy makers disagree with this position.

The impact(s) of tourism were addressed in general terms only, but are implicit in the responses park superintendents gave to problems anticipated from types of tourism expected to grow in the future and are examined later in this subsection. With respect to general comments made by both groups to impacts, consensus was noted that increasing numbers of visitors to national parks necessitate understanding the impacts generated on the park environment (Figure 6.9 (A)). A difference of opinion exists, however, in response to how managerial decisions to control access to certain areas within parks aid in limiting impacts from tourism. The majority of policy makers (73 %) are found to agree, whereas the majority of park superintendents (77 %) disagreed (Figure 6.9 (B)). The latter response may be influenced by the experience of having to cope with increasing tourism at the ground level, not just as a general policy issue, and with the reality that, all-to-often and at the expense of the park landscape, some tourists may continue to disregard park regulations and restrictions in order to attain the ultimate experience desired from their visit.

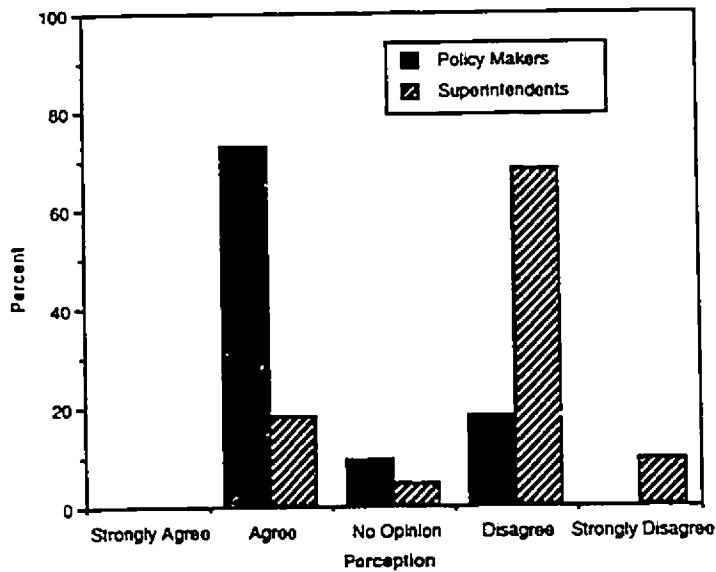
The third aspect of the characteristics of sustainable tourism for parks generated the following responses (see Figure 6.10). Fifteen characteristics of what are viewed to be appropriate were given to both policy makers and park superintendents, based upon recent research that has attempted to link tourism with sustainable development principles (Butler,

Figure 6.9 Responses to issues of tourism impacts

(A) With increasing numbers of visitors to national parks, there is a need to understand the impacts from tourism on park environments



(B) The impacts of tourists on the park environment are limited given managerial decisions to control access to certain areas



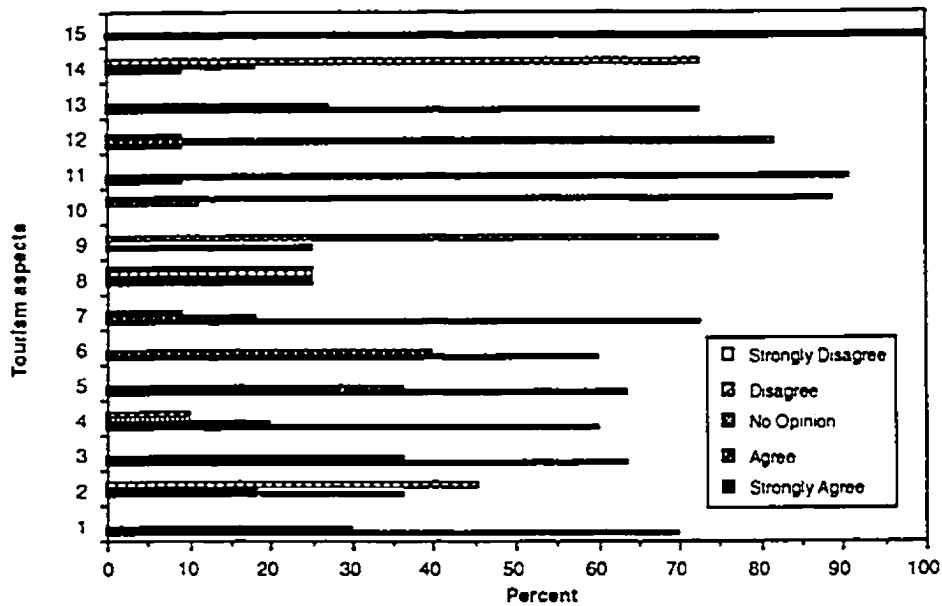
1993). Noting difficulties of linkage, stemming in part from the lack of a clear definition of sustainable tourism development, Butler offered the following definition: "tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and well-being of other activities and processes" (Butler, 1993: 29). As noted by the same author, this should not be confused with sustainable tourism, which may be thought of as "a form of tourism that is able to maintain its viability in an area for an indefinite period of time" (Butler, 1993: 29). The fifteen characteristics were developed from these positions and may be viewed as a test of how the definitions may be applied within the national park setting.

By scoring responses from +2 to -2 (strongly agree to strongly disagree) the five most favoured characteristics by policy makers, in order of strength of agreement were: 'tourism which does not degrade the environment that it is dependent on if it is to continue' (+19), 'controlling tourists in fragile and unique areas of parks' (+18), 'preventing the expansion of activities and facilities which are viewed as undesirable' (+18), 'tourism development which maintains the ecological integrity of the landscape' (+18) and 'development (i.e., infrastructure) which is low in impact' (+17). The same five characteristics received the highest scores by park superintendents with some variation in order (+36 for 'controlling tourists in fragile and unique areas' and 'preventing the expansion of activities and facilities which are viewed as undesirable', +30 for 'tourism which does not degrade the environment that it is dependent on if it is to continue' and +29 for 'tourism development which maintains the ecological integrity of the landscape' and 'development which is low in impact').

Other aspects of tourism which had a strong positive score included for policy makers: 'allowing only tourism types which are low in terms of environmental impacts' (+16), 'forms of tourism which have a positive economic, social and environmental

Figure 6.10

Requirements for tourism to be perceived as sustainable within national parks  
response of policy makers

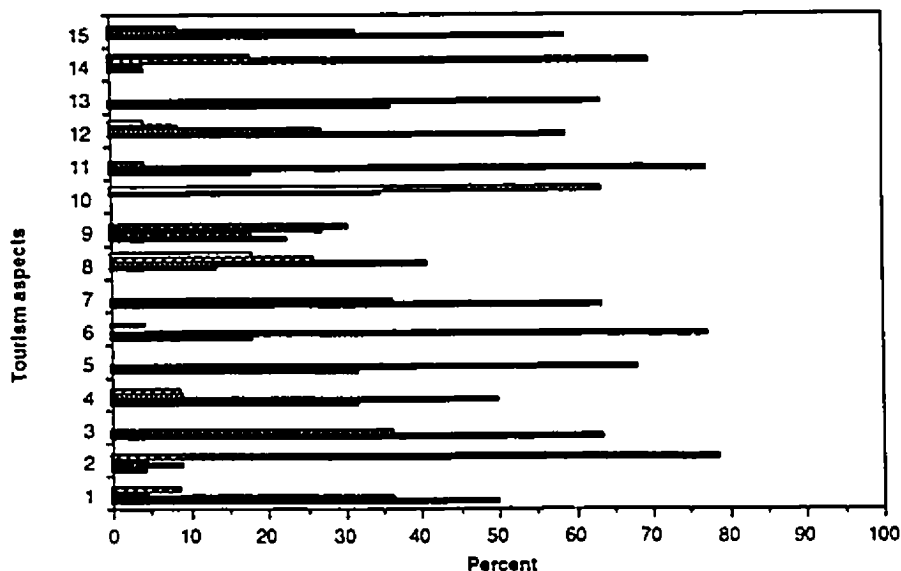


Tourism Aspects

Score received

15. Tourism which is seen to have a symbiotic relationship with other park activities	+ 11
14. Tourism which alters the environment but at the same time maintains its ecological integrity	- 7
13. Tourism which does not degrade the environment that it is dependent on if it is to continue	+ 19
12. Tourism which remains viable over time	+ 11
11. Forms of tourism which have a positive economic, social and environmental component	+ 12
10. Tourism which places an emphasis on economic benefits only	- 17
9. Locating all forms of accommodation outside of parks	- 2
8. Encouraging the development of small-scale accommodation inside the parks	- 2
7. Preventing the expansion of activities and facilities which are viewed as undesirable	+ 18
6. Allowing only tourism types which are low in terms of environmental impacts	- 16
5. Tourism development which maintains the ecological integrity of the landscape	+ 18
4. Preventing visitors from encroaching in areas where permits are needed for entry	+ 9
3. Controlling tourists in fragile and unique areas	- 18
2. Development similar to what is present in parks	- 1
1. Development which is low in impact	- 17

Figure 6.10 continued

Requirements for tourism to be perceived as sustainable within national parks  
response of park superintendents

## Tourism Aspects

## Score received

15. Tourism which is seen to have a symbiotic relationship with other park activities	+ 11
14. Tourism which alters the environment but at the same time maintains its ecological integrity	- 23
13. Tourism which does not degrade the environment that it is dependent on if it is to continue	+ 30
12. Tourism which remains viable over time	+ 9
11. Forms of tourism which have a positive economic, social and environmental component	+ 25
10. Tourism which places an emphasis on economic benefits only	- 22
9. Locating all forms of accommodation outside of parks	- 7
8. Encouraging the development of small-scale accommodation inside the parks	- 11
7. Preventing the expansion of activities and facilities which are viewed as undesirable	+ 36
6. Allowing only tourism types which are low in terms of environmental impacts	- 24
5. Tourism development which maintains the ecological integrity of the landscape	+ 29
4. Preventing visitors from encroaching in areas where permits are needed for entry	+ 23
3. Controlling tourists in fragile and unique areas	+ 36
2. Development similar to what is present in parks	- 14
1. Development which is low in impact	+ 29



component to them' (+12), 'tourism which remains viable over time' (+11) and 'tourism which is seen to have a symbiotic relationship with other park activities' (+11). Only the first two were viewed by park superintendents as important, receiving a score of +25 each. The latter two, although still perceived as positive, received considerably lower scores, +9 and +11, respectively. One aspect considered important by park superintendents, given the score it received, was the view of 'preventing visitors from encroaching in areas where permits are needed for entry' (+23).

Aspects of tourism that policy makers noted disagreement on and which may imply that they offer little to ensure that tourism is sustainable included 'tourism which places an emphasis on economic benefits only' (-17), and 'tourism which alters the environment but at the same time maintains its ecological integrity' (-7). Three other characteristics received negative scores ('encouraging the development of small scale accommodation inside the park' (-2), 'locating all forms of accommodation outside of parks' (-2) and 'development similar to what is already present in parks' (-1)), but because of the low numbers involved, it may be that policy makers hold the view that these factors have limited bearing on how sustainable tourism is in parks. Four of these five characteristics received negative scores from park superintendents. They noted strong disagreement for the first two mentioned by policy makers above, receiving scores of -22, and -23, respectively. Two of the three aspects that had received marginal negative scores by policy makers (development similar to what is already present in parks, and encouraging the development of small scale accommodation inside the parks), received a much more negative response of -14 and -11, respectively from park superintendents.

From these overall results, a number of points can be made. First, there exists a high degree of consensus between policy makers and park superintendents, although the strength of opinion may be greater by the latter. Second, it is clear what are considered to be appropriate tourism characteristics and what are not in terms of promoting sustainable tourism. Third, the principles in sustainable tourism development, as advocated by Butler

(1993). would appear to hold true, except that responses to the characteristic of 'tourism which is seen to have a symbiotic relationship with other park activities', which generated low, but positive scores (+11 for both policy makers and park superintendents), may imply the "successful development and well-being of other activities and processes" element of the definition is not of great importance for tourism that is promoted in a predominantly protected landscape where development is limited.

The expected growth of tourism in parks in the future is an issue that is important to the overall understanding of what is involved in promoting sustainable tourism. In order to address this aspect, only the park superintendents were asked to indicate what types of tourism they considered to have growth potential as it related to their specific park, to list any problems that may be anticipated as a result of growth and any measures to mitigate against them.

Nineteen superintendents said that they expected growth to occur in heritage tourism, ecotourism and organised tours. Other types of tourism expected to grow included remote (17 parks), cultural (15 parks) winter/ski, and adventure tourism (14 parks). Only modest growth was expected in nine parks for mountain tourism, with limited growth in resort tourism and mass tourism, three and five parks, respectively. Table 6.4 shows the range of problems park superintendents anticipate for each type of tourism and the measures that may be taken to mitigate against problems. The overall impression of this table is first, that even within the same tourism type, a varied number of problems are listed that may arise, and second, the method chosen to alleviate problems will vary on a park to park basis according the specific nature of the problem and the characteristics of the park itself. A second impression from this table is the perception that park superintendents have in place an understanding of how to address specific problems, and third, that it is necessary to view each park separately, both in terms of the problems they face from tourism and possible solutions. Such a common sense approach will assist in promoting tourism which has the potential for sustainability.

Table 6.4 Problems anticipated by tourism growth and mitigation that may be taken to limit problems

TYPE OF TOURISM	PROBLEMS ANTICIPATED	MITIGATION TAKEN TO LIMIT PROBLEMS
REMOTE	<ul style="list-style-type: none"> <li>• decrease in wilderness experience</li> <li>• accessibility to users with limited capacity</li> <li>• visitor/wildlife confrontation</li> <li>• backcountry sanitation</li> <li>• trail damage from horses and horse overuse</li> <li>• search and rescue costs</li> <li>• lack of adequate facilities</li> </ul>	<ul style="list-style-type: none"> <li>• education on use, recognize limitations</li> <li>• closures, education and quotas</li> <li>• eliminate random camping</li> <li>• reduce horse traffic</li> <li>• permits and skill assessment of users</li> <li>• provide more facilities</li> </ul>
MOUNTAIN	<ul style="list-style-type: none"> <li>• erosion, disruption of vegetation</li> <li>• demand for increased variety of recreation (mountain bikes, hang gliding)</li> <li>• increased search and rescue requirements</li> </ul>	<ul style="list-style-type: none"> <li>• control access and circulation</li> <li>• clearly delineate policy on use</li> <li>• more staff, more training dollars</li> </ul>
CULTURAL	<ul style="list-style-type: none"> <li>• increased visitation to specific sites</li> <li>• "hot-hunters", loss of artifacts</li> <li>• increased pressure on facilities and surrounding natural resources</li> <li>• increase in numbers of people</li> </ul>	<ul style="list-style-type: none"> <li>• controlling numbers visiting specific sites</li> <li>• education/enforcement</li> <li>• expand facilities, control and restrict access to natural areas</li> <li>• agreements required on acceptable numbers</li> </ul>
WINTER/SKI	<ul style="list-style-type: none"> <li>• disrupting wildlife</li> <li>• impact of mountain and trail development</li> <li>• increased search and rescue needs conflict with avalanche control programs</li> <li>• increased usage</li> <li>• search and rescue impacts on resource</li> <li>• not enough facilities</li> </ul>	<ul style="list-style-type: none"> <li>• locate trails outside of important habitats</li> <li>• long term development plans</li> <li>• controls/mandatory restriction, area closures</li> <li>• change in timing of operational support services</li> <li>• testing, use permits</li> <li>• provide more facilities</li> </ul>
HERITAGE	<ul style="list-style-type: none"> <li>• increasing visitation to specific sites</li> <li>• application of park business regulations to outside of parks</li> <li>• demand for services that cannot be met due to shrinking dollars</li> <li>• increased pressure on facilities and surrounding natural resources</li> <li>• removal of artifacts</li> </ul>	<ul style="list-style-type: none"> <li>• controlling numbers visiting specific sites</li> <li>• clarify park regulations and policy for outside businesses and groups</li> <li>• more dollars</li> <li>• expansion of existing facilities, control use to immediate area</li> <li>• education</li> </ul>
ADVENTURE	<ul style="list-style-type: none"> <li>• increasingly crowded campsites</li> <li>• pressure for more access in backcountry</li> <li>• impact on selected areas and resources</li> <li>• overall numbers increasing</li> </ul>	<ul style="list-style-type: none"> <li>• more input into itineraries</li> <li>• limit numbers</li> <li>• limit numbers and restrict areas</li> <li>• permits and need to test them</li> </ul>

Table 6.4 continued

TYPE OF TOURISM	PROBLEMS ANTICIPATED	MITIGATION TAKEN TO LIMIT PROBLEMS
ECOTOURISM	<ul style="list-style-type: none"> <li>• presentation of appropriate messages</li> <li>• business regulation application</li> <li>• overuse of park areas</li> <li>• increased pressure on sensitive flora and fauna</li> <li>• increasing numbers</li> <li>• development of undisturbed landscape</li> <li>• incremental growth</li> <li>• insufficient infrastructure, pressure for development outside park policy</li> <li>• restrictions of management plans, pressure for non-compatible use</li> </ul>	<ul style="list-style-type: none"> <li>• co-operation in preparation of trips</li> <li>• monitor activities and limit use where necessary</li> <li>• controlling and restricting access to sensitive areas during certain time periods</li> <li>• limit numbers</li> <li>• limit development to existing developed areas</li> </ul>
RESORT TOURISM	<ul style="list-style-type: none"> <li>• increased visitation to specific sites</li> <li>• more development and facilities required</li> <li>• overuse of day use areas and lack of accommodation</li> <li>• overcrowding of visitor facilities</li> <li>• traffic pressure (larger tours)</li> <li>• numbers may exceed the ability to manage</li> <li>• insufficient staff to provide positive experience</li> <li>• high visitation levels</li> <li>• facilities, more development</li> <li>• overcrowding</li> <li>• increased pressure on flora (erosion of dunes)</li> <li>• numbers may exceed ability to manage</li> </ul>	<ul style="list-style-type: none"> <li>• establish long term development plans with IARP, market studies and energy requirements</li> <li>• controlling numbers visiting sites</li> <li>• restrict to existing acceptable activities</li> <li>• better definition of an area's future growth, provide infrastructure</li> <li>• proactive communication/marketing with tour company schedules</li> <li>• advertise and promote shoulder season tours</li> <li>• solicit help from communities around parks</li> <li>• more staff, volunteers</li> <li>• limit numbers, quotas, permits</li> <li>• restrict to existing and acceptable facilities</li> <li>• marketing in shoulder seasons</li> <li>• restrict access, funnel people to designate dune crossings</li> <li>• solicit help from communities around parks</li> </ul>
ORGANISED TOURS		
MASS TOURISM		

Source: Table is compiled from responses of park superintendents to question #7 in the section on "Tourism" in questionnaire to park superintendents

### **6.2.8. Development-oriented Interests**

This section examines a number of items that were grouped under the heading Development-oriented Interests. The responses of both groups are illustrated by Figure 6.11 (A-E). Both policy makers and park superintendents acknowledged that parks play a key role in the economic development of their surrounding regions (Graph A), despite earlier comments noted for tourism, particularly references to providing appropriate facilities to accommodate demand and parks as growth poles to stimulate regional economic development.

A second issue addressed the extent to which commercial development should be permitted within parks. On this issue, consensus was present as both groups recognized that this was an important issue that required attention (Graph B). Over 60 % of park superintendents voiced strong agreement with respect to this issue, while the majority of policy makers (92 %) indicated their agreement.

The third issue focused on development in park town sites. Graph C illustrates that the majority of policy makers (91 %) and superintendents (59 %) agreed to the view that park town sites have the potential of being sustainable provided their growth does not exceed the physical and social carrying capacity of the actual site itself. There was less consensus over the development and expansion of infrastructure related to town sites (Graph D). Even if the ecological integrity of the parks could be maintained on a long term basis, 55 % of park superintendents noted their disagreement with infrastructure development and expansion. In contrast, while a substantial percentage of policy makers (36 %) were of the same opinion as that of the park superintendents, the majority (63 %) saw development as acceptable provided that ecological integrity was maintained on a long term basis.

The fourth and final issue which addressed the concept of ecological integrity for parks overall (Graph E), saw both groups strongly agreeing to the need to maintain

Figure 6.11 Responses to issues on development-oriented interests

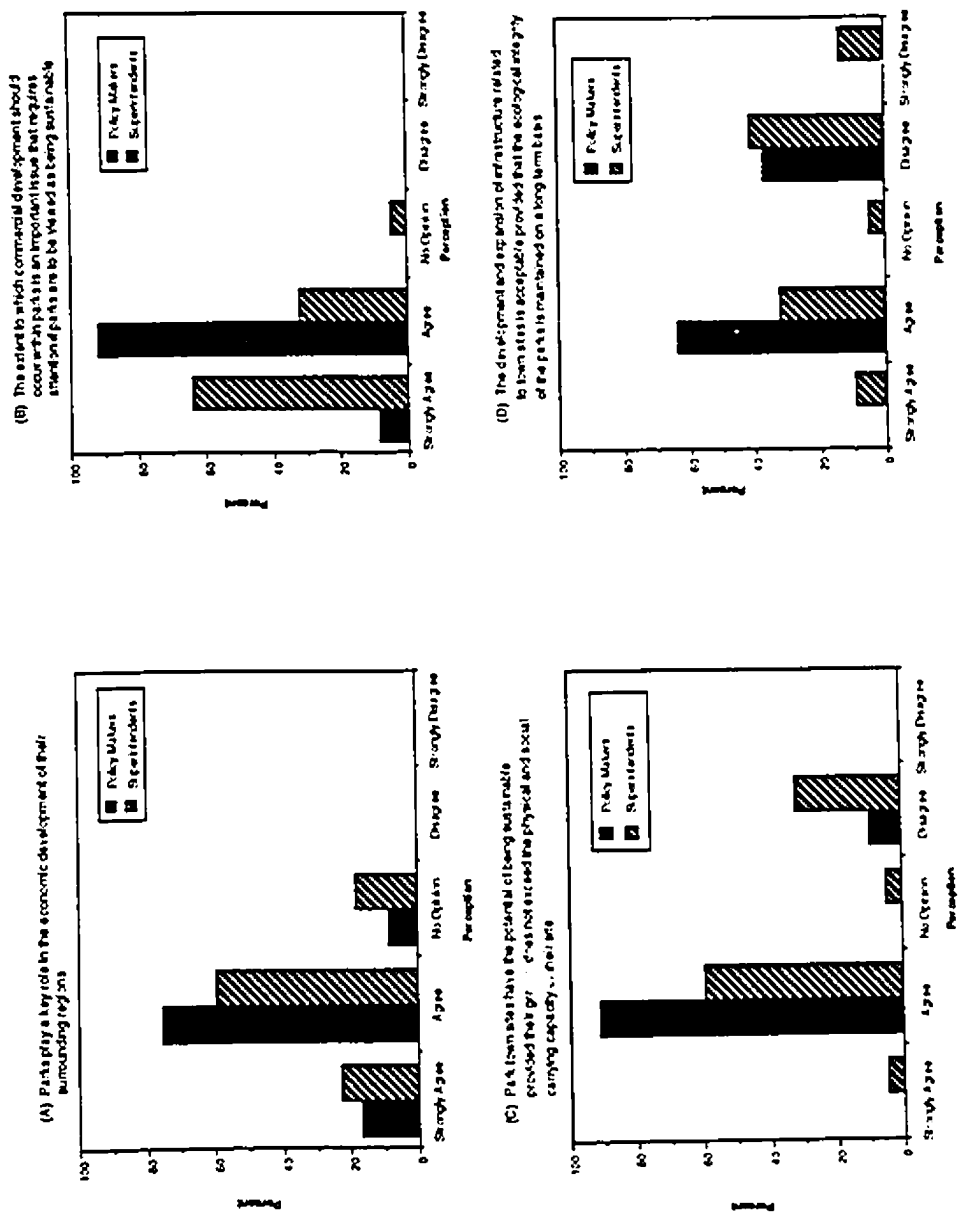
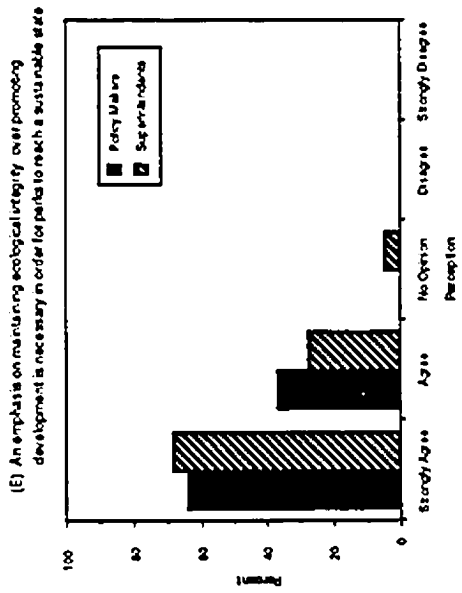


Figure 6.11 continued



ecological integrity over the promotion of development in order for parks to reach a sustainable state.

### **6.2.9. Management Planning**

The final theme that was addressed in the questionnaires was a general one, entitled Management Planning. Questions centred on, first, the perception of parks as being sustainable, second, the issue of managing for external threats, and third, strategies available to managers to address issues involved with the long term management of parks.

Six aspects were noted under the sub-theme of 'perception of parks as sustainable'. The responses by both the policy makers and park superintendents are recorded in Figure 6.12 (A-F). Both groups noted their agreement (91 % of policy makers and 86 % of park superintendents) that parks can be sustainable in nature provided they are efficiently and effectively managed (Graph A), voiced equally strong disagreement (100 % and 86 %, respectively) to the position that it was an unrealistic goal to view parks as possible sustainable landscapes (Graph B). It is therefore not surprising that both groups expressed strong agreement (Graph C) that parks can and should be examples of sustainable landscapes. In order for such a goal to be attained, it is important that current management practices are such that they are suited to understanding and implementing sustainable practices. Perceptions recorded in Graph D would suggest that, according to policy makers (67 %), management at present is appropriate to accomplish this task. While the majority of park superintendents (59 %) indicated general agreement with this task, a significant portion disagreed (36 %), suggesting that management at the park level requires change. The final two graphs (E) and (F), offer some ideas of what may be involved in managing for sustainability. Placing an emphasis on maintaining ecological integrity of sites over development (Graph E) and managing parks using sustainability principles which take into account economic, social and environmental considerations (Graph F), are two possible



Figure 6.12 Responses to issues on management planning - perception of parks as sustainable

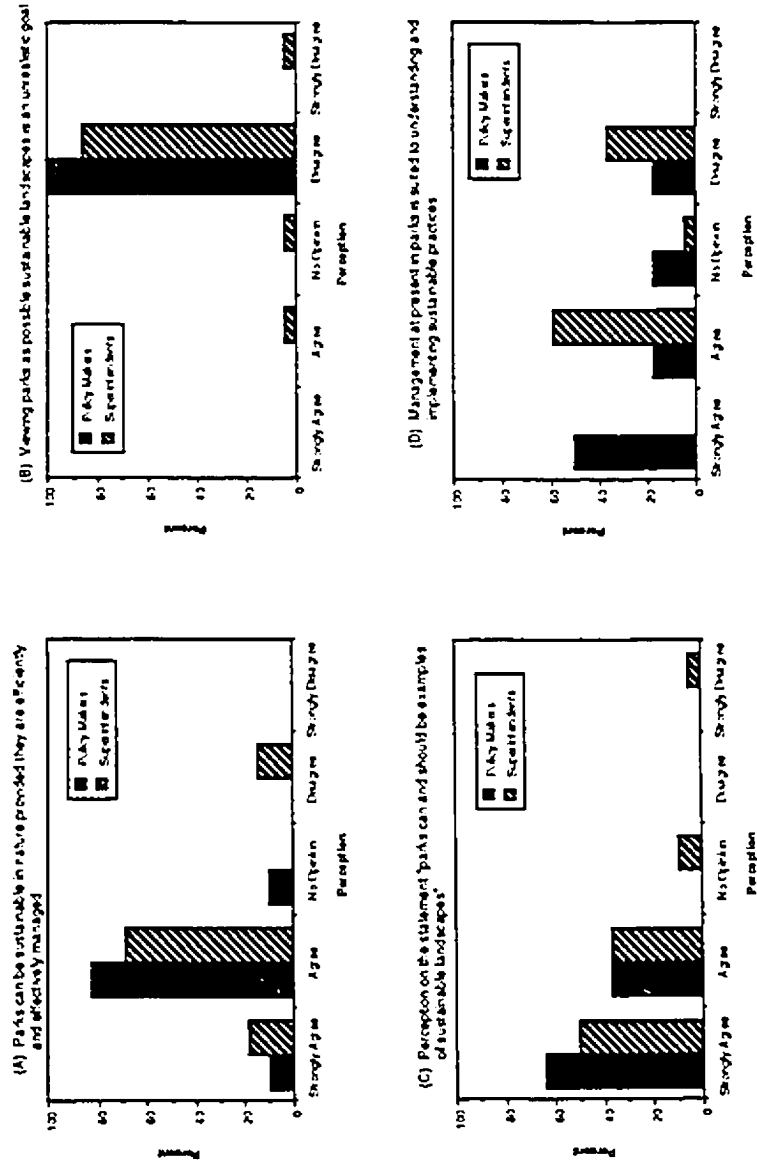
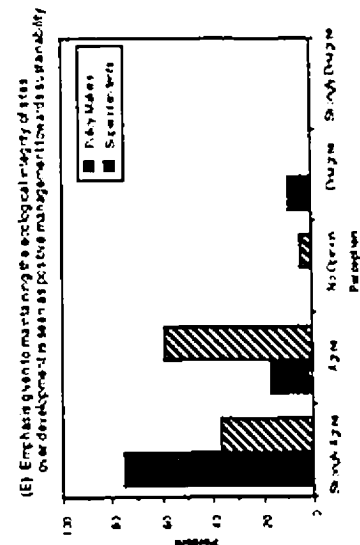
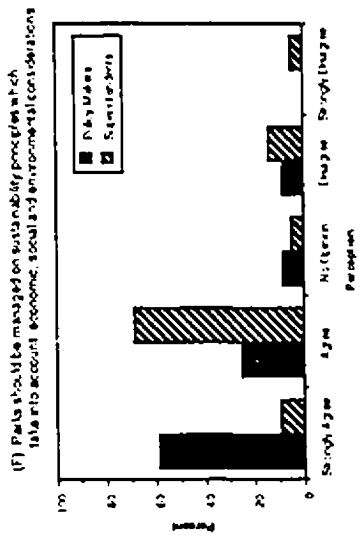


Figure 6.12 continued



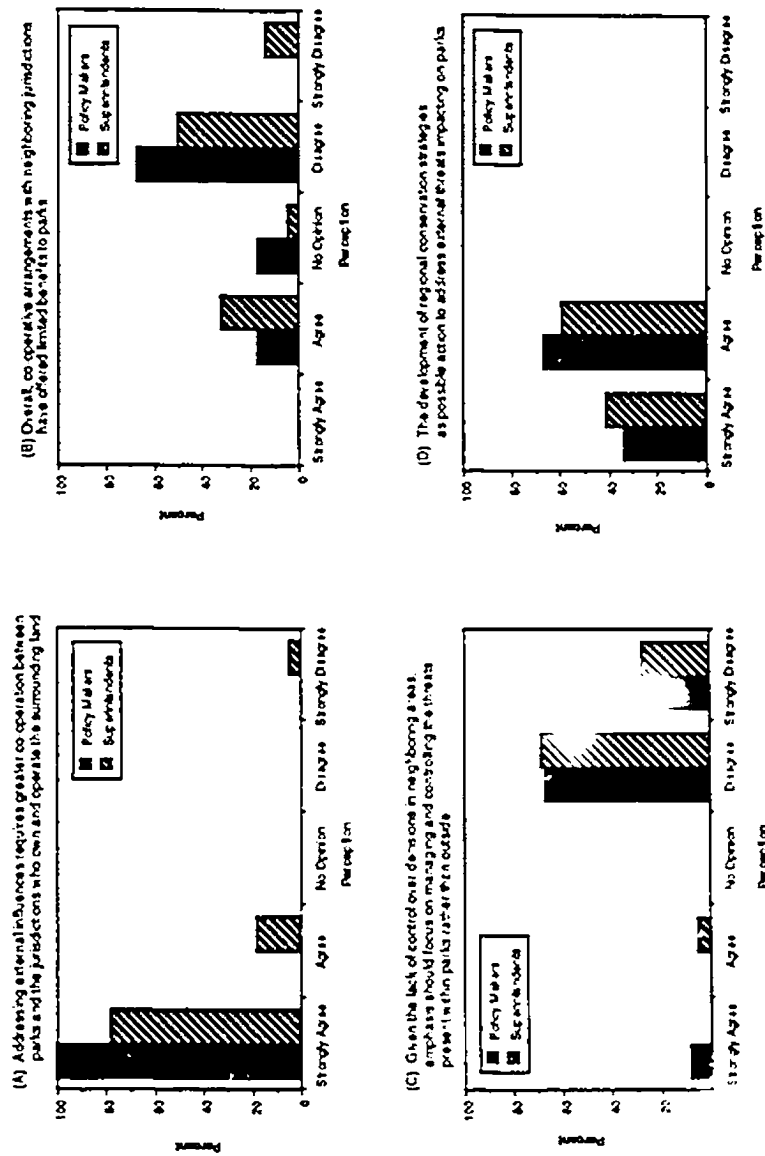
ideas and ones which received support from both groups. Both graphs show that the level of support these ideas received was greater from policy makers than from park superintendents.

The inability to effectively manage for external threats is a problem common for all park superintendents and one which has received acknowledgement at the policy level, but where few substantive developments have been made. If parks are to be sustainable, the region surrounding them and the activities, type and level of development present, must be somewhat compatible with that found within the parks themselves. Too often this has not been the case with national parks viewed as islands of protection within a sea of development (Dearden, 1988). The second sub-theme of 'managing for external threats' explored several issues, and the respondents' perceptions are shown in Figure 6.13 (A-D).

A strong consensus was noted by both groups that in order to address external influences, greater co-operation than exists at present between parks and the jurisdictions who own and operate the surrounding land is required (Graph A). In light of this finding, the opinion of the majority of policy makers (67 %) and park superintendents (64 %), still disagreed with the perception that co-operative arrangements with neighbouring jurisdictions have offered limited benefit to parks (Graph B). Furthermore, as Graph C shows, that even given the lack of control over decisions in neighbouring areas, the majority of both groups (92 % and 95 % of policy makers and park superintendents, respectively) disagreed that emphasis should be focused on managing and controlling the threats present within the parks rather than outside. Both the policy makers and park superintendents indicated unanimous support for the development of regional conservation strategies (see Graph D) which included those areas in close proximity to parks as one possible action that may be taken to address external threats that impact on the park environment(s).

