

An Examination of Visitor Management Issues
Within the Broken Group Islands,
Pacific Rim National Park Reserve

By


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B.Trmt., Malaspina University College, 2000

A Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of

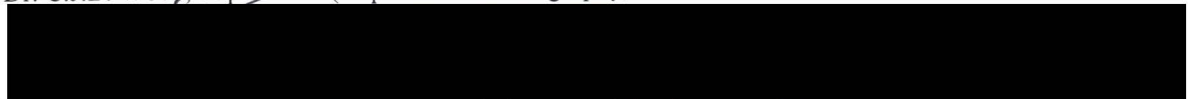
MASTER OF ARTS

In the Department of Geography

We accept this thesis as conforming
to the required standard



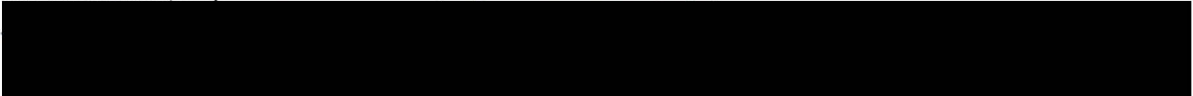
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Abstract

This study examined visitor management issues in the Broken Group Islands, Pacific Rim National Park Reserve (PRNPR). Effective visitor management becomes increasingly important given the growth of tourism and recreation within parks and protected areas coupled with the central position of the maintenance of ecological integrity as the National Parks mandate. As a result of excessive visitor use, problems such as crowding and overharvesting of resources are evident in many of our National Parks, and in particular the Broken Group Islands, PRNPR. However, ecological integrity is affected not just by levels of visitor use, but also by visitors' attitudes and beliefs and levels of knowledge. Compounding this concern for ecological integrity is the significant lack of information on both visitors in general and kayak tourism in particular.

The overall purpose of this exploratory study was to gain an understanding of protected area visitor management within the Broken Group Islands, (PRNPR) by examining three identified issues: (1) the role of commercially guided kayak tourism in the delivery of National Park messages; (2) visitor attitudes towards a voluntary no fishing policy in place to protect declining rock fish populations; and (3) managing for visitor crowding. A multiple method approach included a focus group, structured questionnaire and participant observation techniques to gather data. The focus group was used primarily as tool to assist in the development of the structured questionnaire. The questionnaire was designed to gain an understanding of the demographics of marine-based tourists, levels of recreation specialization, satisfaction, attitudes, beliefs and knowledge levels and was administered pre and post trip to 699 kayak visitors. The participant observer method allowed for in-field observations of the role of the guide in influencing guided visitors' learning, attitudes and behaviour.

Results of the study provided baseline data on visitor characteristics, use of the islands and activities engaged in. The results also suggest that these visitors cannot be considered homogenous, but vary in a number of ways, notably in terms of recreation specialization. Recreation specialization can be

viewed as a continuum of behaviour from the generalist (novice) to the specialist (expert), as reflected by differing levels of skills, experience, equipment and psychological involvement in the activity. Findings indicate that approximately one quarter of visitors are highly specialized, or specialists and three quarters can be considered generalists or low specialized.

Results reveal differences between generalists and specialists: generalists have lower knowledge levels of National Park messages and are less supportive of the voluntary no fishing policy than specialists. Findings also indicate that specialists are more sensitive to crowding and appear to value solitude and the absence of others more highly than generalists.

An examination of the role of the commercial guide reveals differences between guided and non-guided visitors in terms of knowledge of National Park messages. This finding suggests that the guide may have an influential role in guided participants' learning experience. Given that many visitors to the area are generalists, the role of the tour guide becomes critical for improving the understanding of heritage messages and modeling and shaping appropriate behaviour and values of the guided visitor. However, analysis of the role of the guide suggests that while kayak tour guides perform highly in instrumental and interactionary roles, they have yet to perform their communicative, environmental interpreter and motivator of responsible environmental behaviour roles to the level desired or expected by tour participants.

The intent of this thesis was not to advance theories in recreation literature, but to draw on theories as a conceptual framework for understanding the issues identified in this study. To understand visitor beliefs and attitudes towards the voluntary no fishing policy, Ajzen and Fishbein's (1980) Theory of Reasoned Action was adopted. Crowding issues were examined using an approach to normative theory based on the work of Jackson (1965) (Vaske et al 1986). Analysis of the guides' role was examined using Cohen's model (1985). Specialization theory based on the work of Bryan (1977) was adopted as a way to examine variability of visitor beliefs and attitudes. While these theories have been applied individually in recreation literature, the combination of the theories to examine visitor management issues is somewhat unique. For example, while the Theory of Reasoned Action has been adopted to examine visitor attitudes in recreation research, it is rarely applied in combination with specialization theory.

Overall, results confirm the need to consider visitors' attitudes, values, beliefs and behaviours, as well as contributions from commercial tour operators, in managing for the protection of ecological integrity within National Parks. Recommendations that contribute to improved visitor management are provided.

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Table of Contents

	Page
Abstract	ii
Table of Contents	v
List of Tables	vii
List of Figures	ix
Acknowledgments	xi
Chapter 1: Introduction	1
1.1 Study overview	1
1.2 Thesis Structure	4
1.3 Study Area: Broken Group Islands, Pacific Rim National Park Reserve	4
1.3.1 The Setting	4
1.3.2 Issues explored within the Broken Group Islands	9
1.4 Conceptual Framework	10
1.4.1 Dependent variables	10
1.4.1.1 Knowledge of National Park Messages	10
1.4.1.2 Attitude to Voluntary No Fishing Policy	11
1.4.1.3 Normative Acceptability of Social Conditions and Setting Preferences	13
1.4.2 Independent variables	16
1.4.2.1 Recreation Specialization	16
1.4.2.2 Experiential Effects (Pre and Post Design)	18
1.4.2.3 Effect of a Guide	19
1.5 Nature of the Study	21
1.5.1 Purpose	21
1.5.2 Research Objectives	21
1.6 Methodology	22
1.6.1 Research Design	22
1.6.2 Research Methods	22
1.6.3 Questionnaire	22
1.6.3.1 Rationale	22
1.6.3.2 Design	23
1.6.3.3 Sampling Design	25
1.6.3.4 Analysis	27
1.6.3.5 Limitations	28
1.6.4 Focus Groups	29
1.6.4.1 Rationale	29
1.6.4.2 Design	30
1.6.5 Participant Observation	31
1.6.5.1 Rationale	31
1.6.5.2 Researchers Role	32
1.6.5.3 Analysis	33
1.6.5.4 Verification	33
1.6.5.5 Limitations	34
1.6.5.6 Ethical Considerations	34
1.7 The Geographic Focus	35
1.8 Chapter Summary	36

Chapter 2: Recreational Use of the Broken Group Islands	37
2.1 Introduction.....	37
2.2 Literature Review	38
2.3 Methodology	43
2.4 Results.....	46
2.5 Conclusions	79
Chapter 3: Interpretation and Role of the Guide within the Broken Group Islands	83
3.1 Introduction.....	83
3.2 Literature Review	84
3.3 Methodology.....	91
3.4 Results.....	94
3.5 Conclusions.....	111
Chapter 4: Determining Attitudes toward the Voluntary No Fishing Policy	116
4.1 Introduction.....	116
4.2 Literature Review	117
4.3 Methodology.....	124
4.4 Results	129
4.5 Conclusions.....	142
Chapter 5: Perceived Crowding in the Broken Group Islands	146
5.1 Introduction.....	146
5.2 Literature Review	149
5.3 Methodology.....	158
5.4 Results.....	165
5.5 Conclusions.....	187
Chapter 6: General Conclusions, Implications and Recommendations	194
6.1 Introduction.....	194
6.2 Summary of Key Findings	195
6.2.1 Chapter 2: Recreational Use of the Broken Group Islands	195
6.2.2 Chapter 3: Interpretation and Role of the Guide.....	197
6.2.3 Chapter 4: Determining Attitudes Towards the Voluntary No Fishing Policy	198
6.2.4 Chapter 5: Perceived Crowding in the Broken Group Islands.....	199
6.3 Management Implications.....	200
6.4 Recommendations.....	202
Literature Cited.....	208
Appendix 1: Definitions	221
Appendix 2: Pre and Post Surveys	223
Appendix 3: Human Subjects Review Certificate of Approval.....	258
Appendix 4: Voluntary Letter of Participation	259
Appendix 5: Detailed Raw Data Tables	263
Appendix 6: Open-ended Questionnaire Comments	281

List of Tables:	Page
Table 1.1	Sample Size by Group.....26
Table 1.2	Schedule of Trips, Group Size and Composition31
Table 2.1	Sample Size by Group.....46
Table 2.2	Origin of Visitor48
Table 2.3	Nights Spent.51
Table 2.4	Islands Visited.....51
Table 2.5	Activities Engaged In.....52
Table 2.6	Trip Type by Location.....53
Table 2.7	First Time and Repeat Visitation to the Broken Group Islands.....55
Table 2.8	Reliability of Likert Scale Measuring Enduring Involvement of Kayakers58
Table 2.9	Attributes of the Role of the Guide65
Table 2.10	Reliability of Importance Attributes of Role of the Guide Scale66
Table 2.11	Reliability of Performance Attributes of Role of the Guide Scale66
Table 2.12	Reliability of Likert Scale Measuring Strength of Voluntary No Fishing Policy Beliefs71
Table 2.13	Levels of Acceptability Regarding Numbers of Other Kayakers Encountered.....75
Table 2.14	Levels of Acceptability Regarding Numbers of Other Motorboats Encountered.....77
Table 2.15	Levels of Acceptability Regarding Numbers of Tents at Campsites78
Table 3.1	Sample Size by Group.....92
Table 3.2	Dimensions and Variables Incorporated into Specialization Index.....94
Table 3.3	Assigned Levels and Values for Specialization Variables95
Table 3.4	Comparison of Correct Quiz Responses by Pre and Post Trip98
Table 3.5	Pre and Post Computed Learning Scores by Group99
Table 3.6	Importance-Performance Mean Values and Standard Deviation101
Table 4.1	Sample Size by Group.....125
Table 4.2	Assigned Levels and Values for Specialization Variables128

Table 4.3	Standardized Regression Coefficients (Beta) and Multiple Correlation of Dependent Variable (Intention) and Independent Variables (Attitude and Subjective Norm) for Pre and Post Trip, Pre and Post Participant Observation, Non Guided and Guided, Low and High Specialized, and Total Sample.....	131
Table 4.4	Attitude Toward Voluntary No Fishing Policy by Group	134
Table 4.5	Perceptions about Voluntary No Fishing Policy if Opposed/Supportive	136
Table 4.6	Intentions to Support Voluntary No Fishing Policy by Group	139
Table 5.1	Sample Size by Group.....	160
Table 5.2	Assigned Levels and Values for Specialization Variables	164
Table 5.3	Level of Perceived Crowding by Level of Specialization.....	167
Table 5.4	Characteristics for Social Norm Curves for the "Number of Kayakers" Indicator For Low and Highly Specialized Groups	176
Table 5.5	Characteristics for Social Norm Curves for the "Number of Motorboats" Indicator For Low and Highly Specialized Groups	179
Table 5.6	Characteristics for Social Norm Curves for the "Number of Tents" Indicator for Low and Highly Specialized Groups.....	182
Table 5.7	Relationship between Guided and Non Guided Visitors and Acceptability of Other Kayaks, Motorboats and Tents.....	183
Table 5.8	Correlation Between Density in Photographs and Acceptability	184
Table 5.9	Summary of Characteristics and Standards for Social Norm Curves for the Indicators Number of Kayaks, Motorboats and Tents	188

List of Figures	Page
Figure 1.1 Regional Location of Broken Group Islands.....	5
Figure 1.2 Zoning Plan for Broken Group Islands	7
Figure 1.3 Map of Access Points to Broken Group Islands.....	8
Figure 1.4 Theory of Reasoned Action: Factors determining a person's behaviour	12
Figure 1.5 Schematic Representation of the Principal Components of the Role of the Guide	20
Figure 2.1 Visitor Age.....	49
Figure 2.2 Group Size.....	50
Figure 2.3 Years Involved in Kayaking.....	56
Figure 2.4 Level of Experience	56
Figure 2.5 Level of Involvement of Kayakers.....	59
Figure 2.6 Visitor Perceptions of Management Aspects "Source Satisfaction"	60
Figure 2.7 Visitor Perceptions of Management Aspects "Global Satisfaction".....	61
Figure 2.8 Satisfaction with Learning Experience	62
Figure 2.9 Perceptions of Park Messages	63
Figure 2.10 Total Scores on Learning Quiz of the Broken Group Islands	63
Figure 2.11 Importance of the Role of the Guide	67
Figure 2.12 Performance of the Role of the Guide.....	68
Figure 2.13 Theory of Reasoned Action: Factors Influencing a Persons' Behaviour	69
Figure 2.14 Voluntary No Fishing Policy Beliefs in the Broken Group Islands	70
Figure 2.15 Support for the Voluntary No Fishing Policy.....	72
Figure 2.16 Encounters Experienced with Others	73
Figure 2.17 Levels of Crowdedness on the Water and in the Campsites.....	74
Figure 3.1 Schematic Representation of the Principal Components of the Role of the Guide	87
Figure 3.2 Relationship of User Specialization and Site Evolution	89
Figure 3.3 Specialization of Guided and Non-Guided Visitors	96
Figure 3.4 Importance-Performance Grid for Role of the Guide.....	104

Figure 3.5	Importance-Performance Grids for Role of the Guide by Sphere and Dimension	105
Figure 3.6	Representation of the Roles of the Tour Guide in nature based tourism.....	111
Figure 4.1	Theory of Reasoned Action: Factors Determining a Person's Behaviour	119
Figure 4.2	Relationships among Beliefs, Attitude, Normative Beliefs, Intention Using the Theory of Reasoned Action	129
Figure 5.1	Levels of Crowdedness on the Water and in the Campsites.....	166
Figure 5.2	Example and Characteristics of Social Norm Curve	169
Figure 5.3	Example of a No Tolerance Norm	170
Figure 5.4	Example of Multiple Tolerance Norm	170
Figure 5.5	Social Norm Curve for Density of Kayaks.....	172
Figure 5.6	Social Norm Curve for Density of Kayaks by Specialization	175
Figure 5.7	Social Norm Curve for Density of Motorboats	177
Figure 5.8	Social Norm Curve for Density of Motorboats by Specialization.....	178
Figure 5.9	Social Norm Curve for Density of Tents.....	180
Figure 5.10	Social Norm Curve for Density of Tents by Specialization	181
Figure 6.1	Relationship of User Specialization and Site Evolution	201
Figure 6.2	Recreation Management Framework for Broken Group Islands, Pacific Rim National Park Reserve	203

Acknowledgments

The completion of this research is due to the assistance of a number of individuals and organizations, whose contributions I would like to acknowledge.

My sincere thanks and gratitude to Dr. Rick Rollins for his support, insightful suggestions and guidance throughout this study. I am also sincerely grateful to Dr. Colin Wood for his constructive comments and insight during all stages of this project. My thanks also to Dr. Phil Dearden and Dr. Doug Nichols for their perceptive contributions and valuable input particularly in the planning stages of this project.

Financial assistance received from PADI of Project Aware Foundation and the University of Victoria Fellowship eased the financial burden associated with field work and is greatly appreciated.

Tour operators that invited me to join them on their trips to facilitate my research are owed a debt of gratitude. Thank you to Majestic Ocean Kayaking, Pacific Northwest Expeditions, Into the Current Kayaking and Gabriola Cycle and Kayak. Without these operators, the participant observation component of my study would have not been successful. Thank you also to Lady Rose Marine Services for passage on the Frances Barkley ship and allowing me to interview their passengers.

Finally, thank you to my family and friends, and particularly my partner Fred whose unwavering support, encouragement and understanding motivated me to complete this study.

Chapter 1: Introduction

1.1 Study Overview

One of the most pressing problems within National Parks and protected areas today is how to cope with the burgeoning number of visitors seeking recreation in natural environments (Sowman & Pearce 2000). This continuing growth in visitor demand in National Parks has given rise to an ever-increasing need for appropriate and effective visitor management (Sowman & Pearce 2000). However, there is a widespread lack of even basic data on the human dimensions of visitor use, impacts of visitor use, visitor knowledge about National Parks and similar use related issues to inform visitor management strategies (Parks Canada Agency 2000 11-4). The question of how to manage visitor use is further complicated by Canada's National Parks legislative mandate of protection of natural resources, or "ecological integrity" (Wright & Rollins 2002).

Since the inception of Canada's first National Park in 1885, Banff National Park, the economic value of parks as places of recreation and tourism values overshadowed the need to preserve wilderness. In 1930, Canada's first National Parks Act established that parks were "dedicated to the people of Canada for their benefit, education and enjoyment and such parks shall be maintained and made use of so as to leave them unimpaired for the benefit of future generations", emphasizing a dual mandate of recreation and protection (McNamee 2002 :30). However, increasing pressures from commercial activities within National Parks sparked growing public concern about the primary role of National Parks. Today, ecological integrity is fundamental to Canadian National Parks. Within the Canada National Parks Act ecological integrity means "with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes" (Government of Canada 2000). The 1988 amendments to the National Parks Act firmly centered the ecological mandate: "maintenance of ecological integrity through the protection of natural resources shall be the first priority when considering Park zoning and visitor use in a management plan" (Government of Canada 2000). Evolution to policy and the passing of the new Canada's National Parks Act focuses ecological integrity as a prerequisite to use, challenging parks managers in determining where, what type and how much use should be allowed in order to provide "use so as to leave them unimpaired" (Wright & Rollins 2002).

The 1997 State of the Parks Report (Parks Canada 1998) listed a number of internal and external stresses that have compromised the ecological integrity of Canada's National Parks, among these are excessive visitor use, tourism development and resource extraction, raising the question of what is allowable and appropriate use within our parks. As a result, a number of compelling issues face park managers including: visitor crowding in wilderness areas, depletion of natural resources such as fish stocks, and the role of interpretation in shaping visitors attitudes and behaviours within National Parks.

With over 84% of Canadians over the age of 15 participating in one or more nature-related activities (Environment Canada 1999), one of the most rapidly advancing tourism segments includes those activities that are dependent on natural environments (Ewert & Shultis 1997). Within the umbrella of nature-based tourism is the phenomenon of marine tourism, its growth surpassing the general tourism sector and considered the fastest growing segment of the ocean industry (West 1990; Orams 1999). Much of this tourism industry is staged in our parks and protected areas (Buckley & Pannell 1990; Eagles 2001). Although National Parks were created for the "benefit, education and enjoyment" of the people of Canada, and are and will continue to be places for people to visit (Parks Canada Agency 2000), the challenge created by increasing numbers of visitors and tourism growth is to manage use while protecting natural resources. In order to protect ecological integrity, human use in National Parks must be based on the principle of responsible experience: use without abuse, and be subject to the tests of allowability and appropriateness of use and levels of use (Parks Canada Agency 2000). Parks Canada's actions on the subject of allowable and appropriate use are inconsistent with protecting ecological integrity, largely due to a lack of research on the impacts of visitor use (Parks Canada Agency 2000). Excessive levels of visitor use within National Parks have resulted in crowding. "Crowding" is based on the notion that there is some level of visitor use where the visitor experience diminishes, and is a concern widely shared by visitors and managers alike (Manning 1999). As the goal of management is to provide quality recreation experiences, managers must decide what to do when faced with crowding to achieve their park management objectives of protection.

The second issue centres on resource harvesting, ranked highly among the internal and external stresses that have compromised the ecological integrity of Canada's National Parks. While most Canadians assume National Parks are protected from harvest, in reality most parks have some kind of active harvest.

The most common type of extraction is sport fishing, with twenty-two parks reporting a sport fishing harvest (Woodley 2002). The Panel on Ecological Integrity noted that "recreational harvest of native fish in National Parks is an anomaly and is inconsistent with protection of ecological integrity (Parks Canada Agency 2000 :5-11). Further, the panel reported that sport fishing is negatively affecting fish populations in 19 parks (Parks Canada 1998).

Ecological integrity is affected not just by the impacts of particular activities or particular levels of use, but also by the attitudes, values, beliefs and behaviours of parks visitors, regional communities, business, government and park partners (Parks Canada Agency 2000 11-2). Interpretation plays an essential role in educating visitors about ecological integrity and shaping their attitudes, values, beliefs and behaviours, both inside and outside of National Parks (Parks Canada Agency 2000 :11-2). While the Ecological Integrity Report (Parks Canada Agency 2000) provides many recommendations for managing park stresses, of interest here is the recommendation that interpretation is a vital role of parks and needs reviving. However, with budget cuts, interpretive and education services have been reduced to an inadequate level leaving Parks Canada unable to serve its target audiences (Parks Canada Agency 2000). As a result, changes to management have occurred: contracting out of services and allowing concessionaires to play a larger role in parks such as increasing the role of the private sector in interpretation delivery (Roggenbuck, Williams et al. 1992; Butler & Hvenegaard 2002). Given the increasing levels of tourism within National Parks, Orams (1999) reminds us that: "commercial operators must see their responsibilities as extending beyond making a profit. They must see their role as one of contributing to the health and viability of the resource upon which the livelihood of their business depends" (Orams 1999 :86). Tour guides are considered an integral element in facilitating positive social and environmental encounters between the visitor and the visited (Weiler & Davis 1993; Gurung, Simmons et al. 1996; Butler & Boyd 2000). Recognizing the value of tour guides as information conduits, Parks Canada recommends working in collaboration with tourist operators to provide information with a strong ecological integrity focus (Parks Canada Agency 2000). However, not only is there a lack of research on visitors' existing level of knowledge about National Parks (Parks Canada Agency 2000), few studies have examined the roles and effectiveness of the tour guide in information delivery, particularly within a National Park setting.

Increases in tourism and recreation within National Parks have created challenges for managers in providing a quality visitor experience while assisting in the protection of park natural resources. Given this context, three issues guide this study: crowding and managing for a quality visitor experience, resource harvesting in a National Park and visitors' knowledge of heritage messages and the role of the guide in facilitating interpretation.

1.2 Thesis Structure

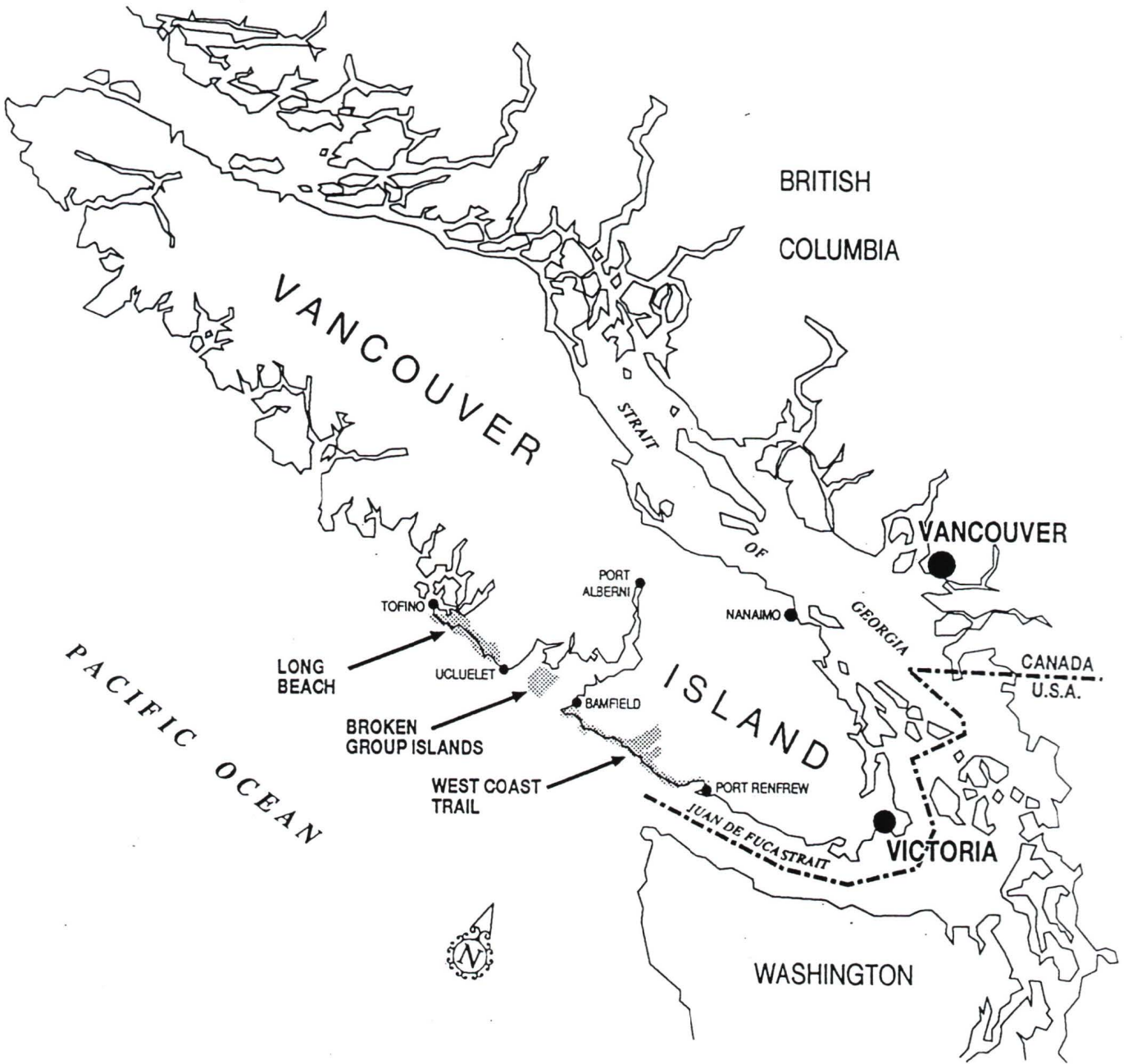
This thesis focuses on three discrete, but related ideas relevant to National Park visitor management. To aid the reader, these three ideas or subcomponents have been organized as individual chapters. Thus this thesis is organized into six chapters. Chapter 1 provides an overview of the nature and purpose of the study, the setting, conceptual framework and methodology. Chapters 2 through 5 focus on the major dimensions of the research and are structured as subcomponent chapters, each with literature review, methodology, results and discussion. Chapter 2 "Recreational Use of the Broken Group Islands" provides descriptive results of the study. Chapter 3 "Interpretation and Role of the Guide within the Broken Group Islands" focuses on levels of visitor knowledge of heritage messages and the role of the guide in facilitating interpretation. Chapter 4 "Determining Attitudes Towards the Voluntary No Fishing Policy in the Broken Group Islands" examines visitors attitudes, beliefs and intentions to support the voluntary policy. Chapter 5 "Perceived Crowding in the Broken Group Islands" examines crowding issues applying the normative theory framework. Finally, Chapter 6 summarizes general and specific findings and discusses implications for park management. This thesis contains a number of common terms, such as "crowding" that have a technical meaning within recreation research literature. For clarity, these terms are defined in Appendix 1 List of Definitions.

1.3 Case Study: The Broken Group Islands

1.3.1 The Setting

The Broken Group Islands, the popular multi-use marine component of Pacific Rim National Park Reserve (PRNPR) is bounded by the Long Beach and West Coast Trail components of the park, on the west coast of Vancouver Island (Figure 1.1). The Broken Group Islands (BGI) an archipelago of more than one hundred islands and rocks, covers an area of 10,607 hectares of which 1,350 are land and the remainder comprise waters of the Pacific Ocean (Parks Canada 1994).

Figure 1.1 Regional Location of Pacific Rim National Park Reserve



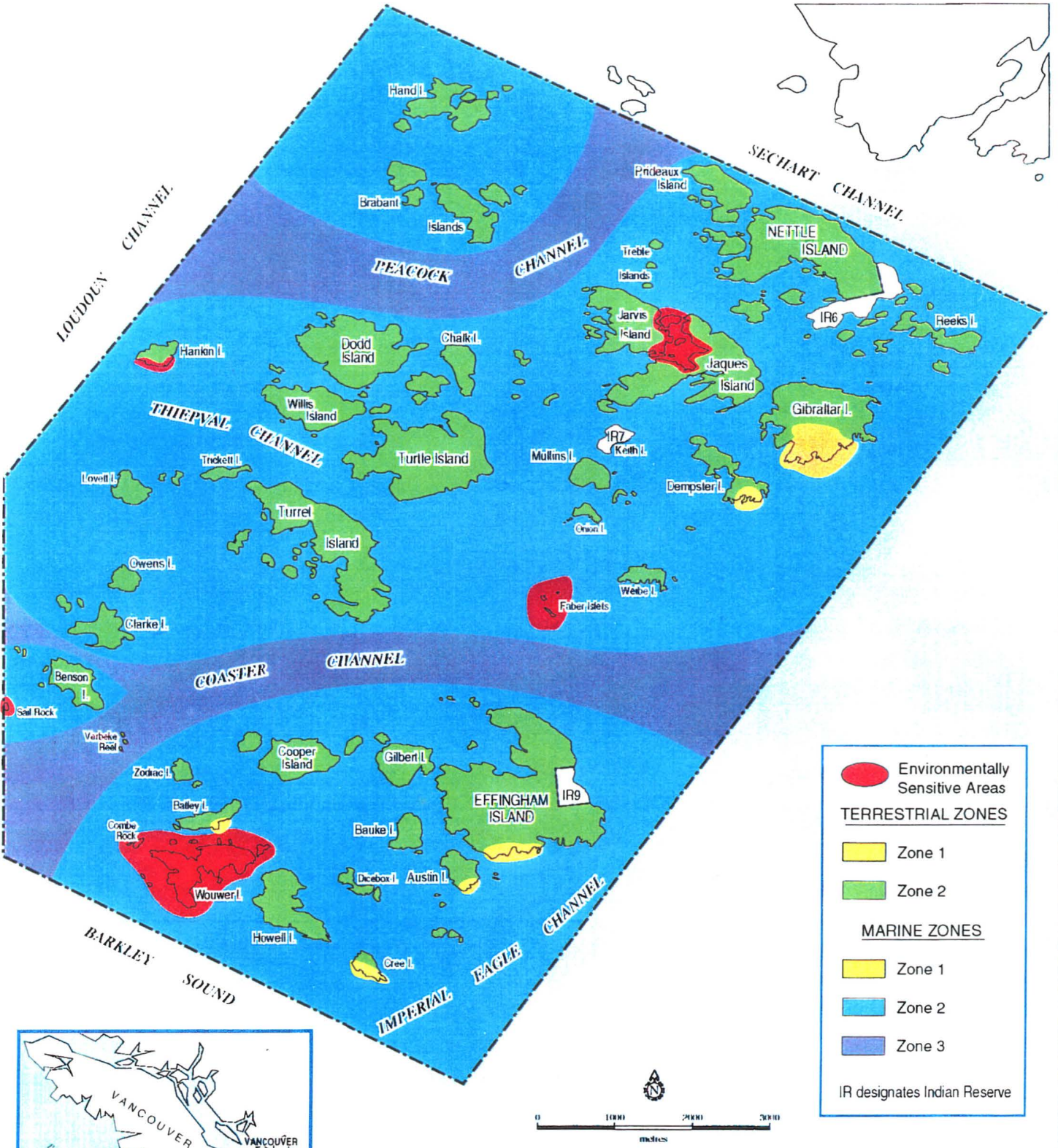
SOURCE: Canadian Heritage, Pacific & Yukon Region (1994)

The BGI represent the coastal interface of land, air and water, resulting in a physically and biologically diverse coastal zone environment (Cochlin 1993). Beyond the maze of protected bays and waterways characteristic of the more central islands, the outermost islands of the BGI are fully exposed to the Pacific Ocean. This rich and diverse environment supports growth of Sitka Spruce, Western Hemlock and Western Red Cedar providing habitat for deer, mink, eagles and many other wildlife species (Parks Canada 2002). The waters of the BGI support an abundance of fish, marine invertebrates, sea birds and marine mammals, such as grey and humpback whales and the occasional orca (Cochlin 1993).

This rich diversity has attracted and supported many: the people of the Nuu-chah-nulth First Nations have lived along this coastline and amongst these islands for centuries leaving a rich history and an abundance of archaeological treasures. Their traditional territories encompass the BGI with many of the islands containing sites of great spiritual and cultural significance for the Toquaht, Tseshaht and Hupachesaht First Nations (Parks Canada 2002) (for a history of Barkley Sound see Scott 1972).

While the BGI are largely viewed as "an add-on to the terrestrial park program with a minimal marine preservation mandate", zoning plans are in place that define and map the different levels of protection and use (Dearden 2002 :359). Three zones demarcate the recreational opportunities: Zone 1: Preservation allows no recreation; Zone 2: Natural Environment allows non-consumptive recreation use; and Zone 3: Conservation offers a broad spectrum outdoor recreation opportunities (Parks Canada 1994). The BGI Zoning Plan (Figure 1.2) delineates the three marine zones offering protection to sensitive seabird colonies under Zone 1 and opportunities for recreation in Zones 2 and 3, encompassing the majority of the park. Wouwer Islands, a sea lion haul out, Jacques and Jarvis Lagoons and Faber Islets are recognized as environmentally sensitive areas that can "accommodate some levels of controlled visitor activity without jeopardizing resource values" (Parks Canada 1994); however efforts to control visitor access to these areas is not evident.

The BGI, rich in both natural and cultural heritage offer a variety of marine-based experiences: sportfishing, scuba, kayaking, canoeing, sailboating, and motorboating attracting many visitors. Findings of a 1995 survey suggest that 65% of park visitors travel by kayak, 11% by canoe, 13% by sailboat, 11% by motorboat (Rollins 1995 Unpublished Report). Of campsite users, canoe and kayak paddlers collectively



BROKEN GROUP ISLANDS ZONING PLAN

accounted for 94% of permitted campers (Parks Canada 1994). To accommodate visitors, there are eight designated camping areas in the BGI within National Park boundaries, located on Hand, Dodd, Willis, Turret, Clarke, Benson, Gilbert, and Gibraltar Islands (Figure 1.2). However from 1999 to 2001, archaeological digs took place on Benson Island closing the island to camping. All island visitors must camp in these designated campsites, camping elsewhere is prohibited by regulation. Campsites are small and visitors are asked to practice low impact camping techniques and be campfire free (Parks Canada 2002). Regulations currently in place to manage visitor use include a maximum campsite stay on each island of four days, maximum group size of 10 people and a maximum two-week stay. Despite high use volumes and signs of stress, there are presently no personal interpretive programs. Non-personal interpretation consists of information on the reverse side of the nautical chart for the area #3670 and inconsistent on-site signage.

Visitors access the Broken Group Islands primarily two ways: Toquart Bay and Sechart Whaling Station (Figure 1.3). Toquart Bay, a Provincial Forest Service Recreation Site is accessed via a 20 kilometre logging road off highway 4 and is used as a primary launch point into the BGI. Sechart Whaling Station, privately owned and operated by Lady Rose Marine Services is a lodge and kayak rental business located outside the park boundary, also serves as a primary launch site into the islands. Two ships, the MV Lady Rose and the Frances Barkley provide overnight lodge guests and kayakers with round-trip transportation up to four times weekly from Port Alberni to Sechart Lodge from June to September.



Figure 1.3 Adapted from Source:
<http://www.vancouverisland.com/maps/pacrimwestcoast.html>

1.3.2 Issues explored within the Broken Group Islands

The rich and diverse environment of this west coast park attracts many visitors. PRNPR hosted approximately 645,000 visitors in 2002 (Parks Canada 2002) an increase of 15% from 1997. This popularity is echoed in the findings of the State of the Parks 1997 Report, rating PRNPR severely stressed from cumulative impacts and significantly stressed from internal sources (Parks Canada Agency 2000 :1-9). Substantial increases in the popularity of coastal cruising, canoeing and kayaking have put additional pressures on the BGI and the wilderness values of this environment are showing distinct signs of stress (Parks Canada Agency 1994). Overnight visitation levels in 1992 were estimated at 20,900 visitor nights, of which 13,600 were camper nights plus 7,300 visitor nights moored in vessels representing a 139% increase over the 1986 figure of 5,694 visitor nights (Cochlin 1993; Parks Canada 1994 :10). Currently, camper nights have peaked at approximately 13,000 (D. Vedova, pers. comm., April 2001).

A further concern with high use levels and park stress is the erosion of the visitor experience. Currently, the Broken Group Islands are managed for a backcountry, wilderness experience, affording those who visit opportunity for solitude (Parks Canada 1994). However, in a recent visitor survey of the area, visitors responded that "other people" and "motorized boats" detracted from their experience (Rollins & Randall 2001 Unpublished Report). In addition to social impacts, current levels of use are having an ecological impact. The campsites of the BGI are suffering obvious signs of overuse, and illegal camping is occurring, at least partially, as a response to overcrowding and the deteriorating condition of existing sites (Parks Canada 1994). Therefore, *a major issue within the Broken Group Islands is how to manage for quality visitor experiences while protecting natural resources.*

As a result of increased interest and growth of ecotourism within parks and protected areas, the BGI is witnessing growth in commercial tourism operations. A Parks Canada's visitor survey conducted in 2000 revealed that approximately 40% of kayak visitors traveled with a commercial guide or outfitter (Rollins & Randall 2001 Unpublished Report), an apparent increase from the 1995 results indicating 12% of all Broken Group Island visitors traveled with a guide (Rollins 1995 Unpublished Report). Because tour guides can mediate the experience of contact between tourist and site, their role in the mitigation of tourism impacts is especially important (Weaver 2000). However, at the time of this study, there were no standards developed to guide commercial tourism and the delivery of National Park messages within the BGI.

Therefore, an issue within the BGI is the need to understand the role of the commercial kayak guide specifically in facilitating interpretation.

A third issue within the BGI is protecting fish stocks through the potential closure of the marine protected area to fishing. The BGI are situated within a popular fishing area, as Barkley Sound witnessed an 83% increase in fishing over a five-year period, from 1987 to 1991 (Cochlin 1993 :27). Further, the results of a 1989 BGI visitor survey prepared by the Department of Fisheries and Oceans suggests that 61% of campers and 83% of private boaters participate in fishing activities (Cochlin 1993 :27). As a result, very high levels of backcountry use coupled with recreational fishing have threatened local populations of rock cod (Parks Canada Agency, 2000). Of the many possible approaches to resource management, a Voluntary No Fishing Policy has been adopted for the BGI. Critical to the success of a voluntary resource management approach is visitor support (Gubbay & Welton 1995). *Therefore, an issue in the BGI is the need to determine visitor support of the voluntary no fishing policy.*

1.4 Conceptual Framework

1.4.1 Dependent Variables

The conceptual framework for this study is structured by three dependent variables: knowledge of National Park messages, attitude towards the voluntary no fishing policy (VNF) and normative acceptability of social conditions and setting preferences.

1.4.1.1 Knowledge of National Park Messages

The role of education is well established in legal and policy documents as the National Parks Act states that National Parks are for the "benefit, education and enjoyment" of the people of Canada. The delivery of interpretation and National Park heritage messages is increasingly important given the evolution of the legislation and policy strengthening the mandate of ecological integrity.

It is well understood that increased visitor levels of understanding and appreciation of National Park values assists in the maintenance and protection of the ecological, educational and cultural values of parks (Parks Canada 1994). In response, National Parks Policy clearly established goals and methods of interpretation and education, specifically stating that programs will be made available to encourage and assist visitors in "understanding, appreciating, enjoying and protecting their National Parks" (Parks Canada 1994; Butler & Hvenegaard 2002). Therefore, educating visitors about ecological integrity plays a critical

role in "shaping visitor attitudes, values, beliefs and behaviours within National Parks" (Parks Canada Agency 2000 :11-2).

Increasing use levels in National Parks (Butler & Boyd 2000), coupled with cuts to interpretation staff and budgets have resulted in many parks lacking adequate personnel and management resources to provide sufficient interpretive services (Boo 1990; Parks Canada Agency 2000). Within our National Parks, Parks Canada is currently not well positioned to serve its target audiences in terms of its educational role (Parks Canada Agency 2000). Despite its central and critical position within National Parks, interpretive aspects within Canada's National Parks have been allowed to fall into disrepair (Dearden & Rollins 2002). Given the support of education as a management strategy, there is recognition of a lack of research on visitors' existing level of knowledge about National Parks (Parks Canada Agency 2000). Therefore, this study examines visitors' level of knowledge about National Park heritage messages to provide baseline information to park managers.

1.4.1.2 Attitudes Toward the Voluntary No Fishing Policy (VNF)

Given that the support of park users is critical to the success of a voluntary approach to resource management, understanding user attitudes towards and beliefs underlying a voluntary policy is particularly important. This study applied the Theory of Reasoned Action (Ajzen & Fishbein 1980) as a framework to explore the relationship between behaviour, attitudes and beliefs and ultimately to inform management interventions aimed at influencing visitor attitudes and behaviours. The model (Figure 1.4) proposes that behaviour can be predicted from the intention that corresponds directly to the target behaviour as the theory assumes that most "socially relevant human behaviours are under volitional control and, therefore, that the most immediate determinant of any given behaviour is the intention to perform or not perform the behaviour" (Fishbein & Manfredo 1992 :33). In addition to predicting behaviour from intention, the theoretical model can be used as a framework for understanding *why* people intend to behave a certain way (Fishbein & Manfredo 1992).

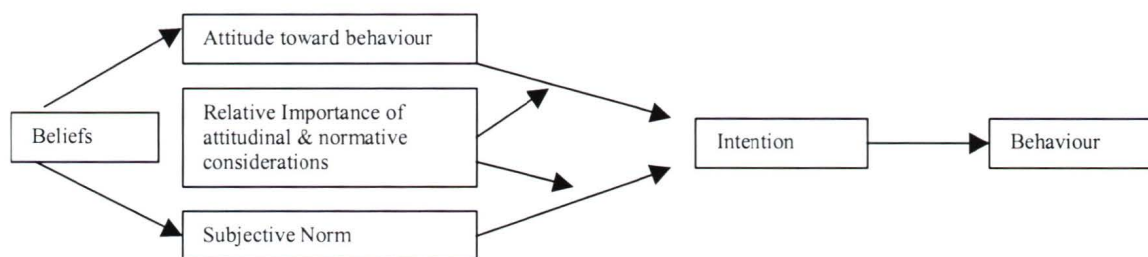


Figure 1.4 Theory of Reasoned Action: Factors determining a person's behaviour (Ajzen & Fishbein 1980 :8)

According to the Theory of Reasoned Action, a person's behavioural intention is a function of two major factors: an attitudinal component and a social or normative component. The attitude toward the behaviour refers to the degree to which the person has a favorable or unfavorable evaluation of the behaviour in question, and is comprised of "top of the mind" or salient beliefs around the behaviour. Changing a person's attitude toward a behaviour requires changing these underlying salient beliefs. The second or normative component of the theory refers to the influence of the social environment on intentions and behaviour, that is, peer pressure (Ajzen & Fishbein 1980). This influence is considered the person's subjective norms, that is, his or her perception that most people who are important to him or her think s/he should or should not perform the behaviour (Ajzen & Fishbein 1980). Subjective norm can be predicted from normative beliefs that specific individuals or referents think he/she should or should not perform the behaviour in question and the person's subsequent motivation to comply. For behaviour that is reasoned and influenced by these two major factors, messages can be targeted to influence people's attitude and beliefs in ways that will lead to behavioural intentions appropriate to a park setting (Vander Stoep & Roggenbuck 1996 :95)

Substantial empirical support exists for the predictive quality of the theory of reasoned action (see Ajzen & Driver, 1992). The theory of reasoned action has been applied in a variety of recreation settings. Kiely-Brocato (1980) used a modified version of Fishbein and Ajzen's model to examine visitor attitudes towards resource use and management (Kiely-Brocato 1980). The theory of reasoned action has also been applied to examine attitudes of campers, which attitudes were found to be significantly correlated to reported camping behaviour (Young & Kent 1985). Bright and others (1993) examined the theory of reasoned action as a model to explain change in public perceptions to a National Park service's controlled burn policy after exposure to belief-targeted messages using treatment and control groups. As implied from

this study, an understanding of the relative importance of attitudes, underlying beliefs and normative influences is important because it may help to explain why programs or interventions are successful or unsuccessful (Fishbein & Manfredo 1992). Further, in park settings, communication can provide messages to specifically target the attitudes and create beliefs about the site's resources and the results of certain behaviours, which may assist Parks Canada's mandate in managing for ecological integrity (Vander Stoep & Roggenbuck 1996). Therefore, this study adopts the Theory of Reasoned Action as an appropriate framework to examine attitudes, beliefs and intention to support the VNF in the Broken Group Islands as well as to contribute to the development of National Park messages in managing for ecological integrity.