The third and final issue addressed within this overall theme focused on potential strategies for management of parks on a long-term basis. Figure 6.14 (A-E) records the

Figure 6.13 Responses to issues on management planning - external factors

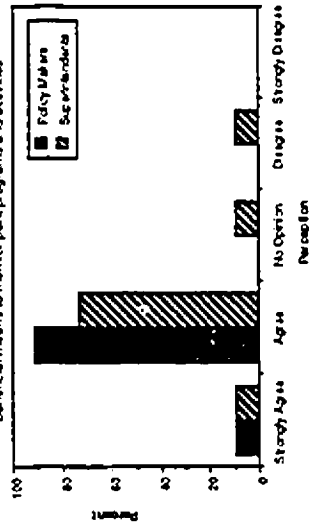


perceptions of both groups on the following aspects. The responses contained in Graph A would imply general agreement that five year management plans and periodic State of the Parks Reports would be beneficial means to monitor park programs and activities. As for expanding the role that the public plays in management planning (Graph B), opinions vary with the majority of policy makers (91 %) noting agreement, whereas, park superintendents responses ranged from agreement (50 %), no opinion (27 %) to disagreement (23 %) of letting the emphasis shift from participation in various exercises of public participation to one where the public are actively involved in developing management programs. Agreement was noted by both groups (especially park superintendents) for an environmental assessment and review process (EARP) which had legislative power and, as such, offer management an effective means to control change within parks (Graph C). In contrast, opinions were completely opposite on the position that zones within parks should be developed based on the range of activities considered acceptable in parks. Graph D illustrates that while the range of opinions of park superintendents predominantly indicated agreement, policy makers, for the most part, disagreed. A final issue addressed the possibility of developing a classification scheme for national parks similar to what is found in provincial park systems, whereby parks are developed to serve specific functions as suited to their natural environment (Morrison, 1982; Priddle, 1993; Swinnerton, 1993). The responses to this idea (Graph E) indicate little consensus exists. Policy makers, for the most part, voiced disagreement, whereas the opinions of the park superintendents reflected the entire spectrum of possible responses, with the majority (36 %) stating they had no opinion on the matter, with 23 % indicating support while 41 % voicing their disagreement.

The above issues represent only few of many that face managers. One important one that has not been discussed yet is the ability to make trade-offs between preservation/protection and various types of use and development in parks, and this is the focus of the next section of this chapter.

Figure 6.14 Responses to issues on management planning - potential strategies

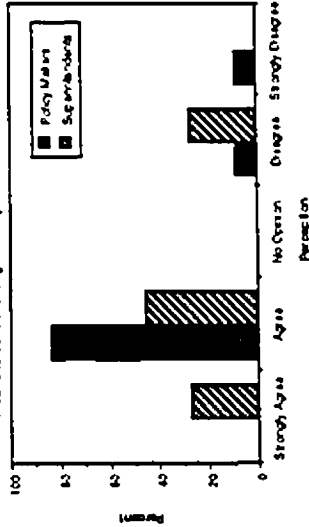
(A) Revising management plans on a five year cycle along with the publication of annual reports on the 'state of the park' are beneficial means to monitor park programs and activities



(B) The role the public plays in management planning should be expanded from participation in special events to include public participation to one in all the public activities involved in developing management programs



(C) An environmental assessment and review process (EARP) with legislative power offers management an effective means to control change within parks



(D) Zones within parks should be developed based on varying degrees for those activities that are considered as acceptable in parks

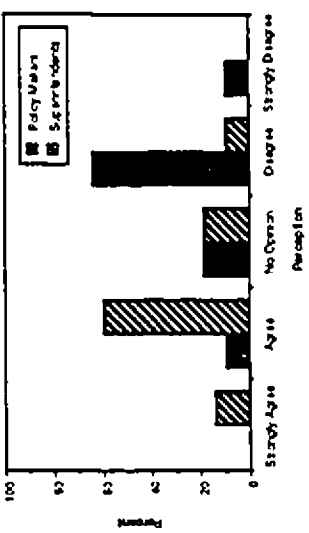
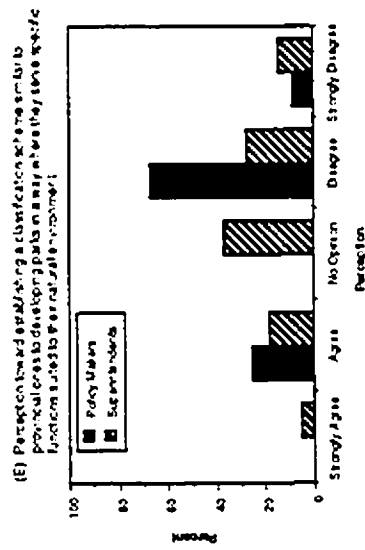


Figure 6.14 continued



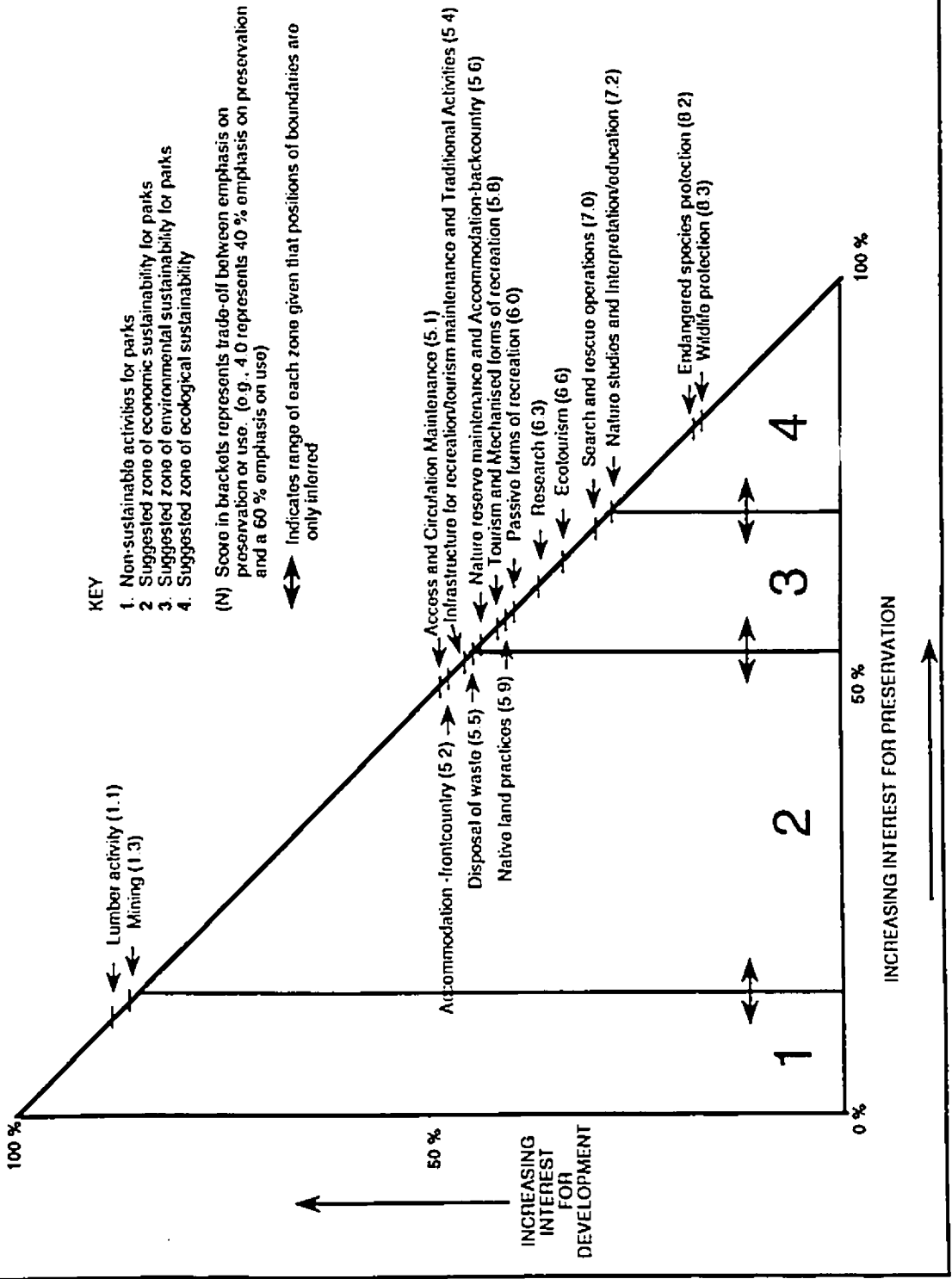
### 6.3. TRADE-OFF RELATIONSHIP BETWEEN PRESERVATION AND USE

In section 3.3.2 (chapter 3) a trade-off model was presented that described in theory the extent to which park superintendents make trade-offs between preservation and use for various park activities. This section comments on the test of this model. Although trade-offs were shown in a previous chapter (five) as not being a management priority, it is suggested here that trade-offs between various activities provide park managers with the means to address both mandates of parks, namely the protection of natural and cultural heritage and the provision for visitors of the opportunities to enjoy and benefit the parks. As such, it is argued that the type of trade-offs made have impacts on sustainability within the parks.

Figure 6.15 shows the trade-off curve based on the mean score of responses by park superintendents to each park activity listed. When the actual scores are compared to theoretical positions (see Figure 3.2, p.73), a number of distinct groups emerge. Two activities, lumbering and mining, as expected, are seen to fall on the 'development/use' end of the spectrum. At the opposite end, five activities (wildlife protection, endangered species protection, interpretation and education, nature studies and search and rescue operations) are noted for their emphasis on preservation. The position of the last of these five activities is somewhat surprising, as it was expected that it would be placed further along the spectrum towards 'use'. A possible explanation for its current position may be that the score reflects how park superintendents perceive this activity in terms of the impacts generated and as such it may therefore have been viewed as having closer links to 'preservation' than 'use/development'. The remaining 13 activities are found to be closely grouped to each other, having very similar scores in which the range between the first and last activity is only 15 %. Within this group, a number of patterns, that were expected to develop, did emerge. Ecotourism is viewed as having more emphasis on preservation than tourism in general, the same applying for passive versus mechanised forms of recreation



Figure 6.15 Trade-off model applied to national park activities based on responses of park superintendents



and accommodation provision in backcountry areas as opposed to frontcountry regions. One should be careful not to read too much into an activity's position relative to others as the differences shown in the diagram are negligible. Within this group of 13, the types of activities found toward the 'use' end are ones where a certain amount of development exists and, therefore, are appropriately placed with respect to the others within the group. The overall impression that was not expected, was the extent to which, all activities but two were clustered within a small range of 32 per cent.

Given this degree of clustering, the implications for sustainability are unclear. For example, while the trade-off results imply that parks should encourage ecotourism and passive forms of recreation, and make provision for backcountry accommodation provision, the fact that there is little difference between the majority of park activities may result in management which encourages a 'business as usual approach' which implies a myriad of activities which will have impact on parks becoming sustainable landscapes.

#### **6.4. RESPONSE TO THE SUSTAINABILITY SPECTRUM**

The second objective of this thesis is the development of a model of sustainability that advocates the need for a balanced approach to be taken between preservation/protection and development-oriented interests present within national parks. The extent to which trade-offs occur between various park activities in order for a balance to exist has been presented. The theoretical development of the model and how it may be applied was explained in detail in the third chapter (see section 3.2.2) The results of its application are the focus of this section.

In order to gain insight into how policy makers and park superintendents rated each of the themes addressed in section 6.2 according to a five point sustainability spectrum (1 unsustainability, 2) intermediate stage between conditional sustainability and unsustainability, 3) conditional sustainability, 4) intermediate stage between sustainability and conditional sustainability, 5) sustainability and 6) does not apply), a general question

about this spectrum was asked at the end of each section. This question asked respondents to indicate where the theme in question was found on the spectrum, based on the responses they gave to the questions asked on that theme, and their knowledge and experience of the issues involved. Owing to a poor response by policy makers on answering questions involving the sustainability spectrum, the model is examined using only the responses of park superintendents. It is also important at this stage to stress that the position of each theme along this spectrum represents only a measure of the perception of sustainability and not actual sustainability itself. The results are shown for each theme separately (Figure 6.16) and for all themes combined for each region within the Canadian national park system (Figure 6.17).

Figure 6.16 (graphs A-I) depicts the range of response given to each theme by superintendents as compared with the mean score for all regions combined. In reading the responses within this figure, it is important to realize that in order to preserve anonymity, the order of park superintendents shown does not reflect the geographical location of parks from west to east across the country. In other words, the responses of superintendents #1 and #22 should not be read as the response for South Moresby, British Columbia and Terra Nova, Newfoundland, respectively. The responses by park superintendents in Quebec and Atlantic Regions were combined because of the low numbers involved in these regions.

The graphs show that there is little variation in the mean scores for most themes (responses range between 3.25 and 3.7), with the exception of traditional activities/aboriginal issues and development-oriented issues which scored 3.1 and 2.4, respectively. These results, therefore, imply that all themes except development-oriented issues, were perceived as falling between conditional sustainability (score of 3) and the intermediate stage between the sustainability and conditional sustainability (score of 4) stage of the spectrum. Development-oriented issues, on the other hand, are viewed as falling mid way between conditional sustainability and the intermediate stage between unsustainability and conditional sustainability of the spectrum.

Figure 6.16 Sustainability scores indicated by park superintendents: by theme

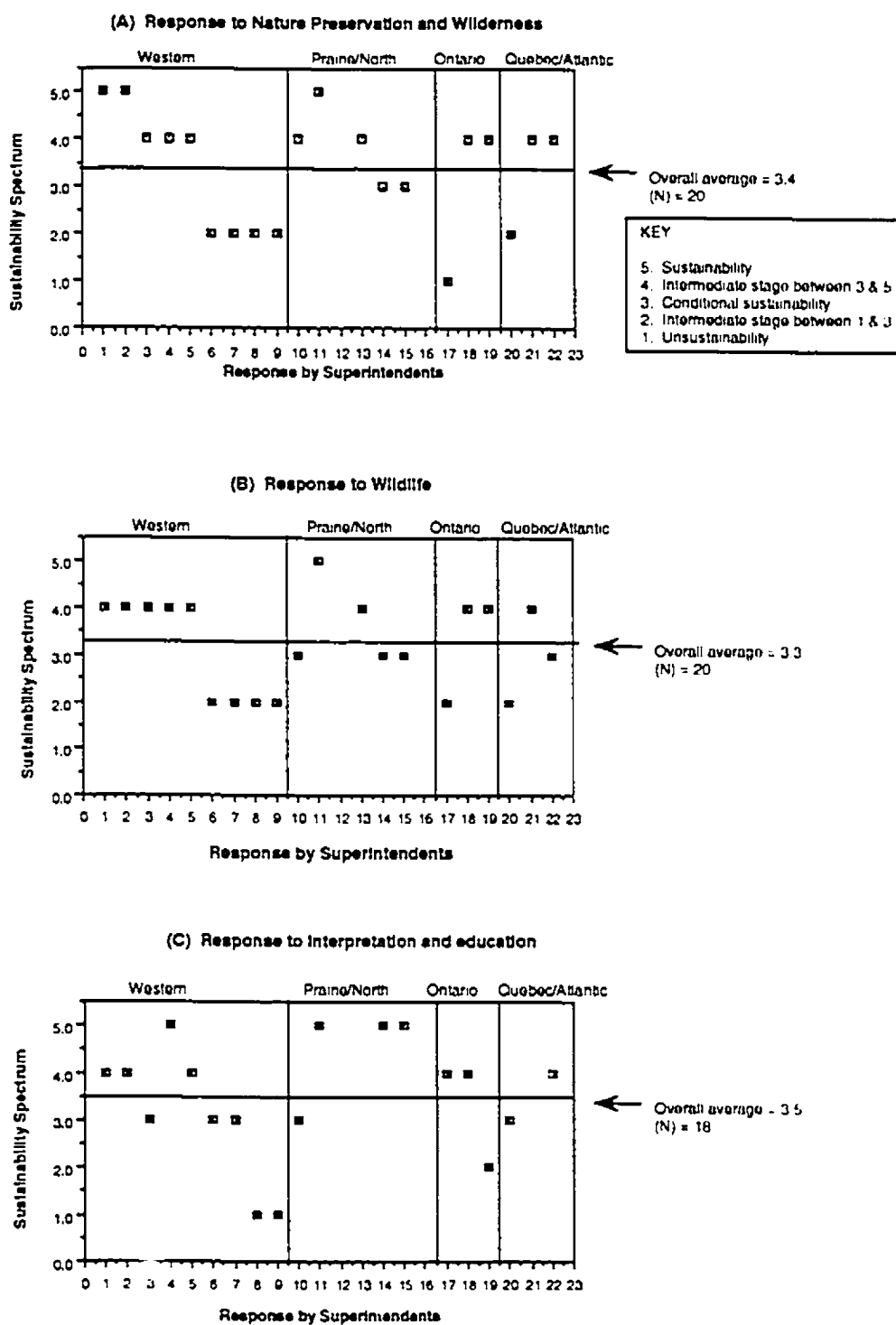


Figure 6.16. continued

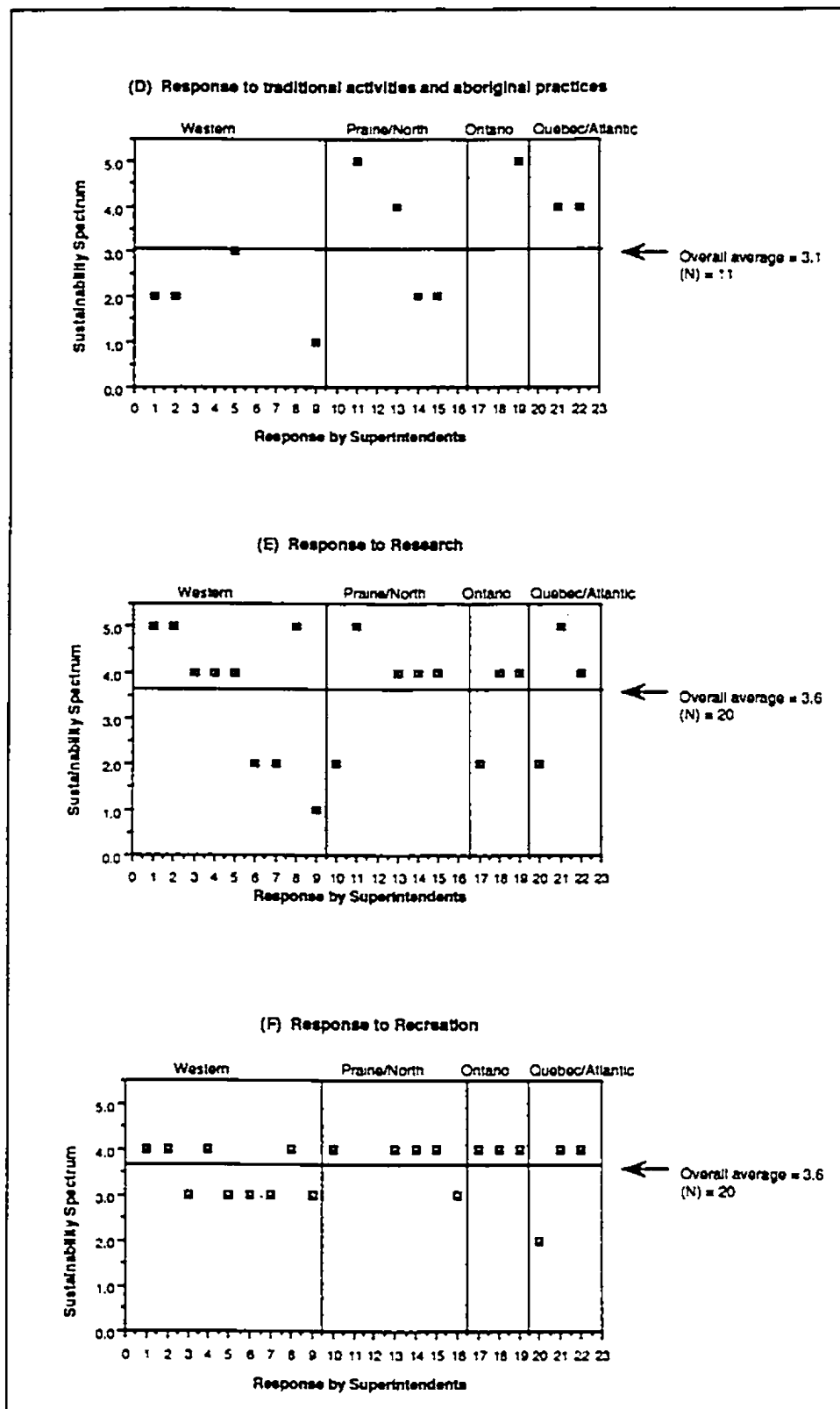
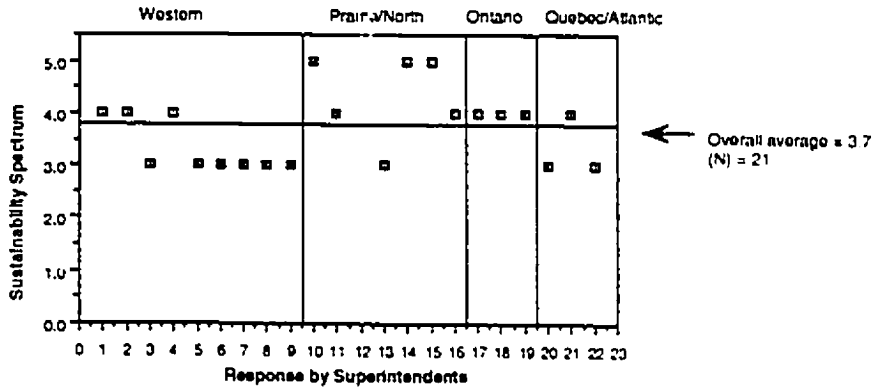
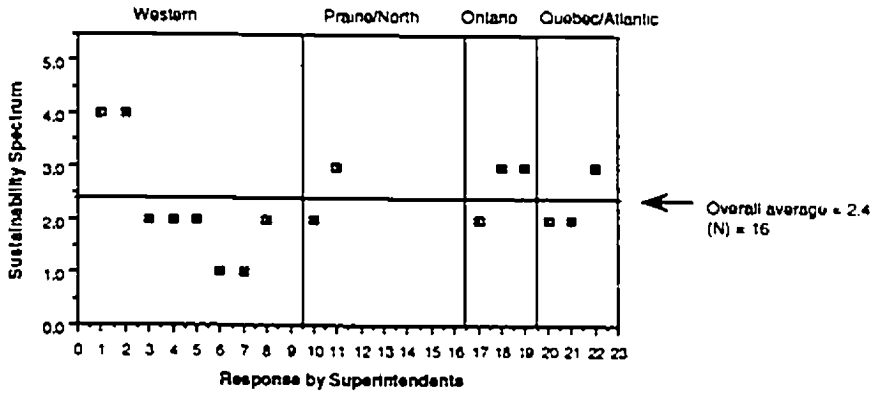


Figure 6.16 continued

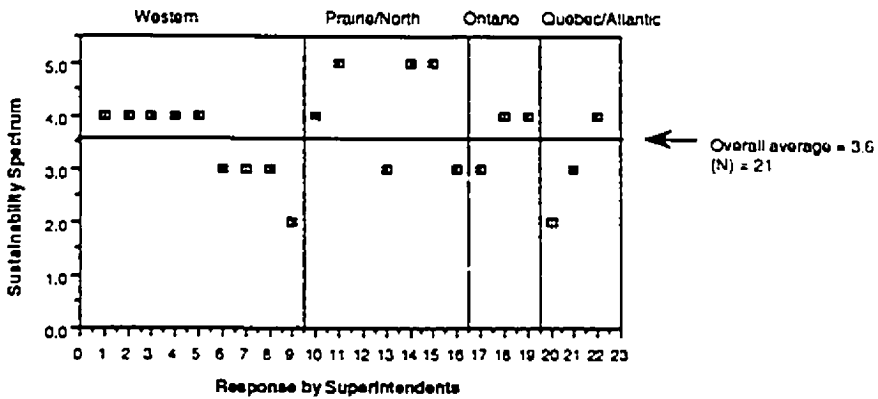
(G) Response to Tourism



(H) Response to Development-oriented issues



(I) Response to Management Planning

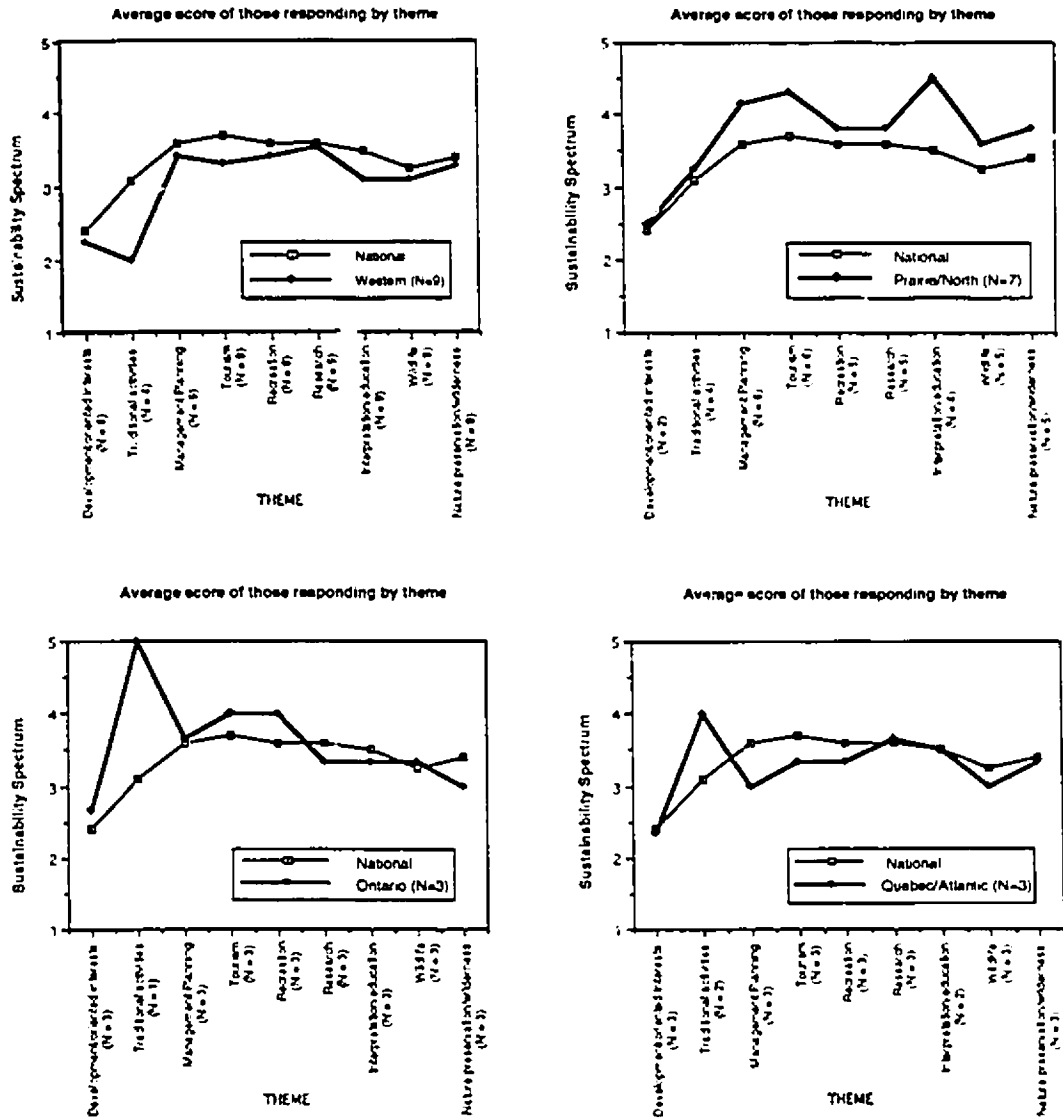


The graphs also reveal the variation in the range of responses for each of the themes. The majority of responses for nature preservation/wilderness are concentrated in the upper portion of the spectrum and above the mean score. An equal number of responses for wildlife are found above the mean value as lie below it with responses covering the spectrum between 2 and 5. Responses to Interpretation/education range across the entire spectrum, with more responses found above the mean score than below it with the majority of all responses scoring between 3 and 5. The considerably fewer responses to traditional activities/aboriginal issues (n=11) cover the entire spectrum with almost equal numbers above and below the mean score. Although responses concerning research range across the entire spectrum, two divergent opinions are evident. The majority view it to be an activity that is sustainable with values greater than the mean score. Others (6 responses) see it as an activity approaching the condition of unsustainability. Responses to recreation are found to be grouped between 3 and 4 of the spectrum, where once again the majority are found to have a value above the mean score. A similar pattern is present for tourism, except that here the responses are slightly less concentrated in one area of the spectrum. Again, the majority of responses are found above the mean score. A very different perception exists for responses to development-oriented issues. Although responses range across the majority of the spectrum (1 to 4), they are concentrated in the lower portion of the spectrum, with more responses having a value less than the mean score. With respect to the final issue of management planning, the opposite pattern emerges. Scores are concentrated in the upper part of the spectrum (3 to 5), with the majority being greater than the mean score calculated for management planning.

Sustainability scores for all themes were grouped by Region to determine if the outcomes resembled the theoretical scenarios depicted by the Balanced Approach Model illustrated in Figure 3.1 (Chapter 3, p.70). Overall results are shown in Figure 6.17 where the regional responses are graphed against the national response (all regional responses combined) for purposes of comparison. The order of the themes, shown along the x-axis,

Figure 6.17

Application of Balanced Approach Model



**Sustainability Spectrum Legend**

- 5. Sustainability
- 4. Intermediate stage between sustainability and conditional sustainability
- 3. Conditional sustainability
- 2. Intermediate stage between conditional sustainability and unsustainability
- 1. Unsustainability



was determined using the values each received in the trade-off model previously discussed. The themes are arranged so that where the focus on preservation/protection lessens as one moves across the graph from right to left.

The shapes of the curves show little resemblance to the scenarios outlined in the theoretical discussion of the model in Chapter 3 (see Figure 3.1). At best, it could be said that only the National response comes close to approximating the negatively skewed curve expected for environments where emphasis is placed on preservation and protection. Only portions of each graph could be said to resemble a skewed perception where themes focusing on the preservation and protection of natural and cultural resources are perceived as more sustainable than those where the level of use and development is present.

When the results by Region are compared with the National response, the graphs show that the Western Region perceives all themes to be less sustainable, particularly traditional activities/aboriginal practices, as shown by the fact that the entire curve falls below overall perceptions. The opposite picture is present when the Prairie/Northern responses are compared. Here all themes are perceived as being more sustainable, the difference being the greatest in the case of interpretation/education and tourism. The results for the Ontario Region are very different than those for the other regions. The majority of the curve is found above the response for all regions combined. The shape of the curve would imply that themes (those found to the right of the spectrum) expected to be most sustainable scored much lower than those where the level of use increases (middle and left portions of the spectrum), with the one exception of development-oriented interests which had a score similar to that of the national response. The score received for traditional activities is somewhat misleading as it represents only one individual's response and this fact is important in comparing it to the rest of the themes where all participants were noted to have given a response. The response of the Quebec and Atlantic Regions combined is somewhat similar to that shown for the Western Region, with the one exception being that

traditional activities are viewed to be more sustainable than indicated in the overall response.

## 6.5. CONCLUSION

This chapter set out to accomplish a number of specific tasks which addressed part of the first objective and all of the second objective of the thesis. The responses of policy makers and superintendents were compared for themes ranging from nature preservation to development issues. For the majority of issues that were addressed, responses were quite similar between the two groups, with a number of noted differences. First, differences were found in the range of response given to issues. Policy makers were more often found to express either agreement or disagreement on issues, whereas the response of the park superintendents was more varied, often covering the full spectrum of choice possible - strongly agreeing to strongly disagreeing. A second key difference in how the groups responded may be noted for issues/aspects which inferred action that was different to that set out in parks policy. For example, policy makers were more opposed to increasing wilderness areas within parks (Figure 6.1 (C)), but, at the same time, were more in agreement with compensating for the loss of wilderness in parks by establishing other such areas elsewhere within a park (Figure 6.1 (G)); were more accepting of the present relationship between wildlife and human presence (Figure 6.2 (G)); were stronger in their disagreement that unsuitable recreational activity be encouraged in neighbouring areas (Figure 6.7 (G)); and with respect to changing the focus on how areas within parks should be zoned (Figure 6.14 (D)). A third area where responses differed was for aspects that were management-oriented. For example, policy makers were found to agree more that impacts from tourism are limited because of managerial decisions to control access to certain areas (Figure 6.9 (B)) and were more readily to accept that management in the parks is suited to understanding and implementing sustainable practices (Figure 6.12 (D)). In

sum, therefore, it is the author's view that based on the examination of sustainability as it related to a variety of themes within Canadian national parks, the first objective of the thesis - to identify and examine the perception of sustainability as it relates to Canada's national parks - has been accomplished.

This chapter also examined the notion of a sustainability spectrum and the implicit trade-offs that are made in parks between protection and use for park activities. These concepts were used to explore the second research objective - to develop a model of sustainability on the basis of advocating a balanced approach between preservation and development-oriented interests, accounting for the trade-off between protection/preservation and use. Both the trade-off and the sustainability spectrum were modelled with the findings being found to differ from the theoretical ideas on which they were based. The results obtained in both these objectives were used to formulate a framework of sustainability suitable for Canada's national parks (objective 3) which is the focus of the next chapter.

## CHAPTER 7

### AREAS OF CONSENSUS AND DISSENSUS BETWEEN RESPONSES OF PARK SUPERINTENDENTS AND ACADEMICS : TOWARDS A SUSTAINABILITY FRAMEWORK

#### 7.1. INTRODUCTION

The focus of this chapter is the third objective of the thesis, namely the identification of components of a framework of sustainability suitable for national parks. Before discussing the framework, it is necessary to first describe the process by which it was produced. An earlier chapter (chapter 3) provided details of the process involved which is summarized below. The initial intention had been to produce a framework by identifying areas of consensus using a multi-level delphi approach. The problem of gaining access to lists of participants (interest groups) and the unwillingness of participants in the survey to be involved in a delphi process resulted in the following single-level approach being used. A questionnaire that displayed the aggregate responses of park superintendents to their questionnaire was designed for members of the academic community (representing the 'objective' experts) who were knowledgeable on national parks. The objective was to elicit reaction on the part of academics in terms of the extent to which they agreed or disagreed with park superintendents' perceptions. By comparing the responses of these groups, it was believed that areas of consensus would emerge which would serve as the basis of the sustainability framework.

The responses of park superintendents were used over those given by the policy makers/ regional directors as the latter group provided a less complete information base

from which to proceed, particularly with respect to the sustainability spectrum. With the exception of a few questions, the 22 park superintendents who completed the questionnaire did so in detail, and therefore their responses were considered suitable to provide an information base to which reaction could be sought.