1.4.1.3 Normative Acceptability of Social Conditions and Setting Preferences

The increase in participation in outdoor recreation and nature-based tourism has resulted in crowding in many parks and protected areas in Canada (Rollins & Robinson 2002). As the goal of management is to provide quality recreation experiences, managers must decide what to do when faced with crowding to achieve their management objectives (Manning 1999).

This study adopts the following definition of visitor management: "the practice of ensuring visitors achieve a quality experience; it is the management of visitors in a manner which maximizes the quality of the visitor experience while assisting the achievement of the area's overall management objectives" (McArthur & Hall 1996 :37). Traditionally, researchers and managers have used satisfaction measures to define quality recreation experiences (Manning 1999; Sowman & Pearce 2000). However, measurement of satisfaction has proven complex for a number of reasons: general measures of satisfaction may be too broad to be useful and secondly, satisfaction is a relative concept subject to interpretation influenced by visitor characteristics (Manning 1999). Thus, research into defining quality recreation experiences has evolved from satisfaction to examining quality recreation settings and the characteristics of participants.

Defining quality recreation settings is the central focus of contemporary management frameworks such as Limits of Acceptable Change (Stankey, Cole et al. 1985) that guide managers in understanding visitor participation, minimum acceptable levels of impacts and perceptions of quality recreation experiences in developing specific management objectives for recreation areas. The development of

management objectives requires an understanding of visitor use impacts and preferences for a quality recreation experience, signaling the importance of researcher input into the decision making framework.

Early research into measuring crowding studied the relationships between use levels and crowding arguing that crowding occurs when use levels reach a certain level. However, studies revealed weak correlations between use levels and crowding. It was speculated that it was not use levels that influenced crowding, but actual encounters or contacts that influenced crowding. The next wave of crowding studies then examined the relationships between encounters and crowding resulting again in weak relationships. Crowding studies are summarized by Manning (1999) and highlight generally weak relationships between use levels, encounters and crowding (pp. 89-92).

Weak relationships between use levels, encounters and crowding have been explained in part by social interference theory which suggests that individuals will evaluate their experience as crowded, not when contacts reach a certain level, but when the number of other people present interferes with or restricts a desired goal, such as solitude (Gramann 1982; Manning 1999). Crowding can be understood as a normative process that differentiates between use levels as a neutral, objective physical concept such as number of people per unit of space and crowding as a negative, subjective evaluation of the use level influenced by a number of factors (Manning 1999). Factors such as personal characteristics such as experience and levels of specialization within the activity, the characteristics of those encountered such as group type and size and situational variables such as launch sites or in campsites have been found to influence crowding perceptions.

As a result, researchers have recently studied crowding under the framework of normative theory (Roggenbuck, Williams et al. 1991; Vaske, Donnelly et al. 1996; Manning, Valliere et al. 2000; Heywood & Murdoch 2002). Considered a contemporary approach to crowding, the normative approach has been developed as a useful way to conceptualize, collect and organize empirical data representing value judgments about resource management (Vaske, Donnelly et al. 1996), and suggests that visitors have "preferences, expectations, or other standards by which to judge a situation as crowded or not" (Manning 1999 :122). If these preferences can be defined and measured, they then can assist in formulating indicators and standards of quality useful for management purposes (Manning, 1999). One approach Vaske and others used was the illustrative or visual approach explored in a number of studies (for a list of studies see

Manning, 1999 :145). In this approach, computer manipulated photographs depict a setting, such as tents at a campsite, with varying levels of density. Each photograph shows a level of density higher than the photograph before it. For example, one photograph will depict two tents, the second photograph will depict four tents and the third photograph will depict six tents. The respondents rate the acceptability of the level of density illustrated in each photograph on a five point Likert scale ranging from very unacceptable to very acceptable. Resulting data can be used to measure the personal encounter or density norm of each respondent. This data can then be aggregated to test for social encounter or density norms, or the degree to which norms are shared across groups (Manning, Valliere et al. 1999). These social group norms can be interpreted as indicators and standards of quality sought in a recreation experience, and assist in determining social carrying capacity by defining what is the minimum acceptable condition.

While many crowding studies have occurred in terrestrial sites, or on lakes and rivers, few studies have examined crowding issues within a marine setting. However, coastal wilderness settings are particularly sensitive to visitor impacts complicated by the difficulty in dispersing people away from the marine interface, where crowding and resource impacts are most severe (Rollins 1998).

Some studies have applied terrestrial based management frameworks to a marine setting. Shafer & Inglis (2000) applied the concepts of carrying capacity and limits of acceptable change to a study of snorkeling sites and found that differences in benefits received and how the particular site influenced their enjoyment depended on group size. Findings suggest that numbers of people and site development are potential setting indicators and support the usefulness of Limits of Acceptable Change framework in a marine environment where recreational uses are rapidly changing (Shafer & Inglis 2000). Davis & Tisdell (1995) applied the concept of carrying capacity to recreational scuba-diving in marine protected areas and found evidence for social and biological thresholds, and that activity above these thresholds reduced the amenity values. Inglis and others (1999) applied the normative approach to crowding using illustrations with varying densities of snorkelers in a marine setting and found that, like terrestrial studies, visitors' prior experience and number of people illustrated influence ratings (Inglis, Johnson et al. 1999). Vaske, Donnelly et. al (1996) applied a visual approach to normative theory to measure the encounter tolerances of kayakers and motorboaters within Gwaii Hanaas and found that tolerances varied according to user and activity. This body of literature suggests that in response to increasing use and impacts, traditional

management approaches and research typically applied to terrestrial recreation can be successfully applied to marine based recreation. Therefore, this study adopts an illustrative approach to normative theory to examine and identify visitors crowding standards.

1.4.2 Independent Variables

A major challenge of outdoor recreation planning and management is that people vary in attitude, preference and behaviour in outdoor recreation experiences (Vander Stoep & Roggenbuck 1996). For example, some visitors prefer solitude while some prefer the company of others, creating potential for conflict. This diversity, found throughout recreation studies, has created challenges for managers to plan for "the average camper that does not exist" (Manning 1999; Rollins & Robinson 2002). By identifying subgroups of like-minded visitors, park managers may understand better the needs and requirements of visitor segments, ultimately providing more satisfactory experiences and potentially avoiding conflict (Rollins & Robinson 2002). A number of variables have been applied to examine visitor diversity including, but not limited to gender (Brown 1999) and culture (Vaske, Donnelly et al. 1995). However, this study limited the examination of variability to three independent variables: recreation specialization, experiential (pre and post design) and effect of a kayak guide, chosen on the basis that they relate to issues identified in the Broken Group Islands.

1.4.2.1 Recreation Specialization

Of the many ways to explain variability in behaviour patterns and attitudes of participants within the same activity, specialization assists in explaining variability by defining appropriate subgroups of visitor populations (Wellman, Roggenbuck et al. 1982). Bryan's (1977) classic study of trout fisherman conceptualized recreation specialization. Bryan defined recreation specialization as a continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences (Bryan 1977: 175). Bryan examined the beliefs, attitudes, values and ideologies connected with the sport of fishing and its place in the individual's life. Results suggest a fishermen typology based on degree of specialization that reflects attitudes, values, expectations and preferences. This study is important as it illustrates differentiation within recreation groups. Management directed at the average visitor may fail to provide distinct and important subgroups with satisfying experiences (Wellman, Roggenbuck et al. 1982). Further, if incompatible groups are mixed, the potential for social conflict

increases, thus detracting from the quality of recreation experience (Jacob & Schreyer 1980). Recreation specialization is a concept that has been advanced as a way of meaningfully disaggregating participants in specific activities into more homogenous subgroups (Bryan 1977).

Specialization research has expanded the concept of recreation specialization measurement based on equipment and skill to include cognitive, behavioural and psychological components incorporating a variety of specialization measurements (Manning, 1999). Past studies have defined specialization by past experience and participation (Schreyer, Lime et al. 1984), experience and equipment ownership (Wellman, Roggenbuck et al. 1982), participation, equipment, skill and centrality to lifestyle (Miller & Graefe, 2000) and combinations of participation, equipment ownership, perceived skill (Donnelly, Vaske et al. 1986). McIntyre and Pigram (1992) argue for the inclusion of a psychological indicator of specialization, as observable measures (such as equipment) do not include a measure of the level and type of affective attachment that an individual has developed for an activity. This attachment is variously termed commitment, ego involvement or enduring involvement and adopted in their study of vehicle-based campers' attitudes towards management practices (McIntyre & Pigram 1992). While a number of studies have incorporated different approaches to specialization, there is no consensus in the literature on construct measurement (Scott & Shafer 2001).

The concept of recreation specialization has been found to be related to a number of attitudes, preferences and behaviours, including perception of recreation-related impacts, importance of recreation setting attributes, perceived quality of recreation management, standards of quality for social conditions, perceived crowding and preferences for management actions (Manning, 1999). Specialization has been used to measure differences in environmental preference (Virden & Schreyer, 1988; Rollins & Connelly, 1997), attitudes to management (McIntyre & Pigram 1992), attitudes to depreciative behaviour (Wellman, Roggenbuck et al. 1982) and crowding (Miller & Graefe, 2000). In this way, the framework of recreation specialization is well suited to this study of social setting preferences as well as attitudes and knowledge levels.

Managers are under considerable pressure with increasing use levels, diversity of users and concomitant requests for more facilities and levels of accommodation (Rollins, 2002). Park managers must decide how much use should be allowed, where this use will be allowed and how this use will be managed.

A model proposed by Duffus and Dearden (1990) links the concepts of "limits of acceptable change" and specialization by examining how a destination, over time, increases in popularity and tends to attract fewer specialized visitors and more generalist visitors, often with different setting preferences. The model suggests that if the dominant level of specialization among the user groups is known, the relative level of maturity of the destination can be estimated, providing valuable indicator information for management (Duffus and Dearden, 1990). As an example, if the majority user in the Broken Group Islands is found to be a low specialized user or a generalist, demanding easier access and developed campsites while tolerating higher density situations, then it is very likely that the specialized user seeking a wilderness experience and solitude has been displaced (Manning 1999). Managers may inadvertently aggravate undesirable impacts from this "recreational succession" by responding to increases and changes in users with development to accommodate generalist demands (Hendee 1990 :191).

1.4.2.2 Experiential Effects (Pre and Post)

Visits to parks and nature education programs have long been thought to promote a responsible land ethic (Roggenbuck, Loomis et al. 1991). Some researchers have found that responsible environmental behaviour is significantly related to experiences in nature and active participation in environmental activities outside the classroom (Dresner & Gill 1994 and Jordan et al 1986 cited in Zelezny, 1999). There is an argument that ecotourism, due to its active participant involvement, is an excellent opportunity for environmental interventions and learning (Forestell, 1993; Kimmel, 1999). With the growth in marine ecotourism and concerns about quality and sustainability of natural ecosystems, there is strong support for education tools as management strategies within the ecotourism, outdoor recreation and natural resource interface (Forestell, 1993; Ewert, 1999; Orams, 1999; Ross & Wall, 1999). However, there is little empirical evidence that demonstrates the benefits of educational interventions and tourist behavioural change as a result of interventions (Olson, Bowman et al. 1984; Orams 1996; Orams 1997; Orams 1998).

As this study focuses partially on visitors' knowledge levels of heritage messages, the pre and post design allows for examination of responses before and after a trip experience and identification of knowledge gain. Of the few studies to examine experiential effects on behaviour and learning in recreation, the pre and post design was used to isolate visitor knowledge gains following a river rafting trip and found

that visitors receiving interpretive messages from trained guides tended to have higher knowledge scores than those visitors rafting with untrained guides (Roggenbuck, Williams et al. 1992).

1.4.2.3 Effect of a Guide

As a result of budget restraints, increasing use levels and reduced personnel to deliver interpretation within National Parks, management changes have occurred resulting in an increased role of the private sector in interpretation delivery (Charters, Gabriel et al. 1996). Studies have provided support for tour operators and guides having an influential role in information delivery and interpretation for natural resource management agencies (Bange 1984; Roggenbuck, Williams et al. 1992). Despite widespread support of the use of guides as information conduits (Moore & Carter 1993; Hockings 1994; Kimmel 1999), there has been relatively little attention paid to the role of guide (Holloway 1981; Weiler & Davis 1993; Gurung, Simmons et al. 1996; Ap & Wong 2001). Of the studies that have acknowledged and investigated the role of the guide Holloway (1981), Bange (1984), Cohen (1985), Geva & Goldman (1991), Weiler & Davis (1993), Hockings (1994), McArthur (1994), Dearden & Harron (1994), Gurung, Simmons et al. (1996), Parker & Avant (2000), Ap & Wong (2001), Wang, Hsieh et al. (2002) and Dahles (2002), many have used Cohen's model as a basis for examining the role of the guide.

Cohen (1985) first conceptualized the role of the guide in four distinct sub roles of guiding. The orientation of the "outer-directed" role of the tourist guide is towards organization and management (instrumental roles) and the facilitation of encounters with the host populations (interactionary roles). The tour guide in these roles must meet both the individual and group needs of the party using resources outside the group tour. The "inner-directed" role of the tourist guide is focused on leadership in the form of social interaction (social role) and information dissemination (communicative role) and these needs are met from within the group. Weiler (1992), when examining the role of guides in nature based tourism noted that Cohen's work, while oriented to the individual and group needs, did not incorporate the needs of the host or natural environment. Weiler (1992) "recognizing that the tour leader has some responsibility to the host environment" (:229) and that "environmental interpretation to communicate with visitors is crucial in order to contribute to environmentally responsible tourist in both the short and the long term" argues that the guide must have a third focus, the natural environment, or what she terms "resource management", extended the model to include two roles encompassing the dimension of the host environment (1992).

These two roles Weiler described as “motivator, one who contributes to the environmentally responsible behaviour while onsite” and “environmental interpreter, one who contributes to long term knowledge and attitude change” (1992 :232). Figure 1.5 provides a schematic representation of Cohen’s (1985) model and Weiler’s adaptations.

Figure 1.5 Schematic Representation of the Principal Components of the Role of the Guide

	Outer Directed (resourced from outside the group)	Inner Directed (resourced from inside the group)
Leadership Sphere (focus on group)	Instrumental	Social
Mediatory Sphere (focus on individual)	Interactionary	Communicative
*Resource Management (focus on environment)	*Motivator	*Environmental Interpreter

After Cohen (1985) and *Weiler (1992)

As well as tour operators’ high ranking of environmental interpretation and motivator roles (Weiler & Davis 1993), tourists also have an expectation for information and interpretation (Cohen 1985; McArthur 1994). The role of the tour guide in meeting the tourist’s expectation and the delivery of interpretation is considered critically important by a number of researchers (Holloway 1981; Cohen 1985; Geva & Goldman 1991; Orams 1999). However, research indicates that not only does the tour operator often underestimate this expectation, whether interpretation is incorporated within the tour is often influenced by the guide’s personal interest, familiarity with the area and the passivity of activity (McArthur 1994).

The tour guide as role model and information giver provides the guide with an influential position in modifying and correcting visitor behaviour to ensure that it is environmentally responsible and contributes to environmentally sensitive attitudes (Forestell 1993; Kimmel 1999). This is especially important given the levels of tourism within National Parks. With little research on the effectiveness of the guide in information delivery and as "it is necessary to establish the characteristics, roles and responsibilities of all those involved in park management" (Sowman & Pearce 2000), this study examines the role of the tour guide with an emphasis on facilitating interpretation.

1.5 Nature of the Study

1.5.1 Purpose

Given the substantial growth of marine ecotourism within parks and protected areas and the central position of the maintenance of ecological integrity as the National Park mandate, effective visitor management strategies become increasingly important. Therefore, the overall purpose of this study is to gain an understanding of protected area visitor management strategies within the Broken Group Islands, (PRNPR) by examining three identified issues: (1) the role of commercially guided kayak ecotourism in the delivery of National Park messages; (2) visitor attitudes towards the voluntary no fishing policy; and (3) managing for visitor crowding. It is hoped that the results from these examinations will facilitate recommendations to protected area managers and ecotourism operators to improve visitor management and use within protected areas while striving to protect natural resources.

1.5.2 Research Objectives

Specific research objectives include:

1. To determine the role of commercial guided ecotourism in delivering National Park interpretive messages by asking the following:
 - i) What is the level of visitors' knowledge of heritage messages?
 - ii) Is there a change in visitor's level of heritage messages after a trip experience?
 - iii) Do commercial ecotourism operators influence or contribute to visitors' attitudes, learning and behaviour?
 - iv) Is there a difference in learning, attitude and behaviour changes between non-guided visitors and commercially guided visitors?; and
 - v) Does specialization influence knowledge levels?
2. To determine visitors' attitudes towards the voluntary no fishing policy:
 - i) What are the influences on the visitor's support for the voluntary no fishing policy?
 - ii) What is the influence of specialization?
 - iii) Does the guide play a role in influencing visitor attitudes?; and
 - iv) Is there a change in visitor attitude pre to post trip?
3. To examine the social conditions by determining:
 - i) What are the crowding perceptions of visitors to the Broken Group Islands?
 - ii) What are the visitors' minimum acceptable levels of crowding?
 - iii) Are visitor's satisfied with existing management strategies? and
 - iv) Does specialization influence visitors' crowding perceptions?
4. To make recommendations towards:
 - i) Improving the visitor management strategy of the Broken Group Islands;
 - ii) Improving management of commercial tour operations with respect to interpretation and the role of the guide in shaping visitor behaviour.

1.6 Methodology

1.6.1 Research Design

This study adopts a blended or multiple method approach as the research objectives call for an approach that provides both breadth and depth to the data. A positivist, quantitative approach to collecting data may be a more effective strategy for study questions that require “breadth”, that is how much, how many or how often (Henderson & Bedini 1995). However, interpretive research and qualitative data are ideal for addressing “depth”, understanding meaning, capturing individual’s point of view and securing rich descriptions (Henderson & Bedini 1995; Denzin & Lincoln 1998). By linking quantitative and qualitative data, the strengths of both can be enhanced, while generating more information about the breadth and depth of the study (Henderson & Bedini 1995). Therefore, this study adopts a blended approach that nests or encapsulates qualitative methods within a primarily quantitative study, sometimes referred to as a "dominant less dominant design" (Creswell 1994 :177). This approach will provide context and check the validity of the quantitative procedures by aiding in the interpretation of data and gaining an understanding of in-field processes. An encapsulated, blended approach has been successfully used in leisure and recreation research (Mitra, 1999) and is an appropriate approach to study the visitor experience in the BGI.

1.6.2 Research Methods

This study uses multiple methods to obtain data. There are many recent examples of multiple method use within leisure research that illustrate how “qualitative data enhance and add richness to the understanding derived from quantitative analysis” (Samdahl 1999 :128). The use of multiple methods, referred to as *triangulation* is “a concept based on the assumption that any bias inherent in particular data sources, investigator and method would be neutralized when used in conjunction with other data sources, investigators and methods” (Creswell 1994 :175). This study adopts an approach that draws on qualitative and quantitative data collection procedures using questionnaires, focus groups, and participant observation methods.

1.6.3 Structured Questionnaires

1.6.3.1 Rationale

The self-administered, face-to-face (on-site) structured questionnaire method has been chosen as the primary data collection instrument to obtain data on kayak visitors within the Broken Group Islands.

This structured questionnaire method as opposed to a mail in survey is “suitable for surveying populations for whom there is no list” (Salant & Dillman 1994 :42) and generates a higher response rate (Veal 1997). Self-administered questionnaires allow for a much larger sample size and range of questions to be addressed than personal interviews and focus groups, and are appropriate when working with complex issues, permitting the use of detailed response formats and graphics (Mitra & Lankford 1999).

Because an important objective of this study was to examine learning and attitudes after a trip experience, a "before and after" survey format was selected. The before and after survey method allows researchers the opportunity to measure change, and offers the best opportunity to measure change in visitors knowledge levels, attitudes towards the voluntary no fishing policy as well as importance and performance of the role of the guide following their recreation experience (Mitra & Lankford 1999)

1.6.3.2 Questionnaire Design

A structured questionnaire was developed around the study objectives and information needs. Variables were developed from a review of relevant literature in a variety of areas including outdoor recreation, tourism and marine tourism, attitude and behaviour theory, carrying capacity, crowding, normative theory, recreation specialization and survey design. The booklet style questionnaire was developed on the basis of the Dillman Total Design Method, proven to enhance response rates and response quality (Dillman 1978; Salant & Dillman 1994).

The questionnaire was designed to reveal the demographics, satisfactions, group norms, attitudes, beliefs, learning and behavioural intentions, and desired social conditions. To achieve this, the questionnaire was pre-coded, containing closed-ended questions incorporating the Likert scale and semantic differential measures, as well as open-ended questions to allow an avenue for further discussion. Three different questionnaires were developed specifically to capture change in knowledge and attitude measures before and after and to measure visitors' perceptions of pre trip importance and post trip performance the role of the guide: pre trip (Appendix 2A), post trip for non guided visitors (Appendix 2B) and post trip for guided visitors (Appendix 2C).

The pre trip survey contained 24 questions divided into six sections. The first section was designed to understand visitors trip characteristics and asked if this was their first visit, number of repeat

visits, if they used a commercial guide, activities they planned to engage in, number of nights and on what islands they planned to stay. A map was embedded into the questionnaire to assist respondents.

Section 2 examined visitors' crowding related norms using a visual approach to normative theory. Visual approaches to measuring standards and arriving at user norms have been used in a number of studies (Martin, McCool et al. 1989; Manning, Lime et al. 1996; Vaske, Donnelly et al. 1996; Manning & O'Dell 1997), and may result in more realistic or "valid" measures of crowding-related norms (Manning, 1999). Using this visual approach, three questions were developed around three social indicators: acceptability of number of other kayakers, motorboats and tents at a campsite. Respondents were shown a series of six photographs depicting a range of social conditions with different densities in each photograph. The first question or series of photographs depicted 0, 1, 3, 6, 9 and 12 kayakers in an area approximately 1500 m², the second series depicted 0, 1, 2, 3, 4 and 5 motorboats in an area approximately 1500 m² and the third series depicted 0, 1, 2, 4, 6, and 8 tents in approximately 846m². Using actual backgrounds found in the BGI, photographs were manipulated using Adobe Photoshop 5.5 and each photograph was sized to approximately 2 1/4" x 2" and embedded within the questionnaire, providing a visual cue and easing respondent burden (Hall & Roggenbuck 2002). Respondents were asked rate the acceptability of the level of density illustrated in each photograph on a five point Likert scale ranging from "1 = very unacceptable" to "5 = very acceptable".

Section 3 focused on visitors' learning and importance of learning. Respondents were presented with a series of 10 quiz items based on National Park messages and asked to indicate if the statement was true, false or they didn't know.

Section 4 was used to identify attitudes, beliefs and intentions to support the voluntary no fishing policy. Respondents were asked to what level they agreed with three positive and five negative belief items regarding the voluntary no fishing policy using a 5 point Likert scale from "strongly disagree" to "strongly agree". Following the theory of reasoned action model, as a measure of attitude, respondents were asked to indicate their level of opposition or support towards the policy, the degree to which they felt peer pressure and their likely future support using a semantic differential scale.

Section 5 was designed to identify those attributes that visitors find important in the role of the kayak guide. Respondents were provided with a twelve-item list of attributes identified as pertinent to the

role of the guide in the BGI, compiled from literature review, personal experience and review by Parks Canada staff. Respondents were asked to rate the importance of each attribute on a five point Likert scale from "not at all important" to "extremely important" and "not sure".

The final section was designed to understand respondent demographics and levels of recreation specialization. Respondents were asked how many years they had been kayaking, if they owned their own kayak, and to describe their level of experience in kayaking. To measure enduring involvement, respondents were asked to rate their level of agreement with a 13-item enduring involvement scale.

The post trip questionnaires contained all of the sections of the pre trip questionnaires with some modifications. An additional section was incorporated that asked respondents about perceived crowding on their trip as well as satisfaction with various management aspects. Respondents were also asked how satisfied they were with their learning experience. To determine satisfaction levels with the role of the guide, the same attributes were incorporated into the post trip questionnaires, however guided respondents only were asked to rate whether the role of guide performed these various attributes, allowing for a pre-post comparison of importance and performance. All other sections of the questionnaires were identical.

Once the questionnaire was developed, two pilot studies of the questionnaire were completed. The first pilot was conducted in April 2001 by administering the questionnaire off-site to seven people familiar with the study area. The purpose of this pilot was to determine if question sequencing was appropriate and if questionnaire language and response formats were easily understood. Following this pilot, adjustments were made to the questionnaire and a second pilot was administered on site at Toquart Bay, in May 2001. Due to weather conditions, the questionnaire was administered to only two kayakers. However, the information gleaned from this pilot proved valuable and further adjustments were made to the questionnaire.

1.6.3.2 Sampling Design

The focus of this multifaceted study was to understand demographics, knowledge levels as well as satisfaction and attitudes towards a number of issues within the BGI. The population chosen for this study was kayakers visiting the Broken Group Islands as they represent the predominant visitor and camper within the park. As not all kayakers can be readily surveyed, and we are interested in differences between subgroups (pre-post and guided-non guided) a stratified random sampling strategy was selected (Blalock

1960). Under a stratified random sampling approach, the researcher attempted to administer pre-trip and post-trip questionnaires to approximately equal numbers of commercially guided and non-guided kayak visitors randomly selected within each stratum.

Questionnaires were administered to persons aged 19 or over at the two main launch sites to the BGI; three days per week at Toquart Bay and one day per week onboard the Frances Barkley ship enroute to and departing from Sechart Whaling Station. Data collection occurred from June 1 to September 14, 2001 with a rotating weekly schedule so as to not bias the sample and allow for variability throughout the week. Logistically, kayaking visitors do not enter and exit the BGI at set times but rather come and go at a variety of times throughout the entire week. Therefore, the pre and post trip questionnaire participants were different respondents. The advantage of this approach is that the "carry-over effect" where respondents are influenced by the pre trip survey is minimized (Howell 1999). However, a limitation with this approach is the variability among subjects and the inability to control for extraneous variables (Howell 1999). To address this limitation, statistical analysis will include testing for differences between the pre and post groups.

In addition to sampling at the entry points, participant observation respondents completed pre and post questionnaires, resulting in a matched sample of 21 pre trip and 21 post trip questionnaires termed the "participant observation" sample. Therefore, sampling efforts resulted in: 47 guided pre trip and 84 guided post trip questionnaires and 256 non guided pre trip and 270 non guided post trip questionnaires, and a matched sample 21 pre trip and 21 post trip "participant observation" questionnaires. Overall, sampling efforts resulted in 699 useable questionnaires with the sample breakdown set out in Table 1.1.

Table 1.1 Sample Size by Group

Group	Pre Trip	Post Trip	Total
Guided	47	84	131
Not Guided	256	270	526
Participant Observation	21	21	42
Total	324	375	699

A total of 699 useable questionnaires were completed, however 21 of those questionnaires have been removed from general analysis as they represent the responses of the same respondents from the

participant observation sample. Therefore, it is estimated that with a sample of 678 useable questionnaires, based on an approximate overall visitor population of 4,472 for 2001, margin of error is calculated at $\pm 3.4\%$ at the 95% confidence level. Because we are interested in sub-groups, the sample precision can be estimated from its sample size (Salant & Dillman 1994). Therefore, with a 95% confidence level, the results for each subgroup can be considered accurate within:

- 1) Pre Trip $\pm 5.0\%$
- 2) Post Trip $\pm 4.6\%$
- 3) Pre Trip Guided $\pm 13.6\%$
- 4) Post Trip Guided $\pm 9.8\%$
- 5) Pre Trip Non Guided 5.6%
- 6) Post Trip Non Guided 5.7%
- 7) Participant Observation $\pm 20.9\%$

While, the overall response rate for this study was 93.7%, the response rate varies by group type and geographic location. Despite the rotating schedule, fewer useable guided questionnaires were completed than anticipated. This is due to a number of reasons including inclement weather, guides not wanting to take the time necessary to cooperate, guides not wanting to subject their clients to a questionnaire, and guides wanting to meet a predetermined launch time. Unfortunately guides acted as the “gatekeepers”, and without their cooperation, administering questionnaires to their guests proved difficult. These factors primarily impacted pre-trip situations and therefore the pre-trip response rate (62.0%) is lower than the post-trip response rate (87.0%). Conversely, the 3 1/2 hour trip each way aboard the Frances Barkley provided to be an ideal environment to administer questionnaires. Respondents were not influenced by time pressures, were eager to respond due to the length of the trip, and were not impacted by inclement weather, resulting in a response rate of 97.0%.

1.6.3.4 Analysis

The data from the visitor survey has been analyzed through descriptive analysis using frequency tables and graphs, as well as nonparametric (chi-squared test) and parametric (t-test) inferential statistical techniques using the Statistical Package for Social Sciences (SPSS) Version 11 software. The chi-squared

test was used to compare categorical variables and determine whether significant differences existed between groups. Independent sample t-tests were used to compare the mean scores of two groups to highlight significant group differences. Deciding on which tests to use is contingent upon the type of data being analyzed: nominal, ordinal, interval or ratio. Many questions in the visitor survey use the five point Likert scale type providing respondents with a range of responses from, for example: very acceptable to very unacceptable, which can be considered ordinal or categorical measures and subject to nonparametric testing (Lutz 1983). However, because these responses were numerically represented, for example "1 = very unacceptable" and "5 = very acceptable", it can be argued that the data can be treated as interval measures subject to parametric tests. While there is debate in the literature around proper statistical treatment of Likert scale based data, nearly all of the recreation studies using scales of this nature treat the data as interval (Manning 1999; Mitra & Lankford 1999).

1.6.3.5 Limitations

Approximately 50% of all kayaks and canoes in the BGI access the Islands from Toquart Bay (Parks Canada 1994). Rollins' 1995 study found that of all motorized and nonmotorized campers surveyed, 50.7% enter the area via the Lady Rose/Frances Barkley, 43.3% from Toquart Bay, and 5.9% from Ucluelet, Port Alberni, Bamfield and "other" points. While it is possible to enter the Broken Group Islands by kayak from other entry sites such as Bamfield and Ucluelet, it is not recommended due to its highly committed, potentially dangerous route, requiring a high level of expertise (Parks Canada 2002). The number of kayakers traveling from these entry points would be substantially less than the 5.9% suggested in Rollins (1995); however, a limitation with this sampling design is that those kayakers who entered or exited the group from areas other than Toquart Bay or the Francis Barkley may have been excluded from the study.

A limitation with this study is that the questionnaire was administered to kayakers only. Other users of the park, such as sailboaters and motorboaters were not included in this study for reasons of logistics and cost. Because of the many park entry options for motorized boaters, it was not feasible to administer the survey to those who entered the park through entry points other than Toquart Bay and Sechart Whaling Station. However, previous studies indicated that 94% of campers are kayakers and canoeists.

Finally, a limitation with this study is that it includes only the views of visitors and does not include the views of managers or organized interest groups, although research has shown that these groups often have different perceptions (Martin, McCool et al. 1989; Shelby & Shindler 1992).

1.6.4 Focus Groups

1.6.4.1 Rationale

Bedford and Burgess define the focus group as a “one-off meeting between four and eight individuals brought together to discuss a particular topic by a researcher who moderates and structures the discussion” (2001 :121). While traditionally employed in the consumer market research and psychotherapy arenas (Hoggart, Lees et al. 2002), the focus group is an appropriate research method in geography, having been successfully applied to explore cultural values of landscapes and to address physical, intellectual, social and emotional benefits of participating in wildlife projects (Hoggart, Lees et al. 2002). Focus groups are not only a particularly efficient and interesting way to gain insight into the way in which people construct environmental and social issues (Bedford & Burgess 2001 :121), Lunt and Livingstone (1996), suggest that the focus group is commonly used to gain understanding about an issue prior to the design of a social survey (Salant & Dillman 1994; Bedford & Burgess 2001). Thus, the focus group method was chosen to explore one of the topics within the study: participants’ underlying beliefs and attitudes towards the voluntary no fishing policy within the Broken Group Islands. Data resulting from this focus group was used to guide the questionnaire development.

Advantages of the focus group method are that within the group context, participants’ opinions and beliefs can be questioned and/or amplified by others in the group, provides a forum for people to test and share views, is efficient, is an effective preliminary and exploratory tool, and can be used to evaluate ideas. As well, conversations can take their own dynamic, and spontaneous group debates can be revealing (Bedford & Burgess 2001; Hoggart, Lees et al. 2002). While the dynamic nature of focus groups can be seen as an advantage, dynamics may also present a problem in that the group may or may not have any enthusiasm or interest for the topic (Bedford & Burgess 2001) and some individuals may dominate or under-contribute, potentially biasing the process (Peterson 1994). A further problem may be in the researcher’s lack of skill. While some authors suggest that a skilled, trained moderator is essential for success (Hoggart, Lees et al. 2002); others are beginning to question how essential this training is,

suggesting that desired qualities can be found in many researchers, including the ability to listen, ability to think on your feet, and a knowledge of and interest in the subject (Bedford & Burgess 2001).

1.6.4.2 Design

Unlike the random sampling design for the questionnaire, the sampling design for a focus group is purposive as participants are selected according to the research question (Hoggart, Lees et al. 2002 :216). In keeping with Bedford's defined group size and because smaller groups give a greater opportunity for individual contribution (Bedford & Burgess 2001), six participants were carefully recruited. An explanation of the study site, the voluntary no fishing policy and the reasons for the group discussion introduced the study. While no formal question agenda was used, all participants were asked how they felt about fishing within the BGI to gain a sense of the overall attitude, followed by opened ended questions to elicit the underlying beliefs towards the attitude. As the group engaged in discussion, notes were taken to capture the specific beliefs that were generated, who generated the belief items, who and how many echoed those belief items to gain a sense of the strength of the belief. Immediately following the focus group, notes were reviewed and personal reflections added.

Transcription and analysis of the data was straightforward. Beliefs were then isolated, categories were developed into positive and negative beliefs and further content analysis was performed to categorize beliefs into themes. Upon completion of categorization and content analysis, a list of belief items was generated and forwarded to the warden responsible for the Broken Group Islands for review and input. Efforts resulted in a list of eight belief items was developed, comprising of three positive and five negative beliefs, which guided the development of the questionnaire.

Items generated through the focus group process contributed to the validity and reliability of the belief scale within the questionnaire. Despite focus groups being a qualitative method not subject to the tests of statistical analysis, the qualitative data were developed into a scale embedded in a questionnaire and a statistical measure of reliability applied. The scale had an overall Cronbach's alpha of .744 (on a scale of 0 and 1 where 1 represents the highest reliability measure) representing very good reliability, as an alpha value between .6 and .8 can be considered very reliable (Mitra & Lankford 1999).

1.6.5 Participant Observation

1.6.5.1 Rationale

Participant observation refers to the “process in which an investigator establishes and sustains a many-sided and relatively long-term relationship with a human association in its natural setting for the purpose of developing a scientific understanding of that association” (Lofland & Lofland 1984 :12). Participant observation is a method which allowed the researcher to participate in face to face interaction in a natural setting and to “take the role of the other” in order acquire knowledge and collect the richest possible data (Lofland & Lofland 1984). Participant observation adds richness (Henderson & Bedini, 1995) and depth to this study and makes it possible to gain a more complete understanding of all conditions associated with the problem under investigation (Campbell 1970). The participant observer method allowed for social and environmental in-field observations such as but not limited to, social conditions, environmentally and socially appropriate behaviours (i.e. littering, low/no impact camping practices, noise, shell collecting and fishing behaviour) and role of the guide in influencing learning, attitudes and behaviour. To gain a deeper understanding of the visitor experience and the role of the guide in shaping participant attitudes and behaviours I joined four guided kayak tours as an observer participant as set out in Table 1.2.

Table 1.2 Schedule of Trips, Group Size and Composition

Trip #	Trip Dates	Group Size	Group Composition and Age
1	June 7 – 10	3	1 Female Guide (32) 1 Male Guest (63) 1 Female Guest (52)
2	June 15 – 18	11	1 Male Guide (40-45) 1 Female Guide (40) 3 Females 20-25 3 Males 20 – 25 2 Males 35 – 40 1 Females 35 – 40
3	June 25 – 29	6	2 Male Guides (25) 1 Female Guest (25) 1 Male Guest (38) 1 Male Guest (20)
4	July 27 – 30	9	1 Male Guide (43) 1 Female Guide (45) 2 Male Guests (50 - 55) 2 Female Guest (450-55) 2 Female Guests (20 - 25) 1 Male Guest (30)

1.6.5.2 Researcher's Role

The researcher's role will be discussed from two perspectives: 1) identification of my experience, values and biases; and 2) my field role as a researcher viewed on a continuum of complete participant to complete observer and concomitant implications.

In qualitative research, the role of the researcher as the primary data gathering tool requires that the experience, values and biases of the researcher be identified (Evans 1988; Creswell 1994). While some may argue that past experience and inherent bias may flavor the interpretation of data to such an extent to render it nonobjective and invalid, it has been said that "how odd it is that anyone should not see that observation must be for or against some view if it is to be of any service" (Sellitz in Evans 1988 :199). To carry out observation in a "value free vacuum is unrealistic" (Evans 1988 :199).

My ten-year involvement in the world of kayaking includes both personal and professional dimensions, giving me an understanding of both the role of the kayak visitor and the role of the kayak guide and potential influence of the guide on visitor enjoyment, attitude, learning and behaviour. However, with prior experience, certain biases are brought to the study. Although every effort will be maintained to ensure objectivity, these biases may shape the interpretation of the experiences of others and the way the data is understood.

A researcher may engage in participant observation in a number of roles that vary by degrees of participation or observation along a continuum extending to either extreme (Evans 1988). These roles, examined by Gold (1958), are identified as complete participant, participant as observer, observer as participant and complete observer (Campbell 1970). At one end of the continuum, as the complete participant, the researcher runs the risk of "going native" while at the other end of the spectrum, complete observer, there is no contact between participants and researcher (Campbell 1970). My role as researcher was that of observer as participant, where the balance favoured observation over participation. Observer as participant can be associated with a utilization of a variety of data collection mechanisms (Hoggart, Lees et al. 2002), as in this study where pre and post trip questionnaires were used in conjunction with participant observation method. Further, observer as participant is suitable when time is scarce, allowing the researcher to focus on interpreting activities around them rather than in environments in which they are

active agents (Hoggart, Lees et al. 2002). As an observer participant, my role was overt and my identity revealed.

Implications of the observer as participant role are that the researcher may alter the situation being studied (Webb, Campbell et al. 1971) and the existence of power relationships (Evans 1988). Regarding the former, Smith suggests that “it is possible, though doubtful that a forceful researcher may alter the situation being studied” (Smith 1988 :9). To test this implication, two participants were asked at the end of two different trips, if my presence altered their experience: both replied that it did not. Regarding the existence of power relationships, these relationships were handled through impression management. Because of past experience and knowledge of the setting, my clothing, mannerisms and speech were managed to fit in with the group.

1.6.5.3 Analysis

A field diary was routinely maintained (however discretely and away from the group so as to minimize interviewer effect). Environmental and social observations, conversations as well as personal feelings and impressions were recorded (Jorgensen 1989). The field notes were transcribed and analyzed upon completion of the participant-observer exercise. Notes were reviewed on a regular basis for identifiable patterns and relationships and labeled according to issues relevant to this study (Jorgensen 1989). A written narrative summarized the participant observation findings and how these findings related to the research objectives and questions. This narrative was read in conjunction with and compared to the quantitative findings to demonstrate convergence of the findings, discover inconsistencies or contradiction, and to elaborate on results.

1.6.5.4 Verification

Issues of validity, defined as the accuracy of the findings, and reliability, defined as the extent to which the results can be duplicated, are the primary criticisms of observational research (Adler & Adler 1998). A number of strategies have been taken in this study to enhance validity and reliability.

1. Methodological triangulation has been employed to collect data from a variety of sources, primarily questionnaires, participant observation, focus groups and literature review.

Observation when added onto other research yielding depth and/or breadth enhances consistency and validity (Adler & Adler 1998 :90)

2. Multiple and repeated observations of similar phenomenon and settings occurred through four separate multi-day trips with different groups.
3. Clarification of researcher bias has been articulated under Researcher's Role 1.7.6.2.

By employing these strategies, the validity and reliability of the study has been addressed and enhanced.

1.6.5.5 Limitations

Strengths of participant observation that make it a suitable method for this study include the ability to study behaviour in a natural setting and provide greater depth of understanding. However, limitations and weaknesses of this method must be acknowledged. One limitation is that due to the in-depth nature of participant observation, sample sizes are small, thus generating the question 'to what extent can one generalize'(Dowler 2001 :158). While it is best to avoid generalizing from such a small sample, the multiple-method offers verification and breadth, while the data gathered from participant observation provides depth. Participant observation is also limited by the potential loss of detachment as a result of being closely involved with a group over an extended period of time. The role taken as observer participant requires a conscious awareness of a balance of involvement and detachment required; as well the short, multiple trip design with different groups of participants minimized the potential of over involvement. That the researcher may be seen as intrusive is a limitation of the participant observation method; however this limitation was addressed by inconspicuous note taking, careful management of impressions and, as stated, a balance of involvement and detachment. Finally, the lack of researcher experience in attending and observing skills poses a limitation with this method. The researcher had no prior experience as a participant observation researcher, however had experience with the setting and in the world of kayaking. This familiarity with surroundings allowed me to "settle in" and to concentrate on the task at hand. As well, by practicing reflexive research and continually questioning my strategies, I was able to improve on my researcher shortcomings in an ongoing manner as the study progressed.

1.6.6 Ethical Considerations

A number of ethical issues arise when humans are asked to complete questionnaires and are subject to observation. While a discussion of ethics is beyond the purview of this thesis, ethical considerations were addressed by following proper procedure established by the University of Victoria's Human Subjects Review. Permission to administer questionnaires and observe participants was applied for

and a Certificate of Approval granted (Appendix 3). A Voluntary Letter of Participation (Appendix 4) outlining the scope and purpose of the research and known risks to the participants was provided to all participants. If participants wished to participate in the study they signed and were provided with a Letter of Consent.

1.7 The Geographic Focus

This thesis is developed in fulfillment of academic requirements for a Master of Arts within the discipline of geography. Geography is an integrative, environmental discipline straddling the physical sciences and the social sciences. Geography is often defined as "*the study of the earth as the home of humankind*, focusing on the physical environment, on the interactions between this and human society, and on the spatial organization of that society" (Johnston 1985 :13). With such a broad mandate, geographers study an array of phenomena that influence human-earth interrelationships, often organized as sub-fields within the discipline.

Natural resource management can be considered one of those sub-fields (Hall & Lew 1998). Conservation and the use of natural resources has been a part of geographical discussion for many years, with interest in tourism and recreation emerging in the 1930's (Hall & Lew 1998). Geographical knowledge contributes greatly to the study of tourism: "there is scarcely an aspect of tourism which does not have some geographical implications and there are few branches of geography which do not have some contribution to make to the study of the phenomenon of tourism" (Matley (1976) in Hall & Lew 1998 :4). Mitchell & Murphy, (1991) identify four major contributions of geographers to the study of tourism: regional, spatial, environmental and evolutionary perspectives. Geographers have long studied regional characteristics as well as spatial considerations of tourism such as supply and demand, movement and flow (Hall & Lew 1998). Geographers have studied relationships between the social and physical environment, often using the framework of carrying capacity, and more recently contemporary recreation management frameworks such as Limits of Acceptable Change (Wight 1998). Finally, the evolutionary perspective addressing the question of how tourism destinations change over time, integrates various approaches, with much of the work focusing on models developed by Christaller (1963), and built on by Butler (1980), and most recently by Duffus and Dearden (1990) (Hall & Lew 1998).

This thesis is a study of place, specifically the Broken Group Islands and the human-environment relationship within. It embraces the environmental perspective of geography through an examination of the social and physical environment, referring to the frameworks of carrying capacity and Limits of Acceptable Change. This research also incorporates the work of Butler (1980), Duffus and Dearden (1990) within the context of examining management needs of the destination. This study fits within and contributes to the discipline of geography and more specifically, tourism geography, through its examination of place and application of geographically accepted models and frameworks.

1.8 Chapter Summary

Current use levels amid a central mandate of ecological integrity within our National Parks has challenged parks managers in determining where, what type and how much use should be allowed in order to leave our National Parks unimpaired (Wright & Rollins 2002). This multifaceted study examines visitor use and management strategies set within the Broken Group Islands, PRNPR, focusing on three dimensions: visitors' knowledge levels and the role of the guide in facilitating interpretation, visitor attitudes towards the voluntary no fishing policy and visitors limits of acceptable change. The following chapters address each of the dimensions as separate articles:

- Chapter 2 Recreational Use in the Broken Group Islands;
- Chapter 3: Interpretation and Role of the Guide within the Broken Group Islands;
- Chapter 4: Determining Attitudes toward the Voluntary No Fishing Policy;
- Chapter 5: Perceived Crowding in the Broken Group Islands; and
- Chapter 6: summarizes general conclusions and management implications.

Chapter 2: Recreational Use of the Broken Group Islands

2.1 Introduction

One of the most rapidly advancing tourism segments includes those activities that are dependent on natural environments (Ewert & Shultis 1997). Over 80% of Canadians participate in some form of nature-related activity, and much of this activity takes place in national or provincial parks (Environment Canada 1999). Although, there is consensus that some forms of human use are acceptable in National Parks, our existing protected areas are under stress from visitor use and excessive tourism development (Parks Canada 1998). Park resources are affected not just by the impacts of particular activities or particular levels of use, but also by the attitudes, values, beliefs and behaviours of parks visitors (Parks Canada Agency 2000 11-2). The Panel on the Ecological Integrity of Canada's National Parks clearly states that "agency actions on the subject of allowable and appropriate use are inconsistent with protecting ecological integrity, largely due to a lack of research on the impacts of visitor use" and, further, that there is a widespread lack of even basic data on the human dimensions of visitor use, impacts of visitor use, visitor knowledge about ecological integrity and similar use related issues (Parks Canada Agency 2000 11-4). It is evident that the maintenance of ecological integrity within our National Parks requires an understanding of human behaviour as revealed in the social sciences (Rollins & Robinson 2002 :118).

One National Park that is experiencing significant stress is Pacific Rim National Park Reserve (PRNPR), and in particular its marine component the Broken Group Islands, a popular multi-use marine protected area on the west coast of Vancouver Island, British Columbia. This popularity is echoed in the findings of the State of the Parks 1997 Report, rating PRNPR severely stressed from cumulative impacts and significantly stressed from internal sources, such as visitor use (Parks Canada Agency 2000 :1-9). Substantial increases in the popularity of coastal cruising, canoeing and kayaking have put additional pressures on the Broken Group Islands and the wilderness values of this environment (Parks Canada 1994). These pressures include: crowding concerns, threatened rock fish populations from overfishing, substantial commercial use and inadequate interpretive programming, providing a significant research opportunity using a social science framework.

Therefore, the overall purpose of this chapter is to examine recreational use within the Broken Group Islands, PRNPR specifically to develop baseline visitor data such as visitor and trip characteristics,

crowding perceptions, visitor attitudes towards a no fishing policy, the role of the guide and visitor knowledge about ecological integrity.

2.2 Literature Review

2.2.1 Visitors Characteristics, Specialization and Satisfaction

Human use is an important part of National Parks however, the major issue is how to manage human use effectively in ways that protect park resources while providing for satisfactory visitor experiences (Rollins & Robinson 2002 :117). It is recognized that to accommodate increased use levels and demands without adequate background from scientific research threatens the ecological integrity of National Parks (Parks Canada Agency 2000). While information on "use and users of parks and related areas remains spotty at best" (Manning 1999 :7), it is essential to inform park management through social science research as managers and visitors often have very different perceptions (Martin, McCool et al. 1989). Not only is it important to understand the user and uses of parks, it is important to understand visitors' perceptions about management aspects, which in turn can be an important assessment and monitoring tool of park management. Understanding levels of satisfaction aids in assessing the quality of the recreation or leisure experience and those aspects of it that contribute or detract from its quality (Mannell 1999 :240). This section examines visitor and trip characteristics to provide park managers with baseline information on the user and the uses within the park, as well as satisfaction with various management aspects of the Broken Group Islands.

A major challenge in recreation research is that people vary tremendously in attitudes, preference and behaviours within recreation settings (Clark & Stankey 1979). As there is "no such thing as the average camper" (Shafer (1969) in Rollins & Robinson 2002) an understanding of visitor characteristics is important not only as baseline data for National Park managers, but also to assist in explaining variability in attitudes, preferences and behaviours. One approach to explain variability in behaviour patterns and attitudes of participants within the same activity is specialization, defined as a "continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977: 175). McFarlane et al. 1998 state "as individuals gain experience in an activity they progress through stages of development accompanied by changes in setting preferences, social group affiliation and attitudes" (:196). Specialization assists in explaining variability by defining appropriate

subgroups of visitor populations (Wellman, Roggenbuck et al. 1982). This study adopts specialization theory as a way to examine variability in setting preferences and the variables used to construct a specialization index will be examined individually in this chapter.

2.2.2 Interpretation and Role of the Guide

National Parks are not only burdened with increasing visitor use, but are also challenged by substantially reduced budgets (Wright & Rollins 2002). In response to significantly reduced budgets, changes to park management have occurred: contracting out of services and allowing concessionaires to play a larger role in parks such as increasing the role of the private sector in interpretation delivery (Roggenbuck, Williams et al. 1992). Roggenbuck and others (1992) provide support for tour operators and guides having an important and influential role in information delivery, interpretation and as conduits for natural resource management agencies. Tour guides are considered an integral element in facilitating positive social and environmental encounters between the visitor and the visited (Weiler & Davis 1993; Gurung, Simmons et al. 1996; Butler & Boyd 2000).

Much of the work on the role of the guide is based on the work of Cohen (1985) who first conceptualized the guide's role into four distinct sub roles:

- *The Instrumental Role*: focusing on direction giving, navigation, access to the territory and safety;
- *The Interactional Role*: focusing on representation of the area to the followers in a non-threatening manner and organization;
- *The Social Role*: focusing on tension management, social integration and cohesion and using humor and entertainment to maintain and build group morale;
- *The Communicative Role*: focusing on selecting points of interest for the group, dissemination of correct information and the translation of the unfamiliar (adapted from Cohen 1985).

Weiler (1992), when examining the role of guides in nature based tourism noted that Cohen's work, while oriented to the individual and group needs, did not incorporate the needs of the host or natural environment. Weiler, "recognizing that the tour leader has some responsibility to the host environment" (1992 :228) and that "environmental interpretation to communicate with visitors is crucial in order to contribute to environmentally responsible tourist behaviour in both the short and the long term" (1991 :231) extended the model to include two roles encompassing the dimension of the host environment, which she

terms "resource management". These two roles Weiler described as "motivator, one who contributes to the environmentally responsible behaviour while onsite" and "environmental interpreter, one who contributes to long term knowledge and attitude change" (1991 :232).

Recognizing the value of tour guides as information conduits, Parks Canada recommends working in collaboration with tourist operators to provide information with a strong ecological integrity focus (Parks Canada Agency 2000). However, not only is there a lack of research on visitors' existing level of knowledge about National Parks (Parks Canada Agency 2000), few studies have examined the effectiveness of the role of the guide in information delivery within a National Park setting. The Broken Group Islands are well suited to examine the role of the guide, as the area is witnessing growth in commercial tourism operations: in 1995, 12% of all Broken Group Island visitors traveled with a commercial guide or tour outfitter (Rollins 1995 Unpublished Report). However, Parks Canada's visitor survey 2000 revealed that as many as 40% of kayak visitors traveled with a commercial guide or outfitter (Rollins & Randall 2001 Unpublished Report). Therefore, this study will examine the importance and performance of the role of the kayak tour guide based on the work of Cohen (1985) and Weiler (1992) with a focus on delivery of interpretive messages.

2.2.3 Voluntary No Fishing Policy

While most Canadians assume National Parks are protected from harvest, in reality most parks have some kind of active harvest. The most common type of extraction is sport fishing, with twenty-two parks reporting a sport fishing harvest (Woodley 2002), including the Broken Group Islands. The Broken Group Islands receive very high levels of backcountry use and "recreational fishing threatens local populations of rock cod" (Parks Canada Agency, 2000 :1-13). Of the many possible approaches to resource management, a Voluntary No Fishing (VNF) Policy has been adopted for the Broken Group Islands. Critical to the success of a voluntary resource management approach is visitor support (Gubbay & Welton 1995).

This section examines visitor support for the VNF Policy in an attempt to understand the underlying attitudes and beliefs towards the policy. Understanding visitors attitudes is important in development of interpretive messages as interpretation is considered central to park policy: "Interpretation plays a critical role in educating visitors about ecological integrity and shaping their attitudes, values,

beliefs and behaviours within National Parks" (Parks Canada Agency 2000 :11-2). Therefore, results will inform park managers about visitor attitudes and beliefs underlying their support or opposition to the policy and contribute to the development of effective interpretative messages designed to increase visitor support (Fishbein & Manfredo 1992).

2.2.4 Crowding

Coastal wilderness settings, such as the Broken Group Islands, are particularly sensitive to visitor impacts complicated by the difficulty in dispersing people away from the marine interface, where crowding and resource impacts are most severe (Rollins 1998). Currently, the Broken Group Islands are managed for a backcountry, wilderness experience, affording those who visit opportunity for solitude (Parks Canada 1994). Overnight visitation levels doubled from 1978 to 1992, (Parks Canada 1994 :10), and have currently peaked at approximately 13,000 visitor camper nights (D. Vedova, pers. comm., April 2001). Results from a study completed in 2000 revealed that motorized watercraft and other visitors were significant detractors from the visitor experience, suggesting that current use levels are unacceptable to visitors. Under current use levels, the campsites of the Broken Group Islands are suffering obvious signs of overuse, and illegal camping is occurring, at least partially, as a response to overcrowding and the deteriorating condition of existing sites (Parks Canada 1994).

As the goal of management is to provide quality recreation experiences while protecting natural resources, managers must decide what to do when faced with crowding to achieve their management objectives. The development of management objectives requires an understanding of visitor use impacts and preferences for a quality recreation experience, signaling the importance of researcher input into the decision making framework. Early research into measuring crowding studied the relationships between use levels and crowding arguing that crowding occurs when use levels reach a certain level. However, studies revealed weak a correlation between use levels and crowding. It was speculated that it was not use level that influenced crowding, but actual encounters or contact that influenced crowding. The next wave of crowding studies then examined the relationships between encounters and crowding resulting again in weak relationships. Crowding studies are summarized by Manning (1999) and highlight generally weak relationships between use levels, encounters and crowding (pp. 89-92).

A number of theories have been presented to account for the mixed findings in crowding studies (Rollins 1998; Manning 1999; Rollins & Robinson 2002). One theoretical approach suggests that individuals use a number of coping mechanisms to mediate perceived crowding, such as displacement, which involves temporal or spatial change in use; product shift, a reevaluation of the experience, for example from a "wilderness" to a "semi-wilderness" experience"; and rationalization, a cognitive shift in their perception of the experience to meet actual conditions (see Manning, 1999). A second theory, social interference theory suggests that individuals will evaluate their experience as crowded, not when contacts reach a certain level, but when the number of other people present interferes with or restricts a desired goal, such as solitude (Gramann 1982; Manning 1999). Finally, crowding can be understood as a normative process that differentiates between use levels as a neutral, objective physical concept such as number of people per unit of space and crowding as a negative, subjective evaluation of the use level, influenced by a number of factors (Manning 1999). One factor includes personal characteristics such as motivations, experience levels, attitudes and demographics, shown to influence crowding perceptions. Characteristics of those encountered, a second factor, includes type and size of group, behaviour and the degree to which others are perceived to be "alike". Finally, situational variables, such as the type of area whether it is backcountry or frontcountry and location within an area whether it is a campsite, on a trail or at an access point have been found to influence crowding perceptions.

As a result, researchers have recently studied crowding under the framework of normative theory (Roggenbuck, Williams et al. 1991; Vaske, Donnelly et al. 1996; Manning, Valliere et al. 2000; Heywood & Murdoch 2002). Considered a contemporary approach to crowding, the normative approach has been developed as a useful way to conceptualize, collect and organize empirical data representing value judgments about resource management (Vaske, Donnelly et al. 1996), and suggests that visitors have "preferences, expectations, or other standards by which to judge a situation as crowded or not" (Manning 1999 :122). If these preferences can be defined and measured, they then can assist in formulating indicators and standards of quality useful for management purposes (Manning, 1999). Therefore, this section incorporates the normative theory framework as an approach to determining acceptable levels of visitor use within the Broken Group Islands.

Given the substantial growth of marine tourism within parks and protected areas, and the tenuous nature of ecological integrity within Canada's National Parks, social science research to inform effective visitor management strategies becomes increasingly important. The Broken Group Islands provides an appropriate backdrop from which to examine not only visitor use, but also the attitudes, values, beliefs and behaviours of park visitors. Therefore, this chapter will examine the following questions:

1. What are the visitor and trip characteristics?
2. What are visitor perceptions of management aspects?
3. What are visitors' levels of knowledge of park heritage messages?
4. How do visitors rate the importance and performance of the role of the guide?
5. What are visitor attitudes towards the no fishing policy?
6. What are visitors perceived levels of crowding?

2.3 Methodology

This study has adopted a blended approach using a face to face structured questionnaire and participant observation to collect data. However, for the purposes of this section, results are based entirely on quantitative data derived from the questionnaire. Therefore, this chapter will discuss only those methods appropriate to it.

2.3.1 Questionnaire Design

The face-to-face structured questionnaire method has been chosen to obtain data on kayaking groups within the Broken Group Islands. This structured questionnaire method as opposed to a mail in survey is "suitable for surveying populations for whom there is no list" (Salant & Dillman 1994 :42), generates a higher response rate, and retains researcher control. The questionnaires were administered at the primary entry sites to the Broken Group Islands, Toquart Bay and onboard the Francis Barkley enroute to Sechart Whaling Station to capture the kayak visitors to the park. A pre and post trip questionnaire design was used and reveal the demographics, satisfaction, perceptions of crowding, perceptions of management aspects, attitudes towards the role of the guide as well as changes in attitudes and beliefs respecting the VNF attitudes and knowledge levels of park messages. To achieve this, questionnaires contained closed-ended questions incorporating the Likert scale and semantic differential measures, a visual approach to measuring social norms, as well as open-ended questions to allow an avenue for further discussion.

2.3.2 Focus Groups

Bedford and Burgess define the focus group as a “one-off meeting between four and eight individuals brought together to discuss a particular topic by a researcher who moderates and structures the discussion” (2001 :121). While traditionally employed in the consumer market research and psychotherapy arenas (Hoggart, Lees et al. 2002), the focus group is an appropriate research method in geography, having been successfully applied to examine views of planning developments, to explore cultural values of landscapes and to address physical, intellectual, social and emotional benefits of participating in wildlife projects (Hoggart, Lees et al. 2002). Lunt and Livingstone (1996), suggest that the focus group is commonly used to gain understanding about an issue prior to the design of a social survey (Salant & Dillman 1994; Bedford & Burgess 2001). Thus, the focus group method was chosen to explore one of the topics within the study: participants’ underlying beliefs and attitudes towards the VNF within the Broken Group Islands. Data resulting from this focus group was used to guide the questionnaire development.

Unlike the random sampling design for the questionnaire, the sampling design for a focus group is purposive as participants are selected according to the research question (Hoggart, Lees et al. 2002 :216). In keeping with Bedford’s defined group size and because smaller groups give a greater opportunity for individual contribution (Bedford & Burgess 2001), six participants were carefully recruited. Open-ended questions were asked to gain information on the beliefs of the voluntary no fishing policy, from which salient beliefs isolated. Results were compiled into a master list of beliefs and forwarded to the National Park warden responsible for the Broken Group Islands for review and input, resulting in a scale of eight belief items, which guided the development of the questionnaire.

2.3.3 Pilot Study

Once the questionnaire was developed, two pilot studies were conducted. The first pilot occurred in April 2001 by administering the questionnaire to seven people familiar with the study area. The purpose of this pilot was to determine if question sequencing was appropriate and if questionnaire language and response formats were easily understood. Following this pilot, adjustments were made to the questionnaire and a second pilot was administered, on site at Toquart Bay, in May 2001. Due to weather

conditions, the questionnaire was administered to only two kayakers. However, the information gleaned from this pilot proved valuable and further adjustments were made to the questionnaire design.

2.3.4 Sampling Design

It is estimated that approximately equal numbers of users enter and exit the Broken Group Islands through primary entry sites (*Vedova, pers com*) Toquart Bay, a Provincial Ministry of Forests Recreation Site and Sechart Whaling Station, a privately operated transportation and lodge business owned by Lady Rose Marine Services both located outside of park boundaries. Rollins' 1995 Broken Group Islands study supports that approximately 50.7% of visiting boating and kayaking "campers" enter the area the Lady Rose, 43.3% from Toquart Bay, and 5.9% of "campers", which includes those in motorized boats, entered from Ucluelet, Port Alberni, Bamfield and other. While it is possible to enter the Broken Group Islands by kayak from other entry sites such as Bamfield and Ucluelet, it is a highly committed, potentially dangerous route, requiring a high level of expertise. The number of kayakers traveling from these entry points would be substantially less than the 5.9% suggested in Rollins (1995); however, a limitation with this sampling design is that those kayakers who entered or exited the group from areas other than Toquart Bay or the Francis Barkley may have been excluded.

Pre and post trip questionnaires were administered to randomly selected guided and non guided kayak visitors as they left from and landed on the beach at Toquart Bay and while they were traveling on the Francis Barkley ship. The Francis Barkley transports kayakers and other visitors from Port Alberni, B.C. to Sechart Whaling Station in the morning and returns kayakers who have finished their Broken Group Island trip to Port Alberni, in the afternoon, three days a week in July and August and four days a week June and September.

In addition to useable completed surveys from these two sites, included in the sample are the completed questionnaires from the participant observer component of the study. The researcher joined four guided kayak trips and each of the 21 participants voluntarily completed pre and post trip surveys, resulting in 42 completed useable questionnaires.

A total of 699 useable questionnaires were completed from a population of approximately 4,472 camping permitted kayakers for May – September, 2001 (R. Smith, *pers. comm.*, November, 2001) as illustrated in Table 2.1.

Table 2.1 Sample Size by Group

Group	Pre Trip	Post Trip	Total
Guided	47	84	131
Not Guided	256	270	526
Participant Observation	21	21	42
Total	324	375	699

A total of 699 useable questionnaires were completed, however 21 of those questionnaires have been removed from general analysis as they represent the post trip responses of the same respondents within the participant observation sample. Therefore, it is estimated that with a sample of 678 useable questionnaires, based on an approximate overall visitor population of 4,472 for 2001, results for the total sample can be considered accurate within a margin of error of $\pm 3.4\%$ at the 95% confidence level (Salant & Dillman 1994). In other words, we can be 95% confident that the sample results reported are within $\pm 3.4\%$ of results had every visitor been surveyed. The overall response rate for this study is 93.5%.

2.3.5 Analysis

For this chapter, study results are presented descriptively by frequency, mean, median, mode and standard deviation where appropriate. Tables and graphs have been developed for presentation and illustration of results to provide an overall description of visitor and trip characteristics, satisfaction levels, attitudes and knowledge levels. Analysis has been completed using SPSS 11.0 statistical software.

2.4 Results and Discussion

Results will be discussed in six distinct sections:

- Section 2.3.1: Visitor profile including demographics, activities, trip characteristics and specialization variables;
- Section 2.3.2: Visitor's Perception of Management Aspects;
- Section 2.3.3: Heritage messages and visitor learning;
- Section 2.3.4: Importance and Performance of the Role of the Guide;
- Section 2.3.5: Visitor Attitudes towards the Voluntary No Fishing Policy; and
- Section 2.3.6: Perceived Crowding.

In addition to the discussion of results in each of section, summary tables of the raw data are attached as Appendix 5. As well, the surveys contained open-ended questions to elicit visitor comments, which have been transcribed and are attached as Appendix 6.

2.4.1 Visitor Profile

People vary tremendously in attitudes, preference and behaviours within recreation settings (Clark & Stankey 1979). As there is “no such thing as the average camper” (Shafer (1969) in Rollins & Robinson 2002) an understanding of visitor characteristics is important not only as baseline data for National Park managers, but also to assist in explaining variability in attitudes, preferences and behaviours. This section will include visitor and trip characteristics in order to provide an overview of the Broken Group Island kayak visitor.

2.4.1.1 Visitor Characteristics

Research has provided evidence that a number of demographic and social variables influence people’s perceptions and attitudes (Payne & Nilsen 2002). Thus, an understanding of visitors’ origin, age and the size of the group they travel with are important characteristics in understanding the visitor experience.

Origin: While the majority of visitors, 70.2%, originate from Canada, 20.9% are from the United States and a small percentage, 3.1%, are from countries other than Canada or the United States as illustrated in Table 2.2. The majority of Canadian visitors are from British Columbia and Alberta, with 52.7% originating from British Columbia and by 13.5% from Alberta. The majority of American visitors are from Washington State and Oregon.

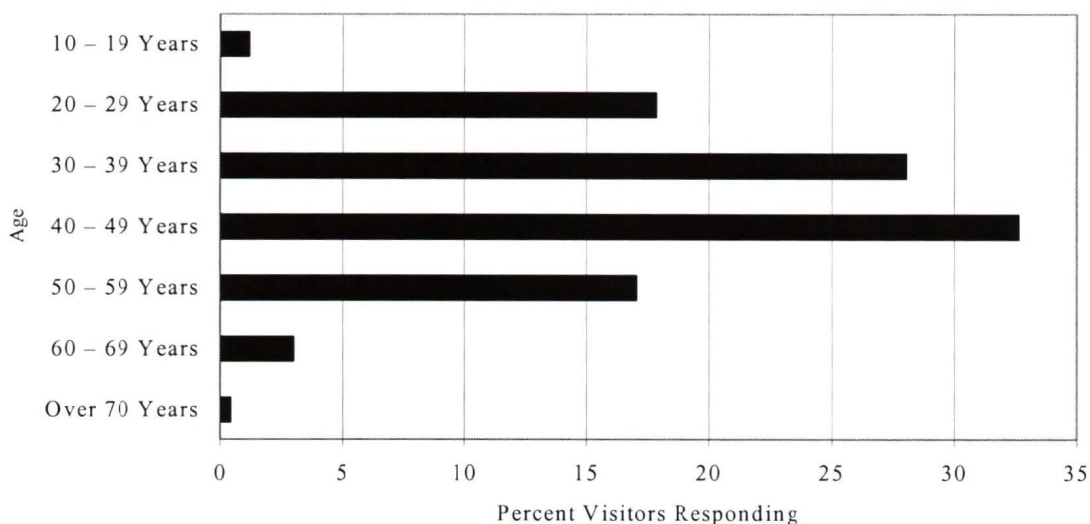
Table 2.2 Origin of Visitor

Origin	Response (%)
Principal residence in Canada	70.2
British Columbia.....	52.7
Alberta	13.5
Ontario	2.2
Saskatchewan	0.7
Quebec	0.6
Manitoba	0.4
Nova Scotia	0.1
Principal residence in United States	20.9
Pacific Northwest	
Washington State.....	6.3
Oregon	5.2
California	3.1
Other United States.....	5.0
Principal residence another country.....	3.1
Germany.....	1.0
Holland/The Netherlands	1.3
Ireland	0.6
New Zealand.....	0.1
Australia	0.1
Missing	5.6

n=678

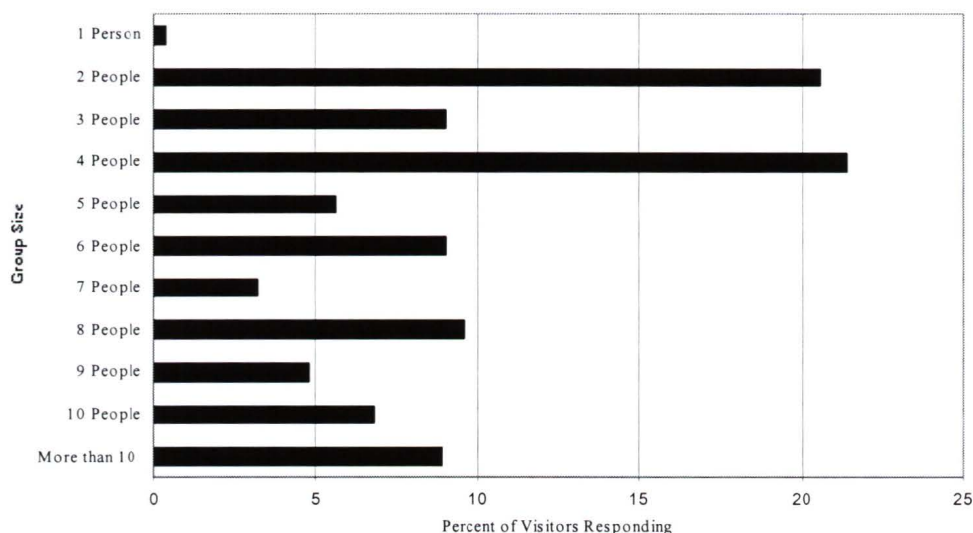
Age: A majority (50.6%) of kayak visitors to the Broken Group Islands are between the ages of 30 and 49 and 79.6% under the under the age of 50 (see Figure 2.1). The largest proportion of visitors is between 40 and 49 (32.6%), while 17.8% visitors are between 20 and 29 years of age and 17% of visitors are between 50 and 59 years of age. There are very few visitors that are over 60 years old (3.4%) and 19 and under (1.2%) however, only those aged 19 and over participated in this study, so there may be a slightly higher proportion of visitors under 20 years of age.

Figure 2.1 Visitor Age



Group Size: According to Manning (1999), the average party size in outdoor recreation settings is between three and six people. In this study, people were asked how many people were in their group. More than half of the respondents, 51.4%, travel in small groups of four or less, yet a large number of visitors, 39%, travel in groups of between five and ten people (see Figure 2.2). Further, while park regulations clearly stipulate maximum group size of ten, 8.9% of visitors travel with groups of more than ten people. When these results are compared to the results from a 1995 study group sizes reported were: mean 4.7 persons per party, median 3 and mode 2 it would seem that the average group sizes are now larger (Rollins 1995 Unpublished Report :25).

Figure 2.2 Group Size



Mean 5.7; Median 4.0; Mode 4.0

To summarize visitor characteristics, results of this study indicate that the majority of visitors (70.2%) originate from Canada and most of these visitors (52.7%) are from British Columbia. The majority of visitors to the BGI are between 30 and 49 years of age, and travel in groups of four or less.

2.4.1.2 Trip Characteristics:

Effective park visitor management demands an understanding of human use patterns; however parks agencies may not have a precise understanding of human use (Payne & Nilsen 2002 :171). Variables such as how long visitors stay in the park, where they stay, what activities they engage and the level of commercial visitation are integral components in understanding the visitor experience and are included in this section.

Length of Stay: Visitors were asked how many nights they spent camping in the BGI, at Sechart Lodge and/or Toquart Bay. Visitors spent an average of four nights camping the BGI (mean 3.98, median 4, mode 4) (Table 2.3). The majority of visitors, 55.9% stay three or four nights, 24.2% stay five or more nights and 11.0% stay two or fewer nights. 22.0% of visitors stay at either Sechart Lodge or Toquart Bay as part of their trip experience. It is also worth noting that while the majority of the visitors, 91.1% overnight in the park, a significant number of visitors, 8.8% are staying outside the park boundaries while still visiting the park, suggesting these visitors are day use visitors only. Day use is considered an emerging issue that warrants more management attention (Manning & Lime 2000 :42)

Table 2.3. Nights Spent

Location	Nights spent (%)							Total ^a	Missing	Mean
	1	2	3	4	5	6	7+			
In BGI	0.7	10.3	25.8	30.2	11.1	5.5	7.5	91.1	0.3	3.98
Sechart Lodge	2.5	5.3	2.8	2.1	0.0	0.0	0.6	13.3	0.3	2.55
Toquart Bay	7.7	0.7	0.1	0.0	0.0	0.1	0.1	8.7	0.3	1.31

N=678

^aadds up to more than 100% because visitors may stay in the park as well as Sechart Lodge and Toquart at the beginning or end of their trip.

Islands Visited: Of the islands visited, over 27% of the visitors stayed on Willis and 25.5% of visitors stayed on Dodd Islands, followed by over 22.6% of visitors on Gibraltar and 20.8% on Clarke Islands (Table 2.4). Results suggest that use appears to be concentrated within inner islands, Willis and Dodd. Further, while park regulations stipulate a maximum camp stay of four nights at any one island, 2.8% of visitors stayed more than four nights on six of the eight designated camping islands.

Table 2.4 Islands Visited

Islands	Number of Nights on Islands (%)							Total	Missing	Mean
	1	2	3	4	5	6	7+			
Willis	7.7	7.2	7.4	3.7	1.0	0.0	0.0	27.0	0.6	2.37
Dodd	10.0	4.4	6.2	4.3	0.6	0.0	0.0	25.9	0.6	2.25
Gibraltar	10.9	7.7	2.7	1.2	0.0	0.0	0.1	22.6	0.6	1.77
Clarke	5.2	6.5	7.2	1.5	0.3	0.0	0.1	20.8	0.6	2.33
Hand	14.9	2.9	0.9	0.4	0.0	0.0	0.0	19.1	0.6	1.31
Turret	5.5	8.4	2.5	1.0	0.1	0.1	0.1	17.7	0.6	2.03
Gilbert	4.4	3.2	2.2	0.3	0.0	0.0	0.0	10.1	0.6	1.84
Benson	1.8	3.1	0.9	0.9	0.4	0.0	0.0	7.10	0.6	2.31
Other	0.7	1.6	0.0	0.0	0.0	0.0	0.0	2.39	0.6	1.68

n=678

Activities: While visiting the islands, visitors engaged in a number of activities, however most visitors kayaked (96.6%), camped (91.3%), engaged in wildlife viewing (90.8%) and hiked or walked (75.8%) (Table 2.5). A number of visitors also engaged in some form of harvest: 18.3% of visitors fished for salmon, 16.2% bottom fished, 11.9% crabbed and 7.1% gathered shellfish.

Table 2.5 Activities Engaged In

Activity	Response (%)
Kayak.....	96.6
Camp.....	91.3
Wildlife Viewing.....	90.8
Day hike/walk.....	75.8
Salmon Fishing.....	18.3
Fishing for bottom fish.....	16.2
Other.....	15.2
Crabbing.....	11.9
Shell fish gathering.....	7.1

N=678

Responses add up to more than 100% as the respondents could choose as many as applicable.

When responding to the open ended question “other activities”, a number of respondents indicated that they engaged in canoeing, photography, beachcombing as well as other activities.

Guided Travel: While many visitors to the area do not hire a commercial guide or travel with commercially guided trips many visitors do. Results from this study indicate that approximately 22.4% of respondents traveled into the park using a guide. Contrasting these results with previous studies, Rollins and Randall (2001) found that that approximately 39% of kayak visitors traveled with a guide or outfitter. This is an apparent increase from the 1995 study of *all* visitors, which indicated that 12% of respondents traveled with a guide (Rollins 1995 Unpublished Report). Because the 1995 study surveyed all visitors, this figure may not accurately represent the portion of kayakers traveling with a guide. However, as visitors traveling by kayak comprised 65% of the survey respondents in the 1995 study, it can be surmised that there has been an increase in the use of a guide within the Broken Group Islands from 1995 to 2000.

There is a substantial difference in guided visitors when results of this study (22.4% guided) are contrasted with results of the 2000 study (39.0%). This can be explained, in part, by methodology. In 2000 sampling occurred more heavily at Toquart Bay than on the Francis Barkley transport ship. Toquart Bay historically is the preferred launch site for commercially guided trips, rather than the Francis Barkley. In 2001, although sampling days were fewer on the Francis Barkley than Toquart Bay, more questionnaires were completed on the Francis Barkley, thus fewer commercially guided visitors were sampled. To determine if there is a pattern or an association between location and trip type, the data was tested using chi-square analysis, which provides evidence that there is an association between trip type and location.

More guided visitors typically depart from Toquart Bay than the Francis Barkley and this difference is statistically significant (see Table 2.6).

Table 2.6 Trip Type by Location

Location	Response (%)		χ^2	sig.
	Guided	Non-Guided		
2000				
Toquart Bay (n = 317)	43.8 (139)	56.2 (178)	22.469	.000
Frances Barkley (n = 198)	31.3 (62)	68.7 (136)		
Total Sample (n = 515) ^a	39.0 (211)	61.0 (314)		
2001				
Toquart Bay (n = 202) ^b	49.5 (100)	50.5 (102)	155.723	.000
Frances Barkley (n = 476) ^b	10.9 (52)	89.1 (424)		
Total Sample (n = 678)	22.4 (152)	77.6 (526)		

^a Does not include "on water boats" (n=24) and "mail-in" (n=25) surveys

^b Does not include 21 cases (participant observation post)

Actual responses in ()

Chi-square, significant at $p < .05$

To summarize trip characteristics 91.1% of Broken Group Island visitors camp within the park and spend an average of four nights primarily on Willis and Dodd Islands. While in the park, visitors like to view wildlife, hike and walk as well as engage in some form on fishing. When traveling in the park, visitors travel primarily unguided, however approximately 22.4% traveled with a guide in the summer of 2001.

2.4.1.3 Visitor Specialization

A major challenge in outdoor recreation planning and management is that people vary in attitude, preference and behaviour in outdoor experiences. Much of the recreation research has been driven by the concept that recreation specialization is an important variable for differentiating among recreationists (Manning 1999). Recreation specialization assists in explaining variability among leisure participants (Kuentzel 2001) by defining appropriate subgroups of visitor populations based on a "continuum from the general to the specialized, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977 :175). McFarlane et al. 1998 state "as individuals gain experience in an activity they progress

through stages of development accompanied by changes in setting preferences, social group affiliation and attitudes" (:196). It is likely then that an advanced recreationist has greater activity related skills and knowledge base, which may lead to differences in attitudes, preferences and behaviour.

While cognitive and behavioural components to specialization have been traditionally incorporated in recreation specialization research, recent studies have argued for the inclusion and broadening of recreation specialization components to include elements of the affective domain, as observable variables, such as equipment ownership may not accurately reflect the level and type of affective attachment that an individual has developed for an activity (McIntyre & Pigram 1992). Included in this study is an "enduring involvement scale" based on the work of McIntyre and Pigram (1992) in an attempt to capture the affective domain of specialization construct. The affective component, in addition to cognitive components of skill level and associated equipment, and behavioural components of prior experience and setting familiarity provide a comprehensive, interrelated and mutually reinforcing recreation specialization index (McIntyre & Pigram 1992; Scott & Shafer 2001).

In order to gain an understanding of the visitor's level of specialization, survey respondents completed a number of questions designed to provide insights into visitor characteristics, but also to construct a comprehensive, specialization index. This specialization index will be used as an independent variable in explaining variability in responses to dependent variables, knowledge, attitude and setting preferences discussed further in Chapters 3, 4, and 5. Variables used to develop the specialization index include: previous visits, years involved in kayaking, self reported level of experience, equipment owned and enduring involvement in the activity of kayaking and are examined individually here.

Previous Visits: Respondents were asked if this was their first visit and if it was not, how many previous visits they had made. In total, 79.2% of respondents were visiting the Broken Group Islands for the first time and 20.6% of respondents were repeat visitors. This result is consistent with the 2000 survey results, however is higher than the 1995 survey results which indicated that 66.4 % of camping visitors were first time visitors (Rollins 1995 Unpublished Report). Of the repeat visitors, most (17.9%) had visited the park previously without a guide, few (2.7%) had visited previously with a guide and a small number of visitors 0.8% had previously visited by other means. The majority of repeat visitors (13.0%) had visited the Broken Group Islands only once previously (Table 2.7).

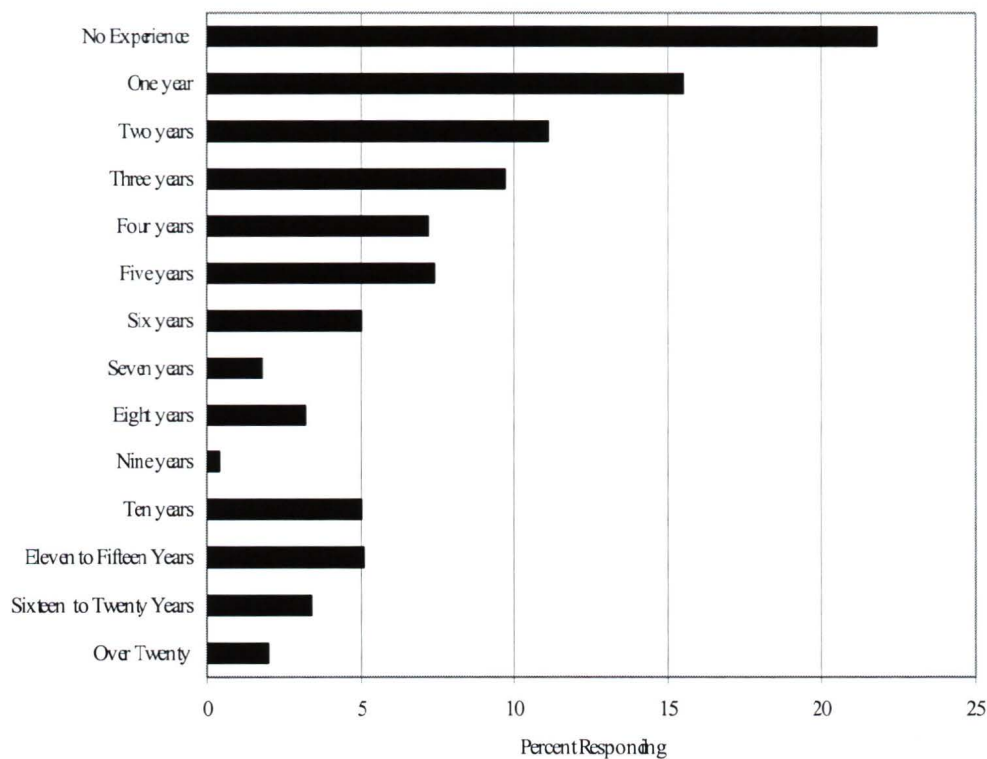
Table 2.7 First Time and Repeat Visitation to the BGI

Visit Type	Response (%)
First Visit to BGI	
Yes.....	79.2
No.....	20.6
Missing.....	0.2
If No, Previous Guided Trips	
One.....	1.8
Two.....	0.4
Three - Five.....	0.4
Six or more.....	0.1
Missing.....	0.7
If No, Previous NonGuided Trips	
One.....	11.2
Two.....	2.8
Three - Five.....	3.2
Six or more.....	0.7
Missing.....	0.6
If No, Previous Trips Other	
All.....	0.8
Missing.....	0.6

N=678

Years Involved: Visitors were asked about how many years they had been involved with kayaking. Results indicated that the average years involved in kayaking was 4.4 years, median 3 years and a mode of 0 years. Almost half of the respondents (48.4%) indicated they had been involved two years or less with 21.8% of visitors indicated that they had no prior kayaking experience, and 26.6% indicated that they had one to two years of kayaking experience. Over 24% of respondents state they have between three to five years of experience and 15% of respondents indicate they have between six and 10 years of experience, followed by over 10% of respondents stating that they have more than 10 years of experience (see Figure 2.3).

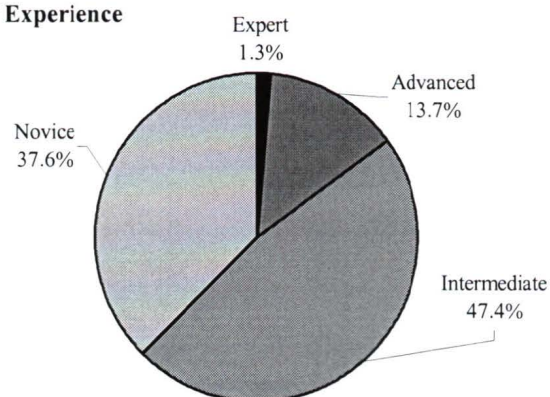
Figure 2.3 Years Involved in Kayaking



Years Involved in Kayaking: Mean = 4.4; Median = 3; Mode = 0; SD 5.94

Self Described Level of Experience: Visitors were also asked to describe their level of experience in kayaking choosing from novice, intermediate, advanced and expert responses. The majority of respondents indicated that they were novice or intermediate: 37.6% described their level of experience as novice, 47.4% described their level of experience as intermediate. 13.7% described themselves as advanced and even fewer, 1.3% described themselves as expert (see Figure 2.4).

Figure 2.4 Level of Experience



Overall, 85% of respondents indicated that they were novice or intermediate. Contrasting these results with results from previous studies suggests that there may be an increase in novice and intermediate visitors since 1995 which survey indicated 61% of respondents reported they were novice or intermediate. However, it must be noted that the 1995 survey results were not limited to kayakers only, but included all park visitors.

Equipment Ownership: When respondents were asked about ownership of kayak equipment, 67.8% do not own their own boat and 31.7% own their own kayak.

Enduring Involvement: In addition to specialization variables that identify years of experience, previous visits, perceived skill level and boat ownership, respondents were asked to rate their involvement in kayaking using the “enduring involvement scale”. McIntyre and Pigram (1992), expanding on the work of Kapferer and Laurent (1985) developed a 13-item enduring involvement scale including components of attraction, self-expression and centrality of the activity.

The enduring involvement scale implemented in this study consisted of 13 items: two items were deleted from the original scale due to redundancy borne out by the pilot study and two items were added at the request of PRNPR office resulting in a final 13 item scale. While this scale departs from McIntyre and Pigram's (1992) scale, it can be considered highly reliable indicated by Cronbach's alpha of .863 (Mitra & Lankford 1999). With the exception of one item, all belief statements are considered important and contribute to the overall reliability of the scale; removal of the one item does not substantially improve overall validity (Table 2.8). It is important to note that while this scale is exploratory in nature, it compares well with Bricker and Kerstetter's (2000) study who applied the enduring involvement scale to whitewater recreationists; reliability analysis for each separate item ranged between .77 and .80, achieving an overall Cronbach's alpha of .92.

Table 2.8 Reliability of Likert Scale Measuring Enduring Involvement of Kayakers

Likert Item	Alpha If Item Deleted
Kayaking is one of the most enjoyable things I do	.8519
Kayaking offers me relaxation when life's pressures build up	.8522
I enjoy discussing kayaking with my friends	.8508
Kayaking is very important to me	.8412
Kayaking says a lot about who I am	.8392
When I am kayaking I can really be myself	.8454
When I am kayaking others see me the way I want them to	.8464
You can tell a lot about a person when you see them participating in kayaking	.8533
I find that a lot of my life is organized around kayaking	.8492
Most of my friends are in some way connected with kayaking	.8579
*I chose kayaking because I believe it to be the most low impact of other boating activities	.8617
*I am involved in kayaking because it is popular with my friends	.8798
**I can't say I particularly like camping	
**I have little or no interest in camping	

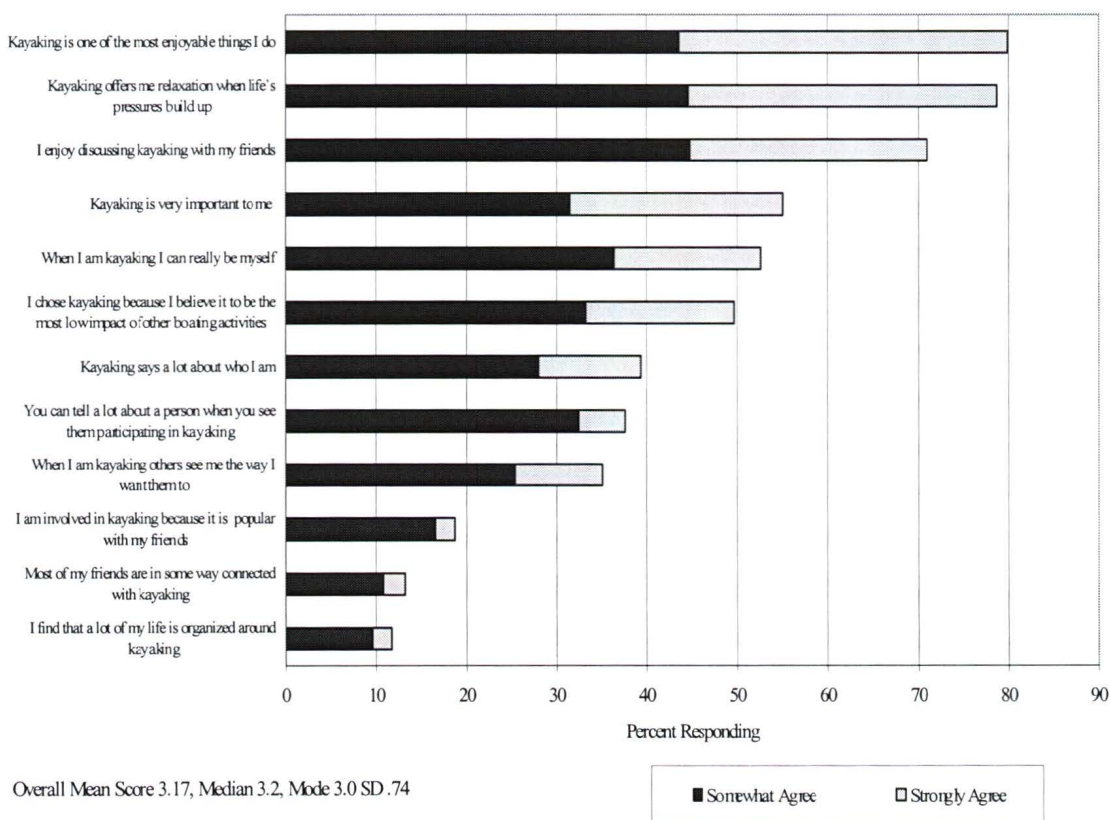
Cronbach's alpha = .8634

*Additional items not included on original scale developed by McIntyre and Pigram (1992)

**Items deleted from original scale developed by McIntyre and Pigram (1992)

Respondents were asked to indicate their level of agreement with each item on a five point Likert scale that ranged from *strongly disagree* (1) to *strongly agree* (5). Results indicating the “somewhat and strongly agree” responses for each item are highlighted in Figure 2.5.