The park superintendent response, was used as the 'first round' of the delphi approach with the response of the academics used as the 'second round'. The academics were given freedom to agree or disagree with the opinions of the park superintendents. The order of having academics respond to park superintendent opinion and not vice versa can be supported by the fact that the latter represent a group close to the issues that has an effective voice in park policy and park operations in general, whereas, the former are an outside group with only limited influence in these matters. Therefore, establishing the base in this order was seen as more appropriate.

Twenty-seven academics were selected - using the Canadian Association of Geographers (CAG) directory and program brochures for recreation, tourism, leisure and environment and resource studies departments across the country - on the basis of parks and/or park management and planning being stated as current research areas. Sixteen (59%) completed the questionnaire with two (7 %) unable to be involved due to time constraints and previous commitments (see Appendix 5). Of the sixteen who replied, eleven were from geography departments, four from recreation, tourism and leisure departments and one from an environment and resource studies department, representing viewpoints from British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia.

This chapter comprises several sections. Following these introductory comments, section two addresses the degree of consensus between both groups with respect to identifying criteria for sustainability. Section three focuses on similarity or dissimilarity of response to the perception of sustainability for themes within parks. Section four comments on the response to the sustainability spectrum for themes, types of tourism and

recreational activities present in parks and the extent to which trade-offs are made. Using the responses in sections two to four, a fifth section describes the framework that results, with some concluding comments making up the sixth section to the chapter.

## **7.2. COMPARISON OF RESPONSES TO ISSUES IDENTIFYING CRITERIA FOR SUSTAINABILITY**

This section focuses on issues addressed in section 1A of the questionnaire designed for the academics (see Appendix 6). The questionnaire provided the academics with the aggregate rank order that the park superintendents had assigned to criteria for the following issues: (1) suitability of definitions of sustainability for parks, (2) general goals often associated with the concept of sustainability, (3) proposed park goals, (4) the condition of the park landscape (nature of the resource base), (5) principles associated with sustainability, (6) involvement, and (7) the focus of management. Using this information, academics were asked to comment on the rank order for the above issues, either agreeing with the one assigned by the park superintendents or by providing a new ranking. In addition, they were asked to indicate how appropriate each criterion was to the concept of sustainability for parks, recording their response using a Likert scale (1 = very appropriate, 2 = appropriate, 3 = some relevance, 4 = little relevance, 5 = inappropriate). This section examines the results of the aggregate rank orders assigned by academics to the above issues and the degree to which each criterion was deemed appropriate to sustainability within a national park context.

Prior to discussing the results, it is necessary to explain how the results were calculated. 'Rank Order' refers to the aggregate rank order, based on the individual rankings that respondents, within either group, gave to each issue or aspect. The 'Mean Score' averages all of the responses given to a question or issue by either group using each individual's score marked on the Likert scale provided. 'Mean Score' is best illustrated using as an example the first definition in Table 7.1. Mean scores of 2.2 and 2.7

were calculated by taking each person's given score (based on the Likert scale), totalling these given scores and dividing the sum by the total number of responses. In this example, the results would imply the average position of responses to fall between 2 "appropriate" and 3 "some relevance". The final column refers to the difference in mean scores between the park superintendents and the academics, expressed as a percentage of the maximum possible difference. When the maximum possible difference in mean scores shows as 4 (5 "inappropriate" minus 1 "very appropriate") and the difference in mean scores shows as 0.5 (2.7-2.2), this maximum percentage of difference equals 12.5 ( $0.5/4 * 100$ ), the value present in the final column for definition #1 in Table 7.1.

### 7.2.1. Definitions

Table 7.1 shows that the rank order chosen by the academics was almost identical to that of the park superintendents, with definitions emphasizing ecological processes and the environment receiving the top ranks, whereas those that linked sustainability to economic growth, development and productivity received the lowest ranks. Consensus between academic and park superintendent response was determined through noting the difference in the mean scores each group assigned to the definitions. The lower the mean score the more appropriate a definition was for national parks, and the smaller the percent difference between mean scores (as expressed as the percentage of maximum possible difference) the greater the consensus in the response.

The top ranked definition received the same low mean score (1.2) from both groups indicating it to be 'very appropriate' within a national park context. The definition that was ranked second also received low mean scores (1.3 and 1.6 for park superintendents and academics, respectively) with a high degree of consensus present between groups (only a 7.5 % difference) suggesting it also to be 'very appropriate' for national parks. The remaining definitions received mean scores that ranged from 2.1 to 3.5 and 2.5 to 4.0 for

Table 7.1 Comparing responses on the suitability of definitions of sustainability for parks

DEFINITIONS	Rank Order (parks sup)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"	4	3	2.2	2.7	12.5
"development that means more than seeking a compromise between the natural environment and the pursuit of economic growth, but one which recognizes that the limits to sustainability have structural as well as natural origins"	5	5	2.2	3.1	22.5
"the ability of a system to maintain productivity in spite of a major disturbance such as that caused by intensive stress or a large perturbation"	9	9	3.5	4.0	12.5
"development which is based on the sustainable use of indigenous resources in association with inter-regional exchange of resources"	8	8	3.2	3.5	7.5
"a fundamental guide or ideal for better planning and management of systems, a process to achieve sustainability rather than any utopian end state"	3	4	2.1	2.7	15.0
"activity in which the environment is fully incorporated into the economic decision making process as a forethought, not an afterthought"	2	2	1.3	1.6	7.5
"the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity"	1	1	1.2	1.2	0.0
"the condition whereby system goals are reached and maintained over time. The renewability of the various systems is dependent on their ability to function below the zone of the critical limits of capacity"	6	6	3.2	2.5	17.5
"the fundamental of balancing environmental considerations with economic growth and development"	7	7	3.5	3.0	12.5

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference



park superintendents and academics, respectively, which indicated definitions that ranged from being 'appropriate' to having 'little relevance' for national parks. With the exception of those definitions that were ranked #6 and #7 by both groups, academics assigned higher mean scores, meaning this group viewed the definitions to be less appropriate, the difference between groups ranging from 12.5 to 22.5 % expressed as the percent of maximum possible difference.

### 7.2.2. General Goals

Table 7.2 reveals that with respect to general goals, the rankings assigned by academics were very similar to those of the park superintendents, differing only for those goals that were ranked from 7 to 10. Ecologically-oriented goals occupied the top three ranks, followed by goals that focused on providing service satisfying needs, with economic-oriented goals in the lowest ranks. When mean scores are considered, only the top three goals of 'preserving essential ecological processes', 'protecting biological diversity' and 'sustaining biological productivity' are considered by both groups as 'very appropriate' for national parks with high degree of consensus noted by the minimal difference in two of the means scores. The remaining goals received mean scores ranging from 2.7 to 4.6 for the park superintendents and 2.5 to 4.5 for the academics, suggesting some to limited relevance within a national park context. For the majority of these goals, there was little difference in mean scores, the only exceptions being noted in the table where difference ranged from 12.5 to 25 %.

### 7.2.3. Park Goals

The results for park goals are recorded in Table 7.3. The initial impression is that the actual order of the ranks assigned to park goals by academics varied somewhat from those of the park superintendents. However, both groups indicated through the ordering and mean scores that the more appropriate goals were to 'preserve unique ecosystems', 'protect gene

Table 7.2 Comparing responses with respect to general goals associated with sustainability

GENERAL GOALS	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Increased economic growth & development	7	8	3.8	3.6	5.0
Economic productivity	9	10	3.9	4.1	5.0
Provision of basic needs & services	4	4	2.7	2.8	2.5
Equity of supply	8	7	3.8	3.0	20.0
Protection of biological diversity	2	2	1.2	1.3	2.5
Preservation of essential ecological processes	1	1	1.0	1.1	2.5
Welfare improvement	10	9	4.1	3.6	12.5
Higher level social and cultural necessities	6	6	3.6	2.6	25.0
Sustaining biological productivity	3	3	1.5	1.5	0.0
Increased per capita material consumption	11	11	4.6	4.5	2.5
Satisfying basic human needs	5	5	3.0	2.5	12.5

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference

Table 7.3 Comparing responses for park goals associated with sustainability

PARK GOALS	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Meeting non-material needs (desire to recreate)	7	5	2.3	2.5	5.0
Protection of gene pools within ecosystems	1	2	1.1	1.3	5.0
Resource management	3	4	1.5	1.6	2.5
Creation of wilderness areas	3	3	2.0	1.3	17.5
Promotion of tourism & recreation	6	7	1.8	2.7	22.5
Preservation of unique ecosystems	2	1	1.2	1.0	5.0
Greater public/interest representation in management	5	6	1.8	2.7	22.5
Parks acting as growth poles to stimulate regional development	9	9	3.8	3.5	7.5
Provision of infrastructure for tourism and recreation	8	8	3.4	3.7	7.5

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference

pools within ecosystems' and 'establish wilderness areas' as compare to 'promoting tourism and recreation', 'providing the infrastructure for tourism and recreation' and 'using parks as growth poles to stimulate regional development'.

For the majority of goals, consensus of opinion existed as mean scores between groups were found to be very similar, with differences being somewhat negligible in the 2.5 to 7.5 % range. Goals where consensus was less evident included 'the creation of wilderness areas' (17.5 % difference), 'promotion of tourism and recreation' and 'greater public and interest representation in management' (22.5 % difference), the first being viewed as more appropriate by academics, whereas the latter two were perceived to be more appropriate by park superintendents. Despite these differences in mean scores, the rankings received by these goals were very similar, showing that while general consensus was present, some difference was present in the range for the mean scores.

#### **7.2.4. Nature of the Resource Base**

Table 7.4 shows perception of criteria associated with the condition of the park landscape (nature of the resource base) to be very similar between the academics and park superintendents, with the only noticeable difference being in how 'Permanence' and 'Stability' were ranked. 'Resilience' was ranked as the most important with 'Balance' being the least important with mean scores of 1.5 and 2.5, respectively by both groups, indicating the extent to which these criteria were appropriate to sustainability within the context of parks. With the exception of 'Permanence' (1.6) for park superintendents and 'Stability' (1.6) for academics, the remaining criteria were found to have mean scores between 2.0 and 2.5, suggesting they also had 'relevance', but less so, for sustainability. Consensus of perception is reflected by the fact that there was no difference in mean scores for four of the eight criteria with a range of difference for the remaining criteria between 2.5 and 12.5 %, the latter figure relating to 'Permanence' and 'Stability'.

Table 7.4 Comparing responses on the issue of the nature of the resource base

CRITERIA	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Resilience	1	1	1.5	1.5	0.0
Adaptiveness	3	3	2.0	2.0	0.0
Permanence	2	5	1.6	2.1	12.5
Flexibility	6	6	2.2	2.5	7.5
Sensitivity	4	3	2.1	2.0	2.5
Stability	4	2	2.1	1.6	12.5
Robustness	7	7	2.4	2.4	0.0
Balance	8	8	2.5	2.5	0.0

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference

### 7.2.5. Principles

Unlike the previous tables in which agreement between groups was common, when Principles (components of sustainability) are examined, academics and park superintendents only agreed on the top and bottom ranked criteria, 'Ethics' and 'Rights', respectively, (Table 7.5). For the remaining criteria, the greatest difference in rank order between groups was noted for 'Self empowerment'.

Table 7.5 Comparing responses with respect to principles of sustainability

CRITERIA	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Self empowerment	3	7	2.1	2.5	10.0
Social self determination	2	3	2.1	2.4	7.5
Ethics	1	1	1.8	1.3	12.5
Equity	6	4	2.6	2.4	5.0
Social justice	4	2	2.4	2.1	7.5
Rights	8	8	2.9	3.0	2.5
Democracy	7	5	2.7	2.7	0.0
Power sharing	5	6	2.5	2.4	2.5

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference

The mean scores each criterion received showed only 'Ethics' to be considered the 'most relevant' for sustainability within a park context, with the others ranging in degrees of

appropriateness from 'appropriate' to 'some relevance' along the Likert scale. In terms of consensus, the greatest difference was found for 'Ethics' (12.5 %), explained by the fact that although both groups gave it a top ranking, academics perceived it to be more appropriate with a mean score closely approximating 'very appropriate' on the spectrum. The remaining criteria showed a difference ranging from 2.5 to 10 %.

#### 7.2.6. Involvement

Table 7.6 shows the results for the issue of Involvement, namely, who should be involved in promoting sustainability. Academics agreed with the rankings that park superintendents assigned to the various criteria, placing managers who are accountable before public participation and representation from interest groups. The mean scores each of these populations received reveals that with respect to sustainability, interest groups are perceived to be least appropriate, particularly by the academics as a 12.5 % difference exists between mean scores for this criteria. A high degree of consensus was found for 'Public participation' and 'Managers' with negligible (2.5 %) to no difference in mean scores being recorded.

Table 7.6 Comparing responses with respect to the issue of involvement

CRITERIA	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Interest group representation	3	3	2.0	2.5	12.5
Public participation	2	2	1.6	1.6	0.0
Managers who are accountable	1	1	1.4	1.3	2.5

<sup>1</sup> The difference is expressed as a percentage of the maximum possible difference

### 7.2.7. Management Focus

The last issue to be considered in identifying criteria for sustainability is the focus which management should take. Table 7.7 reveals similar perceptions between academics and park superintendents, with the emphasis on 'protection', 'preservation', 'integrative planning and management' and 'integration of goals', in that order. With the exception of the last mentioned, the mean score of the academics was lower than those of the park superintendents, especially for the top two ranked criteria of 'Focus on protection' and 'Focus on preservation' (12.5 and 10 % difference, respectively). 'Management in isolation', was ranked the lowest, receiving mean scores that demonstrated this criterion to be of 'little relevance' to sustainability within parks. Overall, the slight percent variations in mean scores showed that a high degree of consensus existed between group responses, the only exception being the 6th ranked criterion of 'Compatibility of goals'. A 22.5 % difference was present as academics scored it closer to 'some relevance' while park superintendents perceived it to be 'appropriate' for sustainability.

Table 7.7 Comparing responses with respect to management focus

CRITERIA	Rank Order (parks sup.)	Rank Order (academics)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Focus on protection	1	1	1.6	1.1	12.5
Focus on preservation	2	2	1.7	1.3	10.0
Management in isolation	8	8	4.1	4.3	5.0
Integrative management	4	4	1.9	1.6	7.5
Integrative planning	3	3	1.7	1.6	2.5
Compatibility of goals	6	6	2.0	2.9	22.5
Integration of goals	4	5	1.9	2.0	2.5
Recognition of trade-offs	7	7	2.7	2.7	0.0

<sup>1</sup> Difference is expressed as a percentage of the maximum possible difference

### **7.3. COMPARISON OF RESPONSE TO SUSTAINABILITY FOR THEMES WITHIN PARKS**

This section charts the responses to issues of sustainability (provided) as they applied to various themes that ranged from nature preservation to development-oriented issues. Responses were recorded using the following scale: 1 = strongly agree, 2 = agree, 3 = no opinion, 4 = disagree, 5 = strongly disagree.

#### **7.3.1. Nature Preservation/Wilderness**

Table 7.8 shows that, for the majority of issues, academics responded in a manner similar to park superintendents. Only on two aspects did perceptions differ, the use of buffer zones between areas of use and preservation areas, and the emphasis on ecological integrity to ensure more wilderness areas remain in a natural state. Here academics stated agreement while park superintendents gave a varied response, as reflected by the difference in means scores of 30 and 27.5 %, respectively.

For three of the five issues where both groups were in agreement, there was obvious consensus as demonstrated by the small percent differences (range 2.5 - 5 %) in mean scores. However, issues involving 'sustaining nature preservation through more restriction to unique areas' and 'increasing the amount of park lands to be left in a natural state' saw less consensus (differences of 15 and 25 %, respectively), with park superintendents not as strong in their agreement, perhaps because these issues were more action-based as compared to the others which were more idea-based. A final point of note was that the level of agreement was higher among academics for the majority of issues shown above, perhaps a reflection of this group's 'objective' perspective of the issues, compared to park superintendents whose responses reflect the reality of implementing such ideas within parks.



Table 7.8 Comparing responses to issues of nature preservation and wilderness

ISSUE/SASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Protection of natural landscapes requires more attention given increased awareness of environmental degradation	X O			1.3	1.4	2.5
Sustaining nature preservation through more restriction to unique/fragile areas	X O			1.9	1.3	15.0
Increasing the amount of park lands to be left in a natural state/absence of use	X O			2.5	1.5	25.0
The encroachment of recreational activities on wilderness areas: an area of increased concern by managers	X O			1.9	1.7	5.0
Use of buffer zones between use areas and preservation areas to assist with nature preservation	O	X		2.8	1.6	30.0
Emphasis on ecological integrity ensuring that more wilderness areas will remain in a natural/unimpaired state	O	X		3.0	1.9	27.5
Compensating a loss of wilderness areas by establishing others elsewhere within a park		X O		2.8	2.7	2.5
Emphasis on ecological component of wilderness areas over the economic and social components in order for sustainability to be realized	X O			1.4	1.5	2.5

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> The difference is expressed as a percentage of the possible maximum difference

### **7.3.2. Wildlife**

The response to issues for this theme are displayed in Table 7.9. Again there was a high degree of general similarity as to how both groups responded to issues, differing only on the aspect of 'the present relationship between wildlife and human presence being conducive for wildlife sustainability', with academics voicing disagreement to the issue compared to the varied response indicated by park superintendents. For example, the issue that 'sustainability involves both numbers and diversity of species present in parks' saw a high degree of consensus as reflected in mean scores and the difference between them (2.5 %). In contrast, the aspect of the 'need to restrict access to wildlife habitats to ensure sustainability' saw considerable divergence of opinion, with academics expressing stronger agreement to the issue, as shown by the 35 % difference in mean scores. Both groups indicated a very similar response of strongly disagreeing to the issue that 'sustainability involves only the maintenance of animal population numbers'. For the majority of issues, the level of agreement was higher among the academics.

### **7.3.3. Interpretation and Education**

With respect to issues concerning Interpretation services and Education, table 7.10 displays results showing high levels of agreement and a high degree of consensus for all issues, the latter reflected in the minimal to no difference in mean scores recorded for both groups. A varied response was found for only one issue, namely 'present focus (in parks) is on explaining activities and programs and not on the relationship between users and the park environment and those impacts generated', mean scores showing no clear consensus of agreement or disagreement. Of all the issues where agreement was stated, the strength of that agreement was least for both superintendents and academics for the issue of whether 'present interpretation facilities were not focused toward explaining sustainability'.

Table 7.9 Comparing responses to issues of wildlife

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Greater attention needed toward wildlife management	X O			1.6	2.1	12.5
Need to restrict access to wildlife habitats to ensure sustainability	X O			2.7	1.3	35.0
Sustaining wildlife numbers and diversity through restrictions to mating & breeding sites	X O			2.3	1.7	15.0
Sustainability involves only the maintenance of animal population numbers			X O	4.5	4.6	2.5
Sustainability involves both numbers and diversity of species present in parks	X O			1.5	1.4	2.5
Encroachment of recreation on wildlife regions impacts on managerial ability to sustain wildlife	X O			2.2	1.9	7.5
Present relationship between wildlife and human presence is conducive for wildlife sustainability		X	O	3.1	3.5	10.0

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

Table 7.10 Comparing responses to issues of Interpretation services and Education

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Interpretation/education are suitable mediums for communicating sustainability principles to users	X O			1.6	1.6	0.0
Present interpretation facilities not focused toward explaining sustainability	X O			2.2	2.1	2.5
Present focus is on explaining activities & programs and not on the relationship between users the park environment and those impacts generated		X O		2.8	2.6	5.0
Explanation of sustainability requires awareness of impacts (human-induced) on park environment	X O			1.4	1.3	2.5
Sustainability involves making users aware of thresholds of ecosystems to accommodate human use	X O			1.4	1.4	0.0
Explanation of awareness of the need for long term management of ecosystems	X O			1.3	1.5	5.0
Explanation to users of the necessity of restricting access to unique areas	X O			1.6	1.5	2.5
Recognition that sustainability involves the ecological, economic and social components of parks	X O			1.7	1.7	0.0
Education of users on the limits of environments to sustain particular activities	X O			1.6	1.4	5.0
Education of users of indicators of impacts/threats that could cause ecological damage	X O			1.3	1.4	2.5

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

#### **7.3.4. Research**

Response to issues that focused on research saw mixed opinions by both academics and park superintendents (Table 7.11). While both groups noted agreement to the first, second and fourth issue listed in the table, the mean scores for these issues showed the level of agreement within groups to be higher for academics than park superintendents. Of these three issues, strongest agreement by both groups was recorded for whether or not 'research can assist measuring the level of sustainability through long term monitoring and assessment of programs and activities'. The remaining two issues saw strong disagreement being voiced by both academics and park superintendents, especially that addressing if 'research (should be) viewed as having limited impact on parks and therefore little affect on the level of sustainability in parks'.

#### **7.3.5. Aboriginal Issues/Traditional Activities**

Table 7.12 shows the response to issues pertaining to aboriginal and traditional activities. Academics and park superintendents were equally strong in their agreement that the 'level of use of activities must remain within the carrying capacity of each park'. Both groups acknowledged agreement regarding realizing the 'awareness of the rights of aboriginals to engage in activities', but at a level less strong than stated for the previous issue. Perceptions differed on the management issue of 'restricting the degree to which activities are undertaken to ensure sustainability is realized'. Academics voiced strong agreement, with a mean score of 1.4 as compared to a varied response by park superintendents with a mean score of 2.8, which represented a 35 % difference between mean scores as expressed as a percentage of the maximum possible difference. A key question may be raised with respect to these issues and that is who decides not only in terms of what are appropriate levels and what extent should restriction occur on traditional activities, but also how are

Table 7.11 Comparing responses to issues of research

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Need for research to address balance between preservation interests and those that are development-oriented in nature if sustainability is to be realized	X O			2.0	1.7	7.5
Need for non-human-oriented research to focus on the nature of the resource base to cope with interference and overuse	X O			2.1	1.9	5.0
Research focus on only promoting better management of parks			X O	3.8	4.1	7.5
Research can assist measuring level of sustainability through long term monitoring & assessment of programs/activities	X O			1.5	1.2	7.5
Research viewed as having limited impact on parks and therefore little affect on the level of sustainability in parks			X O	4.0	4.4	10.0

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

Table 7.12 Comparing responses to issues of aboriginal and traditional activities

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Level of use of activities must remain within carrying capacity of each park	X O			1.3	1.3	0.0
Restricting the degree to which activities are undertaken is key management issue if sustainability is to be realized	O	X		2.8	1.4	35.0
Awareness of the rights of aboriginals to engage in activities must be realized	X O			1.8	2.2	10.0

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

these to be accomplished without infringing on their rights to engage in aboriginal activities?

### **7.3.6. Recreation**

Recreation is an important theme within national parks and table 7.13 records the responses given by respondents to eight issues associated with this activity. Of the eight, similar general responses were noted for seven of them, five of which saw both groups stating agreement with the statement in question while the remaining two issues saw both academics and park superintendents display strong disagreement with the respective statements. A difference of opinion was found to exist over only one issue, namely the 'exclusion from parks of those activities that can be provided outside of parks'. Of the five issues for which both groups indicated agreement with the statement, a lack of consensus between group responses was present for only one, namely if 'recreation represents one of the major trigger mechanisms for generating problems within parks'. A 20 % difference in mean scores was recorded as academics were considerably stronger (mean score 1.4) in their agreement as compared to the park superintendents (mean score 2.2). Consensus on issues where both groups stated general agreement was most evident on the 'use of quotas of numbers participating in activities to reduce environmental impacts and maintain carrying capacity' and the 'non exclusion of activities that can be provided outside of parks'. The table also shows that both groups perceived the need for a re-evaluation of recreational activities within the context of sustainability, and that all forms of recreation are not acceptable even if they remained low in the impacts they leave and the numbers of participants involved.



Table 7.13 Comparing responses to issues of recreation

ISSUE/S/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Recreation represents one of the major trigger mechanisms for generating problems within parks	X O			2.2	1.4	20.0
Only low impact recreational activities should be promoted	X O			1.6	1.9	7.5
In context of sustainability recreational activities do NOT require re-evaluation			X O	4.3	4.4	2.5
Using quotas of # participating in activities to reduce environmental impacts and maintain carrying capacity	X O			1.6	1.8	5.0
Non exclusion of activities that can be provided outside of parks	X O			1.4	1.5	2.5
Exclusion from parks those activities that can be provided outside of parks		O	X	3.9	3.1	20.0
Recreational activities perceived as unsuitable should be encouraged in neighboring areas	X O			2.1	2.2	2.5
All forms of recreation are acceptable provide they remain low in impact and #'s			X O	4.2	4.3	2.5

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

### 7.3.7. Tourism

Table 7.14 provides responses to issues pertaining to tourism within the context of national parks. Issues were arranged into three broad categories, general questions, the function of tourism and requirements for tourism to be sustainable. For the first category, (first four issues shown in the table), both academics and park superintendents agreed that 'there is a need to understand impacts from tourism given the increased visitor numbers' and that 'parks should be viewed separately in terms of problems faced and possible solutions'. The level to which both groups were in agreement with the statements was greater for the former issue, as indicated by lower mean scores. Both groups voiced disagreement to the remaining two statements that made up this first category ('tourism should be promoted as it is an effective means of generating revenue' and 'tourism impacts are limited given management decisions on controlling access to certain areas'), the mean scores showing a similar level of response.

In the second category, response to issues of function of tourism within the parks varied considerably. Both the academics and park superintendents agreed appropriate functions to be 'a showcase for natural and cultural heritage of parks', 'satisfying the mandate of enjoyment and benefit' and 'providing tourism opportunities within a pleasing setting', the strength of agreement being greater for the first than the latter two. Varied responses were recorded for functions that centred on the 'provision of employment for local area' and the 'provision of tourism facilities for a domestic and international market', the mean scores showing opinions were noticeably different for the former. Both groups stated disagreement to the function of 'generating capital for local areas and acting as growth poles to stimulate regional development', the level of disagreement being slightly higher by the academics.

Fifteen issues were addressed under the third category of tourism sustainability requirements. The vast majority of responses saw agreement with the issues stated, with a varied response recorded only twice, and three issues over which both groups disagreed.

Table 7.14 Comparing responses to issues of tourism

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
There is a need to understand impacts from tourism given increased visitor numbers	XO			1.5	1.1	10.0
Tourism should be promoted as it is an effective means of generating revenue			XO	3.8	3.8	0.0
Tourism impacts are limited given management decisions on controlling access to certain areas			XO	3.7	3.6	2.5
Parks should be viewed separately in terms of problems faced and possible solutions	XO			1.9	2.1	5.0
Function of tourism: satisfy the mandate of "enjoyment & benefit"	XO			2.0	2.1	2.5
Function of tourism: provision of employment for local area		XO		3.2	2.6	15.0
Function of tourism: generate capital for local areas, act as growth poles			XO	3.5	3.8	7.5
Function of tourism: provision of tourism facilities for a domestic and international market		XO		3.2	3.2	0.0
Function of tourism: provision of tourism opportunities within an pleasing setting	XO			2.5	2.4	2.5
Function of tourism: being a showcase for natural & cultural heritage of parks	XO			1.9	1.6	7.5
Sustainability in parks requires the following:						
- development (i.e. infrastructure) which is low in impact	XO			1.7	1.2	12.5
- development similar to what is now current			XO	3.6	3.9	7.5
- controlling tourists in fragile and unique areas	XO			1.4	1.1	7.5
- preventing visitors from encroaching in areas that require permits for access	XO			2.0	1.1	22.5
- tourism development which maintains ecological integrity of the landscape	XO			1.7	1.3	10.0
- allowing only tourism types which have low environmental impact	XO			1.9	1.9	0.0
- preventing the expansion of activities viewed as undesirable	XO			1.4	1.2	5.0
- encouraging development of small scale accommodation		XO		3.5	2.9	15.0
- locating all forms of accommodation outside parks		XO		2.7	3.1	10.0
- tourism that places emphasis on economic benefits only			XO	4.6	4.8	5.0
- tourism types that have a positive economic, social & ecological component	XO			1.9	1.8	2.5
- tourism which remains viable over time	XO			2.6	1.6	20.0
- tourism which does not degrade the environment it is dependent on	XO			1.6	1.1	12.5
- tourism which alters the environment, but maintains its ecological integrity			XO	4.0	4.1	2.5
- tourism which is seen to have a symbiotic relationship with other park activities	XO			2.5	1.4	27.5

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS  
<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

For those issues where both groups stated agreement, the mean scores reveal a higher level of agreement with the statements by the academics, with a difference in mean scores on issues ranging from no difference to 27.5 %. Issues which elicited strongest agreement included 'controlling tourists in fragile and unique areas', 'preventing the expansion of activities viewed as undesirable', 'development which is low in impact', 'tourism development which maintains ecological integrity of the landscape' and 'tourism which does not degrade the environment it is dependent on'. Varied response was found for the issues of 'encouraging development of small scale accommodation' and 'locating all forms of accommodation outside parks'. Academics and park superintendents were in agreement as to what was not acceptable, namely, 'tourism that places emphasis on economic benefits only' (mean scores of 4.8 and 4.6), 'tourism which is seen to have a symbiotic relationship with other park activities' (mean scores of 4.1 and 4.0) and 'development similar to what is now current within the parks' (mean scores of 3.9 and 3.6).

#### **7.3.8. Development-oriented Interests**

Five issues were addressed under the general heading of Development-oriented interests (Table 7.15). Both groups stated agreement on three of the five issues, mean scores showing level of agreement being strongest with respect to the second and fifth issue listed in the table. Disagreement was noted on whether the development of infrastructure, in the form of townsites, was acceptable even though the ecological integrity of parks was maintained on a long term basis. A difference of opinion was clear on the issue that 'park townsites can be sustainable provided growth does not exceed physical and social carrying capacity'. Mean scores for this last issue reveal little difference in response, but when the majority of responses on this issue are taken into account, park superintendents voiced general agreement compared to the varied responses of academics.

Table 7.15 Comparing responses to issues of development-oriented interests

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Parks play a key role in the economic development of surrounding areas	X O			1.9	1.8	2.5
The issue of the extent of development within parks is important in context of sustainability being realized	X O			1.4	1.4	0.0
Park town sites can be sustainable provided growth does not exceed physical & social carrying capacity	X	O		2.6	3.0	10.0
Development of infrastructure (townsites) acceptable provided ecological integrity of parks is maintained over the long term			X O	3.2	4.1	22.5
Need for an emphasis on maintaining ecological integrity over promoting development if parks are to reach a sustainable state	X O			1.4	1.4	0.0

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

### 7.3.9. Management Planning

The last issue to be addressed was that concerning Management Planning. Table 7.16 illustrates that there were only two issues over which opinions varied, 'expanding the role the public plays in management planning' and 'developing a classification of parks based on matching functions to the natural environment present', both of which saw academics voicing agreement compared to the varied response of park superintendents. The extent of variation in these replies is well illustrated by the difference between mean scores, 7.5 and 27.5 %, respectively. On only one issue, that of whether 'management is presently suited to understanding and implementing sustainable practices', did both groups express a similar (2.7 and 2.8 mean scores) varied response. Academics and park superintendents expressed disagreement to the statements 'focusing on managing and controlling threats inside park boundaries despite lack of control over decisions in neighbouring areas', to the statement that 'parks as sustainable landscapes is an unrealistic goal' and to the issue that 'limited benefits have resulted from co-operative arrangements with neighbouring areas'.

Of the nine issues where both groups expressed agreement, the nature of this agreement was strongest for 'parks can and should be examples of sustainable landscapes', 'emphasizing the maintenance of ecological integrity as positive management', 'regional conservation strategies as possible means of addressing external threats' and 'requiring greater co-operation between parks and neighbouring jurisdictions to address external influences'. For the remaining six issues, a comparison of mean scores shows that the academics responded more favourably than park superintendents even though they are both grouped under the general category of 'agreement'.

Table 7.16 Comparing responses to issues of management and planning

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Mean Score (parks sup.) range 1-5	Mean Score (academics) range 1-5	% difference between mean scores <sup>1</sup>
Parks are sustainable provided they are efficiently and effectively managed	XO			2.1	2.1	0.0
Emphasis to maintaining ecological integrity viewed as positive management	XO			1.7	1.3	10.0
Presently, management is suited to understanding & implementing sustainable practices		XO		2.7	2.8	2.5
Parks as sustainable landscapes is an unrealistic goal			XO	3.9	3.8	2.5
Limited benefits have resulted from co-op arrangements with neighboring areas			XO	3.4	3.8	10.0
Greater co-operation required between parks & neighboring jurisdictions to address external influences	XO			1.4	1.4	0.0
Focus should be on managing/controlling threats present inside of parks rather than outside given lack of control over decisions in neighboring areas			XO	4.2	4.1	2.5
Regional conservation strategies as possible action to address external threats	XO			1.6	1.6	0.0
Monitoring park programs & activities through review of management plans & state of the parks reports	XO			2.2	1.6	15.0
Expansion of the role the public plays in management planning to one of active involvement in developing management programs	O	X		2.7	2.4	7.5
Controlling change within parks by use of an Environmental Assessment & Review Process (E/ARP) that has legislative power	XO			2.3	2.1	5.0
Developing zones within parks based on the degree to which activities suit the resource base	XO			2.2	1.3	22.5
Development of a classification of parks (similar to provincial ones) which serve specific functions suited to their natural environment	O	X		3.3	2.2	27.5
Parks can & should be examples of sustainable landscapes	XO			1.7	1.1	15.0
Park management that uses sustainability principles that account for economic, ecological and social considerations	XO			2.4	1.6	20.0

X = RESPONSE OF SUPERINTENDENTS      O = RESPONSE OF ACADEMICS

<sup>1</sup> Difference is expressed as a percentage of the possible maximum difference

In summary, for all responses addressed in each of the themes presented in this section, there were no issues on which the views of the academics and park superintendents were diametrically opposed to each other. In other words, there did not exist any situation where one group voiced agreement while the other stated disagreement. The majority of responses, regardless of theme, saw general agreement with statements being expressed which varied only in extent, as reflected by the differences recorded in mean scores. A 'varied response' was recorded on only 15 of the 86 issues, which may be taken as a positive finding, meaning that groups were able and willing to indicate agreement or disagreement on the issues. On only 8 issues was a difference of opinion found to exist between groups, the majority of these cases finding academics indicating agreement to the respective issue while park superintendents provided a 'more varied' type of response to the issues. The strong level of agreement between the two groups was somewhat surprising, especially given their different backgrounds and their degree of specific involvement with the parks, with park superintendents assuming an active management role, compared to the esoteric/detached view of the academics. In the end, the similarity of response provided an excellent information base from which to identify areas of strong consensus, supporting the framework for sustainability.



#### 7.4. SUSTAINABILITY SPECTRUM AND TRADE-OFF

Prior to describing the sustainability framework, responses to the sustainability spectrum and the aspect of trade-offs are first examined. It was considered important to gauge the level of consensus present for these aspects, particularly the former, as the incomplete answers by policy makers to the idea of a sustainability spectrum removed the comparison to the responses given by the park superintendents to this item.