Figure 2.5 Level of Involvement of Kayakers



Results suggest that respondents indicate high levels of agreement for some indicators of involvement, yet very low levels of agreement for others. Overall scale mean of 3.17 from a possible range of 1 to 5 and a standard deviation of .74 suggests that there is variability within the respondents' level of involvement with kayaking. While these results alone may not be particularly interesting, the intent and value of the enduring involvement scale is its capacity to explain variability and accordingly enduring involvement results have been incorporated into the specialization index developed and applied in Chapters 3, 4, and 5.

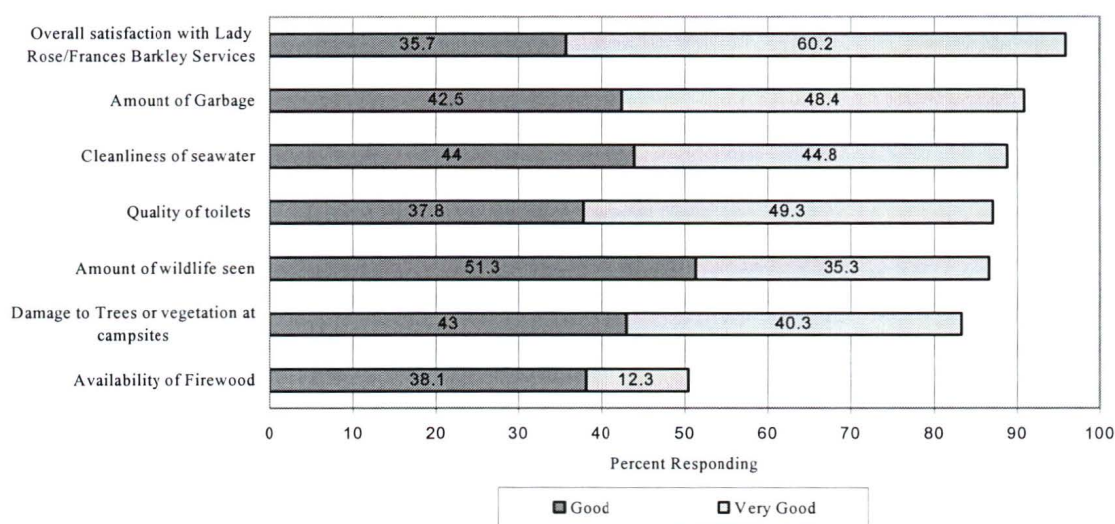
Knowledge of visitor and trip characteristics provides information needed to inform park management such as who is the user and what are the uses of the park, information that is lacking at the park management level. Results indicate a general profile of the visitor based on averages, however there is variability within the responses supporting the idea that "there is no such thing as an average camper". Specialization theory was adopted to address issues of variability within this study, and individual variables that will comprise the specialization index were examined individually. Results indicate that while the "average" visitor appears to be a first time, novice visitor with few years of experience, there is variability

in the responses as some visitors are repeat, advanced kayakers with many years of experience. These results provide evidence that the Broken Group Island visitor cannot be considered a homogenous population (Duffus & Dearden 1990) and that understanding the visitor typology may contribute to explaining variability in attitudes, behaviour and setting preferences explored further in Chapters 3, 4 and 5.

2.4.2 Visitor's Perception of Management Aspects

Understanding visitors' perceptions about management aspects can be an important assessment and monitoring tool of park management, while providing insights into the quality of the visitor experience. Understanding levels of satisfaction with specific components aids in assessing the quality of the recreation or leisure experience and those aspects of it that contribute or detract from its quality (Mannell 1999 :240). Park visitors were asked to state their levels of satisfaction about specific or source components, such as "amount of garbage" as well as overall or global management aspects such as "overall satisfaction", by rating each item "very poor", "poor", "not sure", "good" or "very good". Results to questions related to specific components are illustrated in Figure 2.6, highlighting "good" and "very good" responses. These results suggest generally high levels of satisfaction, over 80% reporting "good" or "very good" for all itemized management aspects of the visitor experience with the exception of the availability of firewood.

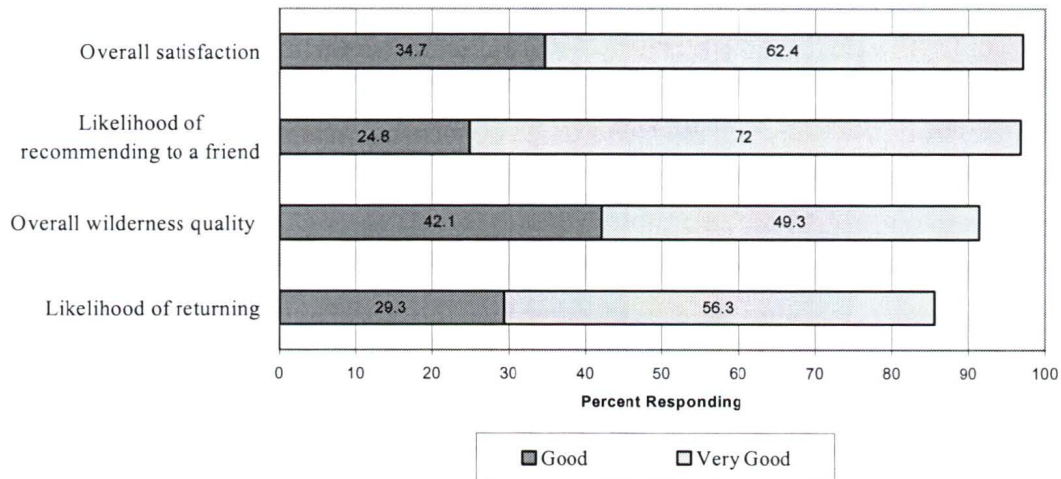
Figure 2.6 Visitor Perceptions of Management Aspects "Source Satisfaction"



Results to questions related to global components of management aspects are illustrated in Figure 2.7, highlighting "good" and "very good" responses. These results indicate very high levels of overall

satisfaction with 97.1% responding “good” or “very good, 96.8% likely to recommend to a friend, 91.4% finding the overall wilderness quality “good” or “very good” and over 85.6% of visitors likely to return.

Figure 2.7 Visitor Perceptions of Management Aspects "Global Satisfaction"

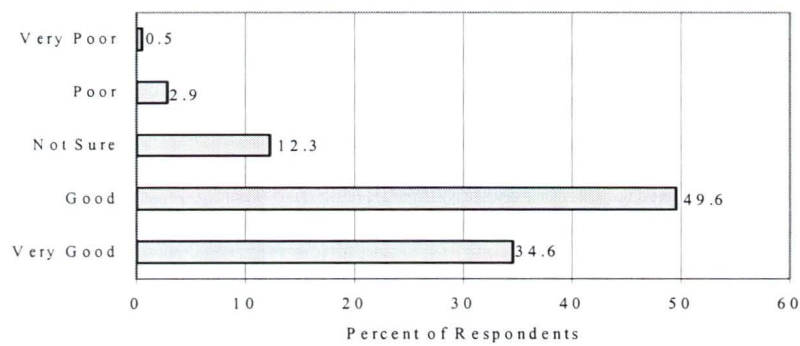


These results are not surprising, as most studies have found very high levels of satisfaction among visitors to a variety of recreation areas (see Manning, 1999 :12). Thus, caution is needed in interpreting these results, as recreation research indicates overall, uniformly high levels of satisfaction, thus limiting the usefulness of satisfaction results in understanding opportunities and experiences (Manning 1999 :15).

2.4.3 Heritage Messages and Visitor Learning

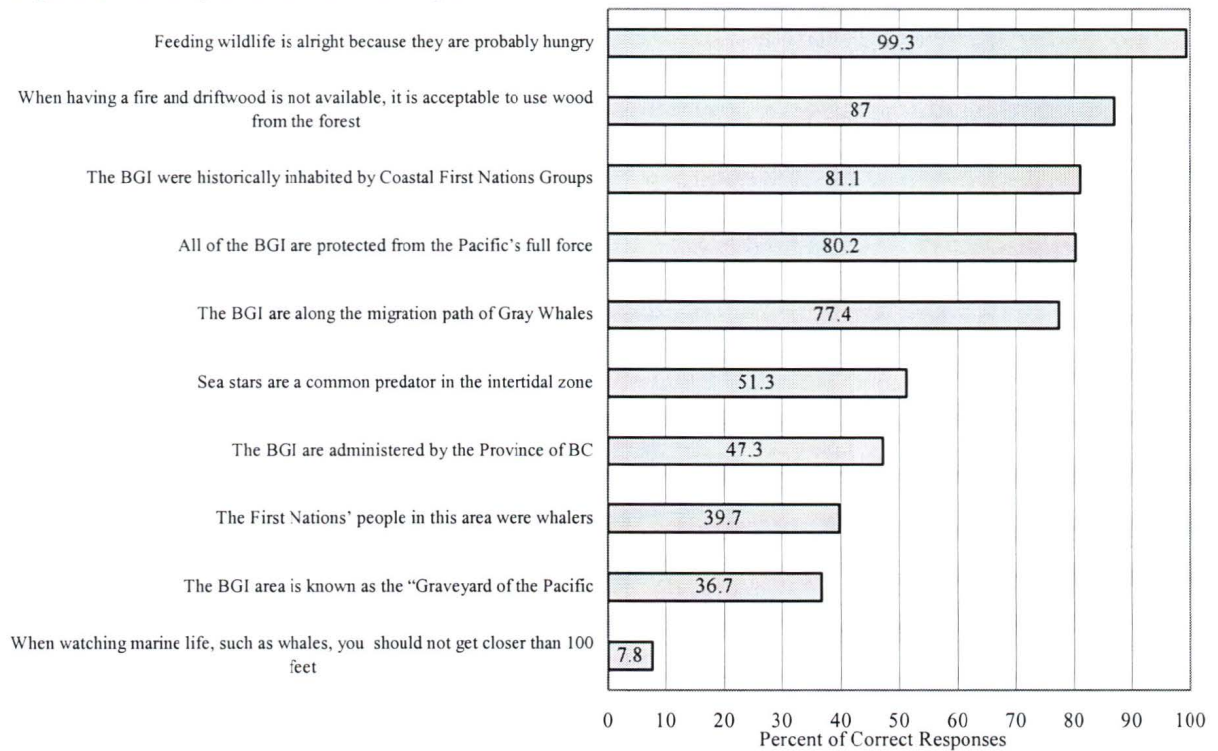
Interpretation, a key purpose of National Parks, helps visitors become aware of the value of parks (Parks Canada Agency 2000). However, the key to effective delivery of park messages is to "bring the message home" and have an understanding if the visitor is receiving and understanding the messages (Parks Canada Agency 2000 10-8). Parks Canada recommends that identifying visitor information needs is "central to accomplishing the effective targeting of interpretative messages" however, there is a lack of research on visitors' existing level of knowledge about National Parks (Parks Canada Agency 2000 10-8). This section examines visitors' levels of satisfaction with their learning experience and responses to the knowledge quiz based on heritage messages.

Figure 2.8 Satisfaction with Learning Experience



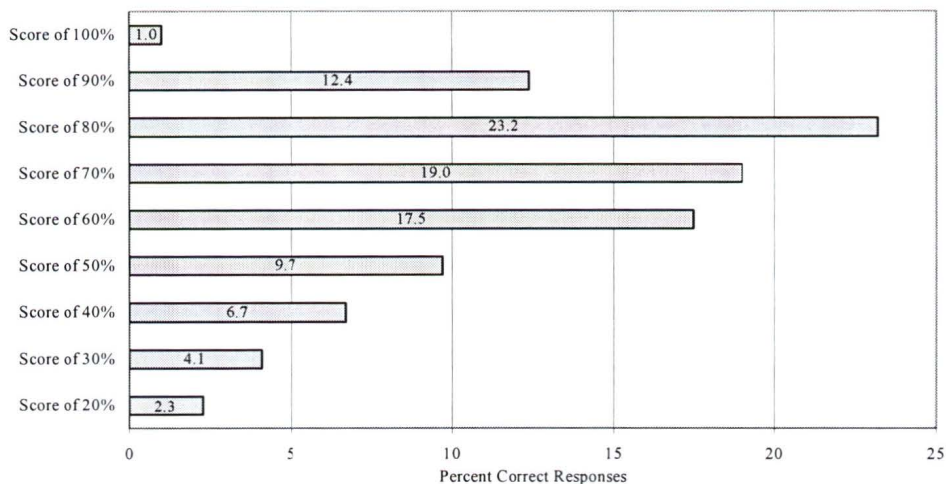
While 84.2% park visitors rate their satisfaction with the overall learning experience in the BGI as good or very good (Figure 2.8) this is not surprising as many past Parks Canada studies have shown that visitors are satisfied with the interpretation programs and communications messages (Parks Canada Agency 2000 :10-8). To gain an understanding of visitors' existing levels of knowledge about National Parks, a series of questions based on heritage messages appearing in Broken Group Islands literature, web site and the nautical chart for the area was incorporated into the survey. Respondents were asked to indicate whether they thought the statement was true, false or they were not sure. For purposes of analysis not sure responses were coded as incorrect. Resulting data provides an indication of the visitors' level of existing knowledge and is illustrated in Figure 2.9.

Figure 2.9 Perceptions of Park Messages



Results indicate that while five out of ten questions were answered correctly by at least 77.0% of respondents, five out of ten questions were answered correctly by 51.3% or fewer respondents. This suggests that only one half of the messages as contained in the questionnaire, are being answered correctly by the respondents.

Figure 2.10 Total Scores on Learning Quiz of the BGI



When correct scores per respondents are analyzed, results indicate that 40.3% of respondents answered 6 or less of the 10 questions correctly (Figure 2.10). This is consistent with other studies of visitor knowledge (Roggenbuck, Loomis et al. 1991; Manning & Lime 2000) and suggests that marked improvements are possible, ultimately leading to improved visitor behaviour. As found with others studies, there is considerable variability in responses to the knowledge quiz as approximately half of the messages are not being answered correctly by half the population. Further analysis by independent variables: pre and post trip, specialization, and guided or non-guided trip will examine if there is a gain in quiz scores pre to post trip and if any significant differences in knowledge of heritage messages exist between subgroups is addressed in Chapter 3.

2.4.4 Importance and Performance of the Role of the Guide

Ecotourism within parks and protected areas has greatly increased, while many parks lack adequate personnel and management resources (Boo 1990). Public-private partnerships are increasingly viewed as a means to accomplish the delivery of park services, but the effectiveness of such cooperative efforts has seldom been empirically evaluated (Roggenbuck, Williams et al. 1993). Roggenbuck and others (1993) provide support for tour operators and guides having an important role in information delivery, interpretation and as conduits for natural resource management agencies, an idea that is emphasized in the literature (Moore & Carter 1993; Hockings 1994; Kimmel 1999). A substantial number of visitors to the Broken Group Islands are guided, estimated at between 24.0% and 39.0%, providing an excellent opportunity for evaluation.

Working from the model proposed by Cohen (1985) and furthered by Weiler (1992), attributes of the role of guide were developed based on a review of the literature, review by Parks Canada, and drawing from personal experience (Table 2.9).

Table 2.9 Attributes of the Role of the Guide

Role Sphere	Role Dimension	Role Attribute
^a Leadership	Instrumental	Guide sets a pace for the trip that is comfortable for you
		Guide discusses hazards that may be present
^a Leadership	Social	Any tension or conflict that emerges is handled quickly and effectively by your tour guide
		Guide promotes a social and happy group environment
^a Mediatory	Interactionary	Guide provides refreshments and meals in an organized manner
		Guide keeps the group organized and on schedule
^a Mediatory	Communicative	Guide introduces you to cultural and natural points of interest such as First Nations history
		Guide provides field guides and books for the group
^b Resource Management	Motivator	Guide discusses "Leave No Trace" camping ethics with the group
		Guide highlights importance of not removing any First Nation artifacts or relics
^b Resource Management	Environmental Interpreter	Guide helps you to develop a keener awareness and appreciation of the area
		Guide increases your knowledge and understanding about the natural environment of the BGI

Adapted from Cohen (1985) and Weiler (1992)

Limitations with this scale lie primarily in its development. This scale could be further developed through an industry focus group and refined through industry review. However, attributes were developed in reference to existing literature, particularly Cohen's (1985) work, and personal experience and reviewed by the park warden responsible for the study area. Finally, there are few studies in the area of the role of the guide; thus this scale is largely exploratory in nature. Despite these limitations, reliability analysis of both scales reveal an overall Cronbach's Alpha of .894 for the importance scale (Table 2.10) and an overall Cronbach's Alpha of .847 for the performance scale (Table 2.11) and considered to be highly reliable (Mitra & Lankford 1999).

Table 2.10 Reliability of Importance Attributes of Role of the Guide

Scale Item	Alpha If Item Deleted
Guide sets a pace that is comfortable for you	.891
Guide discusses hazards that may be present	.887
Any tension or conflict that emerges is handled quickly And effectively by your tour guide	.887
Guide promotes social and happy group environment	.883
Guide provides refreshments and meals in an organized manner	.887
Guide keeps the group organized and on schedule	.885
Guide introduces you to cultural and natural points of interest	.882
Guide provides field guides and books	.892
Guide discusses "leave no trace" camping ethics	.885
Guide highlights importance of not removing And First Nations' artifacts	.887
Guide helps you to develop a keener awareness and Appreciate of area	.882
Guide increases your knowledge and understanding about	
Cronbach's alpha = .894	
N = 525 (pre trip guided and non guided responses only)	

Table 2.11 Reliability of Performance Attributes of Role of the Guide

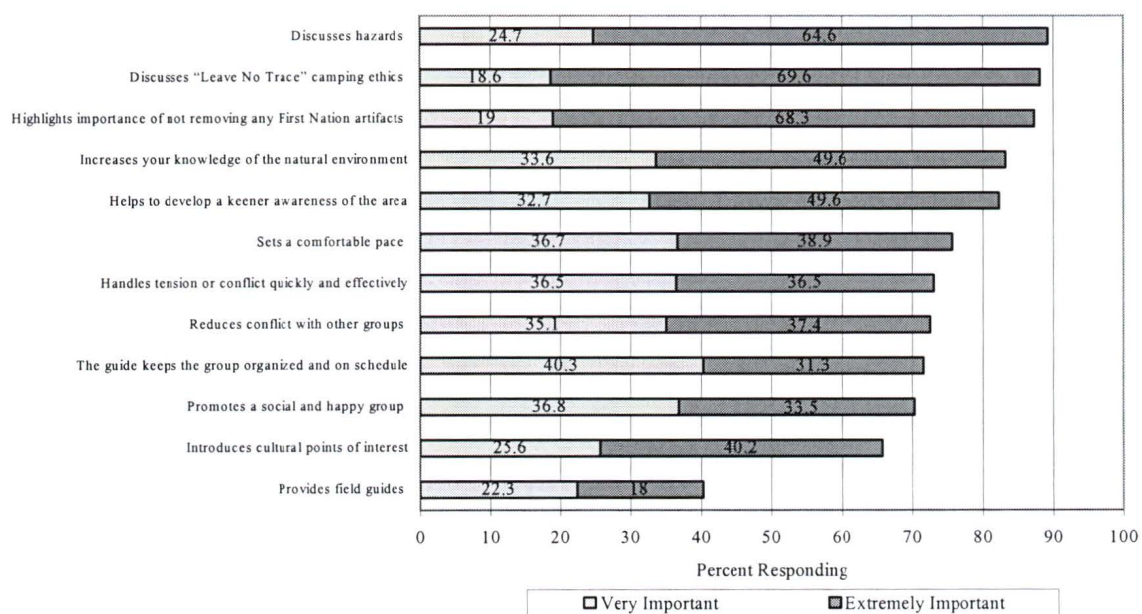
Scale Item	Alpha If Item Deleted
Guide set a pace that is comfortable for you	.835
Guide discussed hazards that may be present	.843
Any tension or conflict that emerged was handled quickly And effectively by your tour guide	.833
Guide promoted social and happy group environment	.838
Guide provided refreshments and meals in an organized manner	.844
Guide kept the group organized and on schedule	.837
Guide introduced you to cultural and natural points of interest Such as bird nesting sites	.843
Guide provided field guides and books	.834
Guide discussed "leave no trace" camping ethics	.837
Guide highlighted importance of not removing And First Nations' artifacts	.826
Guide helped you to develop a keener awareness and Appreciate of area	.818
Guide increases your knowledge and understanding about	
Cronbach's alpha = .847	
N = 105 (post trip guided only)	

As this section focused on evaluating attributes of specific dimensions of the role of the guide, questions and response categories were developed around attribute importance and performance.

Importance-performance analysis (IPA) is considered an effective research tool for evaluation purposes, that illustrates the relative *importance* of various attributes and the *performance* of the firm, product or destination under study providing these attributes (Hudson & Shephard 1998).

As commercial guiding comprises a significant component of visitors to the area and all visitors have some form of contact with guided groups, attribute importance was evaluated by all visitor types, both guided and non-guided respondents in the pre trip questionnaires. Respondents were asked to provide their opinions as to the importance of the 12 attributes on a five point Likert scale from “not at all important 1” through to “extremely important 4” and “no opinion 5”. Only guided respondents evaluated attribute performance (actual kayak guides were excluded from completing the questionnaire) by providing responses to the same 12 attributes used in the importance scale and rating performance from “strongly disagree 1” to “strongly agree 4” and “no opinion 5”. Results of the importance of the role of the guide reflect “very important” and “extremely important” responses and are highlighted in Figure 2.11.

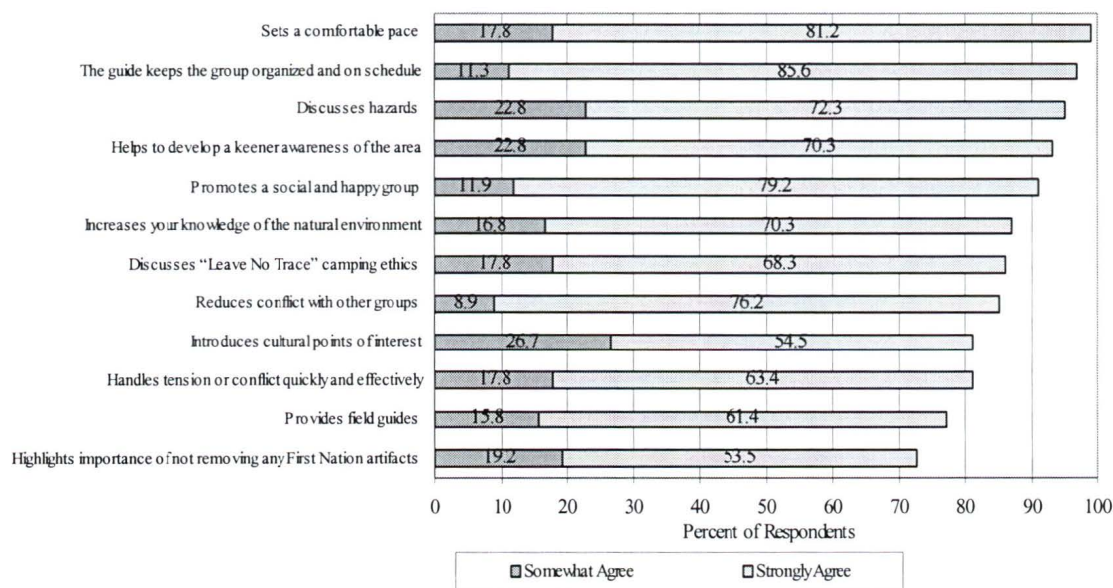
Figure 2.11 Importance of the Role of the Guide



Results indicate that 89.3% of respondents find “discusses hazards” the most important attribute, which aligns with the instrumental role of the guide. 88.2% of respondents find “discusses Leave No Trace” and 87.3% find “highlights importance of not removing First Nations artifacts” important, both of which fall under the motivator role of the guide. 83.2% of respondents find “increases knowledge” and 82.3% find “develop a keener awareness” important, which align under the environmental interpreter role. Attributes respondents find the least important include “introduces to cultural and natural points of interest” (65.8%) and “provides field guides” (40.3%), both of which are categorized under communicative role of the guide.

Results of the performance of the role of the guide illustrating “somewhat agree” and “strongly agree” responses are highlighted in Figure 2.12.

Figure 2.12 Performance of the Role of the Guide



Results of attribute performance indicate that 99.0% of respondents feel that the “guide set a pace that is comfortable” and 95.1% feel that “guide discussed hazards” both of which are within the instrumental role. 96.9% of respondents feel that the guide “kept the group organized” under the interactionary role. Of the attributes with the least agreement 77.2% of respondents felt “provided field guides” was not performed to the extent of other attributes; however, the importance of this attribute was not rated as highly. However, 72.7% of respondents felt “highlights importance of not removing First Nations artifacts” was not performed to the extent of the other attributes, despite this attribute being one of the top three important attributes.

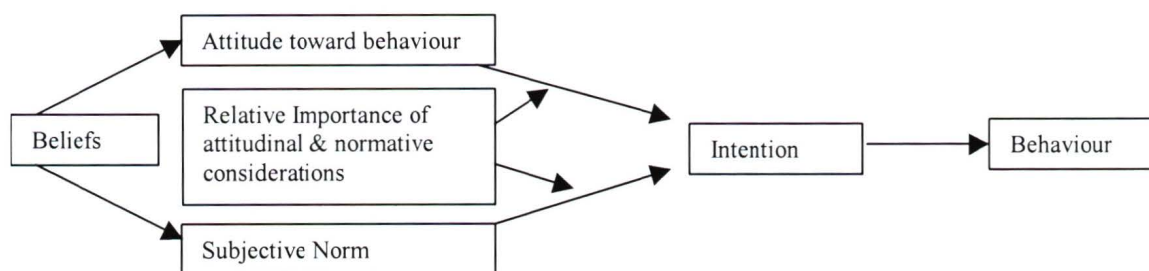
These results suggest that some attributes such as the instrumental attribute of “discussing hazards” are rated both highly in importance and performance, suggesting that these are areas where visitors are satisfied and expectations were met. Some attributes have been rated low in importance and low in performance, such as the communicative attribute of “providing field guides” suggesting that these may not be a concern to the visitor. However, some attributes were rated highly in terms of importance yet low in performance such as the motivator attribute of “highlighting importance of not removing First Nation artifacts”. This suggests that despite the importance of this attribute to the visitor experience, the

guide underperformed this role, potentially creating areas of concern for tour guides, operators and National Park management. Further importance and performance analysis applying mean values on a two-dimensional grid to aid in identification of areas of satisfaction and concern is warranted and developed in Chapter 3 “Interpretation and Role of the Guide”.

2.4.5 Visitor Attitudes towards the Voluntary No Fishing Policy

Recreational fishing, an internal ecological stressor within the park, is threatening local populations of rock cod (Parks Canada Agency 2000 :1-13). Low park resources for sufficient staff or signage, necessitated the implementation of a voluntary no fishing policy, requesting park visitors to voluntarily refrain from fishing in the park. As a new policy implemented in 2001, Parks Canada was interested in knowing how visitors feel about this policy, as well as understanding visitor perceptions about underlying beliefs towards the policy. This section incorporated the theory of reasoned action model developed by Fishbein and Ajzen in 1975, which is based on the assumption that human beings are usually quite rational and make systematic use of information available to them. This model can be used as a tool to predict and understand behaviour by its examining underlying influences of intention to perform the behaviour, attitude towards the behaviour and group pressures to perform or not perform the behaviour (Ajzen & Fishbein 1980). Figure 2.13 illustrates the model components.

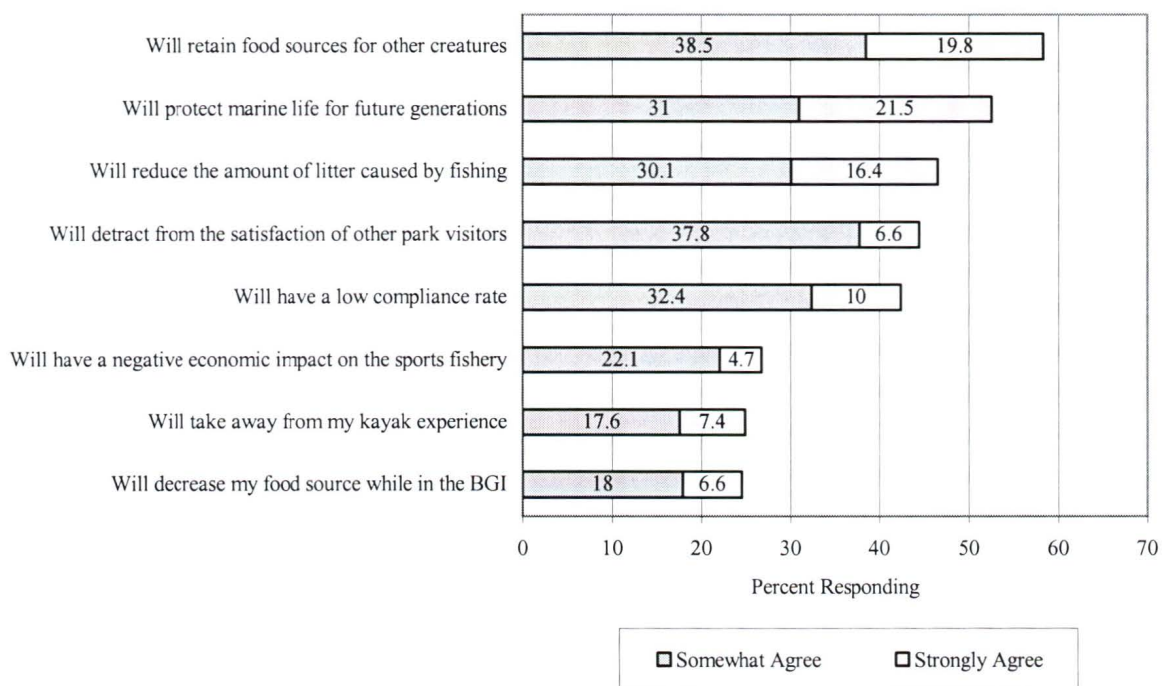
Figure 2.13 Theory of Reasoned Action: Factors influencing a person’s behaviour



(Ajzen & Fishbein, 1980 :8)

To understand visitors' attitudes and underlying beliefs towards the policy, visitors were asked, pre and post trip, how they felt about the Voluntary No Fishing Policy (VNF) within the Broken Group Islands, by indicating their level of agreement with a series of positive and negative belief statements on a five-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). Results, illustrated in Figure 2.14 highlight the “somewhat agree” and “strongly agree” responses.

Figure 2.14 Voluntary No Fishing Policy Beliefs in the Broken Group Islands



Of the positive beliefs, the majority of visitors (58.3%) believe that the VNF would retain food sources for other creatures and (52.5%) protect marine life for future generations, and 46.5% believe the VNF will reduce fishing related litter. Of the negative beliefs, 44.4% believe the VNF will detract from visitors' satisfaction and 42.4% believe the VNF will have a low compliance rate. Of the remaining negative beliefs, 26.8% of visitors believe that the VNF will negatively impact the sports fishery, 25% believe that the VNF will take away from their kayak experience and fewer still 24.6% believe the VNF will decrease their food source. It is important to note the considerable variability in responses. Chapter 4 will address this variability by analyzing the data with the independent variables: specialization, experiential effects and effect of a guide.

A limitation with this study is the development of the belief scale. As suggested by Fishbein and Manfredo, to elicit the salient beliefs particular to the behaviour, an "elicitation" survey of the population under study should be conducted (Fishbein & Manfredo 1992). However, the belief scale used in this study was not developed through an elicitation survey, rather, it was developed through a review of the literature, a focus group and conversations with the BGI park staff. Despite this limitation, reliability analysis (see Table 2.12) indicates an overall Cronbach's alpha of .694 considered highly reliable by Mitra and Lankford

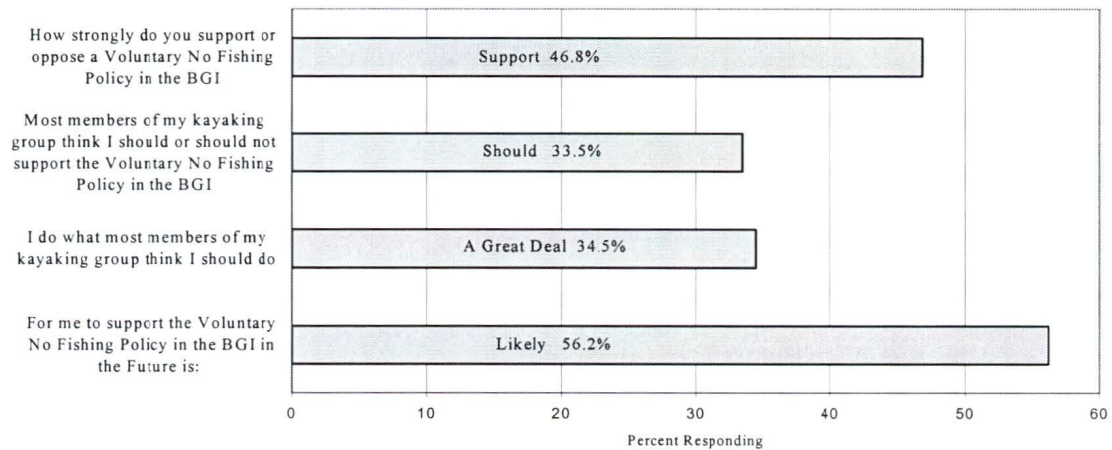
(Mitra & Lankford 1999). With the exception of two items, all belief statements are considered important and contribute to the overall reliability of the scale; removal of the two items does not substantially improve overall reliability. As well, it is important to note that the scale is exploratory in nature.

Table 2.12. Reliability of Likert Scale Measuring Strength of Voluntary No Fishing Beliefs

Likert Item	Alpha If Item Deleted
A Voluntary No Fishing Policy in the BGI:	
Will protect marine life for future generations624
Will detract from the satisfaction of other park visitors.....	.675
Will reduce the amount of litter caused by fishing673
Will have a negative economic impact on the sports fishery.....	.711
Will retain food sources for other creatures647
Will decrease my food source while in the BGI.....	.650
Will have a low compliance rate701
Will take away from my kayak experience613
Cronbach's alpha = .694	

The attitude and behaviour model also attempts to measure the strength of the attitude and social influence or subjective norm towards the behaviour. Attitude was measured by asking visitors to indicate how strongly they supported or opposed the VNF using the semantic differential scale from “extremely oppose” to “extremely support”. Social influence or subjective norm was measured through two questions. Visitors were asked if they thought members of their kayaking group thought they should or should not support the VNF using the semantic differential scale from “extremely should not” to “extremely should”. The companion question to social influence asked to what extent the respondent is influenced by their group choosing from “extremely not at all” to “extremely a great deal”. A final question concerning the likelihood of future support for the VNF was asked using “extremely unlikely” to “extremely likely” semantic differential scale. Positive responses to these questions are highlighted in Figure 2.15.

Figure 2.15 Support of Voluntary No Fishing Policy



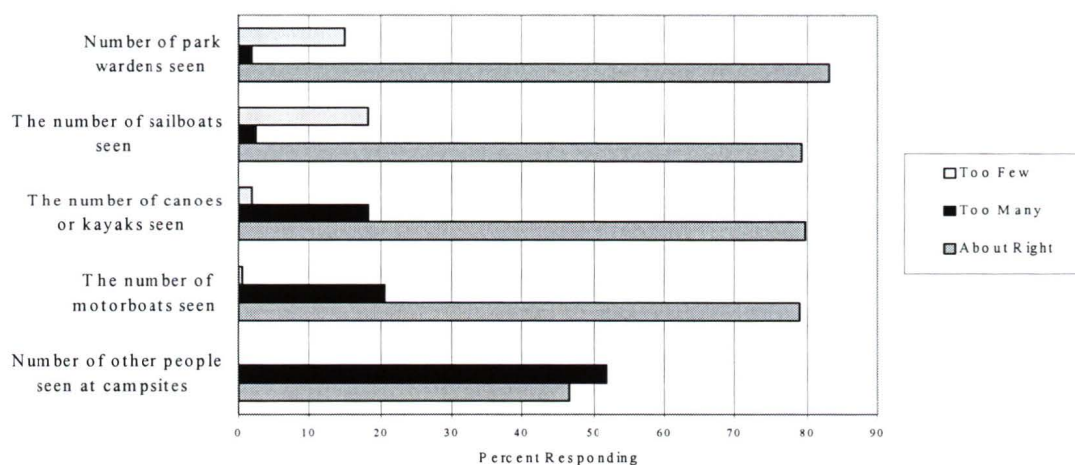
Results indicate that less than half of the respondents (46.8%) support for the VNF policy, the majority of respondents (56.2%), indicate that they intend to support the policy in the future, and 33.5% of respondents indicate that members of their kayaking group think they should support the policy. However, it is clear that while less than half of the respondents support the policy, more than half do not support the policy, suggesting tremendous variability in the responses. While these results provide an overview of general and future support for the VNF policy and an indication of respondent's social influence, the focus of this study is to understand the degree to which an individual's attitude or social influence predicts intention to support the VNF policy. Chapter 4 examines the degree of influence of attitude and social pressure on intention as suggested by the Theory of Reasoned Action model, using multiple regression techniques. In addition, Chapter 4 examines the variability in the responses by applying the independent variables: specialization, effect of a guide, and experiential effects to the data.

2.4.6 Perceived Crowding

This study incorporated a number of questions to evaluate visitors' perceptions and attitudes towards current use levels. Visitors were asked, post-trip ($n = 375$), to indicate how they felt about encounters experienced with others on this trip (Figure 2.16). While the majority of respondents indicated that the number of kayaks, motorboats, sailboats and park wardens was "about right", a number of respondents felt differently. 18.2% felt that they saw too many kayaks and 20.6% felt they saw too many motorboats, while conversely, 18.3% felt that they saw too few sailboats and 14.9% felt they saw too few park wardens. When asked about the number of other people at campsites, the majority of visitors, 51.9%,

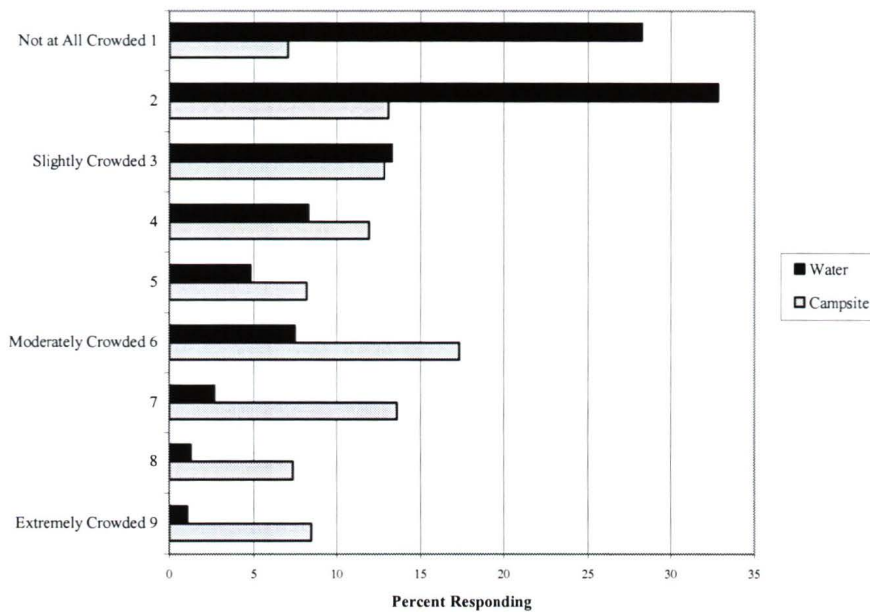
indicated that they saw too many other people at campsites. While it is clear that a number of visitors feel that they have encountered too many canoes and kayaks, too many motorboats and too many other people at campsites, there is variability within the responses. Examining responses using the specialization construct may help to account for this variability in attitude and preference.

Figure 2.16 Encounters Experienced with Others



Use level evaluations have also been measured using the widely adopted crowding scale developed by Heberlein and Vaske (1977) which ask respondents to rate their level of perceived crowding on a nine-point scale ranging from "1 - not all crowded" to "9 - extremely crowded". Empirical studies have supported that crowding perceptions are subject to situational influences; visitors have different crowding perceptions within the same wilderness area, such as campsites and on trails (Rollins 1998; Manning 1999; Needham 2002). To test this, respondents were asked about crowding in different spatial areas within the park: on the water and in the campsites. Results (Figure 2.17) indicate that the majority of visitors do not consider the "on water" use level crowded as 61.0% rated on the water crowding as a "1" "not at all crowded" or "2" and 39% rated on the water crowding as "3" "slightly crowded" or more. When visitors were asked to rate the level of crowding in the "campsites at night" substantial variability in responses is indicated. 20.2% of respondents reported feeling not at all crowded, however, 79.8% reported a score of "3 slightly crowded" or higher on the perceived crowding scale, indicating a high number of respondents feeling at least slightly crowded

Figure 2.17 Levels of Crowdedness on the Water and in the Campsites



These results suggest that while the majority (61%) of park visitors do not find the water crowded, 39% find the water crowded to some degree. While approximately 20% of visitors do not find the campsites crowded, almost 80% of park visitors find the campsites crowded to some degree.

While perceived crowding is more useful as an evaluative criterion than satisfaction as well as simple and easy to apply it does not provide complete information about use levels, impacts and standards (Shelby, Vaske et al. 1989 :275). Perceived crowding may indicate when an area is nearing its social carrying capacity, but questions such as "what represents the maximum amount of crowding that is acceptable" and "what level of crowding should be allowed before management intervention is needed" remain unanswered (Manning 2001 :96-97). These questions are mainly determined by value judgments regarding acceptable impact levels, necessary in the development of indicators and standards that define the quality of a recreation experience (Manning 1999). The normative approach has been developed as a useful way to conceptualize, collect and organize empirical data representing value judgments about resource management (Vaske, Donnelly et al. 1996). Norms are standards that individuals use for evaluating activity, environments or management proposals as good or bad, better or worse (Vaske, Donnelly et al. 1996 :18). Crowding can be understood as a normative process: visitors often have preferences, expectations or other standards by which to judge a situation as crowded or not (Manning, 1999 :122),

assisting in the formulation of standards of quality useful for management purposes. Therefore, this study adopted a normative approach to understanding visitors' crowding standards.