The overall goal in developing the sustainability spectrum was to identify the extent to which themes and activity types were perceived as being sustainable. To that end, the questionnaire sent out to academics listed the sustainability scores as perceived by park superintendents, on themes, types of tourism and types of recreational activity present in national parks.

Table 7.17 provides the mean sustainability scores for all themes addressed in the previous section, with the exception of tourism and recreation. The latter two themes were examined in greater detail, based on the assumption that tourism and recreation represent major trigger mechanisms for generating problems within parks. The issues of tourism and recreation are discussed later in the section. Although the spectrum used to address the perceived nature and level of sustainability for themes or activities has been described in earlier chapters, it is again included below to assist the reader in understanding Tables 7.17 to 7.19.

The results of mean sustainability scores shown in table 7.17 reveals very similar values for all themes (between positions 3 and 4 on the spectrum) for park superintendents with the exception of development issues (approaching a position of 2). In contrast, academics scored three of the seven themes (nature preservation, wildlife, interpretation/education) with higher mean sustainability scores, one theme (research) at the identical level as the park superintendents, and gave lower scores for the remaining three themes of aboriginal issues, development issues and management/planning.

Table 7.17 Comparing responses to sustainability scores for themes present in national parks

THEMES	Mean Score (park superintendents) range 1-5	Mean Score (academics) range 1-5	% of difference between mean scores <sup>1</sup>
Nature Preservation	3.4	3.9	12.5
Wildlife	3.3	3.7	10.0
Interpretation/education	3.2	3.5	7.5
Research	3.6	3.6	0.0
Aboriginal issues	3.1	2.8	7.5
Development issues	2.4	1.7	17.5
Management planning	3.6	3.4	5.0

<sup>1</sup> Difference is expressed as a percentage of the maximum possible difference

Note: Key to understanding mean score values in Tables 7.17, 7.18 and 7.19

The following spectrum addressed the perceived nature and level of sustainability possible for any given theme and was set up as follows with the following scores:

**1 = Unsustainability** (impacts and threats result in ecological damage of the various components within parks which cannot be corrected; the degree of negative impact (perceived) of development/use on the park environment is high).

**2 = Intermediate stage between conditional sustainability and unsustainability** (increasing stress placed on park systems; low tolerance present; impacts still perceived as negative, but no ecological damage occurs).

**3 = Conditional sustainability** (stress placed on the park environment by activities present; high tolerance within park systems; the degree of impact is limited and can be perceived as positive or negative).

**4 = Intermediate stage between sustainability and conditional sustainability** (limited stress placed on park environment, very high ecological tolerance within systems, the degree of positive impact (perceived) of development/use on the environment is low).

**5 = Sustainability** (minimal stress placed on the environment; degree of positive impact (perceived) of development/use on the environment is high; a symbiosis of development/use with nature is present).

The sustainability scores for different forms of tourism present within a national park context, are displayed in Table 7.18. The first point to note is the surprisingly high sustainability scores that park superintendents assigned to all types of tourism, even 'resort' and 'mass tourism' which are often perceived to have limited potential for sustainability. In contrast, the scores assigned by academics are considerably lower, particularly for types such as 'resort', 'winter/ski', 'organized tours' and 'mass/conventional', with percent differences between mean scores ranging between 22.5 and 35 % indicating less potential for them to be sustainable within a park setting. Even allowing for the higher than anticipated scores of the park superintendents, it is still possible to identify general areas of consensus between the two groups; the types viewed

as more sustainable by both groups are 'remote', 'mountain' and 'ecotourism', while those with least potential for sustainability are 'mass/conventional', 'resort' and 'organized tours'.

Table 7.18 Comparing responses to sustainability scores for types of tourism present in national parks

TOURISM TYPES	Mean Score (park superintendents) range 1-5	Mean Score (academics) range 1-5	% of difference between mean scores <sup>1</sup>
Remote	4.2	3.9	7.5
Mountain	4.2	3.8	10.0
Cultural	3.8	3.6	5.0
Winter/Ski	3.9	2.7	30.0
Heritage	3.8	3.5	7.5
Adventure	4.2	3.5	17.5
Ecotourism	4.1	3.9	5.0
Resort	3.2	2.3	22.5
Organized Tours	3.6	2.3	32.5
Mass/conventional	3.1	1.7	35.0

<sup>1</sup> Difference is expressed as a percentage of the maximum possible difference

The final aspect focusing on the sustainability spectrum was that of recreational activities present within national parks. Unlike the previous responses, Table 7.19 reveals that park superintendents' perception of sustainability varied considerably, ranging from a low value of 1.0 to a high of 4.2, with the majority of recreational activities scoring between 3.0 and 4.2. The scores assigned by academics did not differ greatly from those of the park superintendents', ranging from a low of 1.4 to a high of 4.0, with the majority of activities receiving a sustainability score between 2.1 and 3.4. More detail emerges when results are examined on an activity basis for the following three groups: air-based, land-based and water-based activities.

The results in the table reveal major differences between groups for scores assigned to air-based activities (sky diving to parascending), with park superintendents viewing them all as unsustainable with the exception of heli-hiking/skiing, while academics assigned very similar scores (2.0 to 2.3) to each of these activities.

Table 7.19 Comparing responses to sustainability scores for recreational activity present in national parks

RECREATION	Mean Score (park superintendents) range 1-5	Mean Score (academics) range 1-5	% of difference between mean scores <sup>1</sup>
Skv Diving	1.0	2.1	27.5
Hang Gliding	1.0	2.3	32.5
Heli-Hiking/Skiing	4.0	2.1	47.5
Gliding	1.0	2.1	27.5
Parascending	1.0	2.0	25.0
Motorcycling	2.6	1.6	25.0
Trail biking	3.2	2.0	30.0
Cycling	3.8	2.8	25.0
Hiking/walking	4.1	3.9	5.0
Touring	4.2	3.1	27.5
Picnicking	3.9	3.3	15.0
Orienteering	3.4	3.4	0.0
Golfing	2.1	1.4	17.5
Tennis	3.0	1.6	35.0
Horseback riding	2.3	2.3	0.0
Downhill skiing	1.7	1.4	7.5
Cross country skiing	3.9	3.3	15.0
Snowmobiling	2.1	1.4	17.5
Backpacking	3.8	3.6	5.0
Guided nature touring	3.9	4.0	2.5
Camping	3.3	3.1	5.0
Mountaineering	3.9	3.3	15.0
Recreational walking	4.0	4.0	0.0
Visiting historic sites	4.2	3.8	10.0
Ice skating	4.1	3.5	15.0
View/photo plant/wildlife	4.0	3.9	2.5
Diving	3.8	3.2	15.0
Scuba Diving	3.3	3.0	7.5
Snorkeling	3.7	3.2	12.5
Swimming	3.9	3.8	2.5
Canoeing	4.2	4.0	5.0
Sailing	3.9	3.6	7.5
Water/jet skiing	2.3	1.4	22.5
Beachcombing	3.2	2.8	10.0
Motor boating	3.2	1.7	37.5
Fishing	3.0	2.5	12.5
Clam digging	3.1	2.4	20.0

<sup>1</sup> Difference is expressed as a percentage of the maximum possible difference

As a result, the percent differences between mean scores are, not surprisingly, very large. The results of the park superintendents need to be qualified, however. They do not necessarily reflect the overall perception of this group, but rather only those members who

stated these types of activities to be present within their park. The consistently low scores of the academics, although not the lowest that they assigned, suggest that their potential, within a national park setting, would be toward unsustainability as they could allow access to restricted areas, impact on fragile ecosystems, and be disruptive to wildlife.

The second and much larger group of land-based activities (motorcycling to viewing/photographing plants and wildlife) were consistently scored lower on the sustainability spectrum by academics than park superintendents (% difference range of 2.5 to 30 %), with the exception of 'orienteering', 'horseback riding', 'recreational walking' which were scored similarly and 'guiding nature touring' which received a slightly higher score. When motorized activities (motorcycling, touring, snowmobiling) are compared to non-motorized activities, a similar pattern emerges in the scores of both the academics and park superintendents. First, they received some of the lowest scores given for this group of activities, with the one exception being for 'touring', and second, the scores of the academics are substantially lower than those of superintendents, with the range of difference as large as 17.5 to 27.5 %. Non-motorized forms of recreation, which often involve small numbers (e.g., cycling, hiking/walking, picnicking, backpacking, recreational walking, visiting historic sites and observation), all scored high on the sustainability spectrum, suggesting that these types of recreational activity are what best suits national parks, especially from the perspective of sustainability. In light of the last point, it should be noted that even within this small group of most favoured activities, scores between groups varied considerably (from no difference for recreational walking to a high of 25% for cycling) which in turn may have implications on their potential as activities that reflect sustainability within national parks.

Other results, within this second group, are particularly interesting, especially those such as 'golfing', 'tennis', 'horseback riding', 'downhill skiing', and 'cross country skiing', as they are some recreational activities that were promoted in early parks with 'townsites' to cater to an affluent urban class (golfing and tennis) and others which have

been recognized for the impact they leave on the landscape (horseback riding, and skiing). Golfing and tennis received very low scores from the academics (1.4 and 1.6, respectively) which may be a reflection of not just their perception on how sustainable these activities actually are within parks, but also an indication by this body of respondents of how unacceptable these activities are given that they can be easily offered outside the parks. As for the second group (horseback riding, cross-country skiing and downhill skiing), it was not surprising to see the lowest scores being assigned by both academics and park superintendents to downhill skiing (1.4 and 1.7, respectively). They clearly show this to be an activity as close to the condition of 'unsustainability', resulting from the large numbers involved, and the physical impact such large volumes of people and the equipment generate. In contrast, cross-country skiing is shown as an activity with more potential to be sustainable given that the physical impact is less. Both academics and park superintendents gave horseback riding a value of 2.3, indicating that this activity has potential to be unsustainable for the park environment. In the previous chapter, the impact of trampling, and trail damage from horses, especially under wet conditions were concerns of the park superintendents and such concern may be reflected in this score.

The last group of activities to be examined are those which are water-based (diving to clam digging). Not surprisingly, passive ones like 'swimming' and 'canoeing' scored higher, while motorized forms of water-based recreation such as 'water and jet skiing' did not; an indication of first, acceptability as an activity for parks and second, the level of disruption caused. 'Motorboating' and 'clam digging' received low scores by the academics, perhaps a reflection of the impact of noise, pollution and removal of items from the park itself, respectively.

As noted above, when recreational activity is taken as one element, the scores by park superintendents were found to be lower than those given by the academics. This pattern may have developed from the fact that, although park superintendents are aware of the problems generated by some recreation activities (as shown in some of the scores they

gave), they are also cognizant of the importance of having to provide to the park visitors a range of opportunities to enjoy the parks and the reality that the system needs the revenues generated by users. In contrast, the response of academics may be more a reflection of what types of recreational activity they view as best suited to a national park landscape in a more abstract context.

For the remainder of this section, attention turns to examine the results of the trade-off between use and protection. Table 7.20 shows the mean scores of both the park superintendents and academics for 19 park activities, based on the emphasis given to total protection (position 10 on the range 0-10 shown in the table) or total use/development (position 0 on the range). The results of the mean scores (average of all scores) of park superintendents have already been addressed in the previous chapter and so the focus in this section is to compare these results with those of the academics. The greatest difference in mean scores was found for 'mechanized forms of recreation' (27% difference between mean scores) with academics scoring this category much lower (3.1), indicating limited emphasis on protection as compared to use and development. Excluding 'mechanized forms of recreation' the range of difference between mean scores was between zero (tourism) and 19 % (nature reserve maintenance), but the majority of activities had less than a 10% difference. Eight activities were scored lower by academics (less emphasis on protection), differences in particular in 'search and rescue operations' (16 %) and 'traditional activities' (11 %). 'Endangered species protection' and 'wildlife protection' scored highest in terms of emphasis on preservation, with 'lumber activity' and 'mining' scoring the highest with respect to use and development. The most significant differences between groups were in the mean scores for 'mechanized forms of recreation' and 'passive forms of recreation'. While the difference in the mean scores of park superintendents for these two activities was minimal (0.2), the response of academics indicated that passive forms of recreation were given a score which reflected more emphasis on protection than

mechanized types, the difference in scores for these two forms of recreation being 3.9. A similar trend is evident for tourism and ecotourism, but with less notable differences involved ( 0.8 and 1.5 difference for park superintendents and academics, respectively).

Table 7.20 Comparing responses to the trade-off between use and protection for park activities

PARK ACTIVITIES	Mean Score (park superintendents) range 0-10	Mean Score (academics) range 0-10	% of difference between mean scores
Endangered species protection	8.2	9.3	11.0
Mining	1.3	0.3	10.0
Mechanized forms of recreation	5.8	3.1	27.0
Tourism	5.8	5.8	0.0
Eco-tourism	6.6	7.3	7.0
Research	6.3	6.9	6.0
Passive forms of recreation	6.0	7.0	10.0
Traditional activities	5.4	4.3	11.0
Lumber activity	1.1	0.8	3.0
Nature reserve maintenance	5.6	7.5	19.0
Wildlife protection	8.3	8.9	6.0
Nature studies	7.2	7.8	6.0
Interpretation & education	7.2	7.6	4.0
Search & rescue operations	7.0	5.4	16.0
Access & circulation maintenance	5.1	4.8	3.0
Infrastructure for recreation/ tourism maintenance	5.4	4.8	6.0
Disposal of waste	5.5	5.7	2.0
Accommodation (front country) provision	5.2	4.8	4.0
Accommodation (back country) provision	5.6	4.9	7.0



### 7.5. TOWARD A 'SUSTAINABILITY FRAMEWORK'

At the start of the thesis, general statements were made on what form a sustainability framework might take. Reference was made to Dover's (1990) work in which general and specific attributes of sustainability were identified, and a suggestion was that this approach had utility in the development of a sustainability framework for national parks. Figure 7.1 provides the reader with a summary of the various stages involved in the framework, noting a contextual stage, followed first by a stage showing general attributes and then specific attributes, out of which strategies may be developed and assessed via monitoring or re-evaluation of the strategies themselves. Figure 7.2, takes this process further by providing the details within each of the stages of the framework itself. The responses of the park superintendents and the reaction of academics to the former were used in the development of the framework, by identifying those elements of consensus which were perceived to be supportive of sustainability and those where the opposite was the case.

Prior to describing the framework, it is necessary to point out that the framework is not set up in the form of a step-by-step approach that could be followed by park managers. Instead, the framework is set up to be used as a tool by managers allowing them to compare sustainability attributes identified for the system as a whole, to conditions existing within a particular park. It is important to stress that the attributes identified in the framework are somewhat general in nature and that the degree to which they have applicability to actual parks is subject to the characteristics of individual parks themselves.

The first stage (context) in the framework involves the four elements of 'objectives', 'scale', 'political structure', and 'societal change'. With respect to the first, there is a need to determine objectives as they relate to 'type' of sustainability desired, be they ecological, economic or social in outlook, or a combination of these three. The type of 'objectives' set are influenced by the other contextual elements of scale, political structure and societal change. It may be argued that 'scale' not only influences the nature of the objectives being established but determines the level at which sustainability is being

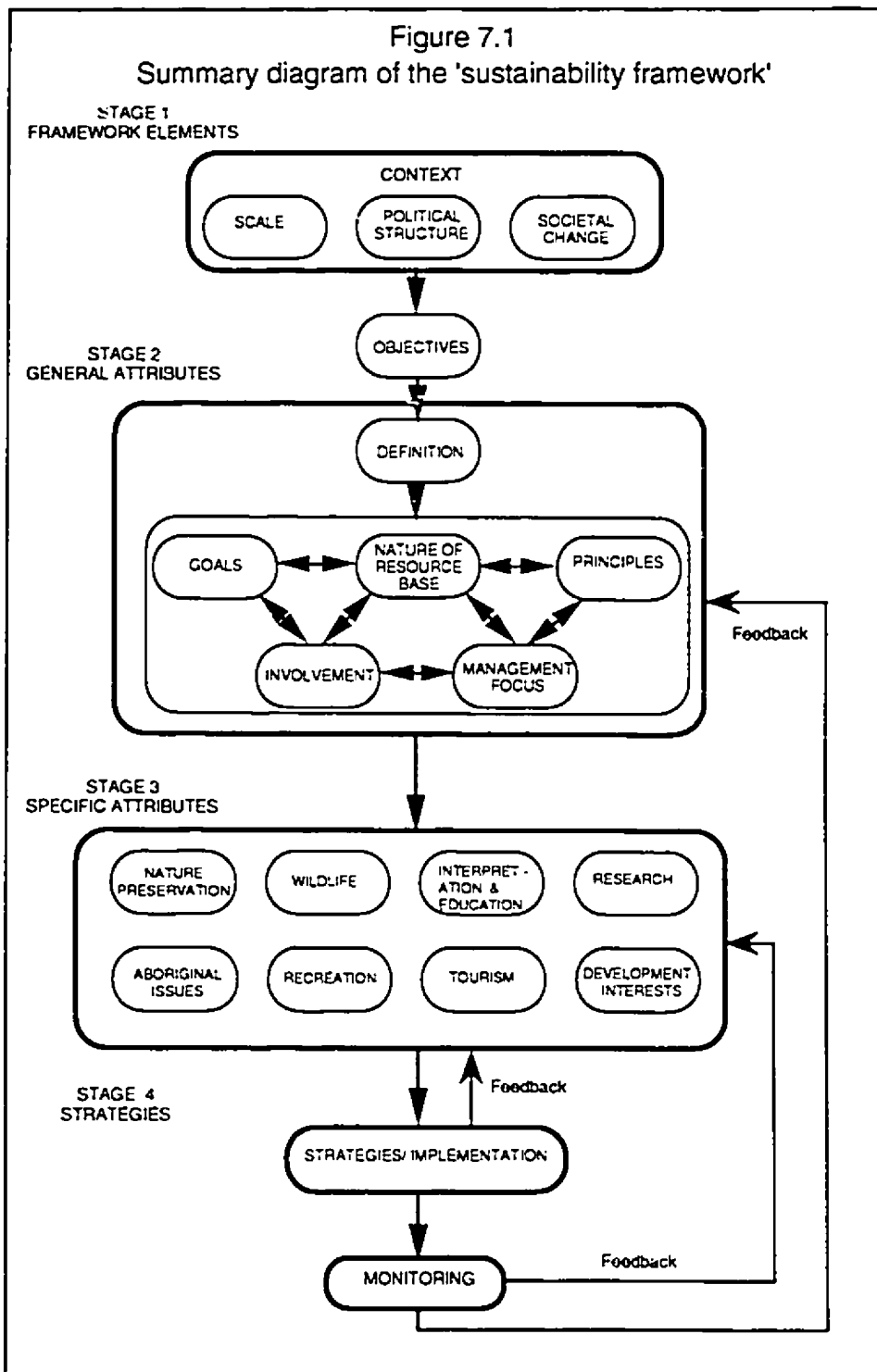
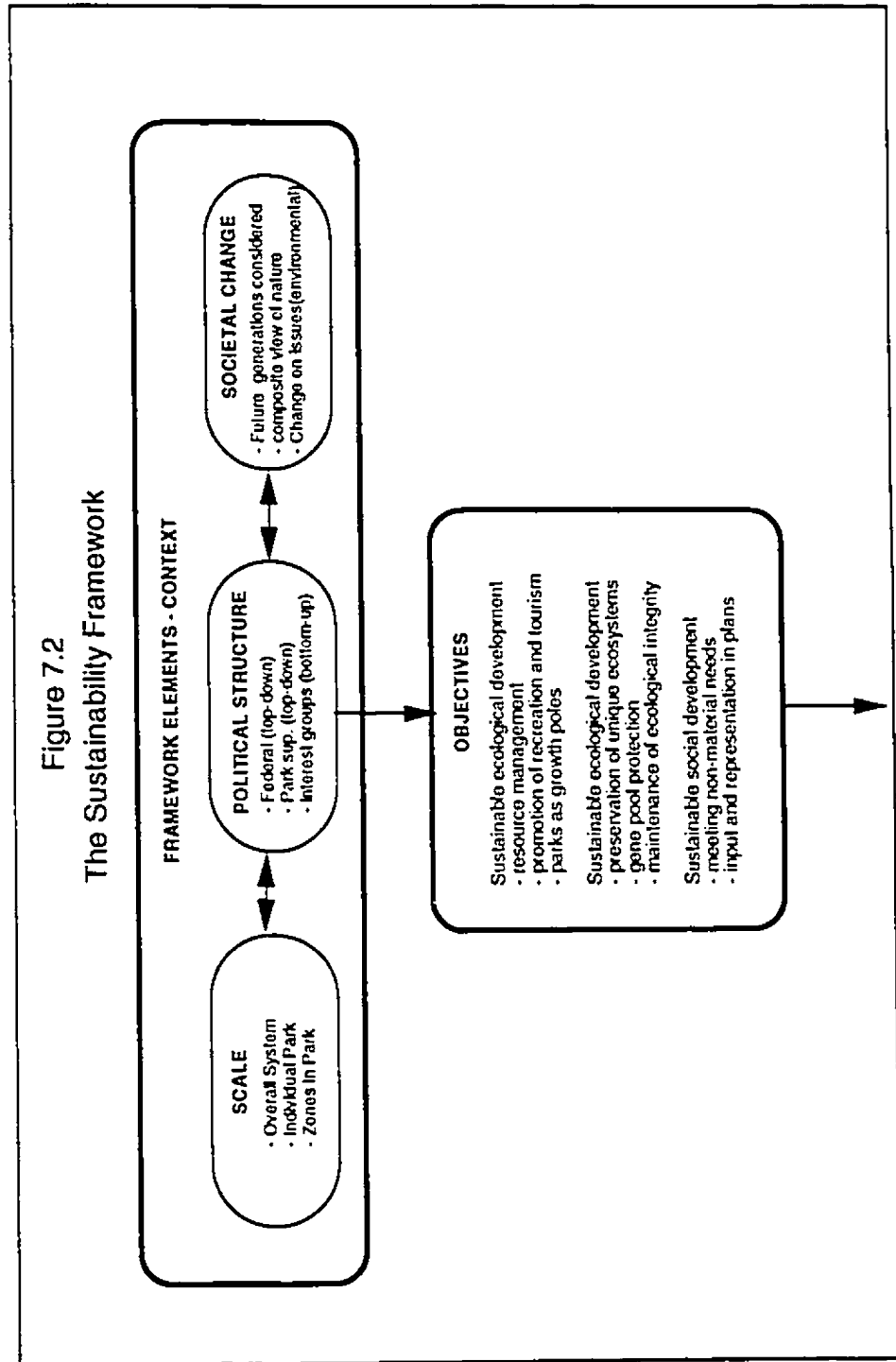


Figure 7.2  
The Sustainability Framework

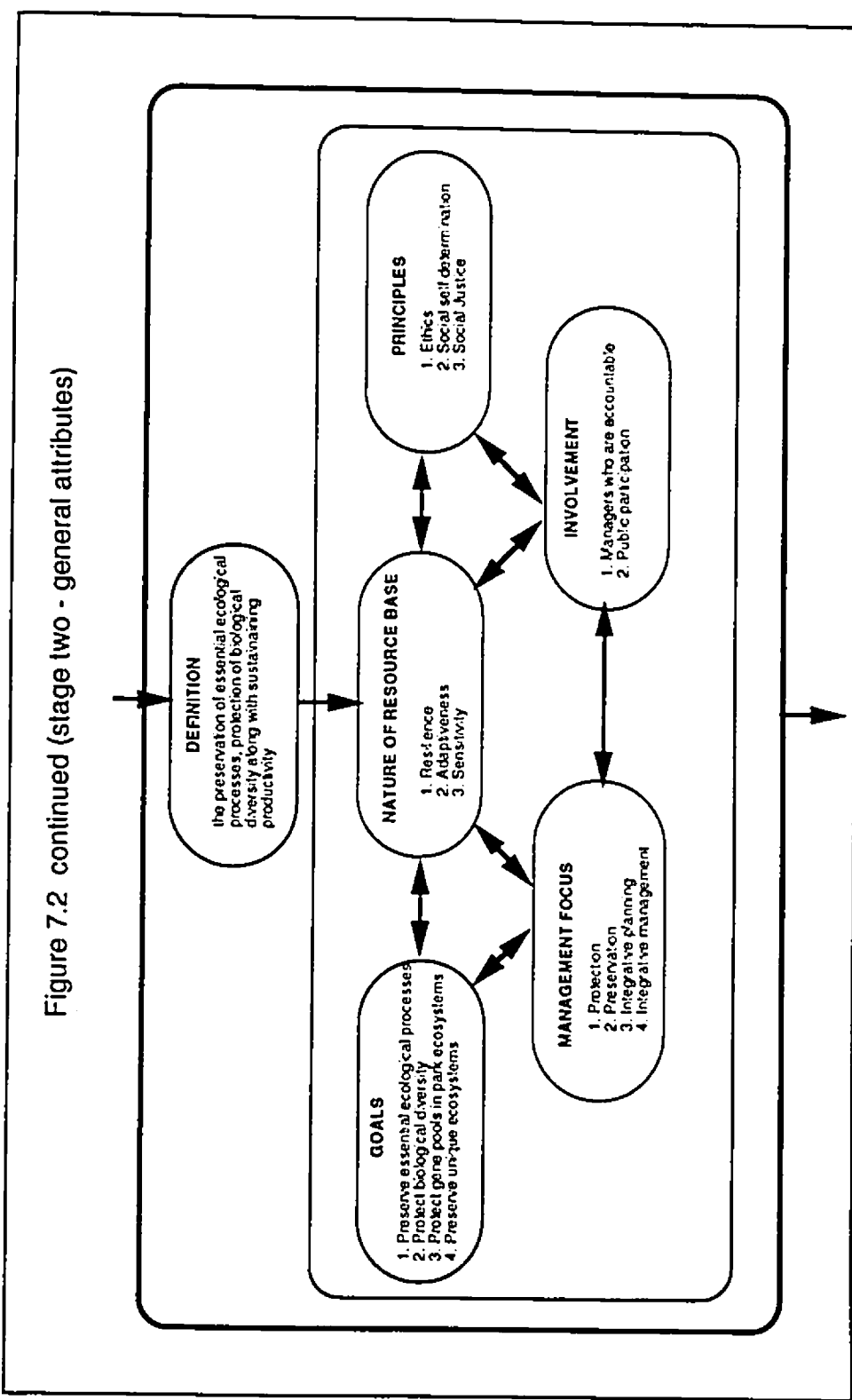


directed. 'Political structure' (top-down, bottom-up or mixed) is important in any understanding of sustainability as this is often the mechanism in which change is offered and ensured. The last element, 'societal change', plays a key role in addressing sustainability, often as the driving force behind ensuring action is taken to promote change, and re-evaluate concepts, ideas and relationships between issues in the pursuit of the goal of sustainability itself. It is important to note, however, that there are linkages between each of these framework elements as shown in Figures 7.2. These linkages were discussed within the first two chapters of the thesis and therefore require little discussion or elaboration at this point other than to indicate that of the four framework elements, 'objectives' is viewed as the most important, being influenced by the other three, as shown by the direction of the arrows in the Figure. The position that is put forward, therefore, in the first stage of the framework is that these four 'elements' are particularly important in any discussion of sustainability in general (as shown in Figure 1.2, of Chapter 1) and when national parks, in particular are taken as the context.

The following assumption was made to establish a linkage between the Framework Elements (objectives, scale, political structure, societal change) and the second stage in the framework of identifying General Attributes of criteria of sustainability, namely, that the types of objective(s) pursued shape and influence how the concept may be defined within a specific context. The influence of the remaining framework elements also have a bearing on the type of definition that may be agreed on. Having established a definition, a second assumption stated that the various General Attributes (Figure 7.2 - stage two) (sustainability criteria) in turn shape how sustainability may be defined.

Based on consensus statements between the responses of park superintendents and academics, Figure 7.2 (stage two) reveals the most appropriate definition of sustainability for national parks to be: (1)'the preservation of essential ecological processes, (2) protection of biological diversity and (3) sustaining productivity', the original IUCN World Conservation Strategy (1980) definition of sustainable development. It represented the

Figure 7.2 continued (stage two - general attributes)



definition most preferred by respondents as reflected in the rank ordering, the extent to which they considered it as appropriate, and the degree of consensus present between group responses, as shown in Table 7.1. Establishing an appropriate or working definition of sustainability may then be viewed as the base on which General Attributes, namely, sustainability criteria, can be determined. Within the context of national parks, the framework identifies general attributes associated with 'goals', 'the nature of the resource base', 'principles', 'involvement' and 'management focus'. The author remains cognizant of the attention that has been paid to defining sustainability within the broader literature and stresses that the above definition is used only as a working definition, that it represents only the opinions of the groups surveyed in the thesis, and that no attempt is made here to take the degree of appropriateness it received as endorsing it for application to the park system as a whole.

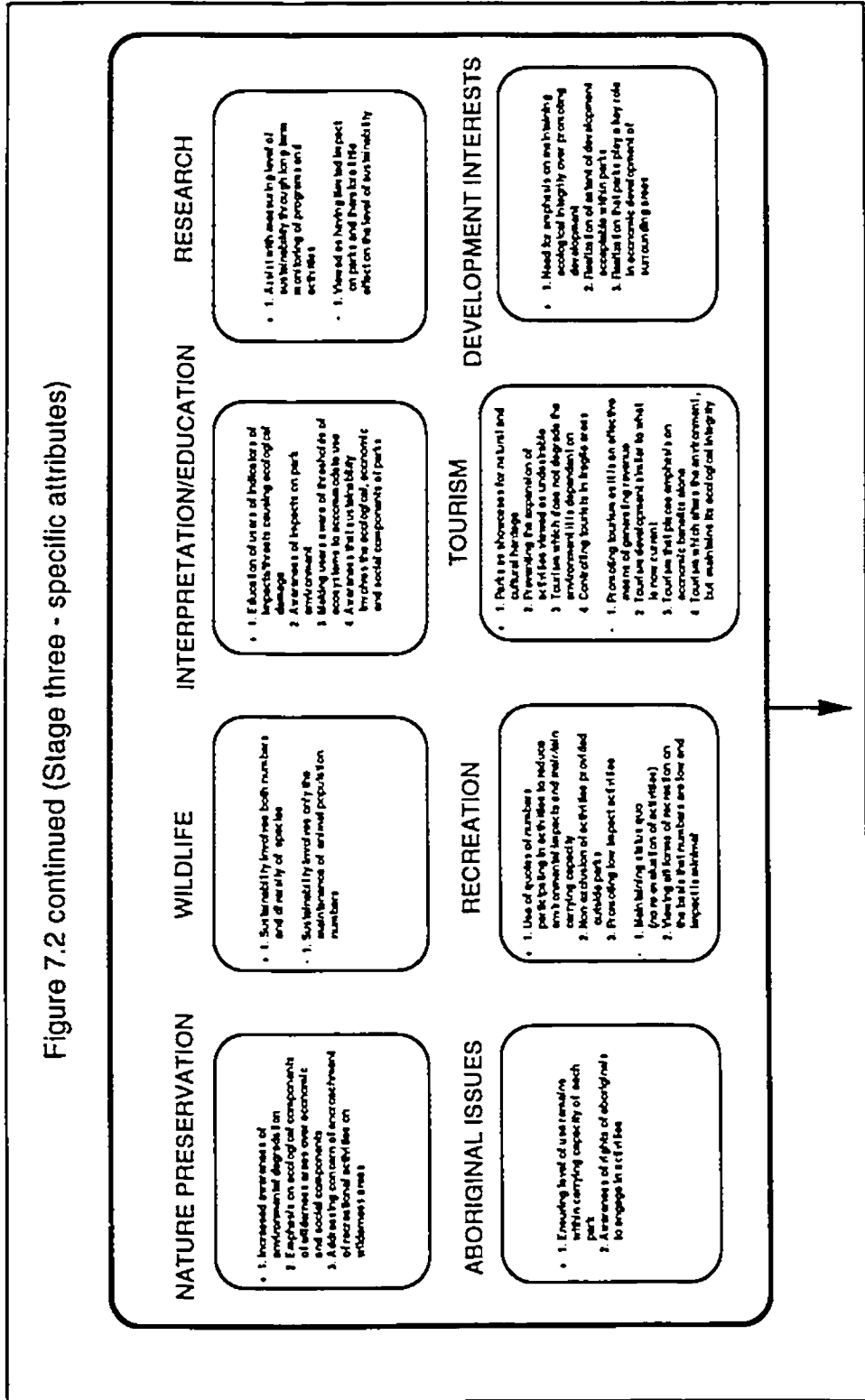
With an ecological emphasis present in the working definition, it was expected that the same emphasis would be present in the goals that could be declared for the overall park system with regard to sustainability. Figure 7.2 lists the four top goals (see Tables 7.2 and 7.3), in terms of rank, appropriateness and the degree to which consensus was found between groups, and as expected the ecological dimension featured prominently. As for the most desired attributes with respect to the condition of the park landscape itself (nature of the resource base) Table 7.4 revealed these as being 'resilience', 'stability', 'adaptiveness' and 'sensitivity'. Principles viewed as important within a park context included 'ethics', 'social self determination' and 'social justice' (Table 7.5), the first being more relevant than the others. As for the Involvement component of sustainability, responses of the two groups saw representation of interest groups being less vital, indicating attributes of having 'managers with accountability' and 'public participation' present as the most important (Table 7.6). The last General Attribute shown in Figure 7.2 involves the focus taken by management. Once again, given the nature of the definition, it

is not surprising to see the focus on 'protection' and 'preservation' before 'planning' and 'integrative management' are addressed (Table 7.7).

Within this second stage of the overall framework, the direction of the arrows illustrates the perceived linkages believed to be present between each of the sustainability criteria. There may exist more direct linkages between the various General Attributes themselves, but the nature of the linkage shown in Figure 7.2 is simplified for the purpose of illustrating the role played by these General Attributes in assisting to define sustainability and influencing the subsequent direction the concept will take given the context in which it is presented. What is absent from the figure is the possibility of linkages from some of the Framework Elements (stage one) to the General Attributes in stage two. For example, there are linkages between how the 'Political Structure' will influence 'Management Focus' in terms of whether or not management will be top-down (following policy decisions) or bottom-up (dealing with problems on the ground through co-ordination with neighbouring jurisdictions). 'Scale' will impact on the focus given to the 'Nature of the Resource Base' based on whether one is considering the whole park system, one particular park or an area within a park. The issue of how resilient the entire system can be will differ from considering resilience within a specific park itself, as the factors affecting the former will not necessarily be the same as those affecting the latter. Lastly, 'Societal Change' will be demonstrated in the 'Principles' of sustainability chosen (e.g., ethics, social self determination) and may influence who becomes part of the 'Involvement' process itself.

Having identified General Attributes of sustainability for parks, the third stage of the framework moves to identify those Specific Attributes for themes present for national parks, based on the degree of consensus present between groups on the issues addressed under each of the following themes: nature preservation, wildlife, interpretation and education, research, aboriginal and traditional activities, recreation, tourism and development-oriented interests (Figure 7.2 stage three). Attributes shown with a plus sign represent items where consensus was evident in the responses of park superintendents and

Figure 7.2 continued (Stage three - specific attributes)





academics which supported sustainability for the theme in question. In contrast, the issues listed with a minus sign represent items of consensus indicating they were not viewed as being in support of sustainability.

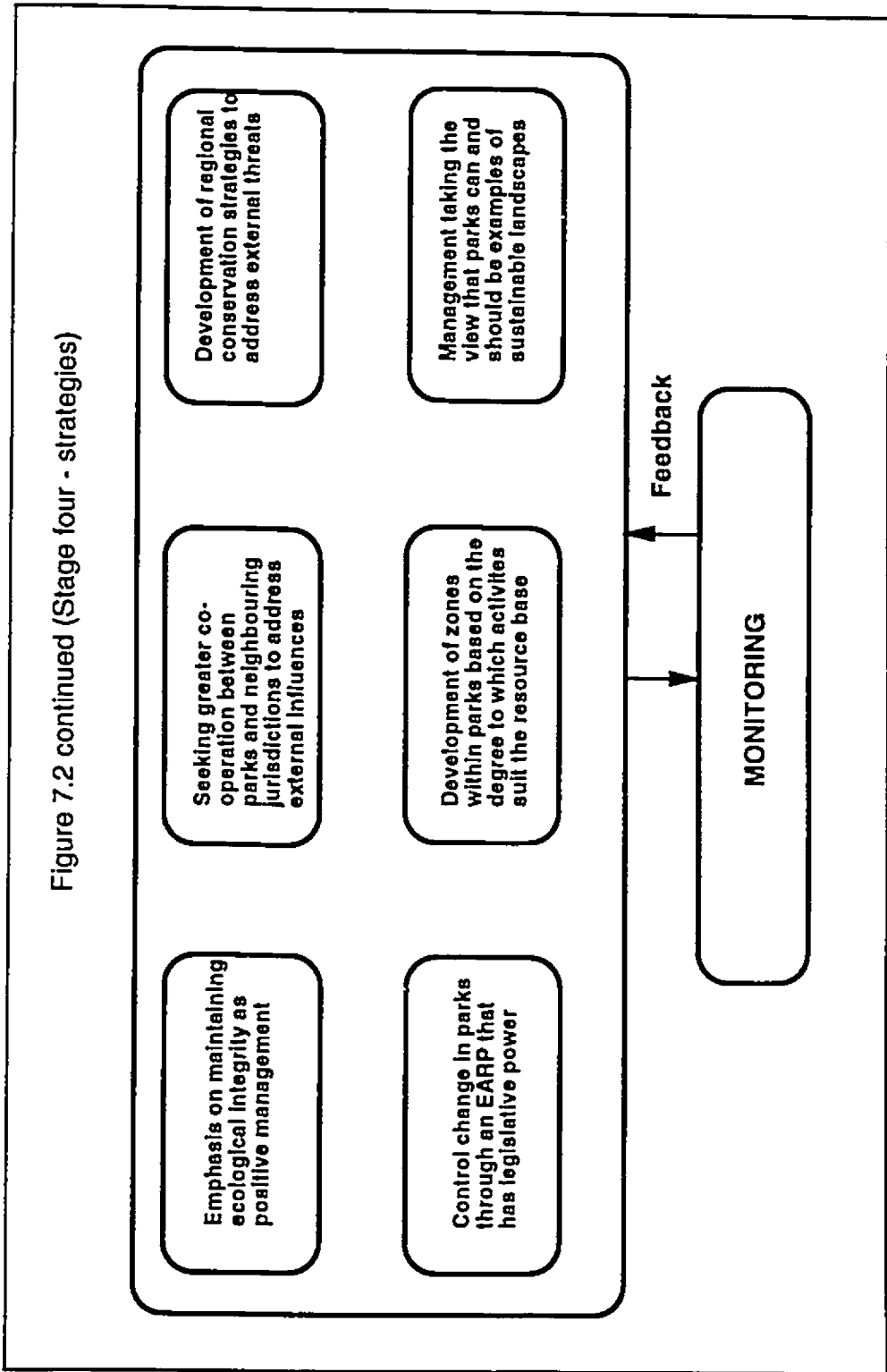
This third stage of the framework synthesizes the results shown in Tables 7.8 to Table 7.15 (nature preservation to development-oriented interests, respectively). What are presented in this stage, are those issues where agreement and consensus were most strong, and which were in support or opposed to achieving sustainability. For each of the themes, issues of consensus are presented in the order of most agreement or disagreement to the statement and, where the greatest consensus in response existed between the groups with respect to the issues. The themes of 'nature preservation' (Table 7.8), 'interpretation and education' (Table 7.10), 'aboriginal and traditional activities' (Table 7.12) and 'development-oriented interests' (Table 7.15) are shown in Figure 7.2 (Stage three) as listing only issues of consensus that were understood to be supportive of sustainability, as indicated by the absence of any negative (-) issues. In contrast, themes like 'wildlife' (Table 7.9), 'research' (Table 7.11), 'recreation' (7.13) and 'tourism' (7.14) are shown to have certain issues where consensus was present between groups on issues that were not in support of sustainability, especially when tourism is considered.

Absent from this third stage of the framework are the linkages between each of the themes and issues within themes. Also, absent are the cross-linkages between General Attributes (stage two) and Specific Attributes (stage three). For example, it may be argued that the 'Nature of the Resource Base' has bearing on 'aboriginal and traditional activities', 'recreation' and 'tourism', as does the 'Management Focus' on, for instance, 'aboriginal and traditional activities'. In fact, it may be suggested that there are linkages between all General Attributes and each Specific Attribute, but because some of these may be more explicit than others, the linkage between the second and third stages of the framework is illustrated in a more simplified manner.

After the identification of the various Specific Attributes that have potential to support or deter sustainability for attributes present within the parks, the fourth and final stage of the framework presents some basic general management and planning strategies within which specific issues within parks may be addressed (Figure 7.2 - Stage four). Six strategies are listed in the framework which represented ideas that were supported by both park superintendents and academics with minimal difference of opinion being voiced. Accepting the strategies, a final stage in operations would be to undertake measures of monitoring and/or assessment, and to consider periodically a re-evaluation both of the general and specific attributes, particularly as issues within the parks system and individual parks change.

As previously noted, there has been no attempt within the overall framework to show all causal linkages between Framework Elements, General Attributes, Specific Attributes and Strategies for the reason that the primary objective in developing the framework was to identify what factors are involved in sustainability when the concept is applied to a national park context, rather than attempt to explain linkages. The author is aware of the importance of linkages, especially how to support them, but the processes involved in achieving this is beyond the scope of the thesis. It is argued that a framework such as the one described above has utility in itself in showing those elements or issues within each theme which have relevance toward achieving sustainability in parks. Moreover, by gaining a better overall understanding of how sustainability applies within themes, managers can use this type of information to develop specific strategies to support activities and programs that promote sustainability for more than one theme, and by so doing, develop the potential for parks to be examples of sustainable landscapes.

Figure 7.2 continued (Stage four - strategies)



## 7.6. CONCLUSION

This chapter addressed the third objective of the thesis, namely, the identification of areas of consensus from which a sustainability framework for national parks could be developed. This framework is comprised of those aspects that focused on criteria of sustainability, and issues for sustainability within a number of themes present in the parks. Areas of consensus were identified in the responses of academics and park superintendents, groups viewed as having a high degree of familiarity with issues pertaining to national parks. The framework represents a first step towards understanding what is meant by sustainability within a national park context, and a base from which specific strategies to promote sustainability within each theme or area can be undertaken.

It is important to note that any outcomes leading from the development of the framework must be supported by park policy. Many new items may emerge which, if they are to be implemented within parks, may require revision of existing policy. In light of the foregoing, the next chapter provides a brief review of policy developments that have occurred for parks, explores how policy has shifted, and examines the extent to which a shift toward sustainability has occurred over time.

## **CHAPTER 8**

### **POLICY DEVELOPMENTS**

#### **8.1. INTRODUCTION**

Policies, in general, tend to reflect ideas current for the period in which they were developed. With respect to Canada's national parks, park policies over the past three decades (the first formal policy for the system appeared in 1964, was updated in 1979, with the current one released in 1994) have helped to clarify the mandate of the parks, outline procedures for establishing new parks and set guidelines by which existing parks are to be managed; all within a varied environmental climate between 1964 and 1994. This chapter examines each of the park policies in turn, comments on the various sections within each policy and how they have been changed or have evolved over this time frame. An attempt is also made to determine the nature of the shifts occurring in policy developments, offer reasons for the changes and to assess the extent to which change in policy has reflected a shift toward sustainability. It should be noted here that comments made about the various policies are based on the authors' interpretation unless stated to be explicit within park policy.

#### **8.2. CHANGE IN POLICY OVER TIME**

##### **8.2.1. National Parks Policy - 1964**

Prior to the first National Parks Policy (National and Historic Parks Branch, 1964), policies had evolved for each park, but in a piecemeal fashion and often as a reaction of

failure to meet the objectives set out for each park. The 1930 Act could be viewed as a de facto policy statement as it applied to all Parks, but was not described as such. The first attempt at setting a policy, designed to have national applicability, came some 34 years after the National Parks Act had been passed and at a time when economic growth and development was prevalent in national thinking, and where ideas associated with environmental protection were still perceived to be secondary in importance to use. The purpose behind the 1964 policy was to organize existing individual park policies into a "statement of National Parks Policy" which would give direction toward sound planning and development of individual parks within the system (even though at this stage a system plan for national parks had not yet been developed), and act as a guide for the administration for each park (National and Historic Parks Branch, 1964). It was recognized within the 1964 policy that parks varied in their purpose and use. Prince Edward Island and Riding Mountain were cited as being more suited to family recreation compared to Yoho and Glacier which were viewed as being more suited to offer enjoyment in terms of their natural scenic beauty. With diversity present between parks, both in terms of their purpose and use, the problem of assuring that general policies established would have national applicability was addressed in a proposal within the 1964 Policy to classify national areas (Table 8.1). The position was that this would make it easier to define and state the purposes of each type of area from which consistent policies could be developed.

Preservation was stated to be the prime consideration within the 1964 Policy (National and Historic Parks Branch, 1964: 4). Parks were seen as a resource, not in the traditional sense of the word (i.e., materials/ products) but in terms of their recreational potential (i.e., refreshment, aesthetics, enjoyment and benefit). However, variation was present in how nature was viewed, which permitted secondary uses like urban type outdoor recreation to occur in some of the parks. Preservation was often viewed in terms of recognition of limits on use, the need to address improper use, and to avoid inappropriate development within the parks.

Table 8.1 Classification proposed in 1964 National Parks Policy

TYPE OF AREA	CHARACTERISTICS
National Parks	- areas of outstanding natural features which should be preserved forever as part of the national heritage for the benefit, education and enjoyment of present and future generations
National Shorelines	- major units of ocean shoreline or the shoreline of very large lakes, which, due to their unique quality, are of national significance
National Recreation Areas	- areas which are primarily useful for recreational purposes and in which the obligation to preserve the natural state is distinctly secondary. This might also include areas suitable for recreation by reason of man-made developments such as power developments
National Nature Preserves, Sites, or Monuments	- areas, sites or features (scenic, geographic, or scientific) which it appropriate for the nation to preserve but which perhaps for lack of size or other reasons do not qualify as National Parks

Source: National and Historic Parks Branch (1964: 3).

The emphasis on recreational potential within the parks is not surprising given the period in which this policy appeared. The post war decades heralded in new opportunities for economic growth. The 1950s and 1960's were noted as a period which brought increasing economic prosperity to a larger segment of the population than had been previously the case. An expanding population (a result of the baby boom era), increased urban growth, a buoyant economy, fuelled by automation and service-related occupations, better working conditions, more paid vacations, improved transportation, a better road network and more disposable income, all resulted in parks, once the domain of the elite elements of society, becoming destination areas where summer vacations could be spent, and where camping and picnicking activities could be entertained by the general public on a more frequent basis. Evidence of this is cited by Nelson (1976) who states that during this period the western parks came to be visited by more easterners and Americans who had come west and north, respectively, for the summer months and by Darling and Eichorn (1967) for the U.S. parks. With North American society becoming more mobile, and placing an increasing emphasis on recreation and leisure, it is not surprising that the recreational resource potential of parks received the attention it did in the 1964 Policy.

Policy was prescribed for thirteen issues (Wildlife and Nature, Access to Parks, Permanent Visitor Accommodation, Camping, Group Camping Developments, Research and National Utility Installations, Education and Interpretation, Culture, Private Dwellings, Recreation, Townsites, Park Zoning, and Finances), and recreational activities and the provision of recreational facilities featured prominently in nine of these.

Policy on Wildlife and Nature stated that construction of highways, fire roads, hiking trails, townsites and urban type recreational developments were acceptable within parks but only "if considered essential". Also, it was stated that provision should be made for good quality angling for visitor recreation, that public appreciation of natural history values should be developed through the provision of nature trails and use of interpretative programs, and that management of the natural components of parks be kept to a minimum so as to preserve the recreational and aesthetic values of parks. Forests within parks were viewed primarily as recreational areas, protected for their recreational, scenic and aesthetic values.

The position taken with respect to Forestry was that areas around townsites and campgrounds were to be managed from the perspective of being able to withstand necessary visitor use without altering the natural landscape appreciably, and that the dead, diseased or infested timber was to be removed, in part, because this reduced the recreational scenic value of areas within parks (National and Historic Parks Branch, 1964: 6). The policy on Access also helped promote recreation within parks, not only through the acceptance of existing infrastructure (railroads, commercial highways, roads) but also by the provision of aerial lifts, trails and footpaths (in wilderness areas) on the basis that they were acceptable if they assisted in the enjoyment and benefit of substantial numbers of visitors and because the proportion using trails was viewed then to be small with limited impacts, respectively (National and Historic Parks Branch, 1964: 7-8). Policy with respect to Permanent Visitor Accommodation also saw acceptance of motels and hotels within some of the larger parks, along with related facilities, but noted that, in general, emphases



was placed on encouraging facilities that provided for overnight accommodation to be located outside park boundaries (National and Historic Parks Branch, 1964: 8-9).

Policy was prescribed which saw urban type recreational facilities accepted in some parks, acting as a secondary function but only where they were in harmony with park purposes and did not impair natural and scenic values or the enjoyment of visitors (National and Historic Parks Branch, 1964: 13). The policy did, however, stress that urban type recreation should not be introduced as a means of increasing visitation but that emphasis should be placed on primarily natural types of recreation (e.g., boating, swimming, fishing) or other types suitable for recreational and family holiday parks (e.g., golf, tennis). Policy on Townsites, addressed the fact that the type of park use had changed in some of the western parks as a result of increased visitation from 1945 onwards, that weekend visitation had increased, and was concentrated in areas of parks where urban type recreational activities had been developed (National and Historic Parks Branch, 1964: 15). In light of this, policy centred on the need to plan and guide development within townsites in a way that they could meet this demand, functioning as visitor service centres. In particular, the policy on facilities related to townsites stated an obligation on the part of townsites to provide skiing facilities, with emphasis on mass participation without due consideration given to impacts that resulted, that curling and skating rinks were acceptable and supported as community services, and that the intrusion of special events within parks (e.g. winter Olympic competition) could be allowed even although the impact from high visitation, especially in post season, would have a substantial bearing on individual park resources.

Lastly, the concept of zoning was introduced in the 1964 Policy from the perspective of defining areas in accordance with acceptable use and development, noting the type of use, extent of use and the acceptable means of access to each of the zones within parks (National and Historic Parks Branch, 1964: 17). With a spectrum that ranged from wilderness areas to townsites, the policy outlined the need for zoning on the basis of

anticipated demand for recreational use increasing in the future, along with the need for preservation of natural features within parks.

Based on the author's interpretation of the 1964 Policy, policy on issues, especially those relating to recreation are seen to be in contrast to the earlier statement made that preservation was the prime consideration within the Policy. The case to be made here is that the emphasis on use, in particular recreational use, is more evident throughout the policy than preservation, even although the preservation of the natural landscape, also noted earlier, was stated as the primary function of national parks. The context in which this first policy on national parks appeared, namely an increased recreational demand and the need to service this demand, may explain in part, the perceived emphasis of promoting recreational use within national park landscapes. The focus on use may also be explained that the lack of awareness and understanding of the impacts of recreational activity that could result within this type of setting (Nelson and Scace, 1968; Nelson *et al.*, 1978). Direction shifted away from an emphasis on recreation towards preservation when the national parks policy was updated in 1979.

### **8.2.2. Updating National Parks Policy - 1979**

In 1979 the National Parks Policy was updated. The overall tone of the new policy was focused toward protection with the emergence of the concept of heritage being developed. Heritage was viewed as being representative of natural and cultural elements considered as having national significance worth protecting within the parks. Protecting ecological and historical integrity were stated as Parks Canada's first priority over use.

This new policy came about as a result of changes that had occurred since 1964: nine more parks had been added to the system, including several within Northern Canada, reflecting different priorities and problems, perceptions within the public at large were noted to have changed regarding natural heritage (parks were no longer viewed as isolated

areas to be preserved but rather as places from which Canadians could learn about and understand the evolution of natural environments) and policy was needed to reflect changes in the capabilities and priorities of governments, especially regarding outdoor recreation and heritage conservation (Parks Canada, 1979: 7). A final consideration was because of the role that Canadian National Parks had started to play in outlining the importance of protecting heritage resources internationally, reflected by the fact a number of parks were listed as World Heritage Sites.

The overall purpose behind this new policy was to "provide an integrated and comprehensive statement of broad principles to serve as a guide for future initiatives and for more detailed policy statements on specific areas" (Parks Canada, 1979: 8). National Parks Policy was set within an overall program objective for Parks Canada of "protecting for all time those places which are significant examples of Canada's natural and cultural heritage and also to encourage public understanding, appreciation and enjoyment of this heritage in ways to leave it unimpaired for future generations" (Parks Canada, 1979: 11).

Program policies were focused on three areas: the protection of heritage resources, an understanding, appreciation and enjoyment of heritage resources, and the roles and responsibilities of various levels of government involved with national parks. The protection of heritage resources was addressed in a number of ways; first, through impact assessments and reviews of any proposed projects or activities in parks; second, through establishing a procedure to identify heritage resources; third, by viewing protection as reflecting interrelationships between people and nature; and fourth, through undertaking research that focused on protection, identification and the enjoyment of heritage resources. The second area of "understanding, appreciation and enjoyment of heritage resources" saw a focus on the provision of information and interpretative materials for parks, receiving input from the public on all aspects of parks through public participation exercises, by providing opportunities for outdoor recreation which were consistent with the overall mandate of protection but set within the constraints of ensuring that heritage resources were

protected, along with the safety of visitors and the protection and rights of others, and through provision of facilities and services needed to ensure public access, understanding and enjoyment. The third area that focused on roles outlined the responsibilities of various levels of government and explored opportunities for co-operation and regional integration, including the contribution Parks Canada could make at the international level.

Parks Canada's objective for national parks, as outlined in the 1979 Policy, was "to protect for all time representative natural areas of Canadian significance in a system of national parks, and to encourage public understanding, appreciation and enjoyment of this natural heritage so as to leave it unimpaired for future generations" (Parks Canada, 1979: 38); similar to the objective given for the overall program policies of Parks Canada. In order to achieve this objective, policy was prescribed for six topics: (1) the national park system, (2) zoning, (3) protection of park resources, (4) understanding, enjoyment and public appreciation of parks, (5) research, and (6) management plans.

With respect to the first topic, discussion was provided on a system of parks based on representation of terrestrial regions within Canada, and a three step procedure for establishing new parks that involved the identification of representative areas, the selection of potential parks, and the establishment of national parks in line with regulations were set out. Zoning within national parks was addressed in more detail than had been the case in the 1964 policy. Areas within national parks were classified, first, according to their need for protection and, second, according to their capability to accommodate visitors (Nelson *et al.*, 1978). The majority of parks would have five zones: (1) special preservation, (2) wilderness, (3) natural environment, (4) outdoor recreation and (5) park services, however, in northern parks the latter two zones may be absent. It was stated in the policy that zoning parks using the above classification would assist managers to resolve tensions that often arose between different interest groups over the need to balance protection with use. Zoning was viewed to be an integral component of each park plan.

Protection of park resources was placed in the larger context of the region in which parks were located, stressing the need for co-operation with adjacent land management agencies. Policy outlined that national parks were areas which were protected by federal legislation from extractive resource use, that the use of traditional domestic activities in some parks was limited and that native/aboriginal practices were honoured in parks created in areas that were being considered under land claims. In terms of resource management, the use of an Environmental Assessment and Review Process (EARP) was designed to ensure that possible adverse effects were identified, measured, and that action was taken to reduce impacts or alternative actions were chosen.

With respect to the public's appreciation of the parks, the policy outlined that the provision of facilities and services was dependent on the sensitivity of the environment to human impact, and that parks were not meant to provide all types of recreational uses, and that if they were to be left for future generations to enjoy, improper use, overuse and inappropriate development had to be avoided. The emphasis on protection was evidenced in policy on visitor use, information and interpretative services, visitor services and facilities, access and circulation and visitor accommodation. This was implied through promoting protection before use, by creating public awareness for the need for the wise use of national parks that were in line with the mandate, through designing park facilities to harmonize with their natural surroundings, by ensuring that access within parks conformed to zoning classification, by stating that no new park towns would be created and that those existing were to be limited to boundaries established by legislation, and that the preference would be to provide basic accommodation facilities over luxury ones.

Policy on research focused on three areas; first, the development, establishment and management of the national park system; second, better understanding of the park environment to ensure its protection and that it was accurately interpreted to the public; and third, assessment of the need for park facilities and the subsequent impact of visitor uses and facilities on the park landscape.

The last section of the the 1979 policy for national parks addressed the topic of management plans. These were viewed as an expression of general park policy which was set within a specific regional context. Attention focused on the understanding and enjoyment aspect of parks but within the context of zoning, so as to determine the level of protection needed within certain areas of parks. Management plans were viewed as constituting a framework within which subsequent management, implementation and planning would occur, in which public participation played a key role in the overall management planning process. Management plans were developed from the perspective of being long-term in nature, noting that past development which was non-conforming would not be accepted in the future especially, when it resulted in significant impairment of heritage resources.

An overall assessment of the 1979 policy in comparison with the 1964 policy indicates that a clearer statement was made in the former for the protection of heritage resources over use. Although the 1979 policy addressed use aspects within the parks, there was a more noticeable shift towards protection as the priority. A more definitive policy was outlined in a number areas, for example zoning and management plans, where only general statements had been made in 1964. Also, within the various sections of the 1979 policy, there was a stronger recognition that parks must be set within the larger context of the area surrounding them, and as such, more emphasis was placed on integration at a regional level with the development of co-operative arrangements for the management of the region as a whole. The 1979 policy was in place for 12 years until a new proposed policy appeared in 1991.

### **8.2.3. Towards the current National Parks policy - 1994**

The process to produce the present policy document began in 1989 when a green paper was written on the proposed new policy (Environment Canada, 1989). A revised version of

this green paper was published as the proposed new policy in 1991. It would take another three years, however, before the actual policy was presented to Parliament and when it appeared in the summer of 1994, it would reflect a departure from the structure and philosophy presented in the green paper. The reasons behind the changes are not known and the author can only comment on the changes by comparing the proposed policy with the actual policy. As such, this section is limited to describing how the new policy was developed and the changes that occurred in the formulation of the current policy for Parks Canada.

A number of reasons were cited for the need to update the 1979 policy document (Environment Canada, 1991a). First, significant changes had occurred in legislation regarding native land claims and how they related to heritage legislation, and second the amendment of the National Parks Act in 1988 to direct management to consider the maintenance of ecological integrity through the protection of natural resources when developing management plans on a park to park basis, had been approved. Third, the emergence of the concept of sustainable development, and the endorsement by Canada for the work of the World Commission on Environment and Development (WCED), saw parks viewed as "demonstration areas for environmentally sound and ecologically sustainable programs" (Environment Canada, 1989: 8), in which the "principles of sustainable development would be used as a fundamental guide to the future management of natural and cultural resources" (Environment Canada, 1989: 10) within parks.

The need to incorporate such a concept (Parks Canada as a federal department was expected to endorse the principle), is reflected in the frequency that it was used in the draft green paper. The fact that the majority of references to sustainable development were removed from the draft Green paper and replaced by less politically sensitive terms such as 'protection', 'sustainable use' or 'thoughtful environmental management', may imply a lack of acceptance for an idea which promoted development within a landscape where development was not accepted and where emphasis was placed on protection, and

maintaining ecological integrity. The new policy stressed the contribution to sustainable development in terms of maintaining ecological integrity and biodiversity of natural areas, in the promotion of a conservation ethic, in citizenship values that were based on a respect for the environment, where management was ecosystem-based in its approach but where social and economic needs, that were viewed as compatible with maintaining areas in a natural state, would also be met (Parks Canada, 1994: 8).

Ecological emphasis was also stressed in the new policy by the role identified for parks in implementing the Convention on Biological Diversity adopted in Rio in 1992, by contributing to in-situ conservation of biological diversity through protecting ecosystems, maintaining viable population of species in natural settings, and by providing environmentally sound management of areas surrounding parks. Protecting natural heritage was placed within the broader context and national goal of setting aside 12 % of the country as protected space with national parks representing one component of a future network of protected heritage areas (Parks Canada, 1994: 9).

The format used in the final policy differed from that used in the proposed policy. In the final policy an introductory section set the context in which Parks Canada operates, focuses on a vision statement for the agency that emphasizes the priority assigned to the principles of ecological and commemorative integrity (the latter refers to the historical heritage resources managed by Parks Canada, e.g., national historic sites, historic canals), the importance of stewardship (shared responsibility) and citizen awareness, comments on the role of Parks Canada in the new Department of Heritage and lists ten guiding principles by which Parks Canada strives to ensure that heritage resources are sustained. The guiding principles (Table 8.2) for the most part, replaced the Program Policies that were outlined in the proposed policy.

These guiding principles do not differ very much from the program policies set out in the proposed policy. What is different is the shift toward ecological and commemorative integrity within the guiding principles than was present in the proposed policies. This



change reflects the recent thrust of Parks Canada to focus not only just on ecological integrity but also commemorative integrity, representing perhaps a new heritage thrust from the agency, especially given the recent establishment of a Department of Heritage. The new policy discusses the role of this new Department, in which it is stated that Parks Canada will play an integral part. Other specific changes were noticed with respect to the terminology used. Examples include, 'public involvement' as compared to 'public participation' and 'appropriate visitor activities' as opposed to 'experiences, services and facilities' in the proposed policy. Perhaps a major difference between the two documents was the inclusion of the principle of 'accountability' in the actual policy. While reference was made to the State of the Parks reporting in the proposed policy, no mention was made that it would be used as a means to ensure Parks Canada accountability to the guiding principles. Skepticism exists in the appropriateness of using this means of ensuring accountability, especially since these reports were to be prepared on a biennial basis, yet no new reports have been produced since the first State of the Parks Reporting appeared in 1990. Other differences between both policies was the absence in the final policy of sections on management planning, Environmental Assessment and Review Process (EARP), and how the system was to be financed.

Tourism was discussed in both the proposed and the final policy. Specifics were somewhat absent in the proposed policy, outlining in general terms only that the touristic value of an area was dependent on maintaining integrity, and that, where possible cooperation would be sought with non-government and government organizations to promote some national parks as tourism destination areas. In contrast, in the final policy it is recognized that Parks Canada has no mandate for tourism, but the role of tourism in presenting an image of Canada to visitors, and the economic and social benefits arising from tourism are recognized. Tourism which is sustainable is encouraged when it: (1) maintains and enhances ecological and commemorative integrity, (2) respects intrinsic values (natural, cultural and scenic) of protected heritage areas, and (3) provides for

education and recreation opportunities which help foster a sense of Canadian identity. Through co-operation with tourism organizations and other levels of government, Parks Canada is seen to encourage within protected heritage areas what is termed a "sustainable heritage tourism industry" (Parks Canada, 1994: 14).

Table 8.2 Guiding Principles outlined in the Parks Canada Policy -1994

PRINCIPLES	IDEAS ASSOCIATED WITH PRINCIPLES
Ecological & commemorative integrity	<ul style="list-style-type: none"> <li>receives priority</li> <li>maintained by ensuring management decisions are based on ecosystem-based management practices &amp; sound cultural resource management</li> </ul>
Leadership & Stewardship	<ul style="list-style-type: none"> <li>assumes broader responsibility beyond protected heritage areas under Parks Canada</li> <li>concept of integrated family or network of heritage areas</li> <li>long-term goal of setting aside 12% for protected space</li> </ul>
New protected heritage areas	<ul style="list-style-type: none"> <li>based on systematic, rigorous, cooperative and knowledge-based practices</li> </ul>
Education & Presentation	<ul style="list-style-type: none"> <li>foster an appreciation of heritage</li> <li>fostering awareness, appreciation, appropriate use and understanding</li> <li>encouraging public involvement and stewardship</li> </ul>
Human-Environment Relationship	<ul style="list-style-type: none"> <li>protection &amp; presentation of heritage must take account of close relationship between people &amp; the environment</li> </ul>
Research & Science	<ul style="list-style-type: none"> <li>management decisions based on best available knowledge</li> <li>commitment to integrated scientific monitoring</li> </ul>
Appropriate Visitor Activities	<ul style="list-style-type: none"> <li>recognition of limits to growth</li> <li>no compromise regarding integrity</li> <li>quality of visitor experience should not be lessened</li> <li>consistent with approved management plans</li> <li>equity expressed in terms of user access</li> </ul>
Public Involvement	<ul style="list-style-type: none"> <li>cornerstone of policy, planning &amp; management practices</li> <li>ensures sound decision-making</li> </ul>
Collaboration & Cooperation	<ul style="list-style-type: none"> <li>between federal, provincial, territorial &amp; municipal government agencies, the private sector, and aboriginal interests</li> <li>support for regional integration, partnerships, cooperative arrangements, formal agreements</li> <li>cooperation with adjacent or surrounding districts &amp; communities</li> </ul>
Accountability	<ul style="list-style-type: none"> <li>reviewed through State of the Parks reporting</li> </ul>

Source: 1994 Parks Canada Policy, pp. 16-19.

Overall, it may be concluded that the ideas and principles by which Parks Canada operates did not change much between the proposed policy and the new policy published.

The majority of changes were in the nature of how concepts were phrased and the extent of details given. It could be argued that the proposed policy had too many general statements with ambiguity in how issues were addressed. The format used in the final policy saw much of the ambiguity removed, with more precise language where concepts were clearly explained. With the new policy in place, the emphasis on maintaining both ecological and commemorative integrity may imply greater linkages in the near future between nature and culture and on forging better linkages between natural and historic parks within the system.

The format used in how the National Parks component of the overall Parks Canada Policy was presented changed over the 1964-1994 time frame. Table 8.3 shows the format of the national parks policy for 1964, 1979, 1991 (proposed policy) and 1994. The format in 1964 is seen to be very different than those which followed, explained in part as the 1964 policy document represented the first attempt to establish policy and because issues and areas acquiring policy attention would emerge over time from when the first national policy appeared for parks. The format from 1979 onwards, for the most part, was very similar in terms of how park policy was organised and set out.

Table 8.3 shows that the format of the proposed policy in 1991 was virtually identical to that used in the 1979 policy, with changes occurring in the terminology used to section headings by 1994. The proposed policy was very similar in content to the existing one of 1979. Changes that were detected focused on greater incorporation of aboriginal interests in park establishment; more details on zoning, particularly for Wilderness areas (Zone II) to address amendments to the National Parks Act in 1988 to provide for the designation of wilderness areas, and the inclusion of a time frame for management plans of 5 years with the emphasis on ecological integrity as the first consideration in management planning.

Table 8.3 Comparison of format used in policies between 1964 and 1994

1964 POLICY Objective	1979 POLICY Objective	1991 PROPOSED POLICY Objective	1994 NEW POLICY Objective
1. Purpose of National Parks	1. National Parks System	1. National Parks System	1. National Parks System
2. Nature	<ul style="list-style-type: none"> <li>identifying representative natural areas of Canadian significance</li> <li>selecting potential national parks</li> <li>establishing new national parks</li> </ul>	<ul style="list-style-type: none"> <li>identifying representative natural areas of Canadian significance</li> <li>selecting potential national parks</li> <li>establishing new national parks</li> </ul>	<ul style="list-style-type: none"> <li>identifying representative natural areas</li> <li>selecting potential national parks</li> <li>assessing national park feasibility</li> <li>national park agreements</li> <li>establishing national parks in legislation</li> </ul>
• Policy on Wildlife & Nature			
• Policy on Forestry			
3. Access to Parks	2. National Park Zoning System	2. Management Planning	2. Management Planning
• Railroads & Commercial Highways	• zone I to zone V	• management plans	• management plans
• Park Roads		• zoning (I to V)	• zoning (I to V)
• Airfields			• designation of wilderness areas
• Waterways & Boating			
• Trails & Footpaths			
• Aerial Transportation			
4. Permanent Visitor Accommodation	3. Protecting Park Resources	3. Protecting & Managing Natural Resources	3. Protecting & Managing Park Ecosystems
5. Camping	• resource protection	• resource protection	• ecosystem protection
6. Group Camping Developments	• resource management	• resource management	• ecosystem-based management
7. Research & National Utility Installations	• environmental assessment & review		
8. Education & Interpretation	4. Public Understanding & Appreciation & Enjoyment of National Parks	4. Public Understanding & Enjoyment of National Parks	4. Public Understanding, Appreciation & Enjoyment of National Parks
9. Culture	• visitor use	• visitor activities	• management of visitor activities
10. Private Dwellings	• information & interpretation	• information & interpretation	• interpretation & public education
11. Recreation	• visitor services & facilities	• visitor services & facilities	• visitor services & facilities
12. Townsites	• access & circulation	• access & circulation	• access & circulation
13. Park Zoning	• visitor accommodation	• visitor accommodation	• visitor accommodation
14. Financial	• land tenure	• land tenure	
15. Criteria for National Parks	• national park towns	• national park towns	
	• residency	• residency	
	5. Research		5. Historical Activities & Infrastructure
	6. Management Plans		• national park communities
			• golf courses & commercial ski areas
			6. Land Tenure & Residency

Source: Compiled from the 1964, 1979, 1991 (proposed policy) and 1994 policies

The amendment to the Act in 1988 signified a key change in how parks were to be managed and even planned. It saw the focus shift from the 'wilderness' idea to support the idea of 'integrity'. In so doing, it was quickly followed by a shift of management towards embracing science with respect to management. Ideas such as biological conservation and integrity became popular (Soule and Simberloff, 1986; Karr, 1993) along with ecosystem science (Agee and Johnson, 1988; Woodley, Kay and Francis, 1993), a better understanding of integrity as it applied to both natural and cultural systems in general (Regier, 1993; Steedman and Haider, 1993; Kay, 1993) and with respect to monitoring for ecosystem integrity (Shackell and Freedman, 1993; Woodley, 1993b).