Using the illustrative approach embedded in the questionnaire, park visitors were provided with a series of six photographs for each of three indicators chosen for this study: kayaks, motorboats and tents at a campsite. Each photograph shows a level of density higher than the photograph before it: for density of kayakers illustrated is 0, 1, 3, 6, 9, 12 for an area 1500 m²; density of motorboats is 0, 1, 2, 3, 4 and 5 in an area 1500 m²; and tents at a campsite is 0, 1, 2, 4, 6, and 8 in an 846 m² area. Respondents rated the acceptability of the level of density illustrated in each photograph on a five point Likert scale ranging from "1" "very unacceptable" to "5" "very acceptable". For purposes of analysis, responses were recoded " -2 very unacceptable", "-1 unacceptable", "0 neutral", "+1 acceptable" and "+2 very acceptable". Resulting data is used to measure the personal encounter or density norm of each respondent, and then aggregated, using the mean or median, to test for social encounter or density norms, or the degree to which norms are shared across groups (Manning, Valliere et al. 1999). Social group norms can be interpreted as standards of quality sought in a recreation experience, and assist in determining social carrying capacity by defining what is the minimum acceptable condition.

Examining the mean results of the indicator "kayakers on the water at any one time" per 1500 m² area (Table 2.13) reveal respondents feel that 0, 1 and 3 kayakers are acceptable. However, when respondents are presented photos of 6, 9 and 12 kayakers, they feel that these conditions are unacceptable.

Table 2.13 Levels of Acceptability Regarding Numbers of Other Kayakers Encountered

Number of Other Kayakers	RESPONSE (%)						Mean	Median	SD
	Very Unacceptable	Somewhat Unacceptable	Not Sure	Somewhat Acceptable	Very Acceptable	Missing			
Photo A: 0 Kayakers	2.8	0.9	2.2	3.7	90.1	0.3	1.78	2.00	0.77
Photo B: 1 Kayaker	1.8	1.5	1.3	12.2	83.0	0.1	1.73	2.00	0.72
Photo C: 3 Kayakers	1.5	9.0	5.4	42.8	40.7	0.6	1.13	1.00	0.97
Photo D: 6 Kayakers	34.4	34.4	8.3	16.8	4.4	1.8	-0.78	-1.00	1.21
Photo E: 9 Kayakers	77.7	14.2	2.8	2.8	2.1	0.4	-1.63	-2.00	0.84
Photo F: 12 Kayakers	89.3	6.3	1.3	0.4	2.1	0.3	-1.81	-2.00	0.67

n=678

Generally, as the density of kayaks encountered on the water increases the level of acceptability decreases. It appears that 93.8% of respondents find encountering 0 kayaks acceptable, and 95.5% feel one kayak acceptable with little variation in the responses. Respondents feel that encountering 3 kayaks is still acceptable, however 42.8% find 3 kayaks 'somewhat acceptable' and 40.7% find 3 kayaks 'very acceptable' indicating increased variation in responses. As density increases to 6 kayaks, there is even more variability in responses, however the majority of respondents (68.8%) feel that encountering 6 kayaks is unacceptable. 77% of the respondents feel that encountering 9 kayaks is very unacceptable and this increases to 89.3% as the encounter density increases to 12 kayaks. Variation in the range of responses is indicated by the standard deviation (sd) of the mean (Table 2.13). It is clear that, for example, the majority of respondents do not find 6 kayaks acceptable, while some respondents do (sd 1.21). The degree of consensus about the norm is an important consideration in normative research: "the more consensus or agreement about the norm, the more confidence managers might have in using data for formulating standards of quality" (Manning 1999 :147). However, as suggested by Rollins and Robinson (2002) "when consensus does not exist, it may be possible to identify subgroups that share within each subgroup a higher level of consensus than in the whole of the group" (:131). Using the specialization index developed for this study, variability of social norms for different impact levels can be addressed by examining the norms of low specialized visitors, or generalists and highly specialized visitors, or specialists further discussed in Chapter 5.

Referring to Table 2.14 mean results of the indicator "motorboats on the water at any one time" per 1500 m² area reveal respondents feel that 0, 1 and 2 motorboats are acceptable. However, when respondents are presented with 3, 4, and 5 motorboats, they feel that these conditions are unacceptable.

Table 2.14 Levels of Acceptability Regarding Numbers of Other Motorboats Encountered

Number of Other Motorboats	RESPONSE (%)									
	Very Unacceptable	Somewhat Unacceptable	Not Sure	Somewhat Acceptable	Very Acceptable	Missing	Mean	Median	SD	
Photo A: 0 Motorboats	2.1	0.9	0.9	1.3	94.4	0.4	1.85	2.00	0.66	
Photo B: 1 Motorboats	4.3	4.9	3.4	34.2	52.8	0.4	1.26	2.00	1.03	
Photo C: 2 Motorboats	16.7	17.0	9.1	39.5	14.7	2.9	0.19	1.00	1.35	
Photo D: 3 Motorboats	51.2	28.2	7.7	9.4	2.4	1.2	-1.17	-2.00	1.07	
Photo E: 4 Motorboats	86.4	10.0	1.0	0.7	1.3	0.4	-1.80	-2.00	0.61	
Photo F: 5 Motorboats	93.4	4.0	0.6	0.4	1.3	0.3	-1.88	-2.00	0.55	

n=678

Generally, as the density of motorboats encountered on the water increases the level of acceptability decreases. It appears that 95.7% of respondents find encountering 0 motorboats acceptable with little variation in the response. However, when presented with 1 and 2 motorboats there is more variation in responses. Respondents feel that encountering 1 motorboat is still acceptable, however 34.2% feel 1 motorboat is 'somewhat acceptable' and 52.8% feel 1 motorboat 'very acceptable' indicating increased variation in responses. As density increases to 2 motorboats, there is even more variability in responses, the majority of respondents (54.7%) feel that encountering 2 motorboats is acceptable, however, 33% find 2 motorboats unacceptable. The majority find that encountering 3 motorboats is unacceptable, yet some respondents do not (sd 1.07). It is important to examine the responses by levels of specialization to determine if higher levels of consensus exist among subgroups (Rollins & Robinson 2002).

Referring to Table 2.15, mean results of the indicator "number of tents at a campsite at any one time" per 846m² area reveal respondents feel that 0, 1, 2, and 4 tents are acceptable. However, when respondents are presented with 6 and 8 tents, they feel that these conditions are unacceptable. Therefore, the condition that respondents find minimally acceptable is between 4 and 6 tents.

Table 2.15 Levels of Acceptability Regarding Numbers of Other Tents at Campsites

Number of Other Tents At Campsites	RESPONSE (%)						Mean	Median	SD
	Very Unacceptable	Somewhat Unacceptable	Not Sure	Somewhat Acceptable	Very Acceptable	Missing			
Photo A: 0 Tents	2.4	0.7	1.3	1.8	93.5	0.3	1.83	2.00	0.70
Photo B: 1 Tent	1.3	2.1	0.1	10.9	85.3	0.3	1.77	2.00	0.68
Photo C: 2 Tents	1.8	3.4	2.2	33.9	57.8	0.9	1.43	2.00	0.84
Photo D: 4 Tents	11.1	18.4	10.0	41.7	16.7	2.1	0.35	1.00	1.27
Photo E: 6 Tents	38.9	32.7	7.2	15.0	5.2	0.9	-0.80	-1.00	1.23
Photo F: 8 Tents	68.9	17.4	5.0	6.0	2.1	0.6	-1.45	-2.00	0.98

n=678

Generally, as the density of tents at a campsite increases, the level of acceptability decreases. It appears that 93.5% of respondents find encountering 0 tents very acceptable, and 85.3% feel 1 tent is “very acceptable” while 10.9% find 1 tent “somewhat acceptable”. When presented with 2 and 4 tents, respondents find these conditions acceptable, however, variation in responses increases noted by the increasing respective standard deviation (.84) and (1.27). While the majority of respondents feel that encountering 6 tents is unacceptable, some do not, indicated by a standard deviation of 1.23. Again, it is important to examine this variability by the independent variables to determine if subgroups within the study population may have greater levels of agreement.

Accounting for this variance in encounter norms is an important aspect in normative research as norms often vary with visitor characteristics, characteristics of those encountered and situational variables (Manning 1999). This point is reinforced in this study as respondents commented that their levels of acceptability might depend upon different factors such as behaviour, noise and personal experience. Further analysis of normative data by specialization, pre and post trip and guided and non guided independent variables is explored in Chapter 5.

In addition to examining variability by subgroup, Chapter 5 will also incorporate the work of Jacksons' (1965) Return Potential Model, more currently referred to as the "social norm curve" to graphically illustrate norms (Manning 1999). The social norm curve has several important features that aid in interpretation of the norms and, ultimately, the development of standards.

2.5 Conclusions

Visitor use is an important part of National Parks, however the major issue is how to manage this use effectively in ways that protect park resources while providing for satisfactory visitor experiences (Rollins & Robinson 2002 :117). Human use management entails an understanding of use levels and impacts, as well as the attitudes, values, beliefs and behaviours of park visitors that may contribute to the impact of the natural resource. Despite this, it is recognized that there is a lack of information on the human dimensions of visitor use, visitor knowledge about ecological integrity and other use related issues (Parks Canada Agency 2000). Therefore, the overall purpose of this chapter was to examine recreational use and the multifaceted use issues currently challenging the Broken Group Islands, PRNPR. The specific purpose of this chapter was to reveal visitor and trip characteristics, satisfaction with management aspects, visitor knowledge about ecological integrity, the role of the guide, visitor attitudes towards a no fishing policy and crowding perceptions.

Results provide park managers with some general findings that contribute to a visitor profile:

- Over 70% of visitors are from Canada, with 52% from British Columbia;
- The majority of visitors are between 30 and 49 years of age;
- The majority of visitors travel in groups of four or less;
- Visitors camp an average of four nights in the BGI;
- Camping use is concentrated on two inner islands: Willis, Dodd with similar levels of use experienced on Gibraltar and Clarke;
- While most visitors engage in wildlife viewing and hiking up to 18.2% engage in some form of harvest;
- Most visitors travel without a guide, however approximately 22.4% travel with a guide;
- Examination of specialization variables reveals that visitors are typically first time visitors, with two years or fewer kayaking experience, consider themselves novice or intermediate, do not own a kayak and have varying levels of enduring involvement in kayaking.

While these results provide baseline information about users and uses, however, it is important to remember that while these results profile the majority user, there is variability of users and uses within the park. For example, while the majority of users travel in groups of four or less, 39% travel in groups between five and ten people, and 8.9% travel in groups of more than ten, which contravenes park policy of group size maximum of 10. It is important for managers to understand that kayakers are not an "homogenous" but rather a group with differing characteristics and preferences. This study adopted specialization theory to assist in explaining variation in visitors' attitudes, beliefs and setting preferences which is further developed in Chapters 3, 4, and 5.

To effectively manage wilderness recreation, managers need information that science can provide about visitors (Cole & McCool 2000). Not only is it important to obtain baseline information regarding the user and uses of parks, it is important to understand visitors' perceptions about management aspects, which in turn can be a useful assessment and monitoring tool of park management (Manning 1999). This study revealed that 85% or more visitors have high levels of overall satisfaction and, with the exception of availability of firewood, are satisfied with specific management aspects. These findings must be interpreted with caution however, as recreation research consistently reveals high levels of satisfaction, limiting the usefulness of satisfaction as an indicator of quality recreation experiences (Manning, 1999). Sowman & Pearce (2000) agree, stating that care should be taken not to over-emphasize the visitor perspective, since maximizing the visitor experience should be viewed in the context of the park's overall management objectives of maintenance of ecological integrity. Another important consideration when interpreting satisfaction is that a "reliance on visitor satisfaction may ultimately lead to diminished quality, or at least a level of quality as defined by a low common denominator" (Manning 1999 :12). This can be explained by the understanding that some visitors are more sensitive to certain management aspects than others, and if these visitors are "displaced" by those who are less sensitive to certain management aspects, then satisfaction will remain high despite substantive change in the type or quality of recreation opportunity (Dustin & McAvoy 1982).

Therefore, it is important to consider visitors' satisfaction within the context of National Parks' objective to "protect ecological integrity" when making management decisions based on satisfaction levels. Using the results to illustrate this point, there is tremendous variability in the response to "availability of firewood" approximately 50% of visitors are satisfied while 50% are not. Further, open-ended visitors comments suggest inappropriate behaviour by some users in getting firewood: "... campers are disturbing the forests seeking out fuel for their fires" and "people are pulling limbs off trees and destroying woods" impacting the natural resource. Rather than supply more firewood, it may be more appropriate within the context of ecological integrity, for park management to provide more messaging around the use of alternative fuels, rationing of campfires or the encouragement of communal fires (see Hammitt & Cole 1998 :285).

The results of the knowledge quiz provide Parks Canada with an indication of visitor knowledge levels of heritage messages. Results indicate that 50% of heritage messages contained within the questionnaire are not being understood, and that 40% of visitors scored 60% or less on the quiz. Although Parks Canada does not define what an "acceptable level of knowledge" may be, these results suggest that interpretive efforts are reaching approximately half of the visitors. A recommendation recognized by the Panel on Ecological Integrity may be the collaboration with tourist operators to disseminate information. Building on this idea, this study examined the importance and performance of the role of the guide with a view to understand the guides' role in delivery of interpretive messages. Results suggest that while guides are performing their instrumental roles, such as navigation to the extent expected by visitors, they may be underperforming the visitor's expectation of interpretation. Chapter 3 builds on these results by examining the variability in the knowledge quiz as well as adopting Importance-Performance Analysis as a tool to examine the role of the guide in delivery of interpretation.

Another facet to this study was the examination of visitors' attitudes and beliefs towards a voluntary approach to managing declining rock fish population using the Theory of Reasoned Action as a model (Ajzen & Fishbein 1980). Results reveal significant variation in responses as approximately half of the visitors support the policy and half do not. When beliefs underlying the policy is examined, it appears that there is significant variability in these responses as well. As suggested by Fishbein and Manfredo (1992), it is important to understand the beliefs of those who support and oppose the policy particularly when developing communication programs (Fishbein & Manfredo 1992). To increase support for the VNF policy, messages could be designed around those beliefs found to be most important or alternatively designed to weaken opponents' beliefs about the policy. Chapter 4 builds on these results by discriminating between those supported and opposed to the policy and examining their beliefs towards the policy. In addition, Chapter 4 examines the degree of influence of attitude and social pressure on intention as suggested by the Theory of Reasoned Action model, using multiple regression techniques. Finally, the variability in the responses is examined by applying the independent variables: specialization, effect of a guide, and experiential effects to the data.

Finally, this study examined visitor's level of perceived crowding. These results suggest that while the majority (61%) of park visitors do not find the water crowded, 39% find the water crowded to

some degree. While approximately 20% of visitors do not find the campsites crowded, almost 80% of park visitors find the campsites crowded to some degree. These results can be used to as an indication of the area's social carrying capacity based on the work of Shelby and others (Shelby, Vaske et al. 1989). Assessment of the results of this study indicates that the carrying capacity of the study area's water component can be considered "low normal" and that a carrying capacity problem does not exist at this time. However, evaluations of the campsite component can be considered "more than capacity" to "much more than capacity" and management actions are necessary to preserve the experience, manage for high-density recreation or "sacrifice the area" (Shelby, Vaske et al. 1989). Given the fragile nature of the coastal interface and that the study area is a National Park, management actions to preserve the experience and the ecological integrity of the area are warranted. While these results are useful in indicating a problem, they do not answer the questions "what is the level of acceptable use" and "at what point does crowding occur". Applying normative theory to this study provides information that can be used to develop standards based on visitors' levels of acceptability. However, what is apparent is the high degree of variability or lack of consensus around acceptable impacts. The degree of consensus about the norm is an important consideration in normative research: "the more consensus or agreement about the norm, the more confidence managers might have in using data for formulating standards of quality" (Manning 1999 :147). However, as suggested by Rollins and Robinson (2002), when consensus does not exist, it may be possible to identify subgroups that share within each subgroup a higher level of consensus than in the whole of the group" (:131). Using the specialization index developed for this study, variability of social norms for different impact levels can be addressed by examining the norms of low specialized visitors, or generalists and highly specialized visitors, or specialists further discussed in Chapter 5.

Chapter 3: Interpretation and Role of the Guide

3.1 Introduction

National Parks have played an important role as tourism destinations and as a result of significant growth in tourism, are showing distinct signs of stress. The 1997 State of the Parks Report (Parks Canada 1998) documents widespread environmental degradation occurring in existing National Parks, much of which can be attributed to the stresses of tourism. While the Ecological Integrity Report (Parks Canada Agency 2000) provides many recommendations for managing park stresses, of interest here is the recommendation that interpretation is a vital role of parks and needs reviving. Interpretation plays a critical role in educating visitors about ecological integrity and shaping their attitudes, values, beliefs and behaviours within National Parks (Parks Canada Agency 2000 :11-2). However, with budget cuts, interpretive and education services have been reduced to an inadequate level, leaving Parks Canada unable to serve its target audiences (Parks Canada Agency 2000).

With reduced budgets, changes to management have occurred: contracting out of services and allowing concessionaires to play a larger role in parks such as increasing the role of the private sector in interpretation delivery (Roggenbuck, Williams et al. 1992). Roggenbuck and others (1992) provide support for tour operators and guides having an important and influential role in information delivery, interpretation and as conduits for natural resource management agencies. Tour guides are considered an integral element in facilitating positive social and environmental encounters between the visitor and the visited (Weiler & Davis 1993; Gurung, Simmons et al. 1996; Butler & Boyd 2000). Recognizing the value of tour guides as information conduits, Parks Canada recommends working in collaboration with tourist operators to provide information with a strong ecological integrity focus (Parks Canada Agency 2000). However, not only is there a lack of research on visitors' existing level of knowledge about National Parks (Parks Canada Agency 2000), few studies have examined the effectiveness of the role of the guide in information delivery within a National Park setting.

Therefore, the purpose of this chapter is to examine visitors' level of knowledge and the role of the guide in delivery of National Park messages within the Broken Group Islands, the marine component of Pacific Rim National Park Reserve.

3.2 Literature Review

3.2.1 Tourism in National Parks

One of the most rapidly advancing tourism segments includes those activities that are dependent on natural environments (Ewert & Shultis 1997). The resource based tourism segment has grown quickly, with an annual growth rate of fifteen to twenty-five percent (Ewert & Shultis 1997 :97). Within British Columbia specifically, ecotourism and outdoor adventure are the fastest growing segments of the tourism industry (Ministry of Small Business, Tourism and Culture, 2001). In theory, ecotourism is nature based, environmentally educational and sustainably managed (Boo 1990; Miller 1993; Blamey 1997). However, Ross and Wall (1999) state that there is a gap between theory and practice within the paradigm of ecotourism and call for the fostering of the appreciation and protection of natural areas through education. An argument is made that education should be a critical component of ecotourism and that an objective of ecotourism experiences should be to "attempt to move the visitor experience beyond mere enjoyment to incorporate learning and to facilitate attitude and behaviours change" (Orams 1995 :5). As well as having a visitor effect, Orams' suggests that a change in visitor attitude and behaviours should benefit the natural environment. Orams' (1995) model illustrates the consequences of changed visitor behaviours towards the environment should move from a "passive role where recreation is simply based on the natural environment to a more active role where their activities actually contribute to the health and viability of those environments" (:7). Orams (1995) suggests that an appropriate indicator in measuring the effectiveness of an ecotourism management strategy is visitor education and learning.

As much of the ecotourism industry is staged in our protected areas, Orams' model may be particularly relevant in the National Park setting. The role of education is well established in legal and policy documents as the National Parks Act states that National Parks are for the "benefit, education and enjoyment" of the people of Canada. Education is increasingly important given the 1988 amendments to the National Parks Act which state "maintenance of ecological integrity through the protection of natural resources shall be the first priority when considering Park ...visitor use". It is well understood that increased visitor levels of understanding and appreciation of National Park values assists in the maintenance and protection of the ecological, educational and cultural values of parks (Parks Canada). In response, National Parks Policy clearly established goals and methods of interpretation and education,

specifically stating that programs will be made available to encourage and assist visitors in understanding, appreciating, enjoying and protecting their National Parks (Parks Canada, 1994; Butler & Hvenegaard, 2002). Therefore, educating visitors about ecological integrity plays a critical role in "shaping visitor attitudes, values, beliefs and behaviours within National Parks" (Parks Canada Agency 2000 :11-2) .

Of the various ways to manage visitor use in National Parks, educational approaches to management that encompass indirect strategies such as signage and brochures have long been utilized in the park management field, and are more often referred to as interpretation (Orams 1999). Tilden (1957) states that interpretation is a type of education that focuses on meaning and relationships: "an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information" (1957 :9). Beckman (1989) states that interpretation and education programs can assist in achieving park management objectives by reducing the need for regulation and enforcement, increasing visitor awareness of appropriate behaviours to minimize environmental impacts on fragile natural resources (Orams 1999). A small number of studies providing empirical evidence supporting this view include Kernan & Drogin's (1994) study where significant relationships were found between hikers' compliance with minimum impact hiking recommendations and message exposure. Orams (1998) reported significant reduction of noncompliant visitor behaviours during a dolphin-feeding experience after introduction of a structured education program. As well, Butler (1993) found that a group of park visitors exposed to an interpretive message showed significantly stronger reactions to simulated vandalism than the control group that were not exposed to the message. Despite the central role of interpretation within National Parks and support for interpretation as a management strategy, there is a lack of research on visitors' existing level of knowledge about National Parks and the benefits of current interpretation programs (Parks Canada Agency 2000).

3.2.2 Role of the Guide

Increasing use levels in National Parks (Butler & Boyd 2000), coupled with cuts to interpretation staff and budgets have resulted in many parks lacking adequate personnel and management resources to provide sufficient interpretive services (Boo 1990; Parks Canada Agency 2000). Within our National Parks, Parks Canada is currently not well-positioned to serve its target audiences in terms of its educational role (Parks Canada Agency 2000). Interpretive aspects within Canada's National Parks have been allowed

to fall into disrepair (Dearden & Rollins 2002) despite its central and critical position within the role of National Parks. As a result, changes in management have occurred: contracting out of services and allowing concessionaires to play a larger role in parks such as increasing the role of the private sector in interpretation delivery (Roggenbuck, Williams et al. 1992). Roggenbuck and others (1993) provide support for tour operators and guides having an important and influential role in information delivery, interpretation and as conduits for natural resource management agencies, an idea that is supported in literature (Moore & Carter 1993; Hockings 1994; Kimmel 1999). Despite widespread support, there has been relatively little attention paid to the role of guide (Holloway 1981; Weiler & Davis 1993; Gurung, Simmons et al. 1996; Ap & Wong 2001). Studies that have acknowledged and investigated the role of the guide include Holloway (1981), Bange (1984), Cohen (1985), Geva & Goldman (1991), Weiler & Davis (1993), Hockings (1994), McArthur (1994), Dearden & Harron (1994), Gurung, Simmons et al. (1996), Parker & Avant (2000), Ap & Wong (2001), Wang, Hsieh et al. (2002) and Dahles (2002). A number of the above studies have incorporated Cohen's (1985) model as a basis for examining the role of the guide.

Cohen (1985) states that traditionally the role of the guide has been one of "pathfinder" and "mentor". Cohen explains the role of pathfinder as one who leads others through social and natural areas unknown to its followers. Cohen discusses the mentor role within the concepts of personal tutor and spiritual advisor and describes the mentor "as a specialist serving as a guru to the seeker, guiding towards insight and enlightenment" (1985 : 8), the latter becoming more important as contemporary visitors seek qualitative rather than quantitative experiences (Weiler, Johnson et al. 1992).

Contemporary guides exemplify a role which "combines and expands elements from both antecedents, that of the pathfinder and that of the mentor" (Cohen 1985 :9), and which can be categorized into subroles (Holloway, 1981; Cohen 1985: Weiler 1991). Cohen (1985) first conceptualized the role of the guide in four distinct sub roles of guiding. The orientation of the "outer-directed" role of the tourist guide is towards organization and management (instrumental roles) and the facilitation of encounters with the host populations (interactionary roles). The tour guide in these roles must meet both the individual and group needs of the party using resources outside the group tour. The "inner-directed" role of the tourist guide is focused on leadership in the form of social interaction (social role) and information dissemination

(communicative role) and these needs are met from within the group. Cohen's four roles of the tour guide can be summarized as follows:

1. *The Instrumental Role*: focusing on direction giving, navigation, access to the territory and safety;
2. *The Interactional Role*: focusing on representation of the area to the followers in a non-threatening manner and organization;
3. *The Social Role*: focusing on tension management, social integration and cohesion and using humor and entertainment to maintain and build group morale;
4. *The Communicative Role*: focusing on selecting points of interest for the group, dissemination of correct information and the translation of the unfamiliar (adapted from Cohen 1985).

Weiler (1992), when examining the role of guides in nature based tourism noted that Cohen's work, while oriented to the individual and group needs, did not incorporate the needs of the host or natural environment. On the basis that Cohen's (1985) model of tour guide roles revealed that the tour leader must be focused on the group and the individual, Weiler (1992) argues that the guide must have a third focus, the natural environment, or what she terms "resource management". Weiler, "recognizing that the tour leader has some responsibility to the host environment" (1991 :228) and that "environmental interpretation to communicate with visitors is crucial in order to contribute to environmentally responsible tourist behaviour in both the short and the long term" (1991 :231) extended the model to include two roles encompassing the dimension of the host environment. These two roles Weiler described as "motivator, one who contributes to the environmentally responsible behaviours while onsite" and "environmental interpreter, one who contributes to long term knowledge and attitude change" (1992 :232). Figure 3.1 provides a schematic representation of Cohen's (1985) model and Weiler's adaptations.

Figure 3.1 Schematic Representation of the Principal Components of the Role of the Guide

	Outer Directed (resourced from outside the group)	Inner Directed (resourced from inside the group)
Leadership Sphere (focus on group)	Instrumental	Social
Mediatory Sphere (focus on individual)	Interactionary	Communicative
*Resource Management (focus on environment)	*Motivator	*Environmental Interpreter

After Cohen (1985) and *Weiler (1992)

There may be an argument that Weiler's (1992) additional roles are already encompassed within Cohen's (1985) original model: motivator is implicit under the interactionary dimension and environmental interpreter is implicit within the communicative dimension. However, when Weiler (1992) surveyed nature based tour operators about skills and roles most important in a nature based tour leader, results indicated that tour operators ranked environmental interpreter and motivator highly among the six identified roles. Thus, this study incorporates Weiler's (1992) adapted model of the role of the tour guide.

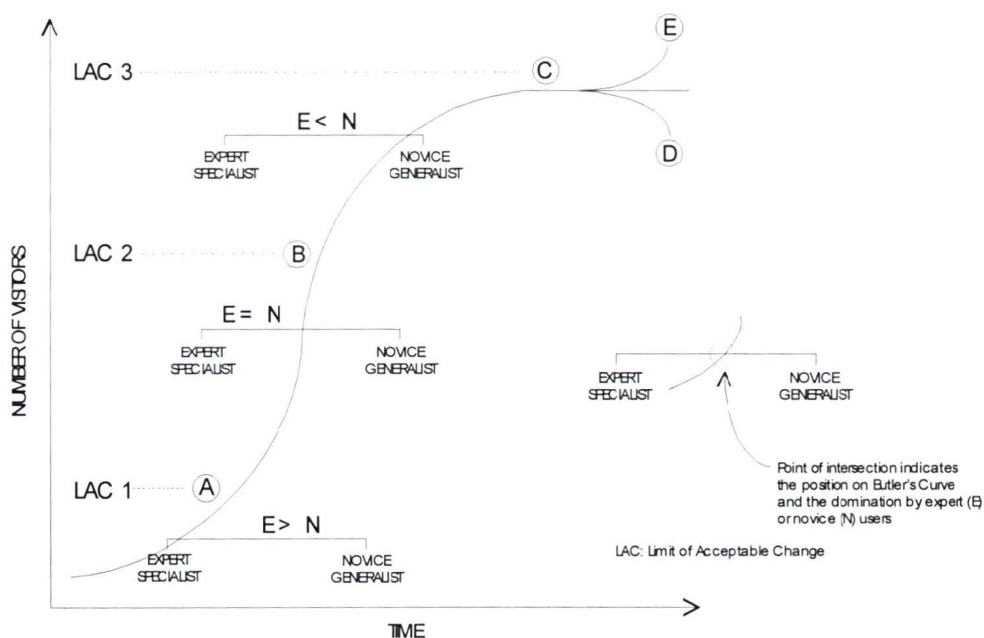
Despite tour operators' high ranking of environmental interpretation and motivator roles and an expectation by tourists for information and interpretation (Cohen 1985; McArthur 1994), the tour operator often underestimates this expectation (McArthur 1994). McArthur (1994) found, in a study surveying a variety of nature based tour operators that whether interpretation is incorporated within the tour is often influenced by the guide's personal interest, familiarity with the area and the passivity of activity. The tour guide as role model and information giver provides the guide with an influential position in modifying and correcting visitor behaviours to ensure that it is environmentally responsible and contributes to environmentally sensitive attitudes (Forestell 1993; Kimmel 1999). Therefore, the role of the tour guide in meeting the tourist's expectation and the delivery of interpretation is critically important (Holloway 1981; Cohen 1985; Geva & Goldman 1991; Orams 1999).

The role of the guide in delivery of interpretation could be considered even more critical with changes to tourism destinations. Settings evolve over time as a result of access and popularity (Dearden & Harron 1994). As a tourist area becomes more popular and accessible, it is hypothesized that the type of visitor changes from a smaller number of what Cohen (1978) terms explorers and others term "specialists" to organized mass tourists and "generalists" (see Butler 1980). Duffus and Dearden (1990) propose that

"over time as the number of visitors increases, the number of specialists will decline relative to generalists. The site, in catering to generalists, will no longer fulfill the expectations of the specialists. Specialists hence may be displaced to other, less developed sites. The model suggests that if the dominant level of specialization among the use group is known, the relative level of maturity as an attraction can be estimated" (:224).

The relative maturity of the tourist area provides insights into management strategies needed such as interpretation and visitor services. This model, illustrated by the s-curve based on a form of the social learning model, suggests that as the tourist area evolves the majority user shifts from specialists, those having prior knowledge and needing little infrastructure or interpretation to generalists, those having little

prior knowledge thus creating more demand for interpretive services (see Figure 3.2). To accommodate the demands of this greater number of generalist visitors, further changes may occur and the carrying capacity or the limits of acceptable change (points defined as LAC I, II, III) broadened (Duffus & Dearden 1990).



LAC 1: May allow for a maximum number of visitors with minimum facilities and negligible impact. Depending upon the management goals for the site this point may define the carrying capacity or limits of acceptable change (after Stankey, 1975)
 LAC 2: Broadening of LAC to accommodate increased facilities upon increased visitor demands
 LAC 3: May be the point where maximum visitors can still maintain the activity
 Point D: Past LAC 3, experience degrades and visitors decrease
 Point E: May represent a related but different experience at the site with a less sensitive LAC

Figure 3.2 Relationship of user specialization and site evolution (after Duffus and Dearden (1990))

3.2.3 Recreation Specialization

An essential component within the model proposed by Duffus and Dearden (1990) is recreation specialization. Tourists cannot be considered to be a homogenous group (Duffus & Dearden 1990), but often vary in attitude, behaviours, preferences and knowledge levels within the same activity. Specialization assists in explaining variability by defining appropriate subgroups of visitor populations. Bryan's (1977) classic study of trout fisherman conceptualized recreation specialization defined as "a continuum of behaviours from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977: 175). Bryan suggests that recreationists may increase their level of specialization over time reflected in changing equipment, skills, settings and commitment.

Specialization research has expanded the concept of recreation measurement based on equipment and skill to include cognitive, behavioural and psychological components (Manning, 1999), incorporating a variety of specialization measurements. Past studies have defined specialization by past experience and participation (Schreyer, Lime et al. 1984), experience and equipment ownership (Wellman, Roggenbuck et al. 1982), participation, equipment, skill and centrality to lifestyle (Miller & Graefe, 2000). Donnelly et al (1986) developed a specialization index comprised of participation, equipment ownership, perceived skill for boating related interests. McIntyre and Pigram (1992) argue for the inclusion of a psychological indicator of specialization, as observable measures (such as equipment) do not include a measure of the level and type of affective attachment that an individual has developed for an activity, termed enduring involvement.

The concept of "recreation specialization" has been found to be related to a number of attitudes, preferences and behaviours, including perception of recreation-related impacts, importance of recreation setting attributes, perceived quality of recreation management, standards of quality for social conditions, perceived crowding and preferences for management actions (Manning, 1999). Studies have shown that more highly specialized recreationists are more knowledgeable about and critical of management actions and setting characteristics (McIntyre & Pigram 1992). Specialists were also found to have more developed setting preferences, while low specialized recreationists tend to prefer ease of accessibility and increased services and facilities (Virden & Schreyer 1988). Rollins and Connelly (2001) suggest that specialists are more knowledgeable of the setting and have greater levels of concern about environmental impacts within protected areas than generalists (Rollins & Connelly 2001).

As visitor type evolves from specialists to generalists, the emphasis on the role of the guide also changes from what Cohen calls an "original" guide focused on instrumental activities to the "professional" guide, focused on communicative activities (Cohen 1985). This shift is most often related to the "emergence and development of a tourist system and the concomitant arrival of institutionalized types of tourists" (Cohen 1982). Nettekoven (1979) cites in Cohen (1985) that "Indeed, the principal expectation of mass tourists from professional guides is that they provide information and interpretation of the sites visited" (:20). As suggested by Duffus and Dearden's (1990) model, mass tourists or generalists often expect more infrastructure (hotels, lodges, services etc.) which can compromise natural values and

ecological integrity. The values and behaviour of specialists can be viewed as being more congruent with the mandate of National Parks regarding visitor services. Therefore, from a National Park perspective, the role of a tour guide may be critical in shaping use values and behaviours more to the specialist end of the spectrum. As a natural resource management strategy, the role of the tour guide in delivering interpretation and motivating environmentally-responsible behaviours cannot be underestimated (Kimmel 1999).

Therefore, study objectives include:

- 1) determining visitors' level of specialization;
- 2) measuring visitors' knowledge levels of National Park messages; and
- 3) examining the role of the guide applying the Cohen and Weiler model.

3.3 Methodology

This study was undertaken to examine the role of the tour guide in nature based marine tourism within the Broken Group Islands (BGI), Pacific Rim National Park Reserve, Vancouver Island. The BGI is well suited to a study of this nature, as a substantial number of visitors to the Broken Group Islands are guided, estimated at between 24.0% and 39.0% (Rollins & Randall 2001 Unpublished Report), providing an excellent opportunity for evaluation of the role of the guide.

More specifically the objectives of this study are to examine visitor characteristics, visitor knowledge levels, importance and performance of the role of the commercial kayak guide and the role of the guide in facilitating interpretation and environmentally responsible behaviour. Based on these objectives, this study involved a blended quantitative-qualitative approach using questionnaires and participant observation as the primary methods of data collection.

The quantitative component of the study employed a random sampling design to administer questionnaires pre and post trip to kayakers entering and leaving the BGI between June and September 2001. Pre and post trip questionnaires were administered at the primary entry and exit sites to the park, namely, Toquart Bay Forest Recreation Site and aboard the Francis Barkley transport ship that carries passengers to and from Sechart Lodge located outside the park boundary. Sampling efforts resulted in: 47 guided pre trip and 84 guided post trip questionnaires and 256 non guided pre trip and 270 non guided post trip questionnaires. Pre and post samples were not the same individuals.

For the qualitative component of the study, the principal investigator joined four guided kayak tours in June and July as a participant observer. In addition to observation, tour participants were asked to complete pre and post trip questionnaires, resulting in a matched sample of 21 pre trip and 21 post trip questionnaires termed the "participant observation" sample.

Overall, sampling efforts resulted in 699 useable questionnaires with the sample breakdown set out in Table 3.1.

Table 3.1 Sample Size by Group

Group	Pre Trip	Post Trip	Total
Guided	47	84	131
Not Guided	256	270	526
Participant Observation	21	21	42
Total	324	375	699

A total of 699 useable questionnaires were completed, however 21 of those questionnaires have been removed from general analysis as they represent the responses of the same respondents from the participant observation sample. Therefore, it is estimated that with a sample of 678 useable questionnaires, based on an approximate overall visitor population of 4,472 for 2001, margin of error is calculated at $\pm 3.4\%$ at the 95% confidence level. Because we are also interested in the responses of the guided visitor population, the margin of error for guided responses is $\pm 6.8\%$ at the 95% confidence level based on a sample of 173 from an estimated guided population of 1,073 (approximately 24.0% guided visitors from a total population of 4,472 permitted park campers in 2001).

3.3.1 Structured Questionnaires:

The face-to-face structured questionnaire method has been chosen to obtain data on kayaking visitors within the Broken Group Islands as this method is "suited to surveying populations for whom there is no list" (Salant & Dillman 1994 :40). Included within the questionnaire were questions designed to measure visitor knowledge of park heritage messages, specialization and the role of the tour guide. Visitor knowledge was measured using a ten-item quiz based on park heritage messages, developed from park literature and reviewed by park staff. Specialization was measured using a multi-dimensional approach consisting of variables: previous visits, years involved in kayaking, level of experience, equipment owned

and enduring involvement elaborated further in the results section. With respect to the role of the guide, two attributes were developed for each of the six components of the guides' role based on the work of Cohen (1985) and Weiler (1991), resulting in twelve attributes. All pre trip visitors were asked to rate the importance of these specific guide attributes and guided post trip visitors were asked to rate the performance of these same guide attributes using a five-point Likert scale. Response categories for the importance evaluation consisted of "1- not at all important", "2 – somewhat important", "3 – very important", "4 - extremely important" and "5 - no opinion". Response categories for the performance evaluation in post trip questionnaires consisted of "1 - strongly disagree", "2 - somewhat disagree", "3 – somewhat agree", "4 – strongly agree" and "5 – not sure". For the purposes of analysis, responses were recoded to reflect "3 no opinion", "and "4 - very important" and "5 - extremely important" for importance items and "3 not sure", "4 - somewhat agree" and "5 - strongly agree" for performance items. It is important to note that a limitation with this study is the attribute development; different attributes under the various dimensions may produce different ratings of importance. Despite this limitation, the reliability of the importance scale (.894) and performance scale (.847) can be considered highly reliable (Mitra & Lankford 1999) and each item contributes to overall scale reliability. Further, this study is exploratory and a first attempt to identify attributes of the role of the kayak tour guide.

Two pilot studies were undertaken prior to administering the questionnaire to assist with questionnaire development and to test the survey instrument in the field.

3.3.2 Participant Observer

To gain a deeper understanding of the visitor experience and the roles of the kayak guide, particularly in the facilitation of interpretation and influencing environmentally responsible behaviours, the participant observation method was used. The principal investigator accompanied guided kayak tour groups on four separate excursions within the Broken Group Islands June and July 2001.

The participant observer method allowed for social and environmental in-field observations of both clients and guides. Observations focused on guides' interpretation efforts and clients' responses, as well as environmentally and socially appropriate or inappropriate behaviours such as low/no impact camping practices, littering, noise, fishing behaviours, conflict management, and overall group functioning. Additionally, each participant (guides excluded) was asked to complete a pre trip questionnaire at the

beginning of the trip and a post trip questionnaire immediately after the trip. All tour participants and guides were aware of the researcher's role. An implication of the observer as participant role is that the researcher may alter the situation being studied (Webb, Campbell et al. 1971); however, Smith suggests that "it is possible, though doubtful that a forceful researcher may alter the situation being studied" (Smith 1988). To confirm this, two participants were asked at the end of two different trips, if researcher presence altered their experience; both replied that it did not.

Analysis of the data proceeded by reviewing and transcribing the field notes. A thorough review of the text revealed behavioural patterns or themes that were identified and grouped. These patterns or themes that emerged were compared to the literature identifying roles of the guide (Creswell 1994). Patterns were read in conjunction with and compared to the quantitative findings to demonstrate convergence of the findings, discover inconsistencies or contradiction, and to elaborate on results.

3.4 Results

3.4.1 Visitor Specialization

Specialization theory is used here as a technique to profile kayak visitors and assist in explaining variability by defining appropriate subgroups of visitor populations. Kayak visitors were segregated into subgroups through a specialization index. In developing the specialization index, a multidimensional approach was adopted following the methods of recent, similar studies (Bricker & Kerstetter 2000; Needham 2002). The following variables comprise the index: previous visits, years involved in kayaking, self reported level of experience, equipment owned and enduring involvement in the activity of kayaking (see Table 3.2), resulting in a comprehensive, interrelated and mutually reinforcing recreation specialization index (McIntyre & Pigram 1992; Scott & Shafer 2001).

Table 3.2 Dimensions and Variables Incorporated into the Specialization Index

Dimension I: Cognitive (Skill Level and Associated Equipment)
1. Self Reported Level of Experience (Q. 27)
2. Kayak Ownership (Q.26)
Dimension II: Behavioral (Prior Experience and Setting Familiarity)
3. Years Involved in Kayaking (Q. 25)
4. First Kayak Visit to the BGI (Q. 1)
Dimension III: Affective (Enduring Involvement 13 item Scale)
5. Involvement in the Activity of Kayaking (Q. 27)

Assigning levels and values of specialization for the individual variables are highlighted in Table 3.3. Adopting the method of recent studies (Bricker & Kerstetter 2000) responses to the variables were reviewed, divided into low and high specialization levels and assigned values of “1” for low and “2” for high. For the variable skill level, those self reporting “novice” or “intermediate” were coded low specialized and assigned a value of “1” and those indicating “advanced” or “expert” were coded high specialized and assigned a value of “2”. It is hypothesized that those who own their own boat have invested highly into the activity of kayaking and therefore are more highly specialized receiving a value of “2” than those respondents who do not own their own boat who received a value of “1”. For the variable “first visit”, respondents answering “yes” received a low specialization level and a value of “1”, while respondents answering “no” received a high specialization level and a value of “2”. For the interval data question “years involved in kayaking” the median defined the cut point, as used in similar, previous studies (Donnelly, Vaske et al. 1986; Bricker & Kerstetter 2000). Individual overall mean scores were computed for the enduring involvement index ranging from zero to five and again, the median defined the point between low and high levels of specialization and corresponding values were assigned.

Table 3.3. Assigned Levels and Values for Specialization Variables

Specialization Variable	Assigned Level	Assigned Value
Reported Level of Experience		
Novice/Intermediate	Low	1
Advanced/Expert	High	2
Kayak Ownership		
No	Low	1
Yes	High	2
Years Involved with kayaking		
0 – 3 years	Low	1
More than 4	High	2
First Visit		
Yes	Low	1
No	High	2
Enduring Involvement Index		
Mean Range		
0 – 3.2	Low	1
3.21 – 5	High	2

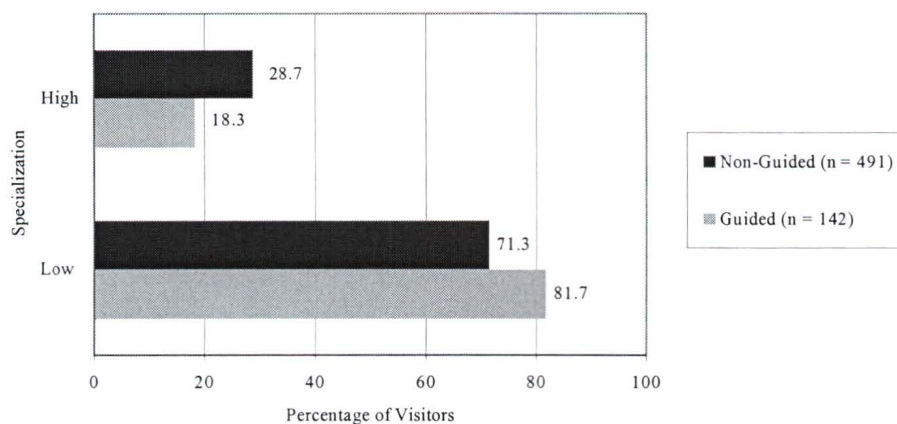
As in previous studies (Donnelly, Vaske et al. 1986; Virden & Schreyer 1988), the specialization index was created by summing the scores for each variable for each respondent, resulting in values ranging

from five to ten. For the purposes of this analysis, the range of scores has been condensed into two categories. Scores of five to seven indicate low specialization and scores of eight to ten represent high specialization resulting in a low specialized group and a high specialized group. Respondents with missing specialization data were excluded.

While this approach is considered simple and easy to understand, a weakness with this approach is the treatment of all variables as equal, potentially obscuring the variation in individual components (McIntyre & Pigram 1992). While a number of studies have incorporated different approaches to specialization, there is no consensus in the literature on construct measurement (Scott & Shafer 2001). Despite the weakness, this specialization index is considered very reliable, as reliability testing of the specialization index indicated an overall Cronbach's Alpha value of .66. An "alpha value between 0.6 and 0.8 can be considered very reliable" (Mitra & Lankford 1999 :273), and is consistent with index reliability of similar studies (Donnelly, Vaske et al. 1986; Miller & Graefe 2000).

Applying this index to the data, results indicate that 73.6% (n = 466) of all respondents can be considered "low specialized or generalist" and 26.4% (n = 167) of visitors can be considered "highly specialized or specialists". This study is also concerned with the levels of specialization of guided and non-guided visitors. Results illustrated in Figure 3.3 indicate 81.7% of guided visitors can be considered low specialized or generalists and 18.3% can be considered more highly specialized or specialists, compared to non-guided visitors, 71.3% of whom can be classified as generalists and 28.7% can be classified as specialists (chi square, χ^2 6.142 sig. p=.013, 2-tailed).

Figure 3.3 Specialization by Guided and Non-Guided Visitors



These findings provide evidence that the majority of visitors to the BGI are a less specialized, generalist visitor. When the specialization level of guided visitors is compared to non-guided visitors, guided visitors are not as highly specialized and participants in guided kayak tourism are more likely to be generalists than specialists. From this, it can be stated that guided kayak tourism brings more generalists than specialists into the park. As stated earlier, the role of the tour guide is critical in shaping the values and behaviours of these generalists to be more like specialists.

The model developed by Duffus and Dearden (1990) proposes that if the majority level of specialization among the user group is known the relative level of maturity of the area can be estimated. If we accept this, then evidence that generalists/novices outnumber specialists/experts ($E < N$) indicates the BGI is at its most mature end of the site evolution spectrum. As proposed by Duffus and Dearden, it is at this point where generalist visitors rely heavily on the development of supportive infrastructure such as interpretation (Duffus & Dearden 1990). The model suggests that generalists will, generally, have lower levels of knowledge, will have greater demands for interpretation, and require additional support and infrastructure. This demand may already be present indicated by the increased presence in the park of transportation barges or taxis, a demand for fixed camps and a desire for interpretation. Selected qualitative comments from visitors provide confirmation of this:

"The lodge/water taxi service is bringing inexperienced paddlers to the islands of their choice (very small children and coolers included). It is a huge change from a few years ago".

"(*) tour guide (*) attempted to prevent our unguided group from camping at Dodd Island despite there being plenty of room. He met us at the water and said he had a group of 11 coming in and we had to find somewhere else to camp. Very unfriendly and unprofessional!! Parks should enforce the maximum of 10 to a group rule! Too many groups exceeded this rule". (*company and guide's name are withheld)

"Interpretive information at the campsites would help visitors to learn more about the Broken Group Islands with respect to natural and cultural history".

3.4.2 Level of Visitor Knowledge

Levels of visitor knowledge were measured by asking visitors ten questions developed around National Park heritage messages. All pre trip and post trip visitors were asked to indicate whether they believed each question was true, false or that they didn't know. Correct responses were computed for each respondent with "don't know" responses computed as wrong answers. Results in Table 3.4 provide evidence of significant differences in pre and post trip responses to the learning quiz. On five quiz items,

post trip scores were higher than pre-trip scores and the differences observed between the groups significant. This indicates that there is a post-trip gain in knowledge scores on 50% of the questions asked. One quiz item showed significant differences observed between pre and post trip measures, however the scores were lower on the post trip than on the pre trip. For the remaining four items, any differences observed between the pre and post trip responses are not significant.

Table 3.4 Comparison of Correct Quiz Responses by Pre and Post Trip (Pre and Post Questionnaire Q. 20)

Quiz Item	Correct Responses (%)		Sig	χ^2	df
	Pre n = 324	Post n = 372			
When watching marine life, such as whales, you should not get closer than 100 feet.....	82.7	77.2	.068	3.32	1
The BGI area is known as the "Graveyard of the Pacific"	37.0	36.4	.859	.031	1
Sea stars are a common predator in the intertidal zone ...	45.9	56.3	.007*	7.40	1
When having a fire and driftwood is not available, it is acceptable to use wood from the forest	87.5	87.4	.991	.000	1
The BGI are administered by the Province of BC	33.5	26.6	.047*	3.95	1
All of the BGI are protected from the Pacific's full force.....	76.9	82.9	.046*	3.99	1
The BGI were historically inhabited by Coastal First Nations groups	74.0	85.0	.000*	13.14	1
The BGI are along the migration path of Gray Whales...	71.7	81.6	.002*	9.40	1
Feeding wildlife is alright because they are probably hungry	99.7	99.5	.651	.205	1
The First Nations' people in this area were whalers	32.7	44.8	.001*	10.57	1

*Significant at $p < .05$ (chi-square, 2-tailed)

Analyzing learning scores by mean (see Table 3.5) reveals that mean post trip learning scores are statistically significantly higher (6.88) than pre-trip learning scores (6.44). To determine if this difference is due to preexisting group differences, such as experience, the pre and post groups' specialization levels were analyzed using chi square analysis. Results indicated no significant differences in specialization between the overall pre and post groups (chi square, $\chi^2 .024$, sig. $p = .878$, 2-tailed). This suggests that the pre and post groups are not significantly different and that the observed differences in pre and post learning scores are not as a result of pre-existing group differences.

Table 3.5 Pre and Post Computed Learning Scores by Group

Group	n ¹	Mean Learning Score ²	Mean Difference	T-test	Sig.
Overall Pre trip	311	6.44			
Overall Post trip	361	6.81	0.37	-5.24	.008*
Pre Trip Guided	43	5.25			
Post Trip Guided	75	6.53	1.28	-3.54	.001*
Pre Trip Participant Observation	21	4.76			
Post Trip Participant Observation	21	7.71	2.95	-5.82	.000*
Pre Trip Non Guided	247	6.79			
Post Trip Non Guided	265	6.82	0.03	-0.195	.846

¹cases with missing data excluded

² Score range from 0 (none correct) to 10 (all correct)

*Significant at $p < .05$ (2 tailed t-test)

Despite the significant difference in pre to post learning scores, there is considerable variation of learning scores within the pre and post groups. To assist in explaining this variation, the pre and post trip learning scores are examined by group. Results of the t-test analysis (Table 3.5), reveals significant differences in pre to post learning scores for guided and participant observation groups; however there are no significant differences in pre to post learning scores for the non guided group. This result suggests that any observed differences in learning pre to post by the guided and participant observation groups are true, observed differences. Guided and participant observation respondents are more likely to have statistically significant increases in learning pre to post than non-guided respondents. When mean score differences are calculated the participant observation group has the largest mean difference or gain of 2.95 and the guided group mean difference or gain is 1.28. The large gain by the participant observation group can be explained in part by carry-over effect where the pre-test has influenced the outcome of the post test (Howell 1999). While this may be viewed as a limitation, these results provide support that exposure to the interpretive messages contained within the questionnaire may result in greater gains in knowledge scores. To determine if preexisting group differences contributed to differences in learning scores, guided pre and post groups were tested for differences in specialization and no significant differences were found (chi square χ^2 .131, sig. $p = .144$, 2- tailed). This means that observed differences in learning scores are not as a result of pre-existing differences in levels of experience.

Finally, analysis of overall mean knowledge scores is analyzed by specialization level (not illustrated in table). Results indicate that generalists have lower mean knowledge levels (6.44) than specialists (7.22), and these observed differences are statistically significant (t-test, $t = -4.531$, sig. $p = .000$, 2-tailed). As predicted by the Duffus and Dearden (1990) model, these results provide evidence that generalists have lower knowledge levels of heritage messages than specialists and support the findings of Rollins and Connelly (2001) that specialists are more knowledgeable of the setting.

In summary, most visitors to the BGI are generalists with significantly lower knowledge levels than specialists suggesting the need for improved interpretation services. As well, significant differences observed in guided pre to post learning scores are suggestive of two important findings: firstly, that pre trip exposure to interpretation messages may influence visitors overall knowledge gain. Secondly, that the guide may have an influential role in guided participants' learning experience, as suggested by previous studies (Bange 1984; Roggenbuck, Williams et al. 1992). The next section examines the many roles of the guide, with an emphasis on determining importance and performance of guides' interpretive role.

3.4.3. Assessment of Role of the Guide

3.4.3.1 Importance Performance Analysis

To assess participants' evaluation of the role of the guide, Importance-Performance Analysis proposed by Martilla and James (1977) was used. Importance-Performance Analysis (IPA) has been applied to studies in various fields (Vaske, Beaman et al. 1996), including the travel and tourism field (Huan, Beaman et al. 2002). Within tourism management, IPA has been used as a diagnostic tool in evaluating guided tours and operators (Geva & Goldman 1991; Hockings 1994; McArthur 1994; Duke & Persia 1996).

Importance-Performance Analysis is concerned with the importance individuals attach to a set of attributes and, in this study, how well the guide performs with respect to those attributes (Vaske, Beaman et al. 1996). Average importance ratings for each of the attributes are combined with the performance evaluations of those same attributes providing an indication of where needs are being met and where more attention is necessary (Vaske, Beaman et al. 1996). Using data from the guided and participant observation groups only, Table 3.6 shows importance and performance mean scores and standard deviations for guide attribute ratings as they were grouped in the questionnaire.

Table 3.6 Importance-Performance Mean Values and Standard Deviation

Role Attribute	Importance ¹ (n=68)	SD	Performance ² (n=105)	SD
Leadership: Instrumental	4.29	0.66	4.70	0.51
Set a pace for the trip that was comfortable for you	4.05	1.02	4.79	0.47
Discusses hazards that may be present in the BGI	4.52	0.72	4.62	0.73
Leadership: Social	4.07	0.96	4.49	0.85
Any tension or conflict that emerged was handled quickly and effectively	4.05	1.13	4.34	1.01
Promoted a social and happy group environment	4.04	1.04	4.63	0.84
Mediatory: Interaction	4.26	0.63	4.65	0.66
Reduces conflict with other groups at campsites or on the water	4.36	0.85	4.52	0.96
Kept the group organized and on schedule	4.13	0.92	4.80	0.55
Mediatory: Communicative	2.86	0.84	4.09	1.07
Introduced you to cultural points of interest such as 1 st nations history	3.97	1.16	4.15	1.17
Provides field guides and books for the group	2.89	1.47	4.02	1.49
Resource Management: Motivator of Responsible Behavior	4.53	0.66	4.20	1.06
Discussed "Leave No Trace" camping ethics with the group	4.58	0.65	4.41	1.06
Highlights the importance of not removing any First Nation artifacts or relics	4.45	0.96	4.00	1.32
Resource Management: Environmental Interpreter	4.38	0.82	4.51	0.86
Helps you to develop a keener awareness and appreciation of the area	4.34	0.91	4.57	0.81
Increases your knowledge and understanding of the natural environment of the BGI	4.44	0.82	4.46	0.99

¹Importance response categories ranged from 1 "not at all important" to 5 "extremely important"

²Performance response categories ranged from 1 "strongly disagree" to 5 "strongly agree"

From here, data can be graphically displayed by plotting mean values on a two-dimensional Importance-Performance grid: importance mean values form the vertical axis and performance mean values form the horizontal axis. IPA literature suggests that the placement of the crosshairs should be based on the variables being used and on the goals and objectives for the study in question (Huan, Beaman et al. 2002) and if possible, should force at least one attribute into each of the sections (Martilla & James 1977), however, few studies actually do this (Hudson & Shephard 1998). Because we are interested in attributes that participants evaluated as "very important" or "extremely important" a value of "4" was chosen for the crosshair location on the horizontal axis. Based on the performance response categories of "somewhat agree = 4" and "strongly agree = 5", crosshair location for performance on the vertical axis was placed at "4.5" based on the desire to stress excellent performance. Crosshair placement results in three sections: attributes that fall into "Area of Concern" indicate those attributes considered highly important but low in

performance; attributes falling in “Area of Caution” indicate those attributes considered low in importance and low in performance; and “Area of Satisfaction” highlights those attributes evaluated as important and high in performance.

Four quadrants have been typically used in the IPA literature: “Concentrate Here” as the upper left quadrant; “Keep up the Good Work” upper right; “Low Priority” bottom left and “Possible Overkill” bottom right (Hudson & Shephard 1998). While the quadrants “Concentrate Here” and “Keep up the Good Work” are generally accepted in the literature and acceptable for use in this study, there is an argument to reconsider the quadrants “Low Priority” and “Possible Overkill”. Duke and Persia argue that while low performance on unimportant issues may receive little effort, they might be termed a “weakness” by some instead of “low priority” (Duke & Persia 1996). Following on this, when addressing ecotourism, particularly staged in protected areas, it may not be appropriate to consider the low performance of an attribute rated unimportant as “low priority”. Using the results (see Figure 3.4) to illustrate this point, it may be inappropriate to consider the statement “#7: The guide introduces you to cultural points of interest such as First Nations history” as a “low priority” in ecotourism issues when the cultural interface is seen as an important component to ecotourism (Charters 1996; Wight 1997). Based on this logic, the researcher has chosen to consider this section as an “Area of Caution” rather than “low priority”. This logic also applies to attributes falling within the “Possible Overkill” where performance exceeds importance. It has been suggested in the literature that “possible overkill” might be reconsidered as a “strength” since extra performance often yields customer satisfaction (Duke and Persia, 1996; Oh 2001). In this respect, this area is combined with “keep up the good work” and redefined as “Area of Satisfaction”. Accordingly, importance and performance analysis of this data uses a three-section grid, which has been applied to other nature based tourism studies such as dive tourism (Bennett 2002). The action grid in Figure 3.4 identifies where each of the 12 attributes fall in terms of the three sections: Area of Satisfaction, Area of Concern, and Area of Caution.

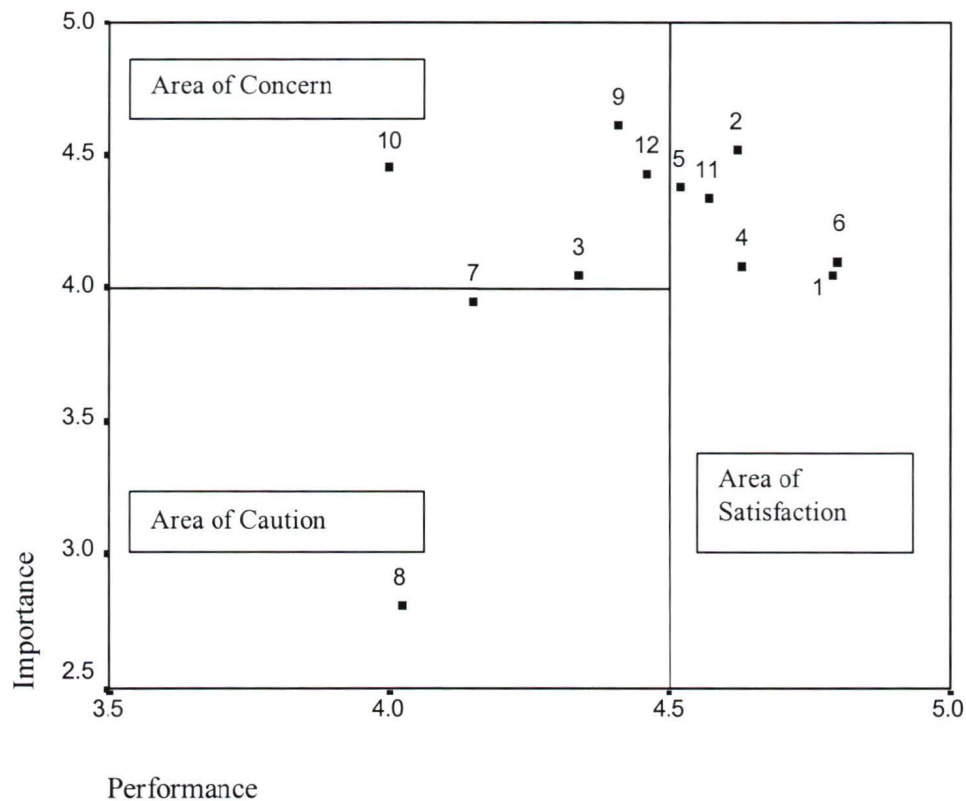
Area of Satisfaction: A total of six attributes or 50% of items fall into the “Area of Satisfaction” section including: the guide setting a comfortable pace, discussing hazards, promoting a social group environment, reducing conflict with others at campsites, keeping the group organized and helping to

develop a keener awareness. Participants were satisfied with those attributes that they considered important.

Area of Concern: A total of four attributes or 33.3% fall into the “Area of Concern” section including handling tension or conflict quickly, discussing Leave No Trace camping ethics, highlighting the importance of not removing First Nation artifacts and increasing participant knowledge and understanding about the natural environment of the BGI. Participants rated these items as high in importance but low in performance.

Area of Caution: Finally, a total of two attributes or 16.6% fall into the third section “Area of Caution”. These attributes include introducing participants to cultural points of interest and providing field guides and books for the group and were found to be both low in importance and in performance. However, as discussed above, given the nature of the study and the setting, these items are best viewed as areas of caution.

Figure 3.4 Importance-Performance Grid for Role of the Guide



N^1 – pre trip guided importance = 68

N^2 – post trip guided performance = 105

Legend:

- 1 Guide sets a pace for the trip that is comfortable for you
- 2 Guide discusses hazards that may be present in the BGI
- 3 Any tension or conflict that emerges is handled quickly and effectively by your tour guide
- 4 Guide promotes a social and happy group environment
- 5 Guide reduces conflict with other groups at campsites or on the water
- 6 Guide keeps the group organized and on schedule
- 7 Guide introduces you to cultural points of interest such as First Nations
- 8 Guide provides field guides and books for the group
- 9 Guides discusses “Leave No Trace” camping ethics with the group
- 10 Guide highlights the importance of not removing any First Nation artifacts
- 11 Guide helps you to develop a keener awareness and appreciation of the area
- 12 Guide increases your knowledge and understanding about the natural environment of the BGI

To illustrate results as they pertain to the individual spheres and dimensions from which each of the attributes were developed (see Table 3.6), the mean values and standard deviations for attributes under each dimension are plotted in Figures 3.5.1 to 3.5.6.

Figures 3.5. Importance-Performance Grids for Role of the Guide by Sphere and Dimension

Figure 3.5.1 Leadership Sphere: Instrumental

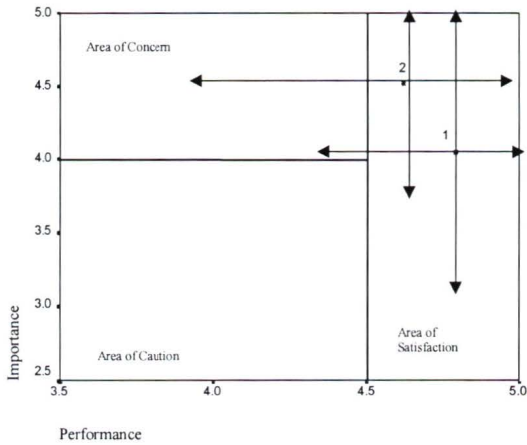


Figure 3.5.2. Leadership Sphere: Social

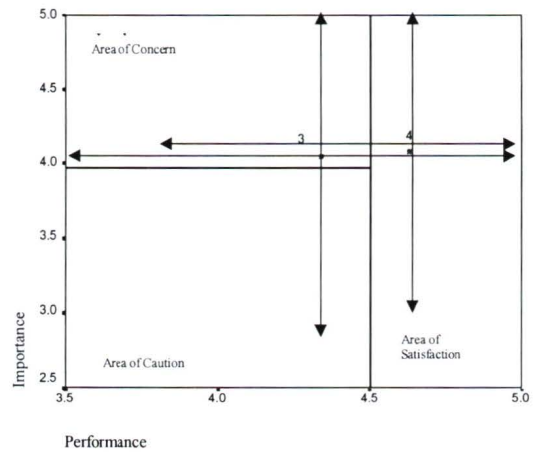


Figure 3.5.3 Mediatory Sphere: Interactionary

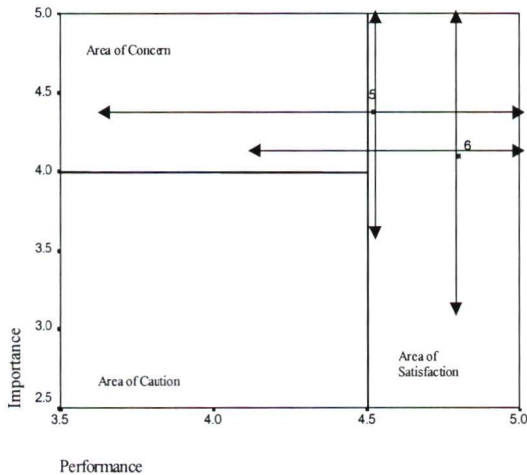


Figure 3.5.4 Mediatory Sphere: Communicative

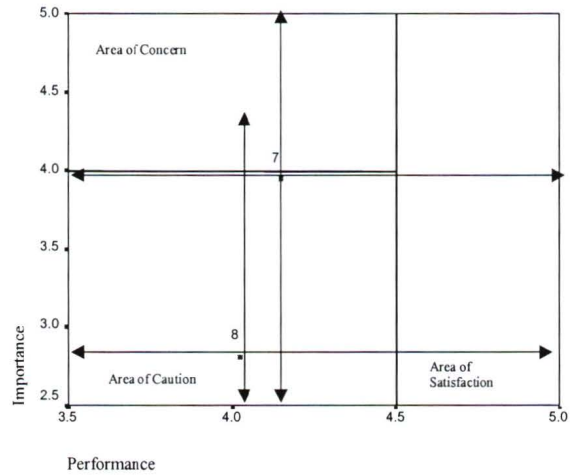


Figure 3.5.5 Resource Management: Motivator

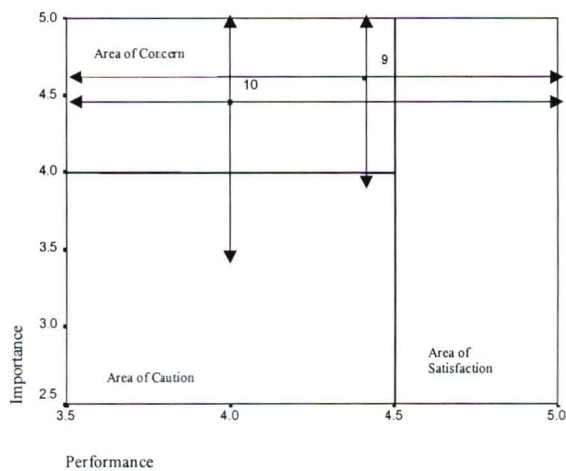
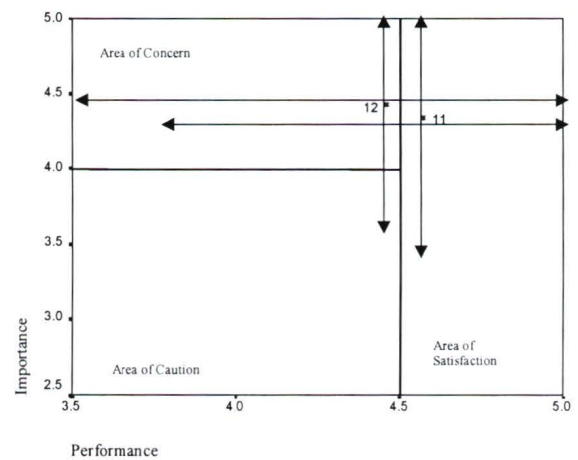


Figure 3.5.6 Resource Management: Environmental Interpreter



Figures 3.5 emphasize the variability or degree of consensus of the mean importance and performance ratings of each of the six dimensions. The lines radiating horizontally for performance and vertically for importance represent plus or minus one standard deviation from the mean, and illustrate variability around the mean ratings. From Figures 3.5 it is clear that not all respondents indicate the same degree of importance and performance for the various attributes. Using Figure 3.5.4 to illustrate, it is apparent that on average, respondents consider attribute "7. Your guide introduced you to relevant cultural and natural points of interest such as bird nesting sites" low in importance and low in performance and falls into "Area of Caution". However, approximately 34% of participants find this attribute more important than the mean and 34% find this attribute less important than the mean. As well, approximately 34% of participants find that the performance of this attribute is more satisfactory than the average. Similar analysis is appropriate with the attribute "8. Your guide provided field guides and books for the group". While the average rating indicates that this attribute is low in importance and performance, variability in responses indicates that approximately 34% of respondents find this attribute to be more important than the average rating and the performance to be both less satisfactory and more satisfactory than the mean rating. This illustration emphasizes the variability of responses in both importance and performance of the various attributes.

Recognition of this variability is important in analysis as problems arise in the interpretation of and validity of results if not all participants share the same importance attitudes and the population is not homogenous (Vaske, Beaman et al. 1996). Vaske et al. (1996) suggests segmenting the population as a way to improve interpretation. While this data represents the responses of participants on guided trips, intuitively a homogenous group, t-test analysis of responses by experience level was performed to test whether these responses were significantly different by low and highly specialized respondents. Results indicate no statistically significant differences in responses between the high and low specialized respondents. Therefore, we can be reasonably assured that these results are representative of a homogenous population. Despite this analysis however, it is important to recognize that there is some variability in respondents' attitudes towards importance and performance, suggesting that there is varied opinions regarding the importance of the attributes, and more importantly, various opinions regarding the guides' performance of the attributes.

To summarize, these results suggest that while guides are performing their instrumental, interactionary and interpreter roles satisfactorily, performance is rated less highly in the areas of motivating environmentally responsible behaviours, managing conflict and promoting a social group environment, and interfacing between the guest and the natural and cultural environment. Improvement to these areas may be warranted.

3.4.3.2 Results from Participant Observation

Qualitative observations add insights and richness, as well as a cross reference to the quantitative results and variability previously discussed. Content analysis of the field notes indicated themes supporting Cohen's (1985) and Weiler's (1991) subroles. Each of the themes are discussed and supported by excerpts from the field notes.

Respecting the instrumental role, guides engaged the group in a safety discussion prior to launching, however the comprehensiveness of the discussion varied considerably from a few sentences to a half hour overview. Regarding the pace set, guides seemed to set a pace that was comfortable for the group, however there were a few exceptions where the pace exceeded the clients' ability:

"A guest is exhibiting severe back pain and the guide gave him a roll for his back. But the group is traveling too fast for this guest who is lagging far behind, maybe as much as 300 feet... This action seems to defy the concept of "sweep guide" so important in guide training."

Insofar as discussing hazards that may be present, most guides functioned highly in this role, identifying hazards within routes, prepping clients for long crossings, discussing the current conditions, effect and impact of wind and waves. Factors influencing this role appeared to be familiarity with the area; guides not familiar with the area appeared less confident in instrumental skills than the guides who had traveled to the region a number of times.

Regarding the social dimension, what emerged consistently was the use of humour by guides to diffuse intra-group tensions and to promote a social and happy group environment. Guides that maintained a cheerful demeanor, were caring, sensitive, helpful and used humour appeared to promote a more social group environment and managed to ease any emerging tensions better than those guides that used these strategies to a lesser degree. Group dynamics appeared to deteriorate where guides did not maintain these strategies.

Regarding the interactionary dimension, there seemed to be great variability in style of guides and trips. Two of the trips were not as highly organized as the other two, however, this was not as important to some of the respondents, as reflected in one guest's comments:

"I prefer this style of trip, one that isn't scheduled to death and where the guides do everything."

Insights into the guides' role of reducing conflict with others provide a somewhat interesting view.

"We notice that nearby campers are having a large fire in the forest, using wood from the forest, which is against park regulations. Our guide has chosen not to tell this group to put out the fire because 'I am concerned about initiating conflict that might spill over to our group and I am also concerned about company's reputation...It's a dilemma. I believe we need more park warden presence and more enforcement as I see many infractions'."

However, a different guide on the same trip had no hesitation in directing a newly arrived group away from our already over crowded camping area, causing obvious frustration and tension with the newly arrived campers.

Regarding the communicative dimension and the importance and performance of the provision of field guides and of the introduction of cultural points of interest, observations provide, at times, contradictory evidence. On all trips field guides and books were provided, although the degree to which they were referred to or made readily available varied from guide to guide. One guide not only kept field books easily accessible, but also provided guests with keepsake interpretation booklets. Despite the low quantitative ranking of the importance of providing field books, groups were often observed using the books to educate and entertain themselves.

"A very wonderful thing occurred tonight when one of the guests picked up her nature book given to her by the guides, walked into the water up to her shorts and peered down looking for seastars and fish. She would then page through her book to identify what she saw".

With respect to highlighting cultural points of interest, occasionally guides would reveal interesting points:

"we are drifting through a kelp bed and the guide points out the different kelp and tells the group how some First Nations peoples used the bull kelp for cord".

Another guide presents the area's culture in another way:

"while hiking through the woods on Benson Island our guide described and explained some First Nations' culture and importance, particularly respecting the Benson Island archaeological dig, deciphering for us what the different levels of middens represent and the different groups that lived here."

However, despite this effort, these particular guests remained silent, appearing completely uninterested. In contrast to these efforts, of the many opportunities to present First Nations' cultural points of interest such as the many First Nation middens, fish traps and canoe runs evident in the Park, few guides pointed out these significant cultural points of interest. Overall, few observations were made of guides highlighting cultural points of interest, supporting the low quantitative rankings for importance and performance of the communicative dimension.

Observations regarding the resource management attributes of motivating environmental behaviours were somewhat variable depending upon the trip. Although few guides actually mentioned the term “Leave No Trace”, components of the concept were mentioned by some of the guides. For example, while some guides demonstrated proper fire building technique such as building a fire below the high tide line and using small pieces of driftwood, other guides did not:

“The guide chose to build a fire within an existing ring, but did not educate the clients as to proper fire technique. Next thing we know the guest has overbuilt the fire with some very large pieces, which were left smouldering. Despite this opportunity to educate, the guide chose not to discuss it”.

The issue of proper waste disposal was brought up by the guides on three of the four trips, while one group received no instruction on proper human waste disposal or personal garbage disposal. All of the guides however modeled environmentally responsible behaviours by keeping the area clear of garbage, often picking up other's garbage:

“prior to leaving the beach, the guides cleared off any and all evidence of fire. There was no ash, or burned pieces – just sand. The kitchen area was scoured for micro garbage. The guides asked guests to clear tent sites for micro garbage and leave sites cleaner than found”.

This modeling was reflected by group members:

“it appears that guests are very conscious of their own garbage, one guest keeping and collecting small crumbs for the garbage instead of brushing them onto the beach”.

Despite the fact that the Broken Group Islands has an important and extensive First Nations history, and the fact that a number of campsites are located on First Nation middens, there was no discussion by any guide around the importance of not removing or disturbing First Nation artifacts. Although not specifically artifacts related, during tidal pool exploration a guide commented as follows: “leave everything in place – rocks and creatures”. While observations generally indicate that guides model and promote responsible environmental behaviours, there is evidence to indicate variability among the

guides in modeling or discussing of responsible behaviours. However, observations indicate that modeling can have an influencing effect on visitors' behaviours.

Finally, observations indicate a desire by the visitor to increase knowledge and awareness of the area:

“There has been no environmental education presented, although there has been interest expressed by guests – picking up shells and wanting to identify them, pointing out eagles and asking questions about whales”.

In delivering environmental interpretation, the guides adopted a number of approaches: One guide had adopted a particularly active, hands on approach:

“The guide encouraged us to collect, gather and identify different empty shells. These were displayed on a rock with the guide books nearby. A number of guests handled the shells and opened the books trying to identify and learn about the shells/marine life”.

Still others had a completely hands-off approach exhibited during a very long tidal pool exploration with guides who provided no interpretation:

“Guests appeared intrigued with this new world, carefully inspecting nooks and crannies for starfish, seaweed and shells. We occupied ourselves for over an hour in the pouring rain”.

Despite these examples of interpretation, many opportunities went underutilized due to various influences. A number of trips occurred during extremely windy and rainy conditions. Under these conditions, it appears that interpretation becomes less important and guest comfort and safety become primary, providing evidence that the overall function of a guide is a combination of all the roles and that these roles may often compete (Cohen 1985; Pond 1993; Weiler & Davis 1993). Further, participant observation revealed that interpretation and modeling of environmental behaviours appears to be effective in influencing visitor's environmental behaviours. However, the amount of interpretation included within the trip is dependent upon the guides' knowledge of the area and personal interests. This echoes the findings of McArthur (1994) that interpretation within the tour is often influenced by the guide's personal interest, familiarity with the area and the passivity of activity.

3.4.3.3 Summary of the Role of Guide

Cohen's (1985) model as modified by Weiler (1992) can be used to summarize the relative importance and performance of the roles of the guide by using the mean scores for the combined dimensions illustrated in Table 3.6. Applying the rankings to Cohen's schematic model, (see Figure 3.6), it is apparent participants find the motivator and environmental interpreter dimensions to be ranked most

highly in terms of importance, however, guides performance in these areas is not ranked as highly. This indicates that tour guides performance in the areas of motivator of responsible environmental behaviours and environmental interpretation underperformed the expectation of the visitor, and supports McArthur's statement that guides often underestimate the importance placed on environmental interpretation by their clients (McArthur 1994). Results also indicate that guides' perform most highly in the instrumental and interactionary dimensions. That is, guides are functioning highly as tour leaders in regard to safety, route planning, navigators and organizers, those functions considered characteristic of the more traditional or original guide (Cohen 1985),

Figure 3.6 Representation of the roles of the tour guide in nature based tourism

	Outer Directed	Inner Directed
Leadership Sphere	Instrumental (importance rank = 3) (performance rank = 1)	Social (importance rank = 5) (performance rank = 4)
Mediatory Sphere	Interactionary (importance rank = 4) (performance rank = 2)	Communicative (importance rank = 6) (performance rank = 6)
*Resource Management Sphere	*Motivator (importance rank = 1) (performance rank = 5)	*Environmental Interpreter (importance rank = 2) (performance rank = 3)

After Cohen (1985) and *Weiler (1992)

These results suggest that while kayak tour guides perform highly in instrumental and interactionary roles, they have yet to perform their communicative, interpreter and motivator of responsible behaviours roles to the level desired or expected by tour participants. The performance emphasis on the instrumental and interactionary roles and importance emphasis on environmental interpreter and motivator roles, provide some indication that the guide's role must evolve from the "original pathfinder" to "professional guide" to meet visitor demands.

3.5 Conclusions

This study has focused on determining specialization levels of visitors, examining visitor knowledge levels of National Park messages, as well as the importance and performance of the various roles of the tour guide based on Cohen's (1985) model, as modified by Weiler (1992). This section will

briefly summarize the findings and discuss management implications and conclude with limitations, advancements and future research questions.

3.5.1 Summary of findings and management implications

In summary, the majority visitor within the BGI is a generalist with significantly lower knowledge levels than specialists suggesting the need for improved interpretation services. As well, significant differences observed in guided pre to post learning scores suggest two important findings: firstly, that pre trip exposure to interpretation messages may influence visitors overall knowledge gain; and secondly, that the guide may have an influential role in guided participants' learning experience. Given the levels of generalist visitors to the area, the role of the tour guide becomes critical for improving the understanding of heritage messages and modeling and shaping appropriate visitor behaviours and values of the guided visitor.

To further examine the role of the guide, this study incorporated a model based on the work of Cohen (1985) and Weiler (1992), which presents a number of roles that the guide must focus on when leading tours: instrumental, social, interactionary and communicative, as well as Weiler's proposed resource management focused roles. These results suggest that while kayak tour guides perform highly in instrumental and interactionary roles, they have yet to perform their communicative, environmental interpreter and motivator roles to the level desired or expected by tour participants. The performance emphasis on the instrumental and interactionary roles and importance emphasis on environmental interpreter and motivator roles, provide some indication that the guide's role must evolve from the "original pathfinder" to "professional guide" to meet visitor demands.

These findings can be linked to the model proposed by Duffus and Dearden (1990). Generally, the model suggests that a specialist majority implies fewer visitor numbers and little management intervention, while a generalist majority implies greater visitor numbers, greater pressure on the tourist area, and a demand for more interpretation (Duffus & Dearden 1990). Results indicate the majority of *all* kayaking visitors are generalists and guided visitors tend to be generalists compared to non-guided visitors. From this we can conclude that guided kayak tourism within the BGI brings in more generalists than non-guided kayak tourism with greater demands for services, such as access services, facilities and interpretation, which can compromise natural park values and ecological integrity. The values and behaviour of specialists

can be viewed as being more congruent with the mandate of National Parks regarding visitor services. Therefore, from a National Park perspective, the role of a tour guide is critical in shaping use values and behaviours more to the specialist end of the spectrum. Results show that the guide may be influential in guided visitors knowledge gains and therefore, instrumental in shaping visitors values and behaviours.

While results show increased knowledge gains by guided visitors, examination of the role of the guide indicates an underperformance of the environmental interpretation and motivator roles. In order to meet this demand for interpretation and responsible environmental behaviours and to fulfill a role that moves the tourist from mere enjoyment to a change in attitude and behaviours based on Oram's model (1999), improved performance of these roles is warranted. Education and park agency involvement are necessary requirements to fulfill this role. Kayak tour guide education focusing on not only the "hard" skills traditionally emphasized in leadership training, but interpretation and environmentally responsible behaviours is critical in order to safeguard the natural resource. While there is little literature on guide training (Gurung, Simmons et al. 1996; Weiler & Ham 2002), Parks Canada Agency could approach guide education from training models such as the newly developed "model for sustainable tour guide training" (Weiler & Ham 2002). Additionally, National Park agency involvement in the form of operating standards that reflect the needed skills set and knowledge to protect the natural resource are essential. However, operating standards should ideally have mandatory licensing requirements, as past studies indicate the vast majority of tour operators do not use professionally trained interpreters and only one third used the staff training services provided by the park agency (Hockings 1994).

Operating standard models from Gwaii Haanas National Park indicate that tour guides must attend a business workshop that overviews the management regime of Gwaii Haanas, the National Parks Act and Regulations, and the visitor orientation (Parks Canada Agency 1999). Further, the management plan proposes the development of an "apprenticeship program" allowing trainees the opportunity to gain local knowledge and heritage interpretation skills (Parks Canada Agency 1999). Models such as this would strengthen the role of the guide as an information conduit and model for responsible behaviours while attempting to satisfy Ecological Integrity Report recommendations to expand interpretive efforts through collaboration with tourist operators (Parks Canada Agency 2000).

3.5.2 Limitations, advancements and future research questions

There are a number of limitations inherent in this study that need to be recognized. A multi-dimensional, summative specialization index was adopted to assist in explaining variability by defining appropriate subgroups of visitor populations. While this approach is considered simple and easy to understand a weakness with this approach is the treatment of all variables as equal, potentially obscuring the variation in individual components (McIntyre & Pigram 1992). While a number of studies have incorporated different approaches to specialization, there is no consensus in the literature on construct measurement (Scott & Shafer 2001).

Development of the attributes of the role of the guide is a limitation that needs to be addressed. While the attribute development was based on a review of the literature and reviewed by park staff, different attributes may have produced different results. Despite this limitation, the reliability of the importance scale (.894) and performance scale (.847) can be considered highly reliable (Mitra & Lankford 1999) and each item contributes to overall scale reliability. Further, this study is exploratory and a first attempt to identify attributes of the role of the kayak tour guide.

The role of kayak guides was examined within a marine component of a National Park consisting of unique characteristics, such as a significant First Nations' heritage and proximity to the path of migrating gray whales. Accordingly, the knowledge quiz and to some extent the role of the guide scale were tailored for the study area and, therefore, results cannot be generalized to all guided nature based tourism.

Finally, results suggest that the participant observation group had large and significant gains in knowledge levels. While this gain in knowledge level could be attributed to exposure to the pre-trip questionnaire thus supporting the idea that interpretive message exposure contributes to increases in learning, it must be noted that participant observation as a methodology may have influenced the group as well. An implication of the observer as participant role is that the researcher may alter the situation being studied (Webb, Campbell et al. 1971); however as previously stated, Smith suggests that "it is possible, though doubtful that a forceful researcher may alter the situation being studied" (1988) .

While exploratory in nature, this study makes important contributions to the examination of nature based tourism in National Parks. This study provides valuable and needed baseline information about visitors knowledge levels of heritage park messages in the Broken Group Islands, Pacific Rim National

Park Reserve. Additionally, this study explores the variability of responses by levels of specialization providing further evidence to support the literature that specialists tend to have higher levels of knowledge about the setting than generalists. As well, examination of knowledge levels by group type is suggestive of important findings. Firstly, large and significant knowledge gains by the participant observation group suggest that exposure to interpretive messages, contained in the questionnaire, may influence knowledge gains. Secondly, significant increases in pre and post knowledge levels of the guided group as opposed to the non-guided groups are suggestive of the importance of the role of kayak tour guides as information conduits while in our National Parks. This study also contributes to and builds on the work of Cohen (1985) and Weiler (1992) by developing and measuring the importance and performance of individual attributes of the guides' role. In addition, this study contributes to importance and performance analysis by plotting and graphing the standard deviation of responses in order to illustrate the variation in responses. Finally, this study found that the model proposed by Duffus and Dearden (1990) was an appropriate framework for examining visitor management issues in a National Park.

While this study does provide insights into nature based tourism within National Parks, further research is recommended to examine the importance and performance of the guide's role in other natural settings where guided tourism is centered. Further, this study did not include day trip visitors, and as day trip tours depend on the same natural resource and are a growing tourism segment (Manning & Lime 2000), research into the role of the guide for the day trip tourism segment is warranted. Further, the development of attributes that define the role of the guide requires further research to better understand the individual attributes of the core dimensions of kayak tour guides. Finally, attention is also needed in the design, delivery and evaluation of guide training models appropriate to natural areas.

Chapter 4: Determining Attitudes toward the Voluntary No Fishing Policy

4.1 Introduction

The idea of ecological integrity is fundamental to Canadian National Parks. Within the Canada National Parks Act ecological integrity means "with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes" (Government of Canada 2000). The 1988 amendments to the National Parks Act state "maintenance of ecological integrity through the protection of natural resources shall be the first priority when considering Park zoning and visitor use in a management plan" (Government of Canada 2000). However, at the park level it has become clear this is not always happening (Dearden & Rollins 2002). The 1997 State of the Parks Report (Parks Canada 1998) listed a number of internal and external stresses that have compromised the ecological integrity of Canada's National Parks, among these are resource extraction and harvesting. While most Canadians assume National Parks are protected from harvest, in reality most parks have some kind of active harvest. The most common type of extraction is sport fishing, with twenty-two parks reporting fishing activity (Woodley 2002). One of those parks reporting a harvest is the Broken Group Islands, the marine component of Pacific Rim National Park Reserve. The Broken Group Islands receive very high levels of backcountry use and "recreational fishing threatens local populations of rock cod" (Parks Canada Agency, 2000 :1-13). Of the many possible approaches to resource management, a Voluntary No Fishing Policy has been adopted for the Broken Group Islands. Critical to the success of a voluntary resource management approach is visitor support (Gubbay & Welton 1995).

This chapter examines visitor support for the Voluntary No Fishing Policy in an attempt to understand the underlying attitudes and beliefs towards the policy. The Theory of Reasoned Action (Ajzen & Fishbein 1980) is used as a model to explore the relationship between behaviour, attitudes and beliefs. An understanding of visitors' attitudes and beliefs towards the policy may be used to inform management interventions aimed at influencing visitor support. This information is essential, for example, in developing effective interpretative messages designed to increase support for the policy, central to park policy: "Interpretation plays a critical role in educating visitors about ecological integrity and shaping their attitudes, values, beliefs and behaviours within National Parks" (Parks Canada Agency 2000 :11-2)

There are a variety of management approaches that can be applied to outdoor recreation problems. These approaches can be classified into direct and indirect management practices. Direct management includes practices that regulate visitor behaviour, require a high degree of control and restrict visitor freedom of choice (Manning 1999). Examples of direct management practices include fines, time and spatial limits, reservations, quotas, and restrictions. Indirect management practices influence or modify visitor behaviour, retain visitor freedom of choice and require less control (Manning 1999). Examples of indirect management include improvements (or not) to access and campsites, education such as signage, pamphlets, interpretation (for a full review of educational techniques see Doucette & Cole 1993) and user fees (for a full review of management techniques see Manning 1999; Manning & Lime 2000). Not only do visitors prefer indirect management practices over direct approaches, regulatory approaches to resource management entail costs associated with enforcement of rules and regulations (Manning & Lime 2000), funding for which is often inadequate (Osborne, Koski et al. 2001). Within the Broken Group Islands, resources in the Park are so low, staff cannot adequately patrol the area or even put up proper signage (Parks Canada Agency 2000).