In line with this shift of emphasis in terms of thinking and approach taken to park management and planning, changes in the new (current) policy, as compared with the proposed one, saw the incorporation of ecosystem-related terminology for a number of sections. Park boundaries, within the section Assessing National Park Feasibility, were to be based on meeting a number of ecological requirements such as providing an undisturbed core, maintaining drainage basin integrity, and avoiding the fragmentation of sensitive natural communities. The section on Management Planning outlined that sub plans would focus on ecosystem management and that zoning within parks would be according to ecosystem and cultural resource protection requirements. A number of ecosystem related terms (ecosystem protection and ecosystem-based management) were used to describe policy in the section entitled Protecting and Managing Park Ecosystems, replacing the section in the proposed policy entitled Protecting and Managing Natural Resources.

Ecosystem management is seen in the 1994 policy as providing the conceptual and strategic basis for the protection of ecosystems, involving a "more holistic view of the natural environment and ensuring that land use decisions take into consideration the complex interactions and dynamic nature of park ecosystems and their finite capacity to withstand and recover from stress induced by human activities" (Parks Canada, 1994: 33). With respect to ecosystem protection, this policy noted that human activities which threaten

the integrity of park ecosystems will not be permitted, and that national park ecosystems will be accorded the highest degree of protection to "ensure the perpetuation of natural environments essentially unaltered by human activity" (Parks Canada, 1994: 34).

In terms of Public Understanding, Appreciation and Enjoyment of National Parks, the new policy shifts towards the management of visitor activities using the Visitor Activities Management Process (VAMP) to match visitor interests with educational and outdoor recreation opportunities of each national park as determined through individual management plans, to develop an integrated database on visitor activities, and to assess risks involved for activities based on knowledge of activities, park infrastructure and environmental conditions. Interpretation and Public Education is broadened to provide interpretative programs on the challenges of maintaining ecological integrity within parks. Emphasis is placed in the section on Visitor Services and Facilities on environmentally sustainable tourism, where impacts on park ecosystems are to be avoided and contribution is made to the region's economic development by the placement of commercial services and facilities in adjacent communities. Services and facilities essential for public access, in the new policy will be based on considerations such as the impacts they generate at an ecosystem level, design requirements and the needs and expectations of visitors which are in line with park objectives. In terms of Access and Circulation and Visitor Accommodation, preference is stated for non-motorized means of transportation and basic accommodation, respectively.

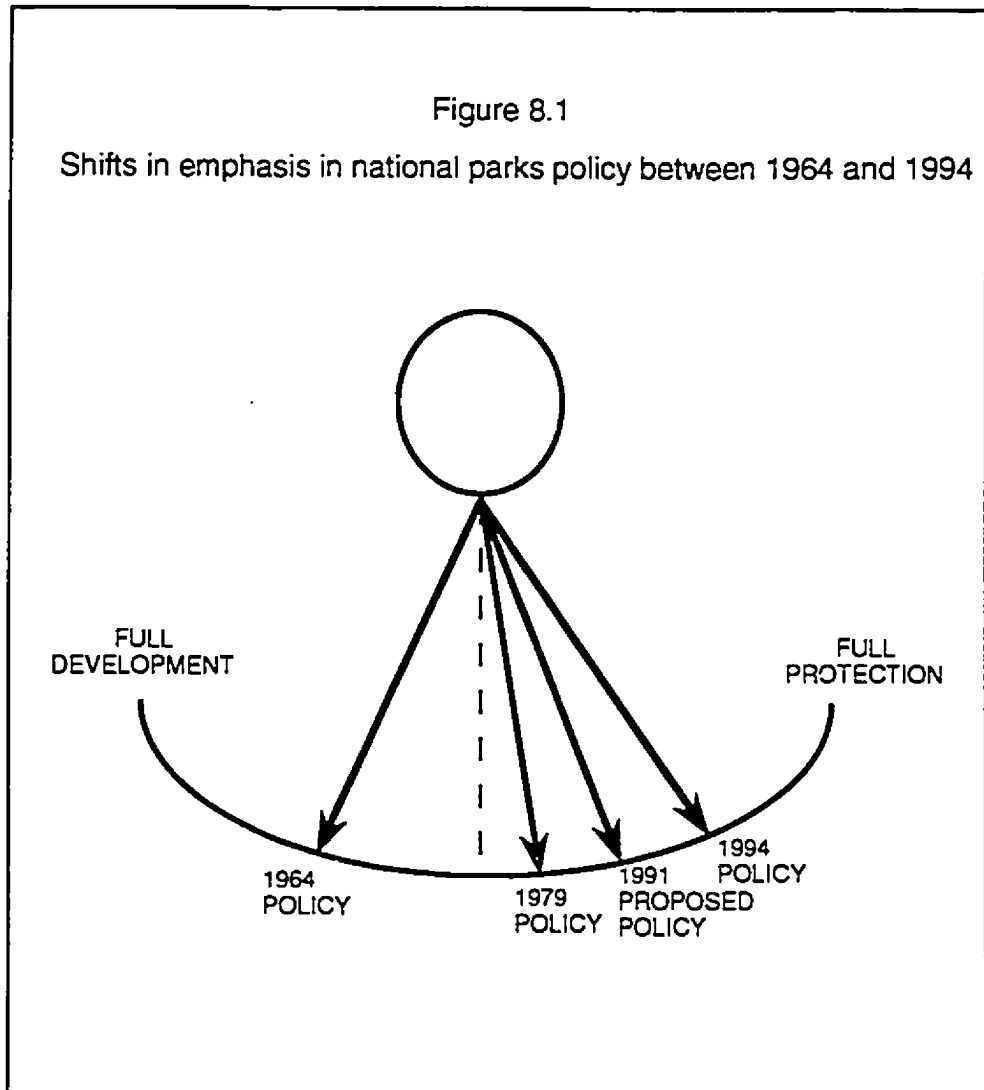
A section was added to the 1994 policy entitled Historical Activities and Infrastructure. It provides a useful background to sections of the policy that concern national park communities, golf courses and commercial ski areas, by explaining the context in which this type of development was permitted in parks prior to the establishment of a national parks policy, noting that they should be recognized as part of the overall history of national park development in Canada, and that the emphasis must now be to manage them "in ways that minimize impairment to the ecological integrity of the parks"

and in so doing "demonstrate the overriding values of ecological integrity, environmental citizenship, environmental stewardship and sustainable development" in how park communities and visitor activities, related to them, are managed (Parks Canada, 1994: 40). There was no change in policy for Land Tenure and Residency.

The overall impression left by the 1994 policy is that it is a stronger statement supporting the priority assigned to ecological integrity, as it arose in the 1988 amendment to the Act, and that recreational use is secondary. The recent shift towards ecosystem protection and ecosystem-based management previously addressed provides a possible structure to ensure the long-term maintenance of national parks. However, the fact that this shift appears to have occurred recently may also lead one to question if park managers are familiar enough with the concepts and ideas associated with these concepts as, like sustainability, ideas and thinking on ecosystem-based management are really only starting to be formulated (Regier, 1993; Slocombe, 1993; Steedman and Haider, 1993; Woodley, Kay and Francis, 1993). One may ask if these terms have replaced sustainability as the new environmental buzzwords, and as such, whether Parks Canada has adopted this line of thinking in order to be seen to be in line with developments taking place in environmental management.

### **8.3. CONCLUSION**

The evolution of policy for Canada's national parks has been the focus of this chapter. From the discussion presented on each of the policies, it can be argued that the following pattern has emerged over the past thirty years in how policy developed (see Figure 8.1). While the first policy in 1964 recognized the importance of preservation of nature, the economic climate of the day appears to have influenced policy makers to accommodate the demands of visitors to pursue recreational activities within a national park setting, a viewpoint implicit from the emphasis of resource use rather than resource preservation in





the policy. The composite view that emerged between people and their environments, and the increased concern and awareness of environmental degradation in the 1970s was the context in which the 1979 policy was framed. It is not surprising then that the focus changed toward protection with reference to ecological integrity and the need to maintain this within the parks. The 1994 policy was influenced by concepts such as sustainability and sustainable development which were gaining in popularity in the late 1980s. Early drafts of this policy contained so many questions as to how these terms could be implemented in the parks, that it was questionable as to whether the concept had applicability within a national park setting. In response to this concern, the role of sustainable development was downplayed considerably in the proposed policy that appeared in 1991. While the maintenance of ecological integrity had been mandated in an 1988 amendment to the National Parks Act, the policy of 1991 did not differ very much from what had been stated in 1979. It would seem, therefore, that in order to ensure that ecological integrity would be maintained, a shift towards an ecosystem-based management approach was adopted in the 1994 policy.

This latter shift in emphasis gained support from the academics surveyed to respond to the views of park superintendents which were addressed in the previous chapter. In a closing section of the questionnaire, academics were asked to indicate if they were familiar with the current policy and, if so, if it represented a significant shift in focus toward development, sustainability or ecological integrity. Of the seven respondents (43.7 %) who had read it, two (12.5 %) did not believe it represented any significant shift in focus, whereas five (31.2 %) stated that a shift in focus was evident in the new policy. All five respondents stated that the shift was towards ecological integrity, with one respondent indicating a secondary shift toward sustainability.

While it may be argued that sustainable development represents a concept which allowed for greater acceptance of 'development' or 'use' within a protected landscape, the shift to the use of a more extreme concept, more closely linked to preservation and

protection, such as ecological integrity may indeed ensure that the parks achieve a sustainable state. In closing, the question should be asked if any really significant change has taken place in the policies. The phrasing of the National Parks Act of 1930 was very similar to the phrasing used to define sustainable development by the World Commission on Environment and Development in 1987, both address inter and intra-generational equity, ethics and balance between protection and use. The 1930 Act could, therefore, be taken as an early example of sustainable development, in days prior to the coining of the term and the existence of a national policy for national parks. The wise use of park resources in the 1960s can equally be read as meaning that sustainability was being undertaken in the parks prior to the actual use of the term itself, as use of park resources was in the context of the importance placed on preserving the natural features in the parks. Likewise, the use of the concept of ecological integrity, first appearing in general terms only in the 1979 policy, but much more specific in the 1994 policy, may be viewed also as yet another expression of sustainability, but with the emphasis on the ecological dimensions of the term. Therefore, in light of these comments, one is forced to question how much change has really occurred in policy. The concepts used may have changed over time, with the impression that change in thinking has occurred, but the reality has been that parks have continued to be managed, for the most part, along the lines of sustainability, regardless what term(s) have been used.

Recent changes, however, may lead one to question if parks can be sustainable in light of increased interest and pressure both from within the agency and "on the ground" to promote the recreational and tourism aspect within parks as a means of generating more revenue in the system. An apt example is that of ecotourism. Viewed as an environmentally-friendly type of tourism and, therefore, perhaps more appropriate for 'protectionist landscapes' such as national parks, past lessons of the impacts of allowing incremental increases in recreational and tourism facilities within national parks should not go unheeded (Nelson, 1994) because like any other type of tourism, it has the potential to

ruin the resource base on which it relies for its own existence. In so doing, it further limits national parks as being representative landscapes of sustainability.

## CHAPTER 9

### CONCLUSIONS

"Sustainable development is not a concept that, at this point, can be used as a basis for either theory or action. Rather, it is more of a slogan (however, oxymoronic) that has taken on a life of its own, becoming a screen behind which resources are being allocated and decisions made, regardless of whether the forcing term is understood or not " (Wilbanks, 1994: 541).

Over the past decade, the concept of sustainable development has received phenomenal attention. This interest has not been confined to academic circles alone, but has spread to many sectors of the business community (Schmidheiny, 1992), with the ideals behind the concept being embraced and 'adopted' within virtually all levels of government. The degree of permanence which the concept has achieved for itself, as implied in the above quotation, may be viewed, however, to be positive. Implicit within the concept has been the powerful recognition for the need for change to occur, both within our societies, economies and the relationship that exists between economic growth and the environment. This in itself, perhaps more than any other reason, may explain why the concept has been so readily accepted. However, the level of acceptance surrounding the concept should be balanced with the reality that there is still limited consensus over what is meant by it, what elements can and should be linked to it, and whether or not the ideas can be translated into reality. Perhaps part of the problem rests with the fact that it has been adopted as the 'panacea' for many problems and issues without any clear understanding that the solution(s) needed may vary given the nature of the problem, the scale involved, and the

end goals and objectives established. As a result, what has emerged has been many different 'pictures' of sustainable development or sustainability, all of which may be relevant in certain contexts and for particular issues.

In light of the foregoing, this research has focused on the value of the concept in the particular context of national parks within Canada. The focus of the research was not to search for an acceptable definition of sustainable development for this type of setting alone, but rather to identify the key elements involved, develop a model and suggest a framework of sustainability applicable given the setting. The approach taken by the author was based on work of other researchers (Shearman, 1990; Dovers, 1990) who have advocated that the focus of research should shift away from trying to define the term and move towards efforts to understand the implications of the term.

Accepting the different viewpoints that exist, a conceptual framework was developed which attempted to incorporate general elements of the term that may be considered to apply in all situations regardless of the context. This included the four elements of 'setting appropriate objectives' (ecological, economic, social or political), 'determining the scale of inquiry' (global/international to regional/local), 'establishing a political structure able to implement and ensure change' (top-down to bottom-up) and 'recognizing within society an attitudinal shift toward the need for change' (evident in attitudes to many environmental issues) (chapter 2). The methodology used (chapter 3) consisted of first, designing questionnaires on sustainability for selective groups, namely policy makers and park superintendents; second, developing and testing a model of sustainability applicable for parks; and third, determining consensus in responses through a modified delphi process involving park superintendents (mandated experts) and academics (objective experts). Three objectives were addressed using this methodological structure, and set within the elements of the conceptual framework previously mentioned.

The first objective attempted to identify and examine, using the perception of selective groups/populations considered knowledgeable on parks, what was meant by

sustainability when translated into the context of national parks. Prior to discussing the results of this first objective, it is important to note that this research should not be viewed as a study of perception *per se*. Rather, the perceptions or 'understanding' of respondents served as a useful and appropriate tool to assemble information on a topic where no published data existed at the level required. How the respondents (policy makers and park superintendents) 'understood' the issues helped in the determination of key aspects of what have been viewed as 'sustainability criteria' (chapter 5). Criteria included determining a suitable definition (those placing emphasis on the ecological dimension of the concept were most favoured), assigning appropriate park goals (emphasis again placed on ecological aspects), determining what landscape/resource characteristics best suit achieving sustainability (namely, resilience, stability and sensitivity), determining the focus of management (emphasis placed on protection and preservation), what principles within sustainability are best suited for national parks (responses mixed between policy makers and park superintendents) and who should be involved in promoting sustainability within the parks (namely, managers who are accountable and the general public via public participation exercises).

In addition to eliciting the above responses on issues pertaining to sustainability criteria, the perceptions of respondents were also sought for a multiplicity of aspects that covered themes within parks, which ranged across a spectrum from nature preservation to development-oriented interests. While perceptions varied between groups for certain aspects or issues addressed within themes (chapter 6), there existed a high degree of consensus in the majority of responses received.

The second objective of the thesis was to develop and test a model of sustainability suitable for national parks. This was approached by attempting to incorporate the principles of balance and trade-offs for themes within parks, where the emphasis on protection and use varied. The model recorded the level of sustainability 'perceived' to exist for themes on the basis of a 'sustainability spectrum' that was introduced in the

questionnaires. The results of the model suggested all themes, with the exception of 'development-oriented interests', fall within the same approximate level of sustainability, as based on calculated mean scores. Considerable variation was found to exist between the model in theory and when it was tested, with limited resemblance being found to the scenarios that were outlined in theory.

The model provides one viewpoint, based on perception, of how sustainable elements within the parks system appear, based on the 'understanding' of those considered to be closest to the issues, namely, the park superintendents. The model provides some insight into the trade-offs that occur within parks between activities and themes with respect to the emphasis on protection as opposed to use. The results of the trade-off aspect to the model were, however, unclear with respect to sustainability, as the majority of activities examined were clustered, as opposed to falling widely along the protection/use spectrum. Some insight into this finding was provided in the comments of one academic respondent who stated that "trade-offs are vital - that is the reason that we need managers - and the trade-offs are complex and multi-dimensional. It is possible to support things such as parks for development and parks for preservation which appear to be opposed". In addressing this second objective, the author remains cognizant that the findings represent an outlook on sustainability within parks that was developed from perceptions and understanding, rather than an 'actual' measure of sustainability itself.

The degree to which groups responded to questions varied considerably between the policy makers and the park superintendents and as a result this influenced the approach used in the third objective. A 'sustainability framework', applicable to parks was developed using consensus responses between park superintendents and academics surveyed. The framework that emerged included those attributes of sustainability that could be identified for the national park system as a whole (chapter 7). It was not expected that all attributes found in the system as a whole would be present within each park. As a result, the utility of the framework rests in park managers using it to be able to make

comparisons with their own park situation for various aspects, in order to determine the extent to which their park may be perceived to be sustainable based on the nature of attributes listed within the framework at a systems level. In essence, the framework offers managers a general guide on how far aspects within specific parks need to 'change' in order for them to be seen to be 'sustainable' and conform with the type of attributes and characteristics determined appropriate for the system as a whole.

The framework also offers an opportunity for issues to be identified and raised in areas where park policy for a specific park may require amendments. A good example of this is tourism. As noted in the previous chapter, the current Parks Canada policy is supportive of 'sustainable tourism', but offers limited information as to what this involves. The framework may be viewed as offering a tool for managers to highlight the most appropriate attributes of sustainable tourism, which in turn may be useful to those managing parks where tourism plays a dominant role.

The results of the three objectives of this research represent a starting point to address sustainability with the context of Canada's national parks, and, offer some understanding of what is involved with sustainability when it is applied in this type of specific context. A number of areas exist where research may be undertaken in the future. One would be to apply the framework within specific parks, with the framework acting as the template against which comparisons with specific themes or issues may be made. With respect to this area, it must be recognized that because no two parks within the system are alike and that the consensus of those surveyed in this research noted that parks should be viewed separately, the results of applying the framework to particular parks will only have applicability for that park alone. A second area of inquiry would be to see how well the elements of the sustainability framework translate to other landscapes where a similar emphasis is placed on protection and preservation with limited use(s)/development permitted, for example, provincial parks and conservation authorities. A third area for possible research, would be to test the sustainability framework within other national park



systems which are similar in size and/or philosophy to Canada's, such as the U.S.A. and New Zealand, and in systems that are viewed as being considerably different, for example, in terms of having both a greater range of perspective in number and size of parks, and acceptance of higher level of use and development within the parks, such as in Australia and the United Kingdom. A fourth area where research could be undertaken would be to update attitudes towards, and understanding of, the current policy that was introduced in 1994, especially in terms of how ecological integrity is perceived to encourage sustainability within the parks.

It is the conviction of the author that this thesis makes a notable contribution to research addressing sustainability. First, it illustrates how the term may be conceptualized to be applicable both at a general level and for specific-type environments such as national parks. Second, the thesis reveals the applied nature of sustainability, showing it to be a usable concept. While reference to parks was often more implicit within "Our Common Future", this research provides an example where the connection between sustainability and parks is made more explicit. Third, the sustainability criteria proposed by respondents in the research offers a potential start to identify appropriate indicators and measures of sustainability, albeit for a specific-type setting. Fourth and last, the research stands as an example of using the framework approach (currently receiving much attention within the literature) to better understand and identify the issues involved with sustainability. It is believed that this type of approach has much potential, especially for management purposes, and this thesis represents an early example of its use.

Having explored sustainability through the objectives of the thesis, it is believed that sustainability in parks represents a modified version of what is often referred to in the literature as ecological sustainability, but a version which accepts a certain amount of use in the form of recreation and tourism. What it is not, are ideas that are framed within the concepts of economic and social sustainability, although certain aspects of these have some relevance within parks. The current park policy, however, would suggest that the direction

adopted by management within the system is to ensure ecological integrity through an ecosystem-based approach, which in turn may result in sustainability playing a less clear role within parks. What this shift means was nicely summarized in the response of one of the academics who stated that it "places the importance of ecological integrity before human use (recreation and tourism), where it should be". If this principle can be accomplished, it could be argued that parks will have moved toward a position where they could be viewed as examples of sustainable landscapes in the overall context of "Our Common Future".

Unfortunately, recent developments in Parks Canada brings into question whether ecological integrity will be overshadowed by the need to generate more revenue given budget cutbacks, and administrative changes (Department of Heritage). The rise in the marketing of parks for tourism with emphasis on human and historic heritage/tourism is a further problem in this regard. These trends may only succeed in generating new problems in parks, adding to existing ones and reducing the opportunity for parks to be effective examples of sustainable landscapes.

## **APPENDIX 1**

**Cover letter to questionnaires sent to policy makers and park superintendents**



# The UNIVERSITY of WESTERN ONTARIO

*Department of Geography*

Mr. Stephen Boyd  
 Department of Geography  
 University of Western Ontario  
 London, Ontario  
 N6A 5C2

Dear Sir/Madame,

This letter is to confirm that the attached questionnaire has been reviewed by Canadian Parks Service (CPS). The questionnaire is part of my doctoral research which focuses on the concept of sustainability and how this translates within national parks. I met with the former Director General (Dr. Ian Rutherford) on a number of occasions regarding this research and the questionnaire was reviewed by the current Director General (Ms. Jane Roszell) and a management group within headquarters. My topic of sustainability is a highly appropriate one given current ideas on the environment and natural resources management. I have given Ms. Roszell a guarantee that responses will remain confidential with the analysis being undertaken at an aggregate level. Your opinions and views of what sustainability means within the context of a national park could serve as a useful database for CPS. The results of this survey will be given to CPS.

I apologise that the questionnaire is only in English. Responses are welcome in both English and French. Your participation in this exercise would assist CPS. Thank you for your time and co-operation.

Monsieur/Madame,

La présente confirme que le questionnaire ci-joint a été revu par le Service canadien des parcs (S.C.P.). Ce questionnaire fait partie de mes recherches pour le doctorat qui se centre sur l'étude du concept de notre capacité à maintenir l'environnement et la manière dont ceci affecte les parcs nationaux. J'ai rencontré à plusieurs reprises l'ancien directeur général (M. Ian Rutherford) et ai discuté de mes recherches. La présente directrice générale (Mme. Jane Roszell) a revu ce questionnaire ainsi qu'un groupe de la gestion l'administration centrale. Mon sujet s'applique particulièrement aux idées contemporaines sur l'environnement et sur la des ressources gestion naturelles. J'ai offert des garanties à Mme. Jane Roszell concernant la confidentialité des résultats, l'analyse étant entreprise aux fins d'un point de vue global. Vos idées et vues sur ce que constitue le maintien environnemental dans le contexte d'un parc national sera une base précieuse pour une banque de données pour au S.C.P. Les résultats de cette enquête seront transmis au S.C.P.

Je vous prie d'excuser le fait que ce questionnaire ne soit diffusé qu'en anglais. Sentez-vous libre de répondre en français comme en anglais. Votre participation à cette enquête sera d'une aide précieuse au S.C.P. En vous remerciant de votre bonne volonté et de votre aide, je vous prie de croire, Monsieur, Madame, à l'expression des mes sentiments les meilleurs.

Stephen Boyd

## **APPENDIX 2**

Questionnaire designed for policy makers/ regional directors

## INTRODUCTION

The purpose of this questionnaire is to solicit your opinion on a number of themes within national parks with the overall goal of addressing the concept of sustainability as it is translated within parks. In particular, the questionnaire focuses on obtaining your perception of the term, examining it within a number of themes, noting those impacts on parks which prevent them from being sustainable, and suggesting possible measures of control/mitigation which may promote a more favourable situation whereby sustainability can be realized. Furthermore, another aim is to identify perception on the suitability and/or feasibility of "achieving sustainable landscapes" as an overall goal and possible direction that parks should move toward given the rising awareness and current concern that is being voiced regarding the environment. In addition, it may represent the contribution that parks can make to the larger resource management issue of sustainable development.

This questionnaire asks for your opinion and perception on many issues as they are viewed relevant to parks. Although you are asked to state your name, title and areas of responsibility, your comments will remain confidential as analysis of responses will be undertaken at the aggregate level. Please work through each section. I envisage that it will take you between 35 to 45 minutes to answer this questionnaire. The questionnaire has been designed for quick response as the majority of questions are precoded, requiring a number to be circled. If you feel you wish not to answer a specific question please leave and go on to the next one.

I believe that the issue of sustainability is one that requires serious attention within the area of resources management. The analysis from the data generated in this questionnaire will act as the base to develop a model of sustainability and propose a framework for sustainable development as it relates specifically to national park environments.

---

### GENERAL BIOGRAPHICAL INFORMATION

1. NAME: \_\_\_\_\_ 2. POSITION HELD \_\_\_\_\_

3. NUMBER OF YEARS IN PRESENT POSITION: \_\_\_\_\_

4. AREAS OF RESPONSIBILITY HELD AT PRESENT:

\_\_\_\_\_

\_\_\_\_\_

---

### DEFINITION OF SUSTAINABILITY

5. Based on your understanding of the concept of sustainability/sustainable development, please provide a definition of this term which you consider to be appropriate for national parks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

---

**Notes to assist you with the questionnaire**

### SUSTAINABILITY SPECTRUM

In one section you are asked to rate your response using what I have termed the "sustainability spectrum". In essence, this spectrum addresses the nature and level of sustainability possible for any given theme. You are asked to make an assessment of the sustainability of themes based upon (1) your knowledge and experience in parks, and (2) how well each theme under examination measures up to the degree of importance you attach to each of the criteria/attributes of sustainability necessary in order for sustainability for that particular theme/issue to be realized (see section A of the questionnaire).

The sustainability spectrum is set up as follows:

1. **Unsustainability** (impacts and threats result in ecological damage of the various components within parks which cannot be corrected; the degree of negative impact (perceived) of development on the park environment is high)
2. **Intermediate stage between conditional sustainability and unsustainability** (increasing stress placed on park systems; low tolerance present; impacts still perceived as negative, but no ecological damage occurs)
3. **Conditional Sustainability** ( stress placed on the park environment by the activities present, high tolerance within park systems; the degree of impact is limited and can be perceived as positive or negative)
4. **Intermediate stage between sustainability and conditional sustainability** (limited stress is being placed on the park environment, very high ecological tolerance within systems, the degree of positive impact (perceived ) of development on the environment is low)
5. **Sustainability** (minimal stress placed on the environment; the degree of positive impact (perceived) of development on the environment is high; a symbiosis of development with nature is present)
6. **Situation does not apply** (i.e. the theme in question is not present within the park of the respondent)

The sustainability spectrum will appear as follows in the questionnaire:

1	2	3	4	5	6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### RANKING OF RESPONSES

In a number of questions you are asked to rank the responses you give. Please rank them as follows: the issue which you consider as the most important should be given a ranking of 1, the next most important response is ranked 2, and so on.

## DEFINITIONS OF CONCEPTS USED IN THE QUESTIONNAIRE

### SECTION A (Q.1)

**Nature of the resource base** - the condition of the park landscape (actual surface area) the totality of the natural resources present at a specific point in time and space.

**Resilience** - the degree to which the resource base can recover.

**Adaptiviness** - the ability to adjust to a new or different condition.

**Flexibility** - the extent to which the resource base of the park is responsive to change

**Sensitivity** - responsive to slight change and able to register very slight differences or change of conditions.

**Stability** - an environment which is constant, firm, durable and able to become stable.

**Robustness** - an environment which is viewed as sturdy, strong and hardy

### PRINCIPLES

**Self-empowerment** - ability and opportunity to make decisions and authorize things on your own.

**Social self-determination** - freedom for people/society to determine their own course of action with compulsion, involving community self-reliance, citizen participation, participatory governance, and decentralized management that involves grassroots activity.

**Ethics** - making decisions based on morals and values

**Equity** - concerned with achieving fairness in the distribution and use of resources, benefits and costs.

**Social justice** - moral rightness, equity, fairness to all groups to participate and have recourse to an open and just system with effective access to information and benefits.

**Rights** - personal entitlement to something (e.g. access to facilities), liberties and privileges in accordance with justice, morality, and law

**Democracy** - ideology (set of beliefs) promoting the interests of people/society based on elected representatives

**Power sharing** - co-management (two or more parties) where institutional arrangements are such that allow governments with the jurisdiction over resources to give user groups access to and the right to be involved in controlling the use of the resources, in co-ordinating decision-making, including the rights and rules for decision-making.

### INVOLVEMENT

**Interest group representation** - the interests of specific groups being voiced, normally those using the resources present.

**Public participation** - procedure where the public in general voice their opinions

**Accountability** - a system in which those charged with responsibility are answerable to someone with regard to the decisions made and the actions that are taken.



## **SECTION A**

### **IDENTIFYING CRITERIA FOR SUSTAINABILITY**

1. For the following criteria/attributes pertaining to: (1) the nature of the resource base, (2) the focus of management, (3) principles, (4) park goals, and (5) involvement, use the spectrum shown below to indicate the level of importance you would attach to each in terms of their appropriateness in promoting a sustainable landscape within parks (Please circle the appropriate number and rank your responses; do NOT rank "other" responses. To assist you in answering this section, many of the terms (those denoted by an asterisk) have been defined on page 4)

Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Criteria Ranking place no.
1	2	3	4	5	

#### **NATURE OF THE RESOURCE BASE\***

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- RESILIENCE*	1	2	3	4	5	
- ADAPTIVENESS*	1	2	3	4	5	
- PERMANENCE*	1	2	3	4	5	
- FLEXIBILITY*	1	2	3	4	5	
- SENSITIVITY*	1	2	3	4	5	
- STABILITY*	1	2	3	4	5	
- ROBUSTNESS*	1	2	3	4	5	
- BALANCE*	1	2	3	4	5	
- OTHER (please specify)	1	2	3	4	5	

#### **MANAGEMENT FOCUS**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- PROTECTION FOCUS	1	2	3	4	5	
- PRESERVATION FOCUS	1	2	3	4	5	
- MANAGEMENT IN ISOLATION	1	2	3	4	5	
- INTEGRATIVE MANAGEMENT	1	2	3	4	5	
-INTEGRATIVE PLANNING	1	2	3	4	5	
- GOAL(S) COMPATIBILITY	1	2	3	4	5	
- GOAL(S) INTEGRATION	1	2	3	4	5	
- RECOGNITION OF TRADE OFFS	1	2	3	4	5	
- OTHER (please specify)	1	2	3	4	5	

**PRINCIPLES (components of sustainability )**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- SELF EMPOWERMENT*	1	2	3	4	5	
- SOCIAL SELF-DETERMINATION*	1	2	3	4	5	
- ETHICS*	1	2	3	4	5	
- EQUITY*	1	2	3	4	5	
- SOCIAL JUSTICE*	1	2	3	4	5	
- RIGHTS*	1	2	3	4	5	
- DEMOCRACY*	1	2	3	4	5	
- POWER SHARING*	1	2	3	4	5	

**PARK GOALS**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- Increased economic growth and development	1	2	3	4	5	
- Economic productivity	1	2	3	4	5	
- Provision of basic needs and services	1	2	3	4	5	
- Equity of supply	1	2	3	4	5	
- Protection of biological diversity	1	2	3	4	5	
- Preservation of essential ecological processes	1	2	3	4	5	
- Welfare improvement	1	2	3	4	5	
- Higher level social and cultural necessities	1	2	3	4	5	
- Sustaining biological productivity	1	2	3	4	5	
- Increased per capita material consumption	1	2	3	4	5	
- Satisfying basic human needs	1	2	3	4	5	

**INVOLVEMENT (who should be involved in promoting sustainability)**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- INTEREST GROUP REPRESENTATION*	1	2	3	4	5	
- PUBLIC PARTICIPATION*	1	2	3	4	5	
- ACCOUNTABILITY OF MANAGERS*	1	2	3	4	5	
- OTHER (Please Specify)	1	2	3	4	5	

2. Please state your opinion on the following general proposed goals within the context of their appropriateness for sustainability. (please check the appropriate column and remember to rank your responses; do NOT rank "other" responses):

GOALS	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	RANKING OF GOALS
-Meeting non-material needs (desire to recreate)						
-Protection of gene pools within ecosystems						
-Resource management						
-Creation of wilderness areas						
-Promotion of tourism and recreation						
-Preservation of unique ecosystems						
-Greater public/interest representation in management						
-Parks acting as growth poles to stimulate regional development						
-Provision of infrastructure for tourism and recreation						
-Others? _____						
-Others? _____						

3. Please evaluate and rank the following definitions of sustainability and sustainable development as to their appropriateness when translated to a park setting.  
(please check the appropriate column and rank your responses)

DEFINITIONS	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Ranking of Definitions
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"						
"development that means more than seeking a compromise between the natural environment and the pursuit of economic growth, but one which recognizes that the limits to sustainability have structural as well as natural origins"						
"the ability of a system to maintain productivity in spite of a major disturbance such as that caused by intensive stress or a large perturbation"						
"development which is based on the sustainable use of indigenous resources in association with inter-regional exchange of resources"						
"a fundamental guide or ideal for better planning and management of systems, a process to achieve sustainability rather than any utopian end state"						
"activity in which the environment is fully incorporated into the economic decision making process as a forethought, not an afterthought"						
"the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity"						
"the condition whereby systems goals are reached and maintained over time. The renewability of the various systems is dependent on their ability to function below the zone of the critical limits of capacity"						
"the fundamental of balancing environmental considerations with economic growth and development"						

**SECTION B****PERCEPTION OF SUSTAINABILITY FOR VARIOUS  
THEMES WITHIN PARKS****NATURE PRESERVATION/WILDERNESS**

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
-------------------	-------	------------	----------	----------------------

1	2	3	4	5
---	---	---	---	---

1. "Given the increased concern and awareness over environmental degradation, the emphasis in parks toward preserving and protecting natural landscapes requires further attention"

1	2	3	4	5
---	---	---	---	---

2. "For nature preservation to be sustainable requires more restrictions placed on access to unique and fragile areas than are operating at present"

1	2	3	4	5
---	---	---	---	---

3. "A greater area within parks, than is commonly found today, should be laid aside from any form of use and left in a natural state"

1	2	3	4	5
---	---	---	---	---

4. "Recreational activities are increasingly encroaching on wilderness areas within parks and are becoming an area of increasing concern by managers"

1	2	3	4	5
---	---	---	---	---

5. "Nature preservation would be best served if a buffer zone was constructed between those areas set aside for the purpose of preservation and those used by visitors"

1	2	3	4	5
---	---	---	---	---

6. "With an emphasis now placed on maintaining ecological integrity, more areas of wilderness will be ensured of remaining in a natural and unimpaired state"

1	2	3	4	5
---	---	---	---	---

7. "A loss of wilderness areas should be compensated for by the establishment of others elsewhere within the park"

1                      2                      3                      4                      5

8. "The ecological component (preservation/protection) of wilderness areas must receive priority over an economic component (resource utilization) or social component (open access of wilderness regions to all visitors) if sustainability can be realized"

1                      2                      3                      4                      5

9. Based on your responses to these questions on nature preservation/wilderness, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below. (Note: it would be useful to have the page showing the spectrum (p.3) beside you to answer this question for each of the issues examined in this section of the questionnaire).