4.2 Literature Review

4.2.1 Voluntary No Fishing Policy as a Management Approach

In contrast to regulatory practices, indirect management practices, such as voluntary approaches to resource management do not rely on restrictions rather they rely on cooperation and support from users (Gubbay & Welton 1995). Voluntary approaches to conservation of marine areas have been recently implemented in the Philippines, United Kingdom (Gubbay & Welton 1995) and in San Juan County, Washington State, with the development of the voluntary Bottomfish Recovery Program (Osborne, Koski et al. 2001). Parks Canada working with the Department of Fisheries and Oceans attempted to address rock fish conservation in the Broken Group Islands by adopting a Voluntary No Fishing Policy (VNF) for waters within the marine component of the park. Fishers were urged to comply with the voluntary no fishing policy in the B.C. Tidal Waters and Sport Fishing Guide:

"Fishing in National Parks: Parks Canada is dedicated to protecting marine life in National Parks. Pacific Rim National Park Reserve is working with others, including DFO to protect ecological integrity and regional biodiversity. Based on scientific data and in keeping with National Park values, recreational fishing within the marine areas of the Park will be reviewed in cooperation with the Department of Fisheries and Oceans. Early data indicates that groundfish are in decline in the Broken Group Islands. In response, Pacific Rim National Park Reserve (Areas 23/24) is

urging visitors to adopt a voluntary no angling policy for groundfish in this areas (Fisheries and Oceans Canada 2000 :15)

The success of these programs largely depend not only on education (Gubbay & Welton 1995), but also on voluntary participation, the goodwill of fishers who realize the value of allowing bottomfish to survive in protected areas and peer pressure (Osborne, Koski et al. 2001). Peer pressure is particularly effective in achieving conservation at a voluntary site, as supportive members of user groups will influence others (Gubbay & Welton 1995).

4.2.2 Theory of Reasoned Action

Given that the support of park users is critical to the success of a voluntary program, understanding user attitudes towards and beliefs underlying a voluntary policy is particularly important. To explore the relationship between behaviour, attitudes and beliefs and ultimately to inform management interventions aimed at influencing visitor attitudes and behaviours, the Theory of Reasoned Action (Ajzen & Fishbein 1980) was used as a framework. This approach proposes that behaviour can be predicted from the intention that corresponds directly to the target behaviour as the theory assumes that most "socially relevant human behaviours are under volitional control and therefore, that the most immediate determinant of any given behaviour is the intention to perform or not perform the behaviour" (Fishbein & Manfredo 1992 :33). In addition to predicting behaviour from intention, the theoretical model can be used as a framework for understanding *why* people intend to behave a certain way (Fishbein & Manfredo 1992).

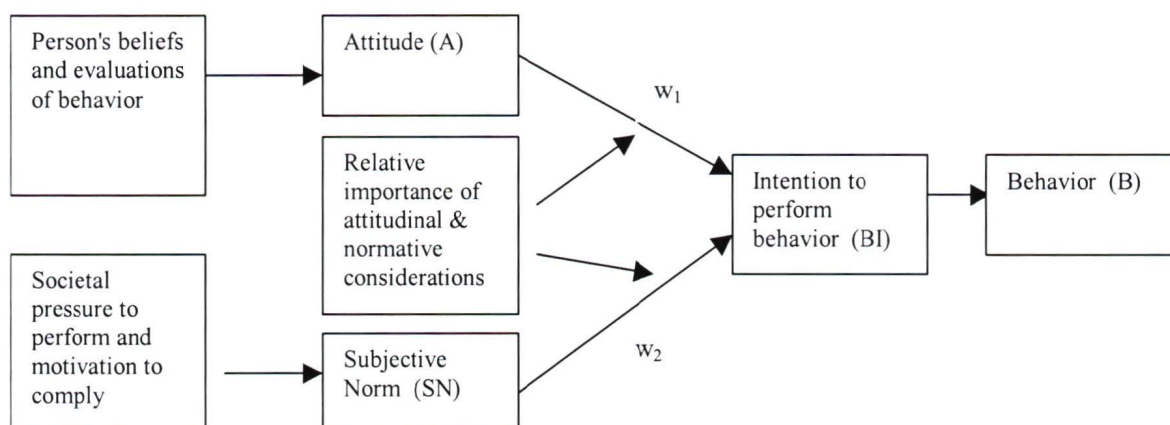
According to the Theory of Reasoned Action, a person's behavioural intention is a function of two major factors: an attitudinal component and a social or normative component. The attitude toward the behaviour refers to the degree to which the person has a favorable or unfavorable evaluation of the behaviour in question, and is comprised of "top of the mind" or salient beliefs around the behaviour. Changing a person's attitude toward a behaviour requires changing these underlying salient beliefs. The second or normative component of the theory refers to the influence of the social environment on intentions and behaviour, for example, peer pressure (Ajzen & Fishbein 1980). This influence is considered the person's subjective norms, that is, his or her perception that most people who are important to him or her think s/he should or should not perform the behaviour (Ajzen & Fishbein 1980). Subjective norms can be predicted from normative beliefs that specific individuals or referents think he/she should or should not

perform the behaviour in question and the person's subsequent motivation to comply (Ajzen & Fishbein, 1980). Each component, attitude and subjective norm, are given a weight reflecting its relative importance as a determinant of the intention under consideration (Ajzen & Fishbein 1980). The relationship of behaviour, intention, attitudes, beliefs and normative influences can be expressed as an equation (Fishbein & Manfredo 1992 :35)

$$B \sim BI = (A) w_1 + (SN)w_2$$

where w_1 and w_2 are empirically determined weights represented by the standardized regression coefficients which specify the relative importance of the attitudinal and normative components in predicting behaviour intention. Figure 4.1 illustrates the concept of the theory.

Figure 4.1 Theory of Reasoned Action: Factors Determining a Person's Behaviour (after Ajzen & Fishbein, 1980: 8)



Substantial empirical support exists for the predictive quality of the theory of reasoned action (see Ajzen & Driver, 1992). The theory of reasoned action has been applied in a variety of recreation settings including examining visitor attitudes towards resource use and management (Kiely-Brocato 1980), attitudes towards camping (Young & Kent 1985), pre and post attitudes after exposure to an interpretive message in a National Forest visitor centre (Cable, Knudson et al. 1987), attitudes to user fees for camping on crown land (Rollins & Trotter 1998), attitudes towards road access in an urban park (Rollins, Harding et al. 2002), and visitor beliefs associated with inappropriate tourist climbing behaviour at Ayers Rock (Brown 1999).

Bright et al (1993) examined visitor attitudes toward allowing fires to burn in National Parks (Bright, Fishbein et al. 1993). Their study applied the Theory of Reasoned Action to examine attitude and

behaviour change based on public perceptions of the National Parks Service controlled burn policy (Bright, Fishbein et al. 1993). Visitors were segmented into positive and negative attitude groups that received belief-targeted messages to determine if changes in beliefs would be related to a change in attitude. Results indicated that changes in underlying beliefs to the policy were positively correlated with a change in attitude supporting the policy and that a change in attitude was a significant predictor of a change in intention to support the controlled burn policy (Bright, Fishbein et al. 1993). As a result, the authors suggested that managers should have an understanding of the direction and strength of park visitors attitudes; further, managers need to target salient beliefs regarding management policy in a communication plan in order to change attitudes and behaviours (Bright, Fishbein et al. 1993). As implied from this study, an understanding of the relative importance of attitudes, underlying beliefs and normative influences is important because it may help to explain why programs or interventions are successful or unsuccessful (Fishbein & Manfredo 1992). Developing messages that specifically target the attitudes and underlying beliefs of the visitors will assist Parks Canada's mandate in managing for ecological integrity. While this study focuses on management of bottom fish, the theory could be applied to other management issues in National Parks.

A number of authors have suggested that characteristics, such as demographics, prior knowledge and personal involvement should be examined to understand better differences in attitudes and beliefs (Bright, Fishbein et al. 1993). Previous studies indicate that attitude and subjective norm components can be influenced by "external" characteristics (Ajzen & Fishbein 1980), and include examining differences in attitude between more and less experienced visitors (see Manfredo, Yuan et al. 1992) and between gender (Young & Kent 1985). Manfredo et al (1992) found that first time visitors would be more influenced by situational factors rather than predispositions to the specific behaviour. Young and Kent (1985) suggest that studies should include an examination of attitudes and beliefs of various subgroups (Young & Kent 1985). To examine differences in attitudes and beliefs of Broken Group Island visitors, this study considers the attitudes and beliefs of visitors as a function of two variables: (1) their trip type (guided and non guided) as well as (2) visitor level of experience or specialization.

4.2.3 Recreation Specialization Theory

It is likely that park visitors will vary in their attitudes and intentions regarding a "voluntary no fishing policy". As often stated in the recreation literature, tourists cannot be considered to be a homogenous group (Duffus & Dearden 1990), but often vary in attitude, behaviour and preferences within the same activity. Specialization theory assists in explaining variability by defining appropriate subgroups of visitor populations. Bryan's (1977) classic study of trout fisherman conceptualized recreation specialization defined as a "continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977: 175). McFarlane, Boxall et al. 1998 state "as individuals gain experience in an activity they progress through stages of development accompanied by changes in setting preferences, social group affiliation and attitudes" (:196). It is likely then that an advanced recreationist has greater activity related skills and knowledge base, which may lead to differences in attitudes, preferences and behaviour.

Bryan (1977) suggests that specialization is reflected in changing equipment, skills, settings and commitment. Studies have defined 'specialization' variability by previous experience and participation (Schreyer, Lime et al. 1984), experience and equipment ownership (Wellman, Roggenbuck et al. 1982), participation, equipment, skill and centrality to lifestyle (Miller & Graefe, 2000). Donnelly et al (1986) developed a specialization index comprised of participation, equipment ownership, and perceived skill for boating related interests. A number of authors propose that specialization measurement include the following dimensions: a behavioural dimension using, for example, prior experience as an indicator; a cognitive dimension using, for example, skill level as an indicator; and an affective dimension using, for example centrality to lifestyle as an indicator (McIntyre & Pigram 1992) (Scott & Shafer 2001). However, there remains "little agreement about how to characterize and measure the construct" (Scott & Shafer 2001). This study adopts a summative, multi-dimensional index comprising of behavioural, cognitive and affective dimensions, adopted in previous studies (Donnelly, 1986; Bricker & Kerstetter 2000).

The application of recreation specialization has been found to be related to a number of variables, including perception of recreation-related impacts, importance of recreation setting attributes, perceived quality of recreation management, standards of quality for social conditions, perceived crowding and preferences for management actions (Manning, 1999). Studies have shown that more highly specialized

recreationists are more knowledgeable about and critical of management actions and setting characteristics (McIntyre & Pigram 1992). Specialists were also found to have more developed setting preferences, while low specialized recreationists tend to prefer ease of accessibility and increased services and facilities (Virden & Schreyer 1988). Rollins and Connelly (2001) suggest that specialists are more knowledgeable of the setting and have greater levels of concern about environmental impacts within protected areas than generalists (Rollins & Connelly 2001). Dawson et al (1992) found statistically significant differences among low and highly specialized groups of fisherman with regard to attitudes towards fishing regulations: support for a ban on snagging fish increased with increasingly specialized groups of fishers (Dawson, Brown et al. 1992). Therefore, recreation specialization is considered to be an appropriate model to determine subgroups in an attempt to determine differences in attitude towards the VNF.

In keeping with this theory and building on the work of Butler (1980) and Bryan (1977), Duffus and Dearden (1990) propose an "s-curve" model examining how a destination, over time, increases in popularity and tends to attract fewer specialized visitors and more generalist visitors, often with different attitudes, behaviours and setting preferences. "As the awareness of the site and associated activity grows, a less ambitious user will dominate the group. There will be a concomitant demand for more facility development, more mediation and increased pressure on both the social system and the ecosystem of the host area" (Duffus and Dearden, 1990). The model suggests that if the dominant level of specialization among the user groups is known, the relative level of maturity of the destination can be estimated, providing valuable indicator information for management (Duffus and Dearden, 1990). As an example, if the majority users in the Broken Group Islands are found to be low specialized users or generalists, with perhaps less knowledge of the setting and fewer concerns about environmental impacts within protected areas (Rollins & Connelly 2001) then it is very likely that specialists, who may have knowledge and attitudes more in keeping National Park messages, have been displaced (Manning 1999). It follows therefore, that having an understanding of the majority user allows managers to apply strategies to shape attitudes, behaviours and knowledge that align with the National Park mandate to protect ecological integrity. Otherwise, managers may inadvertently aggravate undesirable impacts from this "recreational succession" by responding to increases and changes in users with strategies that accommodate generalist attitudes (Hendee 1990 :191).

4.2.4 Role of the Guide

This chapter also examines the differences in attitudes and beliefs between guided and non guided participants. Specifically, the role of the kayak guide in influencing guided participants' attitudes, beliefs and behaviours has not been widely studied. Roggenbuck and others (1993) provide support for tour operators and guides having an important and influential role in information delivery, interpretation and as conduits for natural resource management agencies, an idea that is supported in literature (Moore & Carter 1993; Hockings 1994; Kimmel 1999). Despite widespread support, there has been relatively little attention paid to the role of guide (Holloway 1981; Weiler & Davis 1993; Gurung, Simmons et al. 1996; Ap & Wong 2001). Studies that have acknowledged and investigated the role of the guide include Holloway (1981), Bange (1984), (Pearce 1984), Cohen (1985), Geva & Goldman (1991), Weiler & Davis (1993), Hockings (1994), McArthur (1994), Dearden & Harron (1994), Gurung, Simmons et al. (1996), Parker & Avant (2000), Ap & Wong (2001), Wang, Hsieh et al. (2002) and Dahles (2002). Bange found that the guide was a significant source of influence on boaters, particularly less experienced boaters (Bange 1984). Additionally, the role of guide, through personal contact, is believed to be effective in altering visitor behaviour (Pearce 1984; Roggenbuck, Williams et al. 1992). Further, a number of authors believe that the role of the tour guide goes beyond profit making as they may have an obligation to natural resource managers to monitor visitor impacts, model appropriate on site environmental and cultural practices and deliver minimal impact and conservation messages (Weiler & Davis 1993; Orams 1999). This chapter examines the differences in attitudes and beliefs between the guided and non guided visitor with an emphasis on the influence of the role of the guide.

Understanding visitor support to voluntary policies is critical to its success (Gubbay 1995). The Theory of Reasoned Action is presented as an appropriate model to examine visitor attitudes as it has been successfully applied to natural resource management issues such as examining attitudes towards burn policies in National Parks and fees for camping on crown land. A number of authors have suggested that attitude research consider visitor characteristics such as demographics and experience. Recreation specialization has been shown to be related to a number of variables, including visitor attitudes towards fishing regulations (Dawson, Brown et al. 1992). In addition to recreation specialization, the role of the guide has been found to be a significant source of influence on visitor attitudes and behaviours (Bange

1984; Pearce 1984; Roggenbuck, Williams et al. 1992). Therefore, based on the literature and findings, this study applies the Theory of Reasoned Action as a framework to examine visitor attitudes towards the VNF and adopts recreational specialization and the effect of the guide to examine variability. Specifically, the following questions are addressed:

1. What are the influences on the visitors' intention to support the VNF policy?
2. What are visitor attitudes towards the VNF?
3. What is the influence of specialization?
4. Does the guide play a role in influencing visitor attitudes?

4.3 Methodology

This study measured the intentions, attitudes, and beliefs towards the VNF of overnight kayakers with the Broken Group Islands (BGI), Pacific Rim National Park Reserve, Vancouver Island. Additionally, this study set out to explore the kayak guide's role in influencing these factors. This study involved two methods of data collection: questionnaire interviews and participant observation.

A random sampling design was used to administer questionnaires pre and post trip to kayakers entering and leaving the BGI between June 11, 2001 and September 14, 2001. Questionnaires were administered at the primary entry and exit sites to the park, namely, Toquart Bay Forest Recreation Site and aboard the Francis Barkley transport ship that carries passengers to and from Sechart Lodge located outside the park boundary. Sampling efforts resulted in: 47 guided pre trip and 84 guided post trip questionnaires and 256 non guided pre trip and 270 non guided post trip questionnaires. Pre and post samples were different individuals.

For the qualitative component of the study, the principal investigator joined four guided kayak tours in June and July as a participant observer. In addition to observation, tour participants were asked to complete pre and post trip questionnaires, resulting in a matched sample of 21 pre trip and 21 post trip questionnaires termed the "participant observation" sample.

Overall, sampling efforts resulted in 699 useable questionnaires with the sample breakdown set out in Table 4.1.

Table 4.1 Sample Size by Group

Group	Pre Trip	Post Trip	Total
Guided	47	84	131
Not Guided	256	270	526
Participant Observation	21	21	42
Total	324	375	699

A total of 699 useable questionnaires were completed; however, 21 of those questionnaires have been removed from general analysis as they represent the responses of the same respondents from the participant observation sample. Therefore, it is estimated that with a sample of 678 useable questionnaires, based on an approximate overall visitor population of 4,472 for 2001, margin of error is calculated at \pm 3.4%.

4.3.1 Structured Questionnaires

The face-to-face structured questionnaire method was chosen to obtain data on kayaking visitors within the Broken Group Islands as this method is “suited to surveying populations for whom there is no sampling list” (Salant & Dillman 1994 :40). Included within the questionnaire were questions designed to measure beliefs, attitudes and intentions towards the VNF, fishing behaviour and specialization. In addition to these queries, participants were given the opportunity to express their opinions in an open-ended question. Two pilot studies were undertaken prior to administering the questionnaire to assist with questionnaire development and to test the survey instrument in the field.

4.3.1.1 Operationalizing the Variables

A key component within the Theory of Reasoned Action is the development of beliefs that are salient or at the forefront of people's minds in the particular population under study (Ajzen & Fishbein 1980; Brown 1999). The "focus group method" was used to develop a list of salient beliefs. Bedford and Burgess define the focus group as a “one-off meeting between four and eight individuals brought together to discuss a particular topic by a researcher who moderates and structures the discussion” (Bedford & Burgess 2001 :121), commonly used to gain understanding about an issue prior to the design of a social survey. Unlike the random sampling design for the questionnaire, the sampling design for a focus group is purposive as participants are selected according to the research question (Hoggart, Lees et al. 2002 :216),

and as such, six participants who reasonably represented the Broken Group Island visitor were carefully recruited. All participants were asked how they felt about a Voluntary No Fishing Policy within the Broken Group Islands to gain a sense of the overall attitude, followed by opened ended questions to elicit the underlying beliefs towards the attitude. Results were compiled into a master list of beliefs and forwarded to the National Park warden responsible for the Broken Group Islands for review and input. A final list of eight belief items, comprising of three positive and five negative beliefs guided the development of the questionnaire. These beliefs were incorporated into the questionnaire and measured using a 5 point "strongly disagree" to "strongly-agree" Likert scale. The scale had an overall reliability of .69, as measured by Cronbach's alpha. According to Mitra & Lankford (1999), alpha values between .6 and .8 can be considered very reliable.

To measure attitude, respondents were asked "how strongly do you support or oppose a voluntary no fishing policy" on a 7 point oppose-support semantic differential scale. Intention to support the VNF was measured on a 7-point unlikely-likely semantic differential scale.

To measure normative beliefs, participants were asked to indicate the degree to which "most members of my kayaking group think I should or should not support the voluntary no fishing policy" on a 7 point should not-should semantic differential scale. General motivation to comply was measured by the question "I do what most members of my kayaking group think I should do" on 7 point semantic differential scale varying from "not at all" to "a great deal". According to the Theory of Reasoned Action, a persons subjective norm, the measure of "people important to me think I should or should not" perform the behaviour, can be predicted from multiplying normative beliefs by the motivation to comply and then summing the products (Ajzen & Fishbein 1980 :75). However, because this study was concerned with the influence of the referent group "members of my kayaking group", the hypothesized relationship between normative beliefs and subjective norms nor the influence of subjective norm on intention was tested (see Figure 4.2). Rather, this chapter examines the hypothesized relationship between the normative beliefs measured by "members of my kayaking group think I should or should not" and intentions to support.

4.3.1.2 Analysis

To determine the strength of relationship between the variables and the relative influence of the attitude and subjective norm on intention for the entire sample and various subgroups as a way of

understanding the influence of external variables multiple regression and correlation analysis were employed. In addition to examining responses by pre and post trip and guided and nonguided groups, this chapter examined responses by levels of experience or specialization and incorporated specialization theory to disaggregate visitors into appropriate subgroups. In developing the specialization index, a "multidimensional approach" was adopted consisting of the following variables: previous visits, years involved in kayaking, self reported level of experience, equipment owned and enduring involvement in the activity of kayaking, resulting in a comprehensive, interrelated and mutually reinforcing recreation specialization index (McIntyre & Pigram 1992; Scott & Shafer 2001). Assigning levels and values of specialization for the individual variables is highlighted in Table 4.2. Adopting the method of recent studies (Bricker & Kerstetter 2000) responses to the variables were reviewed, divided into low and high specialization levels and assigned values of "1" for low and "2" for high. For the variable skill level, those self reporting "novice" or "intermediate" were coded low specialized and assigned a value of "1" and those indicating "advanced" or "expert" were coded high specialized and assigned a value of "2". It is hypothesized that those who own their own boat have invested highly into the activity of kayaking and therefore are more highly specialized receiving a value of "2" than those respondents who do not own their own boat who received a value of "1". For the variable "first visit", respondents answering "yes" received a low specialization level and a value of "1", while respondents answering "no" received a high specialization level and a value of "2". For the interval data question "years involved in kayaking" the median defined the cut point, as used in similar, previous studies (Donnelly, Vaske et al. 1986; Bricker & Kerstetter 2000). Individual overall mean scores were computed for the enduring involvement index ranging from zero to five and again, the median defined the point between low and high levels of specialization and corresponding values were assigned.

Table 4.2. Assigned Levels and Values for Specialization Variables

Specialization Variable	Assigned Level	Assigned Value
Reported Level of Experience		
Novice/Intermediate	Low	1
Advanced/Expert	High	2
Kayak Ownership		
No	Low	1
Yes	High	2
Years Involved with kayaking		
0 – 3 years	Low	1
4 or more years	High	2
First Visit		
Yes	Low	1
No	High	2
Enduring Involvement Index		
Mean Range		
0 – 3.2	Low	1
3.21 – 5	High	2

As in previous studies (Donnelly, Vaske et al. 1986; Virden & Schreyer 1988), the specialization index was created by summing the scores for each variable for each respondent, resulting in values ranging from five to ten. For the purposes of this analysis, the range of scores has been condensed into two categories. Scores of five to seven indicate low specialization and scores of eight to ten represent high specialization resulting in a low specialized group and high specialized group. This specialization index had an overall reliability of .66 as measured by Cronbach's Alpha. An "alpha value between 0.6 and 0.8 can be considered very reliable" (Mitra & Lankford 1999 :273), and is consistent with index reliability of similar studies (Donnelly, Vaske et al. 1986; Miller & Graefe 2000).

Application of the specialization index resulted in 73.6% (n = 466) of all respondents falling into the low specialized or generalist category and 26.4% (n=167) of respondents can be grouped into the highly specialized or specialist category. Respondents with missing specialization index data were not included.

4.3.2 Participant Observer

To gain a deeper understanding of the visitor experience and the role of the kayak guide, particularly in influencing visitor's beliefs, attitudes and intentions towards the VNF policy, the participant observation method was used. I accompanied guided kayak tour groups on four separate excursions within the Broken Group Islands June and July, 2001.

The participant observer method allowed for social and environmental in-field observations of both clients and guides. For this study, observations focused on guides' role in influencing visitors attitudes towards environmentally and socially appropriate or inappropriate behaviours, with a focus on fishing behaviour. Additionally, each participant (guides excluded) was asked to complete a pre trip questionnaire at the beginning of the trip and a post trip questionnaire immediately after the trip. All tour participants and guides were aware of the researcher's role.

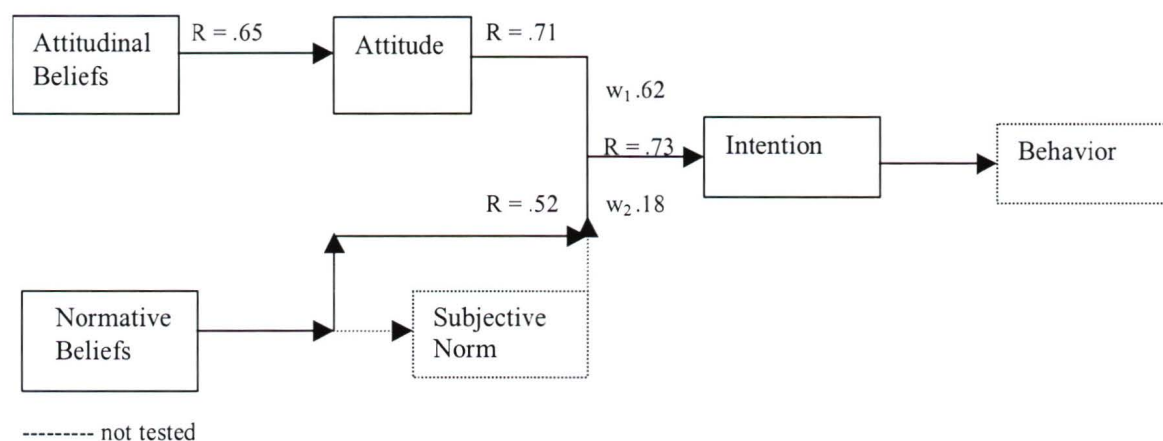
Analysis of the data proceeded by reviewing and transcribing the field notes. A thorough review of the text revealed behavioural patterns or themes that were identified and grouped. Patterns were read in with and compared to the quantitative findings to demonstrate convergence of the findings, discover inconsistencies or contradiction, and to elaborate on results.

4.4 Results and Discussion

4.4.1 Influences on Intention to Support

This chapter does not measure observed behaviour, but focuses on "intention" and the variables that influence intention (to support the VNF). Two major components, attitude and normative beliefs have been found to predict intentions to support the VNF policy. The regression equation predicting intention (BI) to support the VNF from attitude (A) and normative beliefs (NB) yielded a multiple correlation coefficient of $r = 0.73$ ($p < .01$), indicating that 53% of the variation in intention can be explained by the cumulative influence of the attitude and normative components illustrated in Figure 4.2.

Figure 4.2 Relationships among Beliefs, Attitude, Normative Beliefs, Intention Using the Theory of Reasoned Action (n = 658)



According to the model, the beta weights of the main components (attitude and normative beliefs) in a multiple regression equation indicate the relative importance of these components on intention (Young & Kent 1985). In an analysis of the entire sample, the attitudinal component (A) had a higher standardized regression coefficient ($w_1 = 0.62$) than the normative beliefs (NB) ($w_2 = 0.18$). This indicates that the attitudes of the visitors had more influence on their intentions to support the VNF policy than did the social influence of the members of their own kayaking group. These findings are consistent with findings of Bright et al (1993) that intention to support the controlled burn policy in National Parks is more heavily influenced by attitude ($w_1 = 0.80$ and $w_2 = 0.12$), and Brown's (1999) findings that attitude more strongly influences intention to climb ($w_1 = 0.60$ and $w_2 = 0.14$). The relative importance of the main components depends on the behaviour under consideration (Young & Kent 1985). Ajzen and Fishbein state that the normative components are more important in behaviours requiring cooperation (Ajzen & Fishbein 1980), support for which is found in the high subjective norm beta weight (.41) in Young and Kent's (1985) camping behaviour study. The low subjective norm beta weight (0.18) in this study indicates that the behaviour to support the VNF policy is an individual rather than cooperative activity more readily influenced by attitude than other members of the respondents' kayaking group.

This finding has implications for National Park managers in the development of interpretive messages designed to gain support for the VNF policy. Clearly, if managers can determine the greatest influence on visitor intentions, either social group or attitudes, they can target their messages appropriately. Intention was more heavily influenced by attitude therefore, in order to change visitor intention to support the VNF policy, managers must focus on strengthening or changing the attitude towards the VNF policy.

4.4.2 Relative Influences on Intention to Support by Group

The relative influence of the main components attitude and normative components on intention may also depend on external characteristics such as type of trip and levels of visitor experience.

Table 4.3 Standardized Regression Coefficients (Beta) and Multiple Correlation of Dependent Variable (Intention) and Independent Variables (Attitude and Subjective Norm) for Pre and Post Trip, Pre and Post Participant Observation, Non Guided and Guided, Low and High Specialized, and Total Sample

Subject	Standardized Regression Coefficients (Beta)		Multiple Correlations	N
	Attitude (A) w1	Subjective Norm (SN) w2	Intention With A+ SN Pearson's r	
Pre and Post Trip				
Pre Trip	.60	.19	.71*	324
Post Trip	.64	.17	.75*	375
Pre and Post Participant Observation				
Participant Observation Pre	.27	.18 ¹	.28	21
Participant Observation Post	.51	.43	.64*	21
Guided and Non Guided				
Overall Non Guided	.64	.16	.74*	524
Pre Trip Non Guided	.62	.17	.72*	257
Post Trip Non Guided	.65	.15	.76*	270
Overall Guided	.57	.20	.70*	131
Pre Trip Guided	.62	.21 ¹	.77*	46
Post Trip Guided	.73	.02 ¹	.74*	84
Specialization Level				
Overall Low Specialized	.63	.19	.75*	485
Pre Low Specialized	.62	.22	.72*	229
Post Low Specialized	.67	.15	.77*	256
Overall High Specialized	.60	.13	.68*	167
Pre High Specialized	.66	.13	.64*	80
Post High Specialized	.70	.13	.70*	87
Total Sample	.62	.18	.73*	658 ²

*Statistically significant at $p < .05$

¹ not statistically significant

² does not includes cases with missing data

When multiple regression analysis is used to examine how attitude and normative components influence intention for all groups (see Table 4.3) findings indicate that the intentions of each of the groups were more heavily influenced by attitude than subjective norm. This suggests that attitudes are a much more important determinant of the intention to support the VNF policy than subjective norms for all groups. Again, this can be explained by the nature of the activity not being a cooperative activity (Ajzen & Fishbein 1980; Young & Kent 1985). When pre and post trip beta weights are examined, results indicate a small increase in the influence of attitude on intention from pre trip to post trip. While few studies have

examined experiential effect on attitudes using the theory of reasoned action, Cable (1987) found that attitudes became more positive after visiting a forestry interpretive centre, however Cable (1987) did not provide information concerning changes in attitude strength or intensity (Cable, Knudson et al. 1987).

While attitude more strongly influences intention than normative beliefs for all groups, there are some differences between groups that are worth noting. When relative influence of the attitude and normative beliefs are examined for the guided and non guided groups, the intentions of post trip guided visitors are more influenced by attitudes ($w_1 = .73$) than post trip non guided visitors ($w_1 = .65$). As well, changes in the influence of attitude on intention is greater for guided visitors (guided pre $w_1 .62$ and post $w_1 .73$) than for non guided visitors (non guided pre $w_1 .62$ and post $w_1 .65$). Although these differences may seem small, they suggest guided visitors may be more highly influenced by attitude than non guided visitors, particularly post trip. One possible suggestion for this difference may be the influence of the role of the guide in delivering park messages concerning the VNF policy.

Similar results are found when the beta weights of the participant observation group are examined. The relatively large influence of normative beliefs for the post participant observation group ($w_2 .43$) suggests that for this group, the role of the guide as a member of the kayak group, was highly influential. Also, there is a large increase in attitudinal influence on intention in the participant observation sample pre trip ($w_1 .27$) to post trip ($w_1 .51$). This corresponds with the above findings, however the size of gain is surprising. These findings suggest that the role of the kayak guide may be influential and critically important in not only shaping attitudes and therefore the intentions of the guided visitor but also as an important and influential referent.

When the results for the low and high specialized groups are examined, it is apparent that although the influence of attitude on intention is approximately similar for each group, normative beliefs influence the intentions of the overall low specialized group ($w_2 .19$) slightly more than the overall highly specialized group ($w_2 .13$). This supports findings that less experienced visitors are unlikely to have strong attitudes that guide their behaviour, but would be influenced by situational factors instead, such as seeing what others are doing (Manfredo, Yuan et al. 1992).

To summarize, in all cases attitude influences intention to a greater extent than the normative component, suggesting that the intention to support or comply with the VNF policy is more strongly

determined by attitude rather than social group influence or pressure. Although attitude is a significant influence on intention for all groups, results suggest that social group influence for the guided and participant observation respondents is relatively stronger than the social group influence for other groups. This finding suggests that the guide may have an influential role as important referent.

4.4.3 Attitudes towards the VNF

The results indicate that 46.3% of respondents support the VNF, 33.5% of respondents do not support the VNF and 18.4% are undecided (Table 4.4). When the level of support within groups (pre and post; low and specialization; guided and non guided) is examined using chi square analysis, it is apparent that there is variability within the groups. However, significant differences in overall levels of support are observed between low and highly specialized groups only. Overall, highly specialized visitors have a more favorable attitude towards the VNF policy than low specialized groups, supporting the idea that more highly specialized visitors may have more highly developed preferences and attitudes more aligned with the protective values of National Parks and protected areas (Rollins & Connelly 2001). However, it is important to consider the strength of association between visitor attitude and level of specialization. Applying Cramer's V as a measure of association strength, results ($V = .109$) suggest a weak association between specialization and attitude.

Table 4.4 Attitude Toward Voluntary No Fishing Policy by Group

Trip Type	Overall Attitude (%)				χ^2	df	Sig.	V ⁵
	n ¹	² Support	³ Oppose	⁴ Neither				
Overall	645	46.3	33.5	18.4	⁶			
Pre Trip	302	50.7	30.5	18.9	3.718	2	.156	.076
Post Trip	343	44.0	37.3	18.7				
Low Specialization	440	43.2	37.5	19.3	7.173	2	.028*	.109
High Specialization	164	54.9	27.4	17.7				
Guided	125	48.8	28.8	22.4	2.468	2	.291	.062
Non Guided	520	46.7	35.4	17.9				
Guided Low Specialization	94	43.6	31.9	24.5	2.459	2	.292	.145
Guided High Specialization	23	60.9	26.1	13.0				
Guided Pre Trip	47	48.9	19.1	31.9	5.480	2	.065	.209
Guided Post Trip	78	48.7	34.6	16.7				
Guide Commented Yes	19 ⁷	63.2	31.6	5.3	3.945	2	.139	.234
Guide Commented No	53	39.6	39.6	20.8				

*Significant at $p < .05$ (chi square 2 tailed)

¹ sample sizes does not include missing cases or participant observation cases

² includes those responding "somewhat support, quite support or extremely support"

³ includes those responding "somewhat oppose, quite oppose or extremely oppose"

⁴ includes those responding "neither"

⁵ Cramer's V measure of association for nominal variables ranging from 0 to 1 where 0 indicates no association and 1 indicates perfect association

⁶ frequency only no chi square analysis

⁷ post trip questionnaire only

When responses of the guided visitors pre and post trip are examined, overall support is consistent between pre and post trip, however, post trip opposition to the policy is greater than pre trip. This suggests that the guide may have an important role to play in shaping the attitudes of undecided visitors to a supportive attitude towards the VNF policy. To test this idea further, guided visitors were asked post trip if their guide had commented on the policy. Post trip guided participants were categorized on whether the guide did or did not comment on the VNF policy (Comment $n = 19$) (No Comment = 53). Results suggest that if the guide commented on the policy, guided visitors were more likely to support the policy (63.2%) than those guided visitors whose guide did not comment on the policy (39.6%). While these observed differences between the groups are not statistically significant ($p = .139$), they are suggestive as to the influential role of the guide in shaping visitor attitudes towards supporting park policy.

4.4.4 Relationship between attitudes and beliefs

The next step in this analysis is to determine why some groups oppose and some groups support the VNF. The perceptions of respondents who indicated they generally oppose the VNF policy (n = 226) were compared with the perceptions of those who generally support the VNF policy (n = 315) (Table 4.5). Results indicate that respondents who generally support the VNF, those who expressed a positive overall attitude, more strongly endorse each of the positive beliefs than those who generally oppose the VNF policy. These differences are statistically significant. Specifically, those who are likely to support the VNF believe that complying with a VNF policy will (1) retain food sources for other creatures, (2) protect marine life for future generations, and (3) will reduce the amount of litter caused by fishing. In contrast, those who oppose the VNF believe that this policy will not (1) retain food sources for other creatures, (2) protect marine life for future generations and (3) reduce the amount of litter caused by fishing. Again, these differences are statistically significant. The two most important concerns, receiving the highest level of support from those opposed to the VNF are that the VNF will (1) have a low compliance rate and (2) will detract from the satisfaction of park visitors.

It is important to identify those beliefs that discriminate between people who oppose and support particularly when developing communication programs (Fishbein & Manfredo 1992). In this case, to increase support for the VNF policy, messages would demonstrate to opponents that the policy would reduce litter caused by fishing, and more importantly, help to retain food sources for other creatures and protect marine life for future generations. Alternatively, messaging could be designed to weaken opponents' beliefs that the policy would detract from their kayak experience or the satisfaction of visitors.

Table 4.5 Perceptions about Voluntary No Fishing Policy if Opposed/Supportive

Perception	PERCENT AGREEING (%)		χ^2	Df	Sig.
	Opposed Sample ¹ n = 226	Supportive Sample ² n = 315			
Positive Perceptions (Beliefs)					
Will retain food sources for other creatures	47.4	91.2*	105.433	1	.000
Will protect marine life for future generations	36.5	88.5*	136.655	1	.000
Will reduce the amount of litter caused by fishing	40.0	79.4*	67.772	1	.000
Negative Perceptions (Beliefs)					
Will have a low compliance rate	71.6	60.8*	4.620	1	.032
Will detract from the satisfaction of other park visitors	69.0	42.6*	31.007	1	.000
Will take away from my kayak experience	57.2	9.8*	130.271	1	.000
Will have a negative economic impact on the sports fishery	48.8	30.0*	14.478	1	.000
Will decrease my food source while in the BGI	47.5	15.8*	58.490	1	.000

¹Sample does not include participant observation or missing responses, includes those respondents scoring "extremely oppose, quite oppose or somewhat oppose" and does not include "neither" responses

²Sample does not include participant observation or missing responses, includes those respondents scoring "extremely support, quite support, or somewhat support" and does not include "neither" responses

*Statistically significant at $p < .05$ (chi-square)

The relationship between overall attitude towards the VNF and the attitudinal beliefs can be demonstrated using Pearson's correlation analysis. This involved the development of a single index score for each respondent by adding together responses to all eight belief items, scoring a positive response as +1 or +2 and a negative response -1 or -2. The positive responses were scored as follows: "somewhat agree" with a positive item = +1, "strongly agree" with a positive item = +2; "somewhat disagree" with a positive item = -1; "strongly disagree" with a positive item = -2. The negative responses were scored as follows: "somewhat agree" with a negative item = -1; "strongly agree" with a negative item = -2; somewhat disagree with a negative item = +1 and "strongly disagree" with a negative item = +2. Responses indicating "not sure" with any item were scored = 0. Based on the responses to the eight belief items, each respondent received an overall belief score that can vary from -16 to +16. As indicated in Figure 4.2, when this belief index is correlated with the single item measure of overall attitude towards the VNF, the resulting Pearson's correlation of .65 ($p = .000$) confirms a positive relationship between beliefs and attitude and that these

beliefs account for much of the variation in the park visitors' attitudes toward complying with a VNF policy.

The measurement of beliefs used the Likert scale as described above rather than the summation of the belief evaluations outlined by Ajzen and Fishbein (Ajzen & Fishbein 1980). Ajzen and Fishbein's approach allows for a measure of the strength of beliefs that performing the behaviour will lead to various outcomes and the evaluation of those outcomes (Fishbein & Manfredo 1992), whereas Likert is a measure of strength only. Ajzen and Fishbein may be more accurate, but this approach also takes more space on the questionnaire and time for respondents. If this study had used the summation of beliefs measurement scale outlined by Ajzen and Fishbein, the actual Pearson's r value may have been higher. Another limitation is the identification of the salient beliefs. While this study incorporated a focus group to identify salient beliefs, the belief and attitude relationship may have been strengthened by an 'elicitation survey' (Ajzen & Fishbein 1980; Fishbein & Manfredo 1992). An elicitation survey using a free response format to identify the salient beliefs with a larger, independent random sample from the same population as that surveyed in the study may provide for a stronger relationship between beliefs and attitude. However, it is worth noting that the belief attitude correlation found in this study ($r = .65$ $p < .000$) is consistent with the belief attitude correlation ($r = 0.67$, $p < .001$) found by Bright et al (1993) in their study of attitudes towards a controlled burn policy and is in fact higher than the correlation ($r = .52$ $p < .01$) found between beliefs and attitudes towards camping by Young and Kent (1985).

4.4.5 Intentions to Support

As the focus of this study is on intention to support or not support the VNF, in addition to examining the relative influence of attitude and subjective norm, it is important to examine the actual intentions of the respondents. According to the Theory of Reasoned Action, a person's intention to perform or not perform the behaviour in question is the immediate determinant of the action (Ajzen & Fishbein 1980), and understanding the respondent's intentions is critical in understanding actual support for the VNF policy.

As illustrated in Table 4.6, analysis of the overall intention to support the VNF indicates that the majority (55.7%) of respondents intends to support the VNF. When responses are examined by group, it is interesting to note differences between low and high specialized visitors. Generally, highly specialized

respondents intend to support the VNF more strongly than low specialized respondents. This finding is consistent with literature stating that specialists may greater levels of concern regarding impacts (Rollins & Connelly 2001) and that more highly specialized fisherman had greater levels of support for regulations supporting a ban on snagging fish (Dawson, Brown et al. 1992).

Similar to the attitude measures, intentions of pre trip respondents are more favorable than intentions of post trip respondents, and this observed difference is statistically significant. This finding suggests that their intentions to support this policy do not increase after their trip experience. One explanation may be that the post trip respondents are more highly specialized than the pre trip respondents. However, when pre and post trip respondents are analyzed by specialization level, no significant differences exist between the pre and post trip groups specialization levels (chi square, $\chi^2.075$, $p = .784$).

Significant differences exist between guided pre and post trip responses. While overall intention does not change pre to post trip, respondents who were undecided pre trip indicate that they do not intend to support the VNF policy post trip. This suggests that the guide may have an important role to play in moving the undecided visitors to where they are intending to support the VNF policy. To test this idea further, guided visitors were asked post trip, if their guide had commented on the policy. Post trip guided participants were categorized on whether the guide did or did not comment on the VNF policy (Comment $n = 20$) (No Comment = 52). Results suggest that if the guide commented on the policy, guided visitors were more likely to intend to support the policy (65.0%) than those guided visitors whose guide did not comment on the policy (51.2%). However, these observed differences between the groups are not statistically significant, and are therefore only suggestive as to the influential role of the guide in shaping visitors intentions to support park policy.

Table 4.6 Intentions to Support Voluntary No Fishing Policy by Group

Trip Type	Overall Intentions to Support (%)							
	n ¹	² Yes	³ No	⁴ Neither	χ^2	df	Sig.	V ⁵
Overall	642	55.7	27.9	14.2	⁶			
Pre Trip	300	61.7	23.3	15.0	7.529	2	.023*	.108
Post Trip	342	52.9	33.0	14.0				
Low Specialization	438	53.0	30.6	16.4	12.080	2	.002*	.142
High Specialization	163	68.1	23.3	8.6				
Guided	123	57.7	22.0	20.3	5.887	2	.053	.096
Non Guided	519	59.8	30.1	13.1				
Guided Low Specialization	92	55.4	25.0	19.6	0.593	2	.743	.072
Guided High Specialization	23	60.9	17.4	21.7				
Guided Pre Trip	45	57.8	11.1	31.1	7.860	2	.020*	.253
Guided Post Trip	78	57.7	28.2	14.1				
Guide Commented Yes	20 ⁷	65.0	25.0	10.0	1.026	2	.599	.119
Guide Commented No	52	51.2	30.5	15.3				

*Significant at $p < .05$ (chi square 2 tailed)

¹sample sizes does not include missing cases or participant observation cases

²includes those responding "somewhat likely, quite likely or extremely likely"

³includes those responding "extremely unlikely, quite unlikely, somewhat unlikely"

⁴includes those responding "neither"

⁵Cramer's V measure of association for nominal variables ranging from 0 to 1 where 0 indicates no association and 1 indicates perfect association

⁶frequency only no chi square analysis

⁷post trip questionnaire only

4.4.6 Results from Participant Observation

Participant observation respondents completed a pre and post trip survey, providing a matched sample (pre $n = 21$ and post $n = 21$). In addition to this survey data, field notes were transcribed and are used to elaborate on the survey results.