1                      2                      3                      4                      5                      6

### WILDLIFE

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "The sustainability of wildlife within parks requires that attention is directed by managers to protecting wildlife habitats"

1                      2                      3                      4                      5

2. "The long term preservation/protection of both the stock and diversity of wildlife is an important component of sustainability in parks"

1                      2                      3                      4                      5

3. "Greater attention should be paid to wildlife management than is presently available in parks"

1                      2                      3                      4                      5

4. "If wildlife is to reach a state of sustainability, access to wildlife habitats must be restricted"

1                      2                      3                      4                      5

5. "For wildlife numbers and diversity to be sustained necessitates that the mating and breeding grounds of animals are areas where the general public does not gain access"

1                      2                      3                      4                      5

6. "Wildlife sustainability involves only the maintenance of animal population numbers (i.e. the size of herds/populations)"

1                      2                      3                      4                      5

7. "Wildlife sustainability involves both numbers and the diversity of species present within the parks"

1                      2                      3                      4                      5

8. "Encroachment of recreation activities on wildlife regions within parks impacts on the potential of managers being able to sustain wildlife inside of parks"

1                      2                      3                      4                      5

9. "The relationship that exists at present between wildlife and human presence in the parks is conducive for the sustainability of wildlife"

1                      2                      3                      4                      5

10. Based on your responses to these questions on wildlife use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below

1	2	3	4	5	6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### INTERPRETATION AND EDUCATION

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
1	2	3	4	5

1. "Interpretation services and education within the parks are suitable mediums to communicate the principles of sustainability to park users"

1                      2                      3                      4                      5  
 2. "At present, interpretation facilities are not focused toward explaining the principles of sustainability"

1                      2                      3                      4                      5

3. "Personnel employed by parks lack knowledge about sustainability and how it relates to elements within the parks"

1                      2                      3                      4                      5

4. "Interpretation and educational services within the parks focus more on explaining park programs and activities that are available to users rather than outlining the relationship that exists between users and the park environment and the impacts users make on the park landscape"

1                      2                      3                      4                      5

5. "In explaining sustainability to park users, interpretation and educational facilities within parks should focus on : (use the same spectrum as previously used, circling the number most appropriate)

- making people aware of the impacts that human activities make on the park environment..... 1    2    3    4    5
- making users aware of the thresholds of ecosystems to accommodate human use..... 1    2    3    4    5
- the fact that sustainability involves management of ecosystems on a long term basis..... 1    2    3    4    5
- the necessity of restricting access to unique and fragile areas in parks..... 1    2    3    4    5
- the understanding that sustainability involves the ecological, economic and social components of parks..... 1    2    3    4    5
- educating users of the limits to which certain environments can sustain particular activities..... 1    2    3    4    5
- educating users of indicators which would suggest and reveal that impacts and threats may result in irreversible ecological damage..... 1    2    3    4    5







## RECREATION

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
-------------------	-------	------------	----------	----------------------

1	2	3	4	5
---	---	---	---	---

1. "Recreation represents one of the major trigger mechanisms for generating problems within parks"

1	2	3	4	5
---	---	---	---	---

2. "If parks are to be sustainable, only recreational activities that are low impact in their nature, with the potential of remaining so should be encouraged and promoted"

1	2	3	4	5
---	---	---	---	---

3. "Within a context of sustainability, recreational activities offered in parks do not require any re-evaluation"

1	2	3	4	5
---	---	---	---	---

4. "Quotas of numbers participating in recreational activities, may be necessary in order to reduce any environmental impact(s) and maintain carrying capacity"

1	2	3	4	5
---	---	---	---	---

5. "Recreational activities that can be enjoyed and provided outside of parks should not be excluded from parks:"

1	2	3	4	5
---	---	---	---	---

6. "Recreational activities that can be enjoyed and provided outside of parks should be excluded from parks:"

1	2	3	4	5
---	---	---	---	---

7.. "Recreational activities perceived as not suitable within a park environment, should be actively encouraged in neighboring areas"

1	2	3	4	5
---	---	---	---	---

8. "All forms of recreation are acceptable within parks provided they remain low in impact and numbers"

1	2	3	4	5
---	---	---	---	---

9. Based on your responses to these questions on recreation, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below.

1	2	3	4	5	6
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

### TOURISM

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "With increasing numbers of visitors to national parks, there is a need to understand the impacts from tourism on park environments"

1	2	3	4	5
---	---	---	---	---

2. "Tourism should be promoted in national parks as it is an effective means of generating revenue "

1	2	3	4	5
---	---	---	---	---

3. "The impacts of tourists on the park environment are limited given managerial decisions to control access to certain areas of the parks"

1	2	3	4	5
---	---	---	---	---

4. "The function(s) of tourism within parks is/are to :

- satisfy the mandate of "enjoyment and benefit"..... 1 2 3 4 5
- provide employment for locals..... 1 2 3 4 5
- generate capital for local areas, acting as a growth pole..... 1 2 3 4 5
- provide tourism facilities for a domestic and international market..... 1 2 3 4 5
- provide tourism opportunities within an aesthetically pleasing setting..... 1 2 3 4 5
- be a showcase for the natural and cultural heritage of parks..... 1 2 3 4 5

5. "From a tourism perspective, each park should be viewed separately, both in terms of the problems they face from tourism and any solutions that may be offered to problems that arise"

1                      2                      3                      4                      5

6. "For tourism in the parks to be perceived as sustainable requires the following:

- development (i.e. infrastructure)  
which is low in impact..... 1      2      3      4      5
- development similar to what is already  
present in parks..... 1      2      3      4      5
- controlling tourists in fragile and unique  
areas of parks..... 1      2      3      4      5
- preventing visitors from encroaching  
in areas where permits are needed for  
entry..... 1      2      3      4      5
- tourism development which maintains the  
ecological integrity of the landscape..... 1      2      3      4      5
- allowing only tourism types which are  
low in terms of environmental impacts..... 1      2      3      4      5
- preventing the expansion of activities  
and facilities which are viewed as  
undesirable..... 1      2      3      4      5
- encouraging the development of small  
scale accommodation inside the parks..... 1      2      3      4      5
- locating all forms of accommodation  
outside of parks..... 1      2      3      4      5
- tourism which places an emphasis on  
economic benefits only..... 1      2      3      4      5
- forms of tourism which have a positive  
economic, social and environmental  
component to them..... 1      2      3      4      5
- tourism which remains viable over time..... 1      2      3      4      5
- tourism which does not degrade the  
environment that it is dependent on if  
it is to continue..... 1      2      3      4      5

- tourism which alters the environment but at the same time maintains its ecological integrity..... 1 2 3 4 5
- tourism which is seen to have a symbiotic relationship with other park activities..... 1 2 3 4 5

7. Based on your responses to these questions on tourism, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below.

1	2	3	4	5	6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### DEVELOPMENT-ORIENTED INTERESTS

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
1	2	3	4	5

1. "Parks play a key role in the economic development of their surrounding regions"

1	2	3	4	5
---	---	---	---	---

2. "Parks have been, for the most part, largely successful in generating jobs and establishing economic linkages with their surrounding regions"

1	2	3	4	5
---	---	---	---	---

3. "Parks which were established in economically deprived regions as economic growth poles, have had only a limited positive effect"

1	2	3	4	5
---	---	---	---	---

4. "The extent to which commercial development should occur within parks is an important issue that requires attention if parks are to be viewed as being sustainable in nature"

1	2	3	4	5
---	---	---	---	---

5. "Park town sites have the potential of being sustainable provided their growth does not exceed the physical and social carrying capacity of their site"

1                      2                      3                      4                      5

6. "The development and expansion of infrastructure related to town sites is acceptable provided that the ecological integrity of the parks is maintained on a long term basis"

1                      2                      3                      4                      5

7. "An emphasis on maintaining ecological integrity over promoting development is necessary in order for parks to reach a sustainable state"

1                      2                      3                      4                      5

8. Based on your responses to these questions on development-oriented interests, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below.

1                      2                      3                      4                      5                      6

**MANAGEMENT PLANNING**

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "Parks can be sustainable in nature provided they are efficiently and effectively managed"

1                      2                      3                      4                      5

2. "Management principles should be focused on the criteria and attributes of sustainability, already outlined"

1                      2                      3                      4                      5

3. "Emphasis given to maintaining the ecological integrity of sites over development is seen as positive management towards sustainability"

1                      2                      3                      4                      5

4. "Management at present in parks is suited to understanding and implementing sustainable practices"

1                      2                      3                      4                      5

5. "Viewing parks as possible sustainable landscapes is an unrealistic goal to"

1                      2                      3                      4                      5

6. "Overall, co-operative arrangements with neighboring jurisdictions have offered limited benefits to parks"

1                      2                      3                      4                      5

7. "In order to address many of the external influences on parks, there is a need for greater co-operation between parks and the jurisdictions who own and operate the land immediately surrounding them"

1                      2                      3                      4                      5

8. "Because of park lack of control over decisions in neighboring areas, emphasis should focus on managing and controlling the threats present within the parks rather than outside"

1                      2                      3                      4                      5

9. "The development of regional conservation strategies including the areas in close proximity to parks may be one possible action to address those external threats impacting on the park environment(s)"

1                      2                      3                      4                      5

10. "Reviewing management plans on a five year cycle along with the publication of annual reports on the "state of parks" are beneficial means to monitor park programs and activities"

1                      2                      3                      4                      5

11. "The role the public plays in management planning, should be expanded from participation in various exercises of public participation to one where the public are actively involved in developing management programs:

1                      2                      3                      4                      5

12. "An environmental assessment and review process (EARP) with legislative power, offers management an effective means to control change within parks"

1                      2                      3                      4                      5

13. "Zones within parks should be developed based on an area's potential for sustainability"

1                      2                      3                      4                      5



14. "Zones within parks should be developed based on varying degrees for those activities that are considered as acceptable in parks"

1                      2                      3                      4                      5

15. "Is it desirable to establish a classification scheme within the system similar to provincial ones to develop certain parks in a way where they serve specific functions suited to their natural environment"

1                      2                      3                      4                      5

16. "Parks can and should be examples of sustainable landscapes"

1                      2                      3                      4                      5

17. "Parks should be managed on sustainability principles which take into account, economic, social and environmental considerations"

1                      2                      3                      4                      5

18. Based on your responses to these questions on management planning, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum shown below.

1                      2                      3                      4                      5                      6

-----  
-----  
That completes this questionnaire, thank you for taking the time to answer the questions it is greatly appreciated.

Would you be interested in being part of a Delphi panel of experts with the specific purpose of taking these collective responses to propose a strategy and framework of sustainability applicable to parks?

YES \_\_\_\_\_

NO \_\_\_\_\_

PLEASE RETURN THE COMPLETED QUESTIONNAIRE IN THE STAMPED ADDRESSED ENVELOPE PROVIDED TO THE ADDRESS STATED. THANK YOU.

### **APPENDIX 3**

Questionnaire designed for park superintendent

## INTRODUCTION

The purpose of this questionnaire is to solicit your opinion on a number of themes within national parks with the overall goal of addressing the concept of sustainability as it is translated within parks. In particular, the questionnaire focuses on obtaining your perception of the term, examining it within a number of themes, noting those impacts on parks which prevent them from being sustainable, and suggesting possible measures of control/mitigation which may promote a more favourable situation whereby sustainability can be realized. Furthermore, another aim is to identify perception on the suitability and/or feasibility of "achieving sustainable landscapes" as an overall goal and possible direction that parks should move toward given the rising awareness and current concern that is being voiced regarding the environment. In addition, it may represent the contribution that parks can make to the larger resource management issue of sustainable development.

This questionnaire asks for your opinion and perception on many issues as they are viewed relevant to parks. Although you are asked to state your name, title and areas of responsibility, your comments will remain confidential as analysis of responses will be undertaken at the aggregate level. Please work through each section. I envisage that it will take you between 45 to 55 minutes to answer this questionnaire. The questionnaire has been designed for quick response as the majority of questions are precoded, requiring a number to be circled. If you feel you wish not to answer a specific question please leave and go on to the next one.

I believe that the issue of sustainability is one that requires serious attention within the area of resources management. The analysis from the data generated in this questionnaire will act as the base to develop a model of sustainability and propose a framework for sustainable development; as it relates specifically to national park environments.

**Note to the superintendents: PLEASE ANSWER THE QUESTIONS AS THEY RELATE TO YOUR PARK**

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### GENERAL BIOGRAPHICAL INFORMATION

1. NAME: \_\_\_\_\_ 2. POSITION HELD \_\_\_\_\_

3. NUMBER OF YEARS IN PRESENT POSITION: \_\_\_\_\_

4. AREAS OF RESPONSIBILITY HELD AT PRESENT:

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### DEFINITION OF SUSTAINABILITY

5. Based on your understanding of the concept of sustainability/sustainable development, please provide a definition of this term which you consider to be appropriate for national parks:

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## Notes to assist you with the questionnaire

### SUSTAINABILITY SPECTRUM

In one section you are asked to rate your response using what I have termed the "sustainability spectrum". In essence, this spectrum addresses the nature and level of sustainability possible for any given theme. You are asked to make an assessment of the sustainability of themes based upon (1) your knowledge and experience in parks, and (2) how well each theme under examination measures up to the degree of importance you attached to each of the criteria/attributes of sustainability listed in section A. (Note: it would be useful to have the page showing the sustainability spectrum beside you as you complete this section).

The sustainability spectrum is set up as follows:

1. **Unsustainability** (impacts and threats result in ecological damage of the various components within parks which cannot be corrected; the degree of negative impact (perceived) of development on the park environment is high)
2. **Intermediate stage between conditional sustainability and unsustainability** (increasing stress placed on park systems; low tolerance present; impacts still perceived as negative, but no ecological damage occurs)
3. **Conditional Sustainability** (stress placed on the park environment by the activities present, high tolerance within park systems; the degree of impact is limited and can be perceived as positive or negative)
4. **Intermediate stage between sustainability and conditional sustainability** (limited stress is being placed on the park environment, very high ecological tolerance within systems, the degree of positive impact (perceived) of development on the environment is low)
5. **Sustainability** (minimal stress placed on the environment; the degree of positive impact (perceived) of development on the environment is high; a symbiosis of development with nature is present)
6. **Situation does not apply** (i.e. the theme in question is not present within the park of the respondent)

The sustainability spectrum will appear as follows in the questionnaire:

1	2	3	4	5	6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### RANKING OF RESPONSES

In a number of questions you are asked to rank the responses you give. Please rank them as follows: the issue which you consider as the most important should be given a ranking of 1, the next most important response is ranked 2, and so on.

## DEFINITIONS OF CONCEPTS USED IN THE QUESTIONNAIRE

### SECTION A (Q.1)

**Nature of the resource base** - the condition of the park landscape (actual surface area), the totality of the natural resources present at a specific point in time and space.

**Resilience** - the degree to which the resource base can recover.

**Adaptiveness** - the ability to adjust to a new or different condition.

**Flexibility** - the extent to which the resource base of the park is responsive to change

**Sensitivity** - responsive to slight change and able to register very slight differences or change of conditions.

**Stability** - a landscape which is constant, firm, durable and able to become stable.

**Robustness** - a landscape which is viewed as sturdy, strong and hardy

### PRINCIPLES

**Self-empowerment** - ability and opportunity to make decisions and authorize things on your own.

**Social self-determination** - freedom for people/society to determine their own course of action with compulsion, involving community self-reliance, citizen participation, participatory governance, and decentralized management that involves grassroots activity.

**Ethics** - making decisions based on morals and values

**Equity** - concerned with achieving fairness in the distribution and use of resources, benefits and costs.

**Social justice** - moral rightness, equity, fairness to all groups to participate and have recourse to an open and just system with effective access to information and benefits.

**Rights** - personal entitlement to something (e.g. access to facilities), liberties and privileges in accordance with justice, morality, and law

**Democracy** - ideology (set of beliefs) promoting the interests of people/society based on elected representatives

**Power sharing** - co-management (two or more parties) where institutional arrangements are such that allow governments with the jurisdiction over resources to give user groups access to and the right to be involved in controlling the use of the resource, in co-ordinating decision-making, including the rights and rules for decision-making.

### INVOLVEMENT

**Interest group representation** - the interests of specific groups being voiced, normally those using the resource base.

**Public participation** - procedure where the public in general voice their opinions

**Accountability** - a system in which those charged with responsibility are answerable to someone with regard to the decisions made and the actions taken.

### SECTION B - TOURISM, Qu. 7&8

**Remote tourism** - tourism which takes place in isolated areas, activities undertaken are mostly focused on the natural environment.

**Mountain tourism** - tourism which takes place in mountain landscapes, activities undertaken are most of based on the natural environment ranging from highly passive to highly active. An appreciation of local arts, crafts, history and culture. is often involved.

**Cultural tourism** - tourism which focuses on the lifestyles of peoples made distinctive by way of their history, activities, folklore, and festivals. Often they represent life-styles which are vanishing, becoming objects for study per se (Inuits).

**Winter/ski tourism** - a form of tourism which centres around one particular activity, namely skiing during a specified period of time or season in the year. Level of activity engaged in can range from highly passive (spectator only) to highly active (downhill runs). Interaction with local community is often low. A form of tourism which requires an obvious level of skill needed in order to actively participate.

**Heritage tourism** - a form of tourism which is centred on promoting the regions natural and cultural heritage, educating the visitor using a variety of mediums from guides and conducting tours to display centres and information pamphlets.

**Adventure tourism** - a form of tourism in which the participants engage in some form of travel often to regions not as yet considered as places the average tourist would visit (e.g. a canoe trip through NWT). It is a form of tourism where both the level of activity and skill required is high. The travel engaged in is often seen not only as an "adventure" but also one of physical challenge.

**Eco-tourism** - a form of tourism which involves travel to areas that are viewed as relatively undisturbed with the specific objective of studying, admiring and enjoying the scenery, plants and animals, as well as the culture the area has to offer.

**Organized tours** - self explanatory

**Resort tourism** - tourism which is centred around a resort as the destination area of tourists.

**Mass Tourism** -large numbers of people attracted to certain areas because of particular attractions that the area is known for.

## **SECTION A** **IDENTIFYING CRITERIA FOR SUSTAINABILITY**

1. For the following criteria/attributes pertaining to: (1) the nature of the resource base, (2) the focus of management, (3) principles, (4) park goals, and (5) involvement, use the spectrum shown below to indicate the level of importance you would attach to each in terms of their appropriateness in promoting a sustainable landscape within parks (Please circle the appropriate number and rank your responses; do NOT rank "other" responses. To assist you in answering this section, many of the terms (those denoted by an asterisk) have been defined (see page 4).

Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Criteria Ranking place no.
1	2	3	4	5	

### **NATURE OF THE RESOURCE BASE\***

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- RESILIENCE*	1	2	3	4	5	
- ADAPTIVENESS*	1	2	3	4	5	
- PERMANENCE*	1	2	3	4	5	
- FLEXIBILITY*	1	2	3	4	5	
- SENSITIVITY*	1	2	3	4	5	
- STABILITY*	1	2	3	4	5	
- ROBUSTNESS*	1	2	3	4	5	
- BALANCE*	1	2	3	4	5	
- OTHER (please specify)	1	2	3	4	5	

### **MANAGEMENT FOCUS**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- PROTECTION FOCUS	1	2	3	4	5	
- PRESERVATION FOCUS	1	2	3	4	5	
- MANAGEMENT IN ISOLATION	1	2	3	4	5	
- INTEGRATIVE MANAGEMENT	1	2	3	4	5	
-INTEGRATIVE PLANNING	1	2	3	4	5	
- GOAL(S) COMPATIBILITY	1	2	3	4	5	
- GOAL(S) INTEGRATION	1	2	3	4	5	
- RECOGNITION OF TRADE OFFS	1	2	3	4	5	

**PRINCIPLES (components of sustainability)**

- SELF EMPOWERMENT*	1	2	3	4	5
- SOCIAL SELF-DETERMINATION*	1	2	3	4	5
- ETHICS*	1	2	3	4	5
- EQUITY*	1	2	3	4	5
- SOCIAL JUSTICE*	1	2	3	4	5
- RIGHTS*	1	2	3	4	5
- DEMOCRACY*	1	2	3	4	5
- POWER SHARING*	1	2	3	4	5

**PARK GOALS**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- Increased economic growth and development	1	2	3	4	5	
- Economic productivity	1	2	3	4	5	
- Provision of basic needs and services	1	2	3	4	5	
- Equity of supply	1	2	3	4	5	
- Protection of biological diversity	1	2	3	4	5	
- Preservation of essential ecological processes	1	2	3	4	5	
- Welfare improvement	1	2	3	4	5	
- Higher level social and cultural necessities	1	2	3	4	5	
- Sustaining biological productivity	1	2	3	4	5	
- Increased per capita material consumption	1	2	3	4	5	
- Satisfying basic human needs	1	2	3	4	5	



**INVOLVEMENT (who should be involved in promoting sustainability)**

CRITERIA/ATTRIBUTES	Highest Priority	Very Important	Secondary Importance	Limited Relevance	No Relevance	Ranking Criteria
- INTEREST GROUP REPRESENTATION	1	2	3	4	5	
- PUBLIC PARTICIPATION	1	2	3	4	5	
- ACCOUNTABILITY OF MANAGERS	1	2	3	4	5	

2. Please state your opinion on the following general proposed goals within the context of their appropriateness for sustainability. (please check the appropriate column and remember to rank your responses; do NOT rank "other" responses):

GOALS	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	RANKING OF GOALS
-Meeting non-material needs (desire to recreate)						
-Protection of gene pools within ecosystems						
-Resource management						
-Creation of wilderness areas						
-Promotion of tourism and recreation						
-Preservation of unique ecosystems						
-Greater public/interest representation in management						
-Parks acting as growth poles to stimulate regional development						
-Provision of infrastructure for tourism and recreation						
-Others? _____						
-Others? _____						

3. Please evaluate and rank the following definitions of sustainability and sustainable development as to their appropriateness when translated to a park setting.  
(please check the appropriate column and rank your responses)

DEFINITIONS	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Ranking of Definitions
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"						
"development that means more than seeking a compromise between the natural environment and the pursuit of economic growth, but one which recognizes that the limits to sustainability have structural as well as natural origins"						
"the ability of a system to maintain productivity in spite of a major disturbance such as that caused by intensive stress or a large perturbation"						
"development which is based on the sustainable use of indigenous resources in association with inter-regional exchange of resources"						
"a fundamental guide or ideal for better planning and management of systems, a process to achieve sustainability rather than any utopian end state"						
"activity in which the environment is fully incorporated into the economic decision making process as a forethought, not an afterthought"						
"the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity"						
"the condition whereby systems goals are reached and maintained over time. The renewability of the various systems is dependent on their ability to function below the zone of the critical limits of capacity."						
"the fundamental of balancing environmental considerations with economic growth and development"						

**SECTION B****PERCEPTION OF SUSTAINABILITY FOR VARIOUS  
THEMES WITHIN PARKS****NATURE PRESERVATION/WILDERNESS**

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
-------------------	-------	------------	----------	----------------------

1	2	3	4	5
---	---	---	---	---

1. "Given the increased concern and awareness over environmental degradation, the emphasis in parks toward preserving and protecting natural landscapes requires further attention"

1	2	3	4	5
---	---	---	---	---

2. "For nature preservation to be sustainable requires more restrictions placed on access to unique and fragile areas than are operating at present"

1	2	3	4	5
---	---	---	---	---

3. "A greater area within parks, than is commonly found today, should be laid aside from any form of use and left in a natural state"

1	2	3	4	5
---	---	---	---	---

4. "Recreational activities are increasingly encroaching on wilderness areas within parks and are becoming an area of increasing concern by managers"

1	2	3	4	5
---	---	---	---	---

5. "Nature preservation would be best served if a buffer zone was constructed between those areas set aside for the purpose of preservation and those used by visitors"

1	2	3	4	5
---	---	---	---	---

6. "With an emphasis now placed on maintaining ecological integrity, more areas of wilderness will be ensured of remaining in a natural and unimpaired state"

1	2	3	4	5
---	---	---	---	---

7. "A loss of wilderness areas should be compensated for by the establishment of others elsewhere within a park"

1                      2                      3                      4                      5

8. "The ecological component (preservation/protection) of wilderness areas must receive priority over an economic component (resource utilization) or social component (open access of wilderness regions to all visitors) if sustainability can be realized"

1                      2                      3                      4                      5

9. Based on your responses to these questions on nature preservation/wilderness, use the sustainability spectrum to indicate the position in which this theme is found on the spectrum. (Note: it would be useful to have the page showing the spectrum (p.3) beside you to answer this question in each of the issues examined in this section of the questionnaire).

1                      2                      3                      4                      5                      6

### WILDLIFE

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "The long term preservation/protection of both the stock and diversity of wildlife is an important component of sustainability in parks"

1                      2                      3                      4                      5

2. "Greater attention should be paid to wildlife management than is presently available in parks"

1                      2                      3                      4                      5

3. "If wildlife is to reach a state of sustainability, access to wildlife habitats must be restricted"

1                      2                      3                      4                      5

4. "For wildlife numbers and diversity to be sustained necessitates that the mating and breeding grounds of animals are areas where the general public does not gain access"

1                      2                      3                      4                      5

5. "Wildlife sustainability involves only the maintenance of animal population numbers (i.e. the size of herds/populations)"

1                      2                      3                      4                      5

6. "Wildlife sustainability involves both numbers and the diversity of species present within the parks"

1                      2                      3                      4                      5

7. "Encroachment of recreation activities on wildlife regions within parks impacts on the potential of managers being able to sustain wildlife inside of parks"

1                      2                      3                      4                      5

8. "The relationship that exists at present between wildlife and human presence in the parks is conducive for the sustainability of wildlife"

1                      2                      3                      4                      5

9. Based on your responses to these questions on wildlife please use the sustainability spectrum to indicate the position this theme is found on the spectrum.

1	2	3	4	5	6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### INTERPRETATION AND EDUCATION

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
-------------------	-------	------------	----------	----------------------

1                      2                      3                      4                      5

1. "Interpretation services and education within the parks are suitable mediums to communicate the principles of sustainability to park users"

1                      2                      3                      4                      5

2. "At present, interpretation facilities are not focused toward explaining the principles of sustainability"

1                      2                      3                      4                      5

3. "Interpretation and educational services within the parks focus more on explaining park programs and activities that are available to users rather than outlining the relationship that exists between users and the park environment and the impacts users make on the park landscape"

1                      2                      3                      4                      5

4. "In explaining sustainability to park users, interpretation and educational facilities within parks should focus on : (use the same spectrum as previously used, circling the number most appropriate)

- making people aware of the impacts that human activities make on the park environment.....	1	2	3	4	5
- making users aware of the thresholds of ecosystems to accommodate human use.....	1	2	3	4	5
- the fact that sustainability involves management of ecosystems on a long term basis.....	1	2	3	4	5
- the necessity of restricting access to unique and fragile areas in parks.....	1	2	3	4	5
- the understanding that sustainability involves the ecological, economic and social components of parks.....	1	2	3	4	5
- educating users of the limits to which certain environments can sustain particular activities.....	1	2	3	4	5
- educating users of indicators which would suggest and reveal that impacts and threats may result in irreversible ecological damage.....	1	2	3	4	5

5. At present, does your park offer visitors any services and information which pertain to the concept of sustainability?

YES \_\_\_\_\_  
NO \_\_\_\_\_

6. "Explanation of the concept of sustainability to park users is best achieved through the following channels of communication" (please check appropriate box based on the suitability of each format and rank the items; items can be given a similar ranking where deemed appropriate)

CHANNELS OF COMMUNICATION	STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE	RANKING OF ISSUES
Displays at visitor centers						
Educational programs within parks						
Guided tours showing examples of sustainability						
Discussion with wardens and superintendents						
Pamphlets distributed on entering parks						
Ad campaigns						
Advertisement on T.V. and radio						
Workshops in communities						
Presentations in schools and universities						
Information distributed through interest groups						
Videos/films available for public rental						

7. Based on your responses to these questions on interpretation and education, use the sustainability spectrum to indicate the position this theme is found on the spectrum.

1                      2                      3                      4                      5                      6  
                                                                                                             

**RESEARCH**

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
1	2	3	4	5

1. "If parks are to reach a state where they are viewed as sustainable, research must focus on addressing the issue of balance between preservation interests and those interests and activities which are perceived as more development-oriented in nature"

1                      2                      3                      4                      5

2. "Non human-oriented research needs to focus on the resilience, robustness, adaptiveness, and such like of natural systems to human interference and overuse"

1                      2                      3                      4                      5

3. "Research should only focus on promoting better management of the parks"

1                      2                      3                      4                      5

4. "Research can assist with measuring the level of sustainability through long term monitoring and assessment of park programs/activities"

1                      2                      3                      4                      5

5. "Research, both human and physical, has limited and often negligible impact on parks and therefore has little affect on the level of sustainability in parks"

1                      2                      3                      4                      5

6. "Is there any research ongoing in your park which will aid us in understanding sustainability as it applies to parks?" (Please circle answer)

YES                      NO

7. Based on your responses to these questions on research use the sustainability spectrum to indicate the position this theme falls on the spectrum.

1                      2                      3                      4                      5                      6

**ABORIGINAL INTERESTS/ TRADITIONAL ACTIVITIES**

1. Are aboriginal interests/traditional activities considerations that must be addressed in the management of your park?

YES \_\_\_\_\_ ( move to next question)  
NO \_\_\_\_\_ ( move to next section entitled "Recreation")



2. What are the impacts of aboriginal practices and traditional activities on the park environment? (List impacts in table below, indicating the nature of their impact by checking the appropriate column)

ACTIVITY	IMPACT(S)	Perceived Nature of impact on park landscape		
		+	Neutral	-
GATHERING				
HUNTING				
TRAPPING				
FISHING				
DOMESTIC ACTIVITIES				

3. Identify any action(s) which can be taken to control and mitigate impacts that are perceived as negative (i.e. harmful to the park environment)

ACTIVITY	MITIGATION TAKEN TO CONTROL IMPACT(S)
GATHERING	
HUNTING	
TRAPPING	
FISHING	
DOMESTIC ACTIVITIES	

4. The level of use of aboriginal activities should remain within the carrying capacity of the park if these activities are to be viewed as compatible with a sustainable landscape.

1                      2                      3                      4                      5

5. Restricting the degree to which aboriginal activities are undertaken is a key management issue if this park is to achieve a sustainable state:

1                      2                      3                      4                      5

6. An awareness of the rights of aboriginals to engage in activities must always be realized:

1                      2                      3                      4                      5

7. Based on your responses to these questions on aboriginal activities use the sustainability spectrum to indicate the position this theme is found on the spectrum.

1                      2                      3                      4                      5                      6

### RECREATION

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE	AGREE	NO OPINION	DISAGREE	STRONGLY DISAGREE
1	2	3	4	5

1. "Recreation represents one of the major trigger mechanisms for generating problems within the park"

1                      2                      3                      4                      5

2. "If parks are to be sustainable, only recreational activities that are low impact in their nature, with the potential of remaining so should be encouraged and promoted"

1                      2                      3                      4                      5

3. "Within a context of sustainability, recreational activities offered in parks do not require any re-evaluation"

1                      2                      3                      4                      5

4. "Quotas of numbers participating in recreational activities, may be necessary in order to reduce any environmental impact(s) and maintain carrying capacity"

1                      2                      3                      4                      5

5. "Recreational activities that can be enjoyed and provided outside of parks should NOT be excluded from parks"

1                      2                      3                      4                      5

6. "Recreational activities that can be enjoyed and provided outside of parks should be excluded from parks"

1                      2                      3                      4                      5

7. Recreational activities perceived as not suitable within a park environment, should be actively encouraged in neighboring areas"

1                      2                      3                      4                      5

8. "All forms of recreation are acceptable within parks provided they remain low in impact and numbers"

1                      2                      3                      4                      5

9. In the following table, indicate what measures are being taken to mitigate any perceived adverse impacts of recreational activity (If some of the impacts are not applicable, then state so in the mitigation column)

RECREATIONAL IMPACTS	MITIGATION/MEASURES TAKEN TO LIMIT IMPACTS
Loss of species diversity/Removal of species	
Habitat/Site disruption	
Disturbance/conflict with wildlife	
Soil compaction/erosion	
Burning vegetation/starting fires	
Trampling/damaging of vegetation	
Heavy visitor use	
High noise level of users /vehicular noise	
Heavy vehicular traffic	
Widening of trails/creation of new ones/overuse of existing paths	
Increasing garbage	
Decline in scenic value because of presence of structures	
Vandalism	



## TOURISM

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "With increasing numbers of visitors to national parks, there is a need to understand the impacts from tourism on park environments"

1                      2                      3                      4                      5

2. "Tourism should be promoted in national parks as it is an effective means of generating revenue "

1                      2                      3                      4                      5

3. "The impacts of tourists on the park environment are limited given managerial decisions to control access to certain areas of the parks"

1                      2                      3                      4                      5

4. "The function(s) of tourism within parks is/are to :

- satisfy the mandate of "enjoyment and benefit"..... 1      2      3      4      5
- provide employment for locals..... 1      2      3      4      5
- generate capital for local areas, acting as a growth pole..... 1      2      3      4      5
- provide tourism facilities for a domestic and international market..... 1      2      3      4      5
- provide tourism opportunities within an aesthetically pleasing setting..... 1      2      3      4      5
- be a showcase for the natural and cultural heritage of parks..... 1      2      3      4      5

5. "From a tourism perspective, each park should be viewed separately, both in terms of the problems they face from tourism and any solutions that may be offered to problems that arise"

1                      2                      3                      4                      5

6. "For tourism in the parks to be perceived as sustainable requires the following:

- |                                                                                                           |   |   |   |   |   |
|-----------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| - development (i.e. infrastructure)<br>which is low in impact.....                                        | 1 | 2 | 3 | 4 | 5 |
| - development similar to what is already<br>present in parks.....                                         | 1 | 2 | 3 | 4 | 5 |
| - controlling tourists in fragile and unique<br>areas of parks.....                                       | 1 | 2 | 3 | 4 | 5 |
| - preventing visitors from encroaching<br>in areas where permits are needed for<br>entry.....             | 1 | 2 | 3 | 4 | 5 |
| - tourism development which maintains the<br>ecological integrity of the landscape.....                   | 1 | 2 | 3 | 4 | 5 |
| - allowing only tourism types which are<br>low in terms of environmental impacts.....                     | 1 | 2 | 3 | 4 | 5 |
| - preventing the expansion of activities<br>and facilities which are viewed as<br>undesirable.....        | 1 | 2 | 3 | 4 | 5 |
| - encouraging the development of small<br>scale accommodation inside the parks.....                       | 1 | 2 | 3 | 4 | 5 |
| - locating all forms of accommodation<br>outside of parks.....                                            | 1 | 2 | 3 | 4 | 5 |
| - tourism which places an emphasis on<br>economic benefits only.....                                      | 1 | 2 | 3 | 4 | 5 |
| - forms of tourism which have a positive<br>economic, social and environmental<br>component to them.....  | 1 | 2 | 3 | 4 | 5 |
| - tourism which remains viable over time.....                                                             | 1 | 2 | 3 | 4 | 5 |
| - tourism which does not degrade the<br>environment that it is dependent on if<br>it is to continue.....  | 1 | 2 | 3 | 4 | 5 |
| - tourism which alters the environment<br>but at the same time maintains its<br>ecological integrity..... | 1 | 2 | 3 | 4 | 5 |
| - tourism which is seen to have a symbiotic<br>relationship with other park activities.....               | 1 | 2 | 3 | 4 | 5 |

7. "Given the expected growth of tourism to parks in the future, identify in the table below those types that you perceive have growth potential as they relate to your park, the problems anticipated with growth and the mitigation measures that can be implemented to limit them" (Each of these tourism types is defined in the definition section)

TOURISM TYPE	EXPECT GROWTH		DOES NOT APPLY	PROBLEMS ANTICIPATED	MITIGATION OF PROBLEMS
	YES	NO			
REMOTE					
MOUNTAIN					
CULTURAL					
WINTER/SKI					
HERITAGE					
ADVENTURE					
ECO-TOURISM					
RESORT TOURISM					
ORGANIZED TOURS					
MASS TOURISM					



8 Overall, based on your perception, use the sustainability spectrum to indicate where each type of tourism is found on the spectrum. (complete the below table for those types of tourism as they apply to your particular park by checking the appropriate box)

TOURISM TYPES	LEVEL OF SUSTAINABILITY					DOES NOT APPLY
	1	2	3	4	5	
REMOTE						
MOUNTAIN						
CULTURAL						
WINTER/SKI						
HERITAGE						
ADVENTURE						
ECO-TOURISM						
RESORT						
ORGANIZED TOURS						
MASS						

### DEVELOPMENT-ORIENTED INTERESTS

Please comment on the following statements: (use the spectrum shown below for all questions in this subsection, circling the number which best represents your opinion/view).

STRONGLY AGREE      AGREE      NO OPINION      DISAGREE      STRONGLY DISAGREE

1                      2                      3                      4                      5

1. "Parks play a key role in the economic development of their surrounding regions"

1                      2                      3                      4                      5

2. "The extent to which commercial development should occur within parks is an important issue that requires attention if parks are to be viewed as being sustainable in nature"

1                      2                      3                      4                      5

3. "Park town sites have the potential of being sustainable provided their growth does not exceed the physical and social carrying capacity of their site"

1                      2                      3                      4                      5

4. "The development and expansion of infrastructure related to town sites is acceptable provided that the ecological integrity of the parks is maintained on a long term basis"

1                      2                      3                      4                      5

5. "An emphasis on maintaining ecological integrity over promoting development is necessary in order for parks to reach a sustainable state"

1                      2                      3                      4                      5

6. In the following table, please state the problems associated with any of the following elements, outlining the impacts they make on the park environment, and suggest possible mitigation of the perceived impacts:

DEVELOPMENT ORIENTED INTERESTS	PERCEIVED IMPACTS ON PARKS FROM DEVELOPMENT	POSSIBLE MITIGATION OF IMPACTS GENERATED
Access routes and communication networks for the park		
Infrastructure required for park towns		
Infrastructure necessary for recreation and tourist development		
Campsite structures		
Private residential development		
Commercial development (accommodation/retail)		
Commercial development (municipal services)		
Transmission lines/through roads		
Extractive economic activities		
Routes and communication networks unrelated to parks		

9. Based on your responses to these questions on development-oriented interests use the sustainability spectrum to indicate where this theme is found on the spectrum.

1                      2                      3                      4                      5                      6

## MANAGEMENT PLANNING

Please comment on the following statements: (use the same spectrum as shown in the previous subsection, circling the number most appropriate/reflective of your views)

1. "Parks can be sustainable in nature provided they are efficiently and effectively managed"

1                      2                      3                      4                      5

2. "Emphasis given to maintaining the ecological integrity of sites over development is seen as positive management towards sustainability"

1                      2                      3                      4                      5

3. "Management at present in parks is suited to understanding and implementing sustainable practices"

1                      2                      3                      4                      5

4. "Viewing parks as possible sustainable landscapes is an unrealistic goal"

1                      2                      3                      4                      5

5. "Overall, co-operative arrangements with neighboring jurisdictions have offered limited benefits to parks"

1                      2                      3                      4                      5

6. "In order to address many of the external influences on parks, there is a need for greater co-operation between parks and the jurisdictions who own and operate the land immediately surrounding them"

1                      2                      3                      4                      5

7. "Because of park lack of control over decisions in neighboring areas, emphasis should focus on managing and controlling the threats present within the parks rather than outside"

1                      2                      3                      4                      5

8. "The development of regional conservation strategies including the areas in close proximity to parks may be one possible action to address those external threats impacting on the park environment(s)"

1                      2                      3                      4                      5

9. "Reviewing management plans on a five year cycle along with the publication of annual reports on the "state of parks" are beneficial means to monitor park programs and activities"

1                      2                      3                      4                      5

10. "The role the public plays in management planning, should be expanded from participation in various exercises of public participation to one where the public are actively involved in developing management programs:

1                      2                      3                      4                      5

11. "An environmental assessment and review process (EARP) with legislative power, offers management an effective means to control change within parks"

1                      2                      3                      4                      5

12. "Zones within parks should be developed based on varying degrees for those activities that are considered as acceptable in parks"

1                      2                      3                      4                      5

13. "A classification scheme should be established within the park system similar to provincial ones to develop parks in a way where they serve specific functions suited to their natural environment?"

1                      2                      3                      4                      5

14. "Parks can and should be examples of sustainable landscapes"

1                      2                      3                      4                      5

15. "Parks should be managed on sustainability principles which take into account, economic, social and environmental considerations"

1                      2                      3                      4                      5

16. Based on your responses to these questions on management planning, use the sustainability spectrum to indicate where this theme is found on the spectrum.

1                      2                      3                      4                      5                      6

**SECTION C: TRADE OFF RELATIONSHIP BETWEEN  
PRESERVATION AND USE**

1. If national parks are to be examples of sustainable landscapes, management considerations will need to address the fact that trade offs will have to be made between preservation and use. In light of this, use the following spectrum, for the following park activities, to indicate the degree to which emphasis is given to preservation or use (i.e. development) within your park (PLEASE CIRCLE THE MOST APPROPRIATE NUMBER)

	RATING SCALE										
	INCREASING INTEREST FOR PRESERVATION										
0% interest for preservation											100% interest for for preservation
	<u>0</u>	1	2	3	4	5	6	7	8	9	<u>10</u>

EXAMPLE: A 4 REPRESENTS 40 % FOCUS ON PRESERVATION (NO DEVELOPMENT) AND A 60 % FOCUS ON USE (DEVELOPMENT)

Endangered Species.....	0	1	2	3	4	5	6	7	8	9	10
Mining .....	0	1	2	3	4	5	6	7	8	9	10
Mechanized forms of recreation.....	0	1	2	3	4	5	6	7	8	9	10
Protected areas.....	0	1	2	3	4	5	6	7	8	9	10
Tourism .....	0	1	2	3	4	5	6	7	8	9	10
Eco-tourism.....	0	1	2	3	4	5	6	7	8	9	10
Research.....	0	1	2	3	4	5	6	7	8	9	10
Passive forms of recreation.....	0	1	2	3	4	5	6	7	8	9	10
Traditional Activities.....	0	1	2	3	4	5	6	7	8	9	10
Native land practices.....	0	1	2	3	4	5	6	7	8	9	10
Lumber activity.....	0	1	2	3	4	5	6	7	8	9	10
Nature reserves.....	0	1	2	3	4	5	6	7	8	9	10
wildlife.....	0	1	2	3	4	5	6	7	8	9	10

Nature studies.....	0	1	2	3	4	5	6	7	8	9	10
Interpretation and education.....	0	1	2	3	4	5	6	7	8	9	10
Search and rescue operations.....	0	1	2	3	4	5	6	7	8	9	10
Transportation.....	0	1	2	3	4	5	6	7	8	9	10
Access and circulation.....	0	1	2	3	4	5	6	7	8	9	10
Infrastructure for recreation/tourism.....	0	1	2	3	4	5	6	7	8	9	10
Disposal of waste.....	0	1	2	3	4	5	6	7	8	9	10
Municipal services for park towns.....	0	1	2	3	4	5	6	7	8	9	10
Accommodation (park towns).....	0	1	2	3	4	5	6	7	8	9	10
Accommodation (front- country).....	0	1	2	3	4	5	6	7	8	9	10
Accommodation (back- country).....	0	1	2	3	4	5	6	7	8	9	10
Retail facilities.....	0	1	2	3	4	5	6	7	8	9	10
Campgrounds.....	0	1	2	3	4	5	6	7	8	9	10

-----  
-----  
That completes this questionnaire, thank you for taking the time to answer the questions it is greatly appreciated.

Would you be interested in being part of a Delphi panel of experts with the specific purpose of taking these collective responses to propose a strategy and framework of sustainability applicable to parks?

YES \_\_\_\_\_

NO \_\_\_\_\_

PLEASE RETURN THE COMPLETED QUESTIONNAIRE IN THE STAMPED ADDRESSED ENVELOPE PROVIDED TO THE ADDRESS STATED. THANK YOU.

**APPENDIX 4**  
**Wilcoxon T-Test Results**

The Wilcoxon T-Test, a nonparametric test, was used to determine if the two groups (policy makers and park superintendents) response to questions which saw ranked responses were significantly different. This test statistic is computed by calculating a difference score for each item using the following equation:

$$D = X_1 - X_2$$

where  $D$  = difference between the mean score of both groups

Ignoring the signs of the difference scores, they are rank-ordered from smallest to largest on the basis of absolute size, except for difference scores of 0, which are ignored. Next, each of the ranks is given a positive or negative sign to reflect the sign of the corresponding difference score. Last,  $T$  is computed using the following equation:

$T$  = the smaller of the two: (1) the absolute sum of the positive ranks or (2) the absolute sum of the negative ranks

Hypothesis:

Null Hypothesis: the observed difference between groups is small enough that one may conclude that there is no significant difference in how groups replied to the issue involved.

Alternative Hypothesis: the observed difference is too great to attribute to sampling error and that there is a significant difference as to how both groups replied to the issue involved.



### Results

<b>ISSUES</b>	<b><i>T</i> (obtained)</b>	<b>N</b>	<b><i>T</i> (critical)</b>
Definitions	17.0	9	8
Park Goals	30.5	11	13
General Goals	17.0	8	5
Management Focus	16.5	8	5
Principles	14.0	8	5

where  $N$  = the number of nonzero difference scores

As  $T$  (obtained) is greater than  $T$  (critical) in all cases, one can therefore conclude that the difference in scores between groups (policy makers and park superintendents) is nonsignificant and that overall responses to each of the issues were very similar by both policy makers and park superintendents.

## **APPENDIX 5**

### List of Delphi Respondents

NAME	AFFILIATION
<b>Geography Department</b>	
1. Dr. Draper	University of Calgary, Calgary, AB
2. Dr. Dilley	Lakehead University, Thunder Bay, ON
3. Dr. Millward	Saint Mary's University, Halifax, NS
4. Dr. Helleiner	Trent University, Peterborough, ON
5. Dr. Murphy	University of Victoria, Victoria, BC
6. Dr. Wall	University of Waterloo, Waterloo, ON
7. Dr. Butler	University of Western Ontario, London, ON
8. Dr. Slocombe	Wilfrid Laurier University, Waterloo, ON
9. Dr. Lehr	University of Winnipeg, Winnipeg, MB
10. Dr. Selwood	University of Winnipeg, Winnipeg, MB
11. Dr. Wilkinson	York University, North York, ON
<b>Recreation, Tourism and Leisure Departments</b>	
12. Dr. Swinnerton	University of Alberta, Edmonton, AB
13. Dr. Eagles	University of Waterloo, Waterloo, ON
14. Dr. Fennell	University of Regina, Regina, SK
15. Dr. Twyman	Lakehead University, Thunder Bay, ON
<b>Environment and Resource Studies Department</b>	
16. Dr. Francis,	University of Waterloo, Waterloo, ON

## **APPENDIX 6**

Questionnaire compiled for academics

October 12, 1994

Dr.  
Department  
University  
Province  
Postal code

Dear Dr. :

Hello, let me introduce myself to you. My name is Stephen Boyd and I am in the final year of a Ph.D. in geography under the supervision of Dr. Richard Butler at the University of Western Ontario. My research examines the concept of sustainability within Canada's national parks. I am writing to you to ask you to participate in a relatively short, precoded survey which seeks your response to a package of data which summarizes the developments of the research to date. An extensive questionnaire was sent out to Parks Canada staff involved in policy making, to regional directors, and to superintendents for each park. The overall purpose behind the questionnaire was to create a data base on sustainability and to solicit opinions on a spectrum of themes, ranging from protection to development issues, in order to address the concept of sustainability as translated within parks.

The purpose of this current survey is two-fold: (1) to generate discussion on the perceptions of the policy makers and park superintendents to the various themes, noting the degree to which you agree or disagree with their views; and (2) from the combined responses identify elements that may be applicable in developing a framework of sustainability for parks.

This current survey has been restricted to members of the academic community, in particular individuals within geography, recreation and leisure studies and environmental studies departments across the country because they represent a group of individuals knowledgeable on the issues within national parks and as academics can offer an objective response to the issues.

I realize that this is a particularly busy time of the academic year, but I would appreciate you taking time to complete the survey and returning it in the stamped addressed envelope that has been included. I estimate that it will take you approximately half an hour to fill in the form and make such comments as you may wish. If you do not wish to make comments on any question, please leave that section blank and continue with the next question.

To satisfy the requirements of the ethics review committee, I have to stress that your participation is of course completely voluntary, and your identity will not be revealed except as one respondent in a list in the acknowledgements. If you have any questions about the survey you can contact myself at the following number (519) 246 1256 or contact Dr. Butler at (519) 661 4018. I would appreciate it if the completed survey could be returned by November 15 in the stamped addressed envelope provided.

Sincerely,

Stephen Boyd

## DEFINITIONS OF CONCEPTS USED IN THE QUESTIONNAIRE

### SECTION 1

**Nature of the resource base** - the condition of the park landscape (actual surface area), the totality of the natural resources present at a specific point in time and space.

**Resilience** - the degree to which the resource base can recover.

**Adaptiveness** - the ability to adjust to a new or different condition.

**Flexibility** - the extent to which the resource base of the park is responsive to change

**Sensitivity** - responsive to slight change and able to register very slight differences or change of conditions.

**Stability** - a landscape which is constant, firm, durable and able to become stable.

**Robustness** - a landscape which is viewed as sturdy, strong and hardy

### **PRINCIPLES**

**Self-empowerment** - ability and opportunity to make decisions and authorize things on your own.

**Social self-determination** - freedom for people/society to determine their own course of action with compulsion, involving community self-reliance, citizen participation, participatory governance, and decentralized management that involves grassroots activity.

**Ethics** - making decisions based on morals and values

**Equity** - concerned with achieving fairness in the distribution and use of resources, benefits and costs.

**Social justice** - moral rightness, equity, fairness to all groups to participate and have recourse to an open and just system with effective access to information and benefits.

**Rights** - personal entitlement to something (e.g. access to facilities), liberties and privileges in accordance with justice, morality, and law

**Democracy** - ideology (set of beliefs) promoting the interests of people/society based on elected representatives

**Power sharing** - co-management (two or more parties) where institutional arrangements are such that allow governments with the jurisdiction over resources to give user groups access to and the right to be involved in controlling the use of the resource, in co-ordinating decision-making, including the rights and rules for decision-making.

### **INVOLVEMENT**

**Interest group representation** - the interests of specific groups being voiced, normally those using the resource base.

**Public participation** - procedure where the public in general voice their opinions

**Accountability** - a system in which those charged with responsibility are answerable to someone with regard to the decisions made and the actions taken.

### SECTION 2

**Remote tourism** - tourism which takes place in isolated areas, activities undertaken are mostly focused on the natural environment.

**Mountain tourism** - tourism which takes place in mountain landscapes, activities undertaken are most of based on the natural environment ranging from highly passive to highly active.

**Cultural tourism** - tourism which focuses on the lifestyles of peoples made distinctive by way of their history, activities, folklore, and festivals. Often they represent life-styles which are vanishing, becoming objects for study per se (Inuits).

**Winter/ski tourism** - a form of tourism which centres around one particular activity, namely skiing during a specified period of time or season in the year. Level of activity engaged in can range from highly passive (spectator only) to highly active (downhill runs). Interaction with local community is often low.

**Heritage tourism** - a form of tourism which is centred on promoting the regions natural and cultural heritage, educating the visitor using a variety of mediums from guides and conducting tours to display centres and information pamphlets.

**Adventure tourism** - a form of tourism in which the participants engage in some form of travel often to regions not as yet considered as places the average tourist would visit (e.g. a canoe trip through NWT). It is a form of tourism where both the level of activity and skill required is high. The travel engaged in is often seen not only as an "adventure" but also one of physical challenge.

**Eco-tourism** - a form of tourism which involves travel to areas that are viewed as relatively undisturbed with the specific objective of studying, admiring and enjoying the scenery, plants and animals, as well as the culture the area has to offer.

**Organized tours** - self explanatory

**Resort tourism** - tourism which is centred around a resort as the destination area of tourists.

**Mass Tourism** - large numbers of people attracted to certain areas because of particular attractions that the area is known for.

**SECTION 1 RESPONSE TO QUESTIONNAIRE ADMINISTERED TO PARK SUPERINTENDENTS**

**(A) IDENTIFYING CRITERIA FOR SUSTAINABILITY**

One section of the questionnaire sought rankings of criteria (provided) (column #1) relative to specific issues. The following table summarizes those responses. You are asked to react to the ranking assigned to each attribute (column #2) by assigning a new rank order if you disagree (column #3) and also to indicate how appropriate each criterion is to the concept of sustainability for parks (column #4). Please then add any general comments on the rankings you wish (column #5). Definitions of many of these criteria are listed on the previous page.

Use the following score range for column #4: 1 = very appropriate, 2 = appropriate, 3 = some relevance, 4 = little relevance, 5 = inappropriate

**ISSUE: NATURE OF THE RESOURCE BASE**

column #1	#2	#3	#4	#5
CRITERIA	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
Resilience	1			
Adaptiveness	3			
Permanence	2			
Flexibility	6			
Sensitivity	4			
Stability	4			
Robustness	7			
Balance	8			

**ISSUE: MANAGEMENT FOCUS**

CRITERIA	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
Focus on protection	1			
Focus on preservation	2			
Management in isolation	8			
Integrative management	4			
Integrative planning	3			
Compatibility of goals	6			
Integration of goals	4			
Recognition of trade-offs	7			

**ISSUE: PRINCIPLES (components of sustainability)**

CRITERIA	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
Self empowerment	3			
Social self determination	2			
Ethics	1			
Equity	6			
Social justice	4			
Rights	8			
Democracy	7			
Power sharing	5			

ISSUE: GOALS column #1 #2 #3 #4 #5

CRITERIA	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
Increased economic growth & development	7			
Economic productivity	9			
Provision of basic needs & services	4			
Equity of supply	8			
Protection of biological diversity	2			
Preservation of essential ecological processes	1			
Welfare improvement	10			
Higher level social and cultural necessities	6			
Sustaining biological productivity	3			
Increased per capita material consumption	11			
Satisfying basic human needs	5			

ISSUE: INVOLVEMENT (who should be involved in promoting sustainability)

CRITERIA	Rank Order	New Rank Order	Appropriate/ Inappropriate Score: (1-5)	Comments on the rankings
Interest group representation	3			
Public participation	2			
Managers who are accountable	1			

ISSUE: PROPOSED PARK GOALS

GOALS	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
Meeting non-material needs (desire to recreate)	7			
Protection of gene pools within ecosystems	1			
Resource management	3			
Creation of wilderness areas	3			
Promotion of tourism & recreation	6			
Preservation of unique ecosystems	2			
Greater public/interest representation in management	5			
Parks acting as growth poles to stimulate regional development	9			
Provision of infrastructure for tourism and recreation	8			



**ISSUE: SUTABILITY OF DEFINITIONS OF SUSTAINABILITY FOR PARKS**

DEFINITIONS	Rank Order	New Rank Order	Appropriate/ Inappropriate Score (1-5)	Comments on the rankings
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"	4			
"development that means more than seeking a compromise between the natural environment and the pursuit of economic growth, but one which recognizes that the limits to sustainability have structural as well as natural origins"	5			
"the ability of a system to maintain productivity in spite of a major disturbance such as that caused by intensive stress or a large perturbation"	9			
"development which is based on the sustainable use of indigenous resources in association with inter-regional exchange of resources"	8			
"a fundamental guide or ideal for better planning and management of systems, a process to achieve sustainability rather than any utopian end state"	3			
"activity in which the environment is fully incorporated into the economic decision making process as a forethought, not an afterthought"	2			
"the preservation of essential ecological processes, protection of biological diversity along with sustaining productivity"	1			
"the condition whereby system goals are reached and maintained over time. The renewability of the various systems is dependent on their ability to function below the zone of the critical limits of capacity"	6			
"the fundamental of balancing environmental considerations with economic growth and development"	7			

**(D) PERCEPTION OF SUSTAINABILITY FOR VARIOUS THEMES WITHIN PARKS**

A second section of the questionnaire sought responses to issues of sustainability (provided) as they applied to various themes that ranged from nature preservation to development-oriented issues. Responses were recorded using the following scale: 1 = strongly agree, 2 = agree, 3 = no opinion, 4 = disagree, 5 = strongly disagree. The responses are summarized below by theme. You are asked to react to the responses given by assigning a score (using the above Likert scale) to each of the issues indicating your perception of the issues. Please then add any general comments on your responses to issues, particularly those that differ from the responses of the superintendents.

**THEME: NATURE PRESERVATION/WILDERNESS**

ISSUES/ASPECTS	RESPONSES OF SUPERINTENDENTS					Comments on variation of responses
	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)		
Protection of natural landscapes requires more attention given increased awareness of environmental degradation	X					
Sustaining nature preservation through more restriction to unique/fragile areas	X					
Increasing the amount of park lands to be left in a natural state/absence of use	X					
The encroachment of recreational activities on wilderness areas: an area of increased concern by managers	X					
Use of buffer zones between use areas and preservation areas to assist with nature preservation		X				
Emphasis on ecological integrity ensuring that more wilderness areas will remain in a natural/unimpaired state		X				
Compensating a loss of wilderness areas by establishing others elsewhere within a park		X				
Emphasis on ecological component of wilderness areas over the economic and social components in order for sustainability to be realized	X					

**THEME: WILDLIFE**

ISSUES/ASPECTS	RESPONSES OF SUPERINTENDENTS					Comments on variation of responses
	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)		
Greater attention needed toward wildlife management	X					
Need to restrict access to wildlife habitats to ensure sustainability	X					
Sustaining wildlife numbers and diversity through restrictions to mating & breeding sites	X					
Sustainability involves only the maintenance of animal population numbers			X			
Sustainability involves both numbers and diversity of species present in parks	X					
Encroachment of recreation on wildlife regions impacts on managerial ability to sustain wildlife	X					
Present relationship between wildlife and human presence is conducive for wildlife sustainability		X				

**THEME: INTERPRETATION SERVICES AND EDUCATION (INT/EDU)**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Int/edu. are suitable mediums for communicating sustainability principles to users	X				
Present interpretation facilities not focused toward explaining sustainability	X				
Present focus is on explaining activities & programs and not on the relationship between users the park environment and those impacts generated		X			
Explanation of sustainability requires awareness of impacts (human-induced) on park environment	X				
Sustainability involves making users aware of thresholds of ecosystems to accommodate human use	X				
Explanation of awareness of the need for long term management of ecosystems	X				
Explanation to users of the necessity of restricting access to unique areas	X				
Recognition that sustainability involves the ecological, economic and social components of parks	X				
Education of users on the limits of environments to sustain particular activities	X				
Education of users of indicators of impacts/threats that could cause ecological damage	X				

**THEME: RESEARCH ISSUES**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Need for research to address balance between preservation interests and those that are development-oriented in nature if sustainability is to be realized	X				
Non human-oriented research need for focus on the nature of the resource base to cope with interference and overuse	X				
Research focus on only promoting better management of parks			X		
Research can assist measuring level of sustainability through long term monitoring & assessment of programs/activities	X				
Research viewed as having limited impact on parks and therefore little affect on the level of sustainability in parks			X		

**THEME: ABORIGINAL ISSUES/TRADITIONAL ACTIVITIES**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagree-ment (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Level of use of activities must remain within carrying capacity of each park	X				
Restricting the degree to which activities are undertaken is key management issue if sustainability is to be realized		X			
Awareness of the rights of aboriginals to engage in activities must be realized	X				

**THEME: DEVELOPMENT-ORIENTED INTERESTS**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagree-ment (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Parks play a key role in the economic development of surrounding areas	X				
The issue of the extent of development within parks is important in context of sustainability being realized	X				
Park town sites can be sustainable provided growth does not exceed physical & social carrying capacity	X				
Development of infrastructure (townsites) acceptable provided ecological integrity of parks is maintained over the long term			X		
Need for an emphasis on maintaining ecological integrity over promoting development if parks are to reach a sustainable state	X				

**THEME: RECREATION**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagree-ment (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Recreation represents one of the major trigger mechanisms for generating problems within parks	X				
Only low impact recreational activities should be promoted	X				
In context of sustainability recreational activities do NOT require re-evaluation			X		
Using quotas of # participating in activities to reduce environmental impacts and maintain carrying capacity	X				
Non exclusion of activities that can be provided outside of parks	X				
Exclusion from parks those activities that can be provided outside of parks			X		
Recreational activities perceived as unsuitable should be encouraged in neighboring areas	X				
All forms of recreation are acceptable provide they remain low in impact and #s			X		

**THEME: TOURISM**

**RESPONSE OF SUPERINTENDENTS**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
There is a need to understand impacts from tourism given increased visitor numbers	X				
Tourism should be promoted as it is an effective means of generating revenue			X		
Tourism impacts are limited given management decisions on controlling access to certain areas			X		
Parks should be viewed separately in terms of problems faced and possible solutions	X				
Function of tourism: satisfy the mandate of "enjoyment & benefit"	X				
Function of tourism: provision of employment for local area		X			
Function of tourism: generate capital for local areas, act as growth poles			X		
Function of tourism: provision of tourism facilities for a domestic and international market		X			
Function of tourism: provision of tourism opportunities within an pleasing setting	X				
Function of tourism: being a showcase for natural & cultural heritage of parks	X				
Sustainability in parks requires the following:					
- development (i.e. infrastructure) which is low in impact	X				
- development similar to what is now current			X		
- controlling tourists in fragile and unique areas	X				
- preventing visitors from encroaching in areas that require permits for access	X				
- tourism development which maintains ecological integrity of the landscape	X				
- allowing only tourism types which have low environmental impact	X				
- preventing the expansion of activities viewed as undesirable	X				
- encouraging development of small scale accommodation		X			
- focusing all forms of accommodation outside parks		X			
- tourism that places emphasis on economic benefits only			X		
- tourism types that have a positive economic, social & ecological component	X				
- tourism which remains viable over time	X				
- tourism which does not degrade the environment it is dependent on	X				
- tourism which alters the environment, but maintains its ecological integrity			X		
- tourism which is seen to have a symbiotic relationship with other park activities	X				

**THEME: MANAGEMENT PLANNING**

**RESPONSE OF SUPERINTENDENTS**

ISSUES/ASPECTS	Agreement (1) & (2)	Varied Response	Disagreement (4) & (5)	Academic Response (score 1-5)	Comments on variation of responses
Parks are sustainable provided they are efficiently and effectively managed	X				
Emphasis to maintaining ecological integrity viewed as positive management	X				
Presently, management is suited to understanding & implementing sustainable practices	X				
Parks as sustainable landscapes is an unrealistic goal			X		
Limited benefits have resulted from co-op arrangements with neighboring areas			X		
Greater co-operation required between parks & neighboring jurisdictions to address external influences	X				
Focus should be on managing/controlling threats present inside of parks rather than outside given lack of control over decisions in neighboring areas			X		
Regional conservation strategies as possible action to address external threats	X				
Monitoring park programs & activities through review of management plans & state of the parks reports	X				
Expansion of the role the public plays in management planning to one of active involvement in developing management programs		X			
Controlling change within parks by use of an Environmental Assessment & Review Process (EARP) that has legislative power	X				
Developing zones within parks based on the degree to which activities suit the resource base	X				
Development of a classification of parks (similar to provincial ones) which serve specific functions suited to their natural environment		X			
Parks can & should be examples of sustainable landscapes	X				
Park management that uses sustainability principles that account for economic, ecological and social considerations	X				

## SECTION 2: RESPONSE TO SUSTAINABILITY SPECTRUM AND TRADE OFF RELATIONSHIP BETWEEN PRESERVATION AND USE

In the original questionnaire an attempt was made to identify the extent to which themes were perceived as being sustainable. This spectrum addressed the perceived nature and level of sustainability possible for any given theme and was set up as follows with the following scores:

**1 = Unsustainability** (impacts and threats result in ecological damage of the various components within parks which cannot be corrected; the degree of negative impact (perceived) of development/use on the park environment is high).

**2 = Intermediate stage between conditional sustainability and unsustainability** (increasing stress placed on park systems; low tolerance present; impacts still perceived as negative, but no ecological damage occurs).

**3 = Conditional sustainability** (stress placed on the park environment by activities present; high tolerance within park systems; the degree of impact is limited and can be perceived as positive or negative).

**4 = Intermediate stage between sustainability and conditional sustainability** (limited stress placed on park environment, very high ecological tolerance within systems, the degree of positive impact (perceived) of development/use on the environment is low).

**5 = Sustainability** (minimal stress placed on the environment; degree of positive impact (perceived) of development/use on the environment is high; a symbiosis of development/use with nature is present).

Park superintendents were asked to make an assessment of the sustainability of themes based upon: (1) their knowledge and experience in parks, (2) the nature of their responses to the issues examined for each of the themes and (3) how well each theme measured up to the degree of importance they attached to the criteria of sustainability that were provided in the first section of the questionnaire itself.

Please score each of the following themes and activities on the above spectrum and comment in general on the scores you assigned and the extent to which they are similar or dissimilar to the park superintendents.

THEMES	Mean score (max =5)of respondents	Score of Academics	Comments by academics
Nature Preservation	3.40		
Wildlife	3.25		
Interpretation/education	3.15		
Research	3.60		
Aboriginal issues	3.09		
Development issues	2.37		
Management planning	3.59		

Undertake the same exercise for the following tourism types (definitions of each type are listed on page 2)

Tourism Types	Mean score (max =5)of respondents	Score of Academics	Comments by academics
Remote	4.21		
Mountain	4.18		
Cultural	3.80		
Winter/Ski	3.88		
Heritage	3.75		
Adventure	4.15		
Ecotourism	4.05		
Resort	3.22		
Organized Tours	3.60		
Mass/conventional	3.14		

Undertake the same exercise for the following recreational activities present in parks

RECREATION	Mean score (max =5)of respondents	Score of Academics	Comments by academics
Sky Diving	1		
Hang Gliding	1		
Heli-Hiking/Skiing	4		
Gliding	1		
Parascending	1		
Motorcycling	2.63		
Trail biking	3.18		
Cycling	3.82		
Hiking/walking	4.10		
Touring	4.18		
Picnicking	3.89		
Orienteering	3.38		
Golfing	2.12		
Tennis	3		
Horseback riding	2.33		
Downhill skiing	1.71		
Cross country skiing	3.94		
Recreational Snowmobiling	2.11		
Backpacking	3.76		
Guided nature touring	3.94		
Camping	3.29		
Mountaineering	3.90		
Recreational walking	4		
Visiting historic sites	4.15		
Ice skating	4.1		
View/photo plant/wildlife	4		
Diving	3.83		
Scuba Diving	3.25		
Snorkeling	3.71		
Swimming	3.90		
Canoeing	4.2		
Sailing	3.86		
Water/jet skiing	2.28		
Beachcombing	3.16		
Motor boating	3.16		
Fishing	3		
Clam digging	3.14		



### TRADE OFF BETWEEN USE AND PROTECTION

The last section of the questionnaire addressed the management issue of trade-off between preservation and use, an important element to be considered if parks are to achieve a sustainable state. A scale of 0 to 10 was used, with a 0 indicating a response of 0% interest for preservation while a 10 indicated 100 % interest for preservation. The following table lists the mean score for a number of park activities.

You are asked to score each park activity using the above mentioned scale (e.g. a score of 4 represents 40% focus on preservation [no development] and a 60 % focus on use [development]), and to comment on the variation in responses, indicating if it is lower or higher than expected or in the area you would have anticipated.

PARK ACTIVITIES	Mean score of respondents (0-10)	Suggested score by academics (0-10)	General comments on the trade off scores
Endangered species protection	8.2		
Mining	1.3		
Mechanized forms of recreation	5.8		
Tourism	5.8		
Eco-tourism	6.6		
Research	6.3		
Passive forms of recreation	6.0		
Traditional activities	5.4		
Lumber activity	1.1		
Nature reserve maintenance	5.6		
Wildlife protection	8.3		
Nature studies	7.2		
Interpretation & education	7.2		
Search & rescue operations	7.0		
Access & circulation maintenance	5.1		
Infrastructure for recreation/ tourism maintenance	5.4		
Disposal of waste	5.5		
Accommodation (front county) provision	5.2		
Accommodation (back country) provision	5.6		

**SECTION 3: RESPONSE TO THE NEW PARK POLICY**

Please answer the following few questions, circling your response.

- Q.1 Have you read and are you familiar with the new Parks Canada policy?      **Yes**              **No**
- If **Yes**, do you think it represents a significant (in your mind) shift in focus      **Yes**              **No**
- If **Yes**, is the shift towards      **1. Development**      **2. Sustainability**      **3. Ecological Integrity/ Preservation**

Please comment on your response.

Q. 2 Is there anything in the new Policy which you think is in conflict with any of the opinions expressed in the responses summarized above? If so, please elaborate?

For the purpose of recording responses could you please state your name if you removed the introductory letter. Your comments will remain confidential. I require a means of knowing who has and has not replied by the above date.

Name: \_\_\_\_\_

That completes the survey. I want to thank you for taking the time to answer the questions. It was very much appreciated. Please place responses in the stamped addressed envelope provided to the address stated by November 15th. Thank you for your assistance with this research.

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