Pre and post trip analysis of participant observation respondents' attitudes suggests 55.0% of pre trip respondents support the policy and 65.0% support the policy post trip. However, these observed differences are not statistically significant (chi square, $\chi^2 .458$, $p = .758$, 2 tailed) and are therefore only suggestive that attitudes towards the policy became more supportive after a trip experience. Similar results are found when intentions to support the VNF policy are examined. Results indicate that 80% of pre trip

respondents intend to support the policy, however, 75% intend to support the policy post trip. These observed differences are not statistically significant (chi square, χ^2 .1.232, $p = .540$, 2 tailed).

Of the four different trips as a participant observer, there was only one respondent who came prepared to fish. However, this person ultimately did not fish, perhaps due to a number of factors. The guide on this particular trip did ensure that the participants were aware that the National Park had a voluntary no fishing policy, which may have influenced this respondent. As well the pre-trip survey focused on the VNF policy which may have influenced this respondent as well.

To summarize, results suggest that guides may have an influential role in shaping attitudes, beliefs and intentions of guided visitors to National Parks. When comparing the post trip influence of attitude on intention for guided visitors with non guided visitors post trip (see Table 4.3), results indicate a slightly larger attitudinal influence for guided visitors than non guided visitors. Additional analysis suggests that respondents whose guides had directly commented on the VNF policy may hold more favorable attitudes towards the policy than guided visitors whose guide did not comment on the VNF (see Tables 4.4 and 4.6). Although these observed differences were not statistically significant, the results are suggestive of an influential role of the guide. Additionally, participant observation provided insights into the role of the guide in influencing one participant's intention to fish. The guide appears to have an influential role in shaping the attitudes, beliefs and ultimately the behaviours of guided visitors to this National Park.

4.4.7 Respondents Comments

Finally, it is important to consider participants' comments in response to the open-ended questions of the pre and post trip surveys. A selection of these comments, highlighted here, supports the results that there are two distinct groups: those who support the VNF policy and those who do not.

"Regarding fishing: last year we spent a very enjoyable couple of hours catching perhaps half a dozen crabs and cooking them to have with our dinner. Surely this level of fishing is tolerable and without significant environmental impact and can greatly add to the enjoyment of kayakers in the BGI."

"Enroute to my first experience in Broken Group. I understand reservations about fishing, however, I enjoy the activity of catching and eating one fish now and then, and believe this to be an acceptable and sustainable behaviour."

"Voluntary fishing ban is a nice idea if backed by scientific data. Would have some tourism/sport fishing impact, but most kayakers do not use kayak as a way to get fishing (it's more a bonus than a need) – it's just one fish. Ban would be very tough to enforce. I would fully support a ban on motorized boats in BGI (other than ranger) is there one? Also, sites need interpretive signs, effects of fishing, history, cautionary notes."

"With regard to a voluntary no fishing policy in the BGI, I suspect kayakers would have a relatively small impact on fishing even without a ban. For a voluntary no fishing policy to be successful, you need support and compliance from power boaters, because they do far more fishing than kayakers."

"Regarding the voluntary no fishing policy, I was unaware of the policy before arriving here for my trip. I came prepared to fish. I did fish, taking only one for the group and only as much as we could eat one night. Before following the voluntary no fishing policy I would like to understand if there is still commercial fishing in the BGI or nearby."

Comments from those respondents who appear to not support the VNF policy indicate a general belief that kayaks have a relatively small impact on the fish resource and that powerboaters have substantially more impact than kayakers. It is suggested that rock fish populations may be more impacted by kayakers than powers boats as kayakers are able to access the nooks and crannies of rocks more easily than powerboats and may have an advantage over powerboaters. This is only suggestive, as no research has been undertaken to examine this issue. However, comments of the respondents provide additional insights for managers interested in developing messages to target salient beliefs.

Comments from those who appear to support the VNF:

"While a voluntary no fishing policy may detract from the satisfaction of other park visitors or have some kind of negative economic impact on the sports fishing I would still advocate for and support the policy because of its immediate and long term gains for the natural habitat to evolve without the interference of sports fishing".

"Our group was surprised to see people collecting shellfish and fishing for bottom fish and salmon within the park boundaries. In one campsite several young girls were even trying to sell mussels and oysters they had picked up and their parents did not try to explain otherwise. Canada's National Parks should be seen as sanctuaries for wildlife, regardless of whether they are on land or sea. Visitors to these parks should know that harvesting of wildlife is prohibited – there should not be different rules for different parks. Enforcing such a rule may require additional park wardens to educate the public on local natural history and ecology. More education would be a great benefit to park visitors and to the health of the local fauna and flora. The BGI is attractive and accessible to many kayakers including the novice adventurer. As more people continue to visit the BGI impacts will continue to accumulate. The park could be much more proactive in educating the public at large. "

"I have fished in the Bamfield area, including the outer islands of the Broken Group for many years. I believe that closing the BGI to fishing is doable and strongly support it."

"Regarding the voluntary no fishing: I don't really fish in the first place, so it's not a big deal to commit myself to the voluntary no fishing policy."

Comments from respondents who appear to support the VNF policy indicate that this policy is consistent and aligned with Parks Canada mandate to protect the ecological integrity of the park and that a VNF policy would protect species for the future.

4.5 Conclusions

This section of the study was designed to reveal visitors' support for a voluntary no fishing policy using the Theory of Reasoned Action as a framework. Specifically, this study examined the influences on visitors' intention to support the policy, visitor attitudes towards the policy and the influence of specialization and trip type. This paper will conclude with a summary of results and management implications and study limitations, advancements as well as future research questions.

4.5.1 Summary of results and management implications

Specifically, findings indicate that intention to support the policy is more heavily influenced by visitor's attitude than social group. This implies that if managers want to change visitor's intention to support the policy, managers need to strengthen the attitude toward performing that behaviour. This can be accomplished by understanding the salient beliefs underlying the attitude, "as the more one believes performing the behaviour will lead to positive outcomes, the more favorable the person's attitude" (Fishbein & Manfredo 1992 :38). By changing or reinforcing visitors' salient beliefs, managers can change or reinforce attitudes. In this case, to increase support for the VNF policy, interpretive messages would be developed around the beliefs that the policy would reduce litter caused by fishing, and more importantly, help to retain food sources for other creatures and protect marine life for future generations. Alternatively, messaging could be designed to weaken opponents' beliefs that the policy would detract from their kayak experience or the satisfaction of visitor.

As suggested by Young and Kent (1985) and Fishbein and Manfredo (1992), studies should include external characteristics. This study explored results by pre and post trip, by specialization and guided and non guided visitor type. When the relative influences on intention were examined for all groups, attitude rather than normative beliefs more heavily influenced intention across the groups. However, the influence of normative beliefs, or social group was substantially higher for the participant observation sample, suggesting that the guide may be a particularly important referent to guided visitors, supporting the findings of Bange (1984). To explore this further, results were examined by guided and non guided visitor type. Findings suggest that the guide may be in a position to influence visitor attitudes towards the policy, as respondents whose guide commented on the policy were more supportive of the policy than respondents whose guide did not comment on the policy. Managerial implications of this

finding include the need for park management to align tour operators and guides with the voluntary no fishing policy and to ensure that guides are able to communicate the salient beliefs to guided visitors to reinforce or change visitor attitudes and support towards the policy.

Applying the visitors specialization index to the data resulted in 73.6% of respondents being classified as "generalists" and 26.4% of respondents being classified as "specialists". Understanding the majority user of the park provides additional important insights of interest to managers. As predicted in the model proposed by Duffus and Dearden (1990) "as the [tourists] awareness of the site and associated activity grows, a less ambitious user will dominate the group. There will be a concomitant demand for more facility development, more mediation and increased pressure on both the social system and the ecosystem of the host area" (Duffus and Dearden, 1990). While results suggest that the dominant users in this case are generalists, further analysis reveals attitudes specific to generalists and specialists towards the policy.

When relative influences on intention are examined, attitude influenced intention to a greater extent for specialists than for generalists. As well, the normative beliefs for generalists had a greater influence than did normative beliefs for specialists, supporting the findings by Manfredo et al (1992) that first time visitors would be more influenced by situational factors rather than attitudes to the specific behaviour. When policy support is analyzed by specialization, statistically significant differences exist between generalists and specialists. Specialists tend to be more supportive of the policy than generalists and are more likely to support or comply with the policy. Understanding that the majority of visitors are generalists who are generally less supportive of the policy than specialists has significant implications for management. Management must ensure that first time visitors to the park are well aware of the policy and the salient beliefs underlying a supportive attitude towards the policy. In order to shape the generalist attitude and beliefs to align with the National Park mandate of the protection of ecological integrity these messages must be targeted to the majority of visitors. This could be achieved through orientation programs, pre trip information, and greater warden presence considered critical to a successful voluntary resource management program (Gubbay 1995; Osborne, Koski et al. 2001).

4.5.2 Limitations, advancements and future research

A number of limitations to the study need to be recognized. First, this study used a small focus group to elicit the salient beliefs of a voluntary no fishing policy. However, literature recommends the use of an "elicitation survey" administered with the same population in which the study takes place (Fishbein & Manfredo 1992). A second limitation with this study is that it surveyed visitors who kayak within the Broken Group Islands and does not account for the attitudes of other visitors. While kayak visitors currently make up 94% of the visitors using the Broken Group Islands (Parks Canada 1994), it is important to understand the attitudes of all users. Finally, this study examined the influence of the referent group "members of my kayaking group", however, it may be important to consider social influence of others important to the kayaking visitor and these referent groups should be elicited and incorporated into the model.

This study has contributed to an increased understanding of resource management within National Parks, and in particular, visitors' support of a voluntary no fishing policy. The Theory of Reasoned Action was an appropriate model to examine visitor attitudes, normative influences and underlying beliefs towards the policy. The significant correlation observed among the components of the model supported a connection between visitor beliefs, attitudes and intention to support the policy while providing support for the model. The success of this model in predicting intentions is suggestive of future applications of the Theory of Reasoned Action to other resource management issues in National Parks.

A number of studies have examined the influence of demographics on attitudes and beliefs and have suggested that studies include an examination of attitudes and beliefs of various subgroups (Young & Kent 1985). This study examined the influence of a number of external variables and found that specialization is an appropriate theory to desegregate visitors to examine attitudes, building on the work of Manfredo and Yuan (1992).

Future research should focus on two considerations. First, examining the effect of a belief targeted message strategy on attitude and intention change towards a voluntary policy such as in this study. This may assist in developing appropriate communications programs designed to align visitors attitudes with National Park messages. Secondly, further research into visitor segmentation, specialization and corresponding attitudes is warranted to ensure managers do not inadvertently promote undesirable impacts

by responding to increases and changes in users with strategies that accommodate generalist attitudes
(Hendee 1990 :191).

Chapter 5: Perceived Crowding the Broken Group Islands

5.1 Introduction

The increase in recent years in participation in outdoor recreation and nature-based tourism has resulted in crowding in many parks and protected areas in Canada (Rollins & Robinson 2002). As a result, crowding has become one of the most frequently studied issues of outdoor recreation (Manning 1999). While many crowding studies have occurred in terrestrial sites, or on lakes and rivers, few studies have examined crowding issues within a marine setting. However, coastal wilderness settings are particularly sensitive to visitor impacts, a situation complicated by the difficulty in dispersing people away from the marine interface, where crowding and resource impacts are most severe (Rollins 1998). This chapter examines crowding issues within the Broken Group Islands, the marine component Pacific Rim National Park Reserve. These islands are managed for a backcountry, wilderness experience, affording those who visit opportunity for solitude (Parks Canada 1994). However, substantial increases in the popularity of coastal cruising, canoeing and kayaking have put additional pressures on the area and the wilderness values of this environment are showing distinct signs of stress (Parks Canada Agency, 1994) potentially eroding the visitor experience. Overnight visitation levels doubled from 1978 to 1992, (Parks Canada 1994 :10), and have currently peaked at approximately 13,000 visitor camper nights (D. Vedova, pers. comm., April 2001). Under current levels of use, the campsites of the Broken Group Islands are suffering obvious signs of overuse, and illegal camping is occurring, at least partially, as a response to overcrowding and the deteriorating condition of existing sites (Parks Canada 1994).

As the goal of management is to provide quality recreation experiences (Manning & Lime 2000), managers must decide what to do when faced with crowding to achieve their objectives. Techniques available to accomplish management objectives fall within the categories of direct, that regulate and restrict individual choice, or indirect that influence visitors rather than directly controlling them (Hendee, Stankey et al. 1990). Direct techniques include, but are not limited to decreasing use through reservation and quota systems and dispersing use through zoning and designated camping areas. Indirect techniques include modifying use and behaviour through site hardening, trail building, education, or increasing use capacity through campsite development. The literature indicates that recreation resource management is shifting from resource management strategies focused on increasing the supply of recreational opportunities to

strategies focused on coordinating the capability of the resource with the perceived needs of the visitors (Jubenville & Twight 1993). Contemporary management frameworks such as Limits of Acceptable Change (Stankey, Cole et al. 1985), encompass this shift as managers are required to understand visitor participation, minimum acceptable levels of impacts and perceptions of quality recreation experiences in developing specific objectives for recreation areas.

The development of management objectives requires an understanding of visitor use impacts and preferences for a quality recreation experience, signaling the importance of researcher input into the decision making framework. Early research into measuring crowding studied the relationships between use levels and crowding, arguing that crowding occurs when use levels reach a certain level. However, subsequent studies revealed a weak correlation between use levels and crowding. It was speculated that it was not use level that influenced crowding, but actual encounters or contact that influenced crowding. The next wave of studies then examined the relationships between encounters and crowding resulting again in weak relationships. Crowding studies are summarized by Manning (1999) and highlight generally weak relationships between use levels, encounters and crowding (pp. 89-92).

A number of hypothesis have been presented to account for the varied findings in crowding studies (Rollins 1998; Manning 1999; Rollins & Robinson 2002). One theoretical approach suggests that individuals use a number of coping mechanisms to mediate perceived crowding, such as displacement, product shift and rationalization. "Displacement" is a type of sampling error whereby visitors who anticipate crowding and are more sensitive to crowding move on to less crowded sites and are displaced by visitors who are more tolerant of high density situations (Vaske, Donnelly et al. 1980; Rollins & Robinson 2002). "Product shift" involves a cognitive change on the part of the visitor when they redefine their experience to match with the conditions found (Shelby & Heberlein 1986; Manning 1999). Finally, "rationalization" suggests that a visitor who has invested greatly in their experience may be unwilling to rate the experience negatively, and will evaluate their experience highly regardless of actual conditions (Rollins & Robinson 2002). These coping behaviours have been posited as ways to explain the varied result of crowding studies, however, findings have been varied (Manning 1999). A second hypothesis, "social interference theory" suggests that individuals will evaluate their experience as crowded, not when contacts reach a certain level, but when the number of other people present interferes with or restricts a

desired goal, such as solitude (Gramann 1982; Manning 1999). Finally, crowding can be understood as a "normative process" that differentiates between use levels as a neutral, objective physical concept such as number of people per unit of space and crowding as a negative, subjective evaluation of the use level, influenced by a number of factors (Manning 1999). One factor includes personal characteristics such as motivations, experience levels, attitudes and demographics, shown to influence crowding perceptions. Characteristics of those encountered, a second factor, includes type and size of group, behaviour and the degree to which others are perceived to be "alike". Finally, situational variables, such as the type of area whether it is backcountry or frontcountry and location within an area whether it is a campsite, on a trail or at an access point have been found to influence crowding perceptions.

As a result, researchers have recently studied crowding under the framework of "normative theory" (Roggenbuck, Williams et al. 1991; Vaske, Donnelly et al. 1996; Manning, Valliere et al. 2000; Heywood & Murdoch 2002). Considered a contemporary approach to crowding, the normative approach has been developed as a useful way to conceptualize, collect and organize empirical data representing value judgments about resource management (Vaske, Donnelly et al. 1996), and suggests that visitors have "preferences, expectations, or other standards by which to judge a situation as crowded or not" (Manning 1999 :122). If these preferences can be defined and measured, they then can assist in formulating indicators and standards of quality useful for management purposes (Manning, 1999).

However, a major challenge of outdoor recreation management is that people vary in attitude, preference and behaviour for outdoor experiences. One approach to explain variability in behaviour patterns and attitudes of participants within the same activity is specialization, defined as a "continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977: 175). McFarlane et al. 1998 state "as individuals gain experience in an activity they progress through stages of development accompanied by changes in setting preferences, social group affiliation and attitudes" (:196). Specialization assists in explaining variability by defining appropriate subgroups of visitor populations (Wellman, Roggenbuck et al. 1982). This study will adopt specialization theory as a way to examine variability in setting preferences.

Managers are under considerable pressure with increasing use levels, diversity of users and concomitant requests for more facilities and levels of accommodation (Rollins & Robinson, 2002). Park

managers must decide how much use should be allowed, where this use will be allowed and how this use will be managed. A model proposed by Duffus and Dearden (1990) links the concepts of "limits of acceptable change" and specialization by examining how a destination, over time, increases in popularity and tends to attract fewer specialized visitors and more generalist visitors, often with different setting preferences. The model suggests that if the dominant level of specialization among the user groups is known, the relative level of maturity of the destination can be estimated, providing valuable indicator information for management (Duffus and Dearden, 1990).

Therefore, the purpose of this chapter is to examine crowding issues in the Broken Group Islands by applying normative theory as a framework for examining visitors' crowding perceptions and factors influencing preferences, ultimately as way to define measurable standards for management purposes.

5.2 Literature Review

5.2.1 Carrying Capacity and Crowding

Rapidly expanding recreation demand on natural recreation resources has given rise to concerns over appropriate use levels in outdoor recreation areas (Manning 1999). Out of these concerns emerged the theoretical paradigm of carrying capacity, a fundamental concept in natural resource and environmental management (Hendee, Stankey et al. 1990). Carrying capacity is defined as "the maximum level of use an area can sustain as constrained by environmental factors" (Odum cited in Manning 1999: 67). However, it became apparent that use level not only contributed to environmental impact, but also impacted the visitor experience (Manning & Lime 2000). Wagar (1964) contributed greatly to the expansion of carrying capacity to embrace social as well as environmental values, by suggesting that human values must be considered in the deterioration of areas due to recreation (Wagar 1964). As a result, the concept of recreation carrying capacity has been broadened to include not only an ecological capacity but a social capacity as well (Stankey & McCool 1990). Social carrying capacity requires establishing a specific number that defines the minimum acceptable amount of crowding based on visitor preferences or expectations and is defined as "the level of use beyond which social impacts exceed acceptable levels specified by evaluative standards" (Shelby & Heberlein 1986 :21). However, early empirical applications of social carrying capacity in outdoor recreation often failed in their attempts to answer the question "how much impact, such as crowding, was too much" (Manning, Lime et al. 1996 :40). The principal difficulty

with carrying capacity "lies in determining how much impact or change should be allowed" (Manning 1999 :70). This issue is often referred to as the "limits of acceptable change" (Stankey, Cole et al. 1985) suggesting that some change in the recreation environment is inevitable and eventually this change becomes unacceptable; however, what determines the limits of acceptable change? (Manning 1999).

To clarify this issue Shelby and Heberlein (1986) distinguish between descriptive and evaluative components of carrying capacity determination. The descriptive component of carrying capacity focuses on factual, objective data and is interested in the relationship, for example, between use levels and perceived crowding (Manning 1999). The evaluative component defines the type of experience or other outcomes that a recreation setting should provide by specifying the acceptable levels of impact (Shelby & Heberlein 1986) and assists in answering questions such as "what level of perceived crowding should be allowed" (Manning 1999 :71).

5.2.2 Crowding Models

Early applications of carrying capacity examined the relationship between satisfaction with the recreation experience and use level to address whether satisfaction may be a useful evaluative standard for determining carrying capacity (Shelby & Heberlein 1986). This approach adopted the "satisfaction model" that assumed an inverse relationship between use level and satisfaction: as use level increased an individual's satisfaction level would decrease (Heberlein & Shelby 1977). However, results indicate weak to modest relationships between use level, encounters and satisfaction (for a review of studies see Manning, 1999 pp: 89-92), suggesting that satisfaction is not a useful criterion for establishing capacities or determining a quality recreation experience (Shelby & Heberlein 1986).

Shelby and Heberlein (1986) suggest that crowding, because it refers to numbers of people is potentially a better evaluative standard than satisfaction (Shelby & Heberlein 1986). An important distinction between density and crowding was reiterated by Manning in a meta-analysis of crowding literature and supported the notion that crowding was a normative concept and distinct from density (Manning 1985). Density is described as a physical concept relating number of people per unit of space, it is neutral and has no psychological or experiential evaluation or interpretation; crowding has a psychological meaning, it is negative and a subjective evaluation of a use level (Manning 1999). The term

perceived crowding is used to emphasize the subjective or evaluative nature of the concept (Shelby, Vaske et al. 1989).

Measurement of perceived crowding has been standardized by the use of a simple, easy to use scale developed by Heberlein and Vaske (1977). This 9 point scale asks people to indicate how crowded the area was at the time of their visit with responses ranging from "1 not at all crowded" to "9 extremely crowded", and has been widely adopted allowing for comparisons (Shelby, Vaske et al. 1989).

Shelby and others (1989) suggest that perceived crowding combines descriptive information with evaluative information and that when people evaluate an area as crowded, they have at least implicitly compared the impact that they experienced with their perception of a standard. If visitors conclude that the area is crowded, it would appear that the impact exceeded the standard (Shelby, Vaske et al. 1989). Shelby and others (1989) propose perceived crowding levels can be used as an evaluative standard for making carrying capacity judgments based on the following parameters: that if up to 35% of visitor feel crowded (3 to 9 on scale), "suppressed crowding" is evident and managers should preserve the experience. If 35% to 50% of visitors feel crowded, "low normal crowding" is occurring and there is not a problem situation. If 50% to 65% feel crowding, then the area is judged as "high normal" and should be monitored. If 65-80% feel crowded the area is considered "more than capacity" and management action to preserve experience is necessary. Finally, if 80% to 100% feel crowded, the area is deemed to be "much more than capacity" and managers should consider "sacrificing the area" or manage for conflict (Shelby, Vaske et al. 1989).

While the perceived crowding approach to managing the visitor experience informs managers when crowding is a problem, it lacks complete information about impacts and standards needed for defining a quality recreation experience (Shelby, Vaske et al. 1989).

5.2.3 Indicators and Standards of Quality:

Use levels, satisfaction and crowding perceptions could not entirely satisfy the question "*how much social impact is too much*"; however more recent research suggests that the concept of carrying capacity is more effectively applied through the formulation of management objectives, indicators and standards of quality (Manning 1999). Management objectives are broad statements that define the type of visitor experience to be provided; indicators of quality are specific, measurable variables reflecting the meaning of the management objectives; and standards of quality define the minimum acceptable condition

of each indicator variable (Manning & Lime 2000). This approach primarily focuses on defining the type of experience to be provided and maintained through the evaluation of indicators, then monitoring conditions over time to assess whether conditions are within acceptable limits (Manning, Lime et al. 1996). How to identify and define indicators of quality are important issues within the literature. In a study to identify and evaluate potential indicators of quality, Merigliano and Krumpke (1988), concluded that the top five ranking indicators included number of visitors per day, population trend of wildlife, quantity and distribution of litter, number of encounters with other groups per day and number and distribution of campsites per area (Merigliano & Krumpke 1988). Indicators identified in other studies include size of fire rings (Shindler & Shelby 1992), powerboat use and camp encounters (Whittaker 1992), amount of noise (Roggenbuck, Williams et al. 1993), number of people encountered (Manning, Lime et al. 1996) and type of visitor encountered (Manning, Valliere et al. 1999) (for reviews see Manning, Valliere et al. 2000).

In determining criteria defining good indicators Manning (1999) and Merigliano and Krumpke (1988) state that indicators of quality must be specific rather than general, objective rather than subjective, reliable and repeatable, related to visitor use (such as level of use, type of use or location of use), manageable, cost effective and perhaps most importantly significant and relevant to the visitor experience. Consistent with the literature, this study has incorporated three indicators of quality, including "number of kayaks", "number of motorboats" and "number of tents".

The measurement of indicators of quality assist in the development of "standards of quality [that] define the minimum acceptable condition of indicator variables" (Manning, Valliere et al. 2000 :14). By defining indicators and standards of quality, carrying capacity can be determined and managed through a monitoring program (Manning 1985). Indicator variables are monitored over time and management action is undertaken to maintain standards of quality (Manning 2001). Once standards have been reached, then carrying capacity has been reached (Manning 1985 :4).

This approach to carrying capacity is central in contemporary park and outdoor recreation planning frameworks such as Limits of Acceptable Change (LAC) (Stankey, Cole et al. 1985); Visitor Impact Management (VIM) (Graefe 1990); Carrying Capacity Assessment Process (C-CAP) (Shelby & Heberlein 1986); Visitor Experience and Resource Protection (VERP) (Manning 2001). Nilsen and Taylor

(1997) developed a useful, extensive comparative analysis of these frameworks, which analysis addresses framework process steps, factors, indicators and standards, applications, strengths and weaknesses.

5.2.4 Normative Theory

A persistent problem in recreation research is how to obtain evaluative information in order to formulate standards of quality (Manning & Lime 2000). The "normative approach" has been developed as a useful way to conceptualize, collect and organize empirical data representing value judgments in resource management issues (Shelby & Heberlein 1986; Vaske & Donnelly 1993; Shelby, Vaske et al. 1996). "Norms" have been defined as standards that individuals use for evaluating behaviour and social and environmental conditions (Vaske, Graefe et al. 1986; Shelby & Vaske 1991). Crowding can be understood as a normative process, as recreation visitors often have preferences, expectations or other standards by which to judge a situation as crowded or not (Manning 1999 :122). Because visitors often have preferences or standards that define their quality recreation experience, managers and researchers can evaluate and define the quality of that recreation experience by asking visitors about their reactions to different social conditions, such as increasing density, number of tents in a campsite and numbers of encounters.

Shelby and others state that normative information is useful to resource managers for a number of reasons:

- 1) normative information focuses management direction by identifying goals that are deemed desirable;
- 2) normative information helps define the salient characteristics of high quality settings;
- 3) normative information defines standards that can be used as management targets by differentiating minimal conditions from optimal conditions; and
- 4) normative information indicates the degree of consensus (Shelby, Vaske et al. 1996).

The normative approach has been used in a number of studies (for reviews see Shelby & Vaske 1991; Vaske & Donnelly 1993; Manning 1999) . Most applications have been focused on crowding issues (Manning, Lime et al. 1996; Tarrant, Cordell et al. 1997) involving, for example, encounters with other groups (Hall & Shelby 1996) motorboats and kayaks (Vaske, Donnelly et al. 1996) but has also been expanded to include other indicators of quality such as ecological impacts at campsites (Shindler & Shelby 1992) and minimum stream flows (Shelby, Brown et al. 1992). Results from much of this research

suggests norms vary widely across groups, activities and settings (Vaske, Graefe et al. 1986). Encounter norms exist for particular types of contacts with certain types of visitors such as, for example, kayakers having lower tolerance levels for encountering motorboats than other kayakers (Vaske, Donnelly et al. 1996). Studies examining norms in the backcountry and frontcountry have found generally that encounter norms for the backcountry tend to be quite low (Vaske, Graefe et al. 1986) and that people who can specify a norm for wilderness experiences is fairly high (Shelby 1981). Finally, normative research has suggested that norms vary within the same setting. In one of the few normative studies situate in a marine setting, Vaske and others found that encounters for motorboats differed between access areas, attraction sites and a wild place within Gwaii Haanas (Vaske, Donnelly et al. 1996). More recently, Needham (2002) found intra-site differences for norms for trail conditions as well as for encounters for hikers and bikers at five sites within the Whistler Mountain area.

As stated previously, crowding and encounter related norms may vary with characteristics of those encountered, situational variables and visitor characteristics (Graefe, Vaske et al. 1984; Shelby, Vaske et al. 1996).

5.2.5 Specialization

One approach to understanding variability in perceptions of crowding is "specialization". Tourists cannot be considered to be a homogenous group (Duffus & Dearden 1990), but often vary in attitude, behaviour and preferences within the same activity. Specialization theory assists in explaining variability by defining appropriate subgroups of visitor populations. Bryan's (1977) classic study of trout fisherman conceptualized recreation specialization defined as a "continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" (Bryan 1977: 175). McFarlane et al. 1998 state "as individuals gain experience in an activity they progress through stages of development accompanied by changes in setting preferences, social group affiliation and attitudes" (:196). It is likely then that an advanced recreationist has greater activity related skills and knowledge base, which may lead to differences in attitudes, preferences and behaviour.

The concept of "recreation specialization" has been found to be related to a number of attitudes, preferences and behaviours, including perception of recreation-related impacts, importance of recreation setting attributes, perceived quality of recreation management, standards of quality for social conditions,

perceived crowding and preferences for management actions (Manning, 1999). Early studies examining use levels and experience found a positive relationship between experience levels and sensitivity to crowding (Vaske, Donnelly et al. 1980; Ditton, Fedler et al. 1983). One of the first studies to link specialization theory with perceived crowding was Hammit et al (1984) who found that, unlike similar studies, innertube floaters placed great importance on use levels and encounters in their crowding perceptions. Hammit and others suggest that for less specialization activities, such as innertube floating, low specialized participants lack well-defined expectations of crowding (Hammit, McDonald et al. 1984). Building on the work of Hammit et al, Graefe et al (1986) examined the influence of contacts, preferences and expectations by specialization level and found that more highly specialized hikers prefer fewer contacts and are more sensitive to crowding than low specialized hikers (Graefe, Donnelly et al. 1986). Recent studies have also confirmed the relationship between higher specialization levels and crowding sensitivity (Berry, Hals et al. 1993; Amistead & Ramthun 1996). While studies have typically explored variation in crowding within terrestrial, lake and river settings, few studies have explored the relationship between crowding and specialization within a marine setting. Graefe and Moore (1992) examined the relationship between perceived crowding and experience levels of snorkelers at Buck Island Reef National Monument and found more experienced users reported higher levels of perceived crowding (Graefe & Moore 1992).

While studies have explored the variation within crowding perceptions, the relationship between specialization and normative evaluations has yet to receive much research attention (Ormiston, Gilbert et al. 1998). Of the few studies that have explored specialization and normative evaluations, Young and others (1991) examined the relationship between wilderness user's level of involvement and their perception of acceptable standards for social conditions in a wilderness area. Evidence suggested that level of involvement is negatively correlated to the range of acceptable conditions; that is, more highly involved users tend to tolerate fewer encounters than less involved wilderness users (Young, Williams et al. 1990). Basman and others (1996) found that, although statistically insignificant, specialists tolerate fewer impacts in the backcountry and frontcountry than less experienced users (Basman, Manfredo et al. 1996). Hall and Shelby (1996) investigated the relationship between the presence of norms and past wilderness experience of backcountry hikers and found that more experienced users were more likely to hold personal encounter norms than less experienced users (Hall & Shelby 1996). Needham (2002) in an examination of norms for

a variety of conditions found that as the specialization level of visitors increases, the tolerance for hiker crowding decreases. Some authors suggest as an explanation that experienced wilderness users may "embrace the idea that wilderness is for solitude" and that less experienced visitors may not have enough experience to have formulated clear personal norms (Hammitt, McDonald et al. 1984; Hall & Shelby 1996; Inglis, Johnson et al. 1999). While few studies have explored causes of variability of norms (Roggenbuck, Williams et al. 1991), fewer yet have explored variability of norms within a marine setting. One major study includes Inglis and others (1999) who used a visual approach to normative theory in their examination of crowding norms among scuba divers in the Great Barrier Reef. Results indicate that experienced scuba divers preferred scenes without people or infrastructure, while novices regarded the presence of both as more acceptable (Inglis, Johnson et al. 1999). Findings from these studies show that specialized and more experienced users are less tolerant of impacts (Graefe, Vaske et al. 1984; Hammitt, McDonald et al. 1984; Manning 1999) and lend support for the use of specialization theory as a way to explain variability. However, several authors suggest further research is needed to document differences that influence crowding and normative perceptions (Graefe, Donnelly et al. 1986; Basman, Manfredo et al. 1996; Donnelly, Vaske et al. 2000).

In keeping with this theory, Duffus and Dearden (1990) propose a model that links the concepts of "limits of acceptable change" and specialization by examining how a destination, over time, increases in popularity and tends to attract fewer specialized visitors and more generalist visitors, often with different setting preferences. "As the awareness of the site and associated activity grows, a less ambitious user will dominate the group. There will be a concomitant demand for more facility development, more mediation and increased pressure on both the social system and the ecosystem of the host area" (Duffus and Dearden, 1990). The model suggests that if the dominant level of specialization among the user groups is known, the relative level of maturity of the destination can be estimated, providing valuable indicator information for management (Duffus and Dearden, 1990). As an example, if the majority user in the Broken Group Islands is found to be a low specialized user or a generalist, demanding easier access and developed campsites, while tolerating higher density situations, then it is very likely that the specialized user seeking a wilderness experience and solitude has been displaced (Manning 1999). Managers may inadvertently aggravate

undesirable impacts from this "recreational succession" by responding to increases and changes in users with development to accommodate generalist demands (Hendee 1990 :191).

The bulk of the evidence supports that experienced users are more sensitive to higher use levels regardless of how experience is measured (Manning 1999). Bryan (1977) suggests that specialization is reflected in changing equipment, skills, settings and commitment. Past studies have defined specialization by past experience and participation (Schreyer, Lime et al. 1984), experience and equipment ownership (Wellman, Roggenbuck et al. 1982), participation, equipment, skill and centrality to lifestyle (Miller & Graefe, 2000). Donnelly et al (1986) developed a specialization index comprised of participation, equipment ownership, and perceived skill for boating related interests. However, there remains "little agreement about how to characterize and measure the construct" (Scott & Shafer 2001). A number of authors propose that specialization measurement include the following dimensions: a behavioural dimension using, for example, prior experience as an indicator; a cognitive dimension using, for example, skill level as an indicator; and an affective dimension using, for example centrality to lifestyle as an indicator (McIntyre & Pigram 1992; Scott & Shafer 2001).

5.2.6 Role of Guide

As well as examining the influence of respondents' specialization level on crowding and normative a perception, this study examines the differences in crowding and normative perceptions of guided and non-guided participants as crowding and normative perceptions vary by visitor characteristics. Review of the literature reveals few studies explicitly examining differences in crowding and normative perceptions between guided and non-guided visitors. However, studies have been undertaken to examine the role of the kayak guide in influencing guided participants' attitudes, beliefs and behaviours (Bange 1984; Roggenbuck, Williams et al. 1991; Jonas, Stewart et al. 2000; Sharpe 2002).

In a study of normative influences among New River Gorge boaters, Bange found that the river guide was a significant source of influence concerning appropriate amounts of use and environmental impacts on the river, particularly with the less experienced boater (Bange 1984 :51). In a study of whitewater rafters on the New River Gorge National River, Roggenbuck and others found some evidence to suggest commercial rafters had a lower norm for the indicator "acceptable number of boats seen" than private rafters (Roggenbuck, Williams et al. 1991). Jonas et al (2000) found, in a qualitative study of

encounters and recreation experience on the Colorado River, that the evaluation of an encounter often "relies less on the number of encounters and more on the nature of the interaction" providing support for the river guide as an important component in facilitating positive or negative interpretations of river encounters (Jonas, Stewart et al. 2000 :183). Building on the work of Jonas and others (2000), Sharpe (2002), through participant observation, examined how guided groups made sense of encounters in other settings and with other modes of travel. Sharpe concluded that the trip guide was critical in negotiating encounters with others, supporting the findings of Jonas and others (Sharpe 2002). These studies suggest that the guide may influence how participants evaluate their experience and accordingly, this study will examine crowding and normative perceptions of guided and non-guided visitor.

Therefore, this study addresses the following questions:

1. Using the traditional approaches to crowding measurement, what are visitors' perceptions of crowding in the Broken Group Islands?
2. Is there a spatial difference between crowding on the water and crowding in the campsites?
3. Using a visual approach to normative theory, what are visitors' minimum levels of acceptability concerning encounters with other kayakers, motorboats and tents at campsites?
4. Does specialization level influence visitors' crowding perceptions?
5. Are crowding perceptions influenced by whether the visitor is guided or non-guided?

5.3 Methodology

5.3.1 Study Site

This study was situated within the Broken Group Islands (BGI), the marine component of Pacific Rim National Park Reserve (PRNPR), Vancouver Island, British Columbia. The BGI covers an area of 10,725 hectares of which 1,538 hectares are land (Cochlin 1993) and consists of eight designated camping sites. The areas receives very high levels of backcountry use (Parks Canada Agency 2000) with current visitation levels at approximately 4500 permitted overnight campers, primarily kayakers (Rollins 1995 Unpublished Report). The Broken Group Islands are managed for a backcountry, wilderness experience, affording those who visit opportunity for solitude (Parks Canada 1994). However, a study completed in 2000 revealed that motorized watercraft and other visitors were significant detractors from the visitor experience, suggesting that current use levels are unacceptable to visitors (Rollins & Randall 2001

Unpublished Report). Despite high use levels and crowding concerns, there are no quota or reservation systems; however there is a maximum two-week park stay, a group size limit of ten and a maximum campsite stay at any one of the designated island campsites of four consecutive nights (Parks Canada 1994).

5.3.2 Sampling Procedure:

This study measured visitors' attitudes toward social impacts including encounters with other visitors, levels of crowding and the measurement of levels of acceptability towards encountering other kayaks, motorboats and tents at a campsite. Additionally, this study set out to explore the kayak guide's role in influencing visitor attitudes towards these factors. This study involved two methods: questionnaire interviews and participant observation.

A random sampling design was used to administer questionnaires pre and post trip to kayakers entering and leaving the BGI between June 11, 2001 and September 14, 2001. Questionnaires were administered at the primary entry and exit sites to the park, namely, Toquart Bay Forest Recreation Site and aboard the Francis Barkley transport ship that carries passengers to and from Sechart Lodge located outside the park boundary. Sampling efforts resulted in: 47 guided pre trip and 84 guided post trip questionnaires and 256 non guided pre trip and 270 non guided post trip questionnaires. Pre and post samples were different individuals.

For the qualitative component of the study, the principal investigator joined four guided kayak tours in June and July as a participant observer. In addition to observation, tour participants were asked to complete pre and post trip questionnaires, resulting in a matched sample of 21 pre trip and 21 post trip questionnaires termed the "participant observation" sample.

Overall, sampling efforts resulted in 699 useable questionnaires with the sample breakdown set out in Table 5.1.

Table 5.1 Sample Size by Group

Group	Pre Trip	Post Trip	Total
Guided	47	84	131
Not Guided	256	270	526
Participant Observation	21	21	42
Total	324	375	699

A total of 699 useable questionnaires were completed, however 21 of those questionnaires have been removed from general analysis as they represent the responses of the same respondents from the participant observation sample. Therefore, it is estimated that with a sample of 678 useable questionnaires, based on an approximate overall visitor population of 4,472 for 2001, margin of error is calculated at $\pm 3.4\%$ at the 95% confidence level.

5.3.3 Structured Questionnaires:

The face-to-face structured questionnaire method has been chosen to obtain data on kayaking visitors within the Broken Group Islands as this method is “suited to surveying populations for whom there is no sampling list” (Salant & Dillman 1994 :40). Included within the questionnaire were questions designed to measure encounters, perceptions of crowding, normative evaluations, and specialization. In addition to these questions, participants were given the opportunity to express their opinions in an open-ended question. Two pilot studies were undertaken prior to administering the questionnaire to assist with questionnaire development and to test the survey instrument in the field.

5.3.4 Operationalizing the Variables:

5.3.4.1 Dependent Variables: Dependent variables used in this study included measurement of encounters with others, measurement of the level of perceived crowding and normative evaluations of density. Visitors were asked how they felt about encounters with others including kayaks, motorboats and other people at campsites. Visitors were asked to indicate their response on a three point Likert Scale were 1 = "too few", 2 = "too many" and 3 = "about right".

Crowding perceptions were evaluated using a single item, nine point scale which asked visitors to rate how crowded they felt during their visit from 1 = “not at all crowded” to 9 = “extremely crowded”. This scale, developed by Heberlein and Vaske (1977) is relatively simple and easy to apply as it requires

the measurement of only one variable (Vaske, Donnelly et al. 1996), and has been widely adopted (Manning 1999).

With respect to normative evaluations, traditional measurement of crowding norms has involved a "numerical" approach asking respondents to evaluate a range of conditions or simply to report the maximum acceptable number of encounters with other groups. More recently, several studies have incorporated visual approaches to measure the norms of respondents, including photographs of ecological impacts at campsites (Shelby & Harris 1985; Shelby & Shindler 1992), artistic renderings of use levels and related impacts (Martin, McCool et al. 1989), and video images of varying densities of kayakers and motorboats (Vaske, Donnelly et al. 1996). Recently, studies have been using computer software to edit and produce photographs depicting a range of use levels and impacts such as density of visitors at Arches National Park (Manning, Lime et al. 1996), density of users on carriage roads in Acadia National Park (Manning, Valliere et al. 1999), density of snorkelers (Inglis, Johnson et al. 1999) and litter (Heywood & Murdoch 2002). Visual approaches are especially applicable in high use situations (Manning, Valliere et al. 1999) and may be more valid than numerical approaches as respondents tend to underreport encounters when using numerical methods and the visual approach provides a more realistic portrayal of impact (Tarrant, Cordell et al. 1997; Manning & Lime 2000).

A visual approach was adopted to collect data on norms, using three social indicators: number of kayaks, number of motorboats and number of tents identified as potential indicators of quality in previous research (Vaske, Donnelly et al. 1996; Manning 1999). Photographs of these three indicators were manipulated using image-editing software Adobe Photoshop Version 5.5. The first indicator, "number of kayaks" was measured with six photographs depicting 0, 1, 3, 6, 9, and 12 kayaks using a base image of an area in the park approximately 1500 m². The second indicator "number of motorboats" was measured with six photographs depicting 0, 1, 2, 3, 4, and 5 motorized boats using a base image of an area approximately 1500 m² within the park. The third indicator "tents at a campsite" was measured with six photographs depicting 0, 1, 2, 4, 6 and 8 tents in an area approximately 846 m² using a base image of an existing designated campsite within the park. All photos were reproduced in color, sized to approximately 2 1/4" x 2" and embedded within the questionnaire in the order of increasing density for each indicator. The order in which the photographs are presented could potentially bias responses; however on examination of this

methodological issue, Manning et al. (2002) found very small, mostly not significant differences in responses when photographs were presented in increasing and decreasing order (Manning, Lawson et al. 2002). Further, in a study of summertime users at Whistler, British Columbia, Needham (2002) found no statistically significant differences in responses when the photographs were presented in random, increasing and decreasing order (Needham 2002).

A "long" or "repetitive item format" version of measurement technique that asked respondents to rate the acceptability of each of the photographs was adopted (Manning, Valliere et al. 1999). Although this approach may be more burdensome than a "short version" where respondents are asked to select the photograph that illustrates the highest use or acceptable level of impact, this approach provides richer and more meaningful data and "may provide more precise estimates of the highest level of use acceptable" (Manning, Valliere et al. 1999 :108; Hall & Roggenbuck 2002). Respondents were asked to rate the acceptability of each of the photographs using a five point Likert scale where 1 = "very acceptable" and 5 = "very unacceptable". These results were recoded as -2 = "very unacceptable" to +2 = "very acceptable" for purposes of analysis.

Many of the applications described above have relied on the work of Jackson (1965) who developed a methodology termed "return potential curves" to measure both personal and social norms (Manning 1985). Personal encounter norms are defined as "norms specified by individual visitors or visitor groups who express their preferences for acceptable encounter levels within a particular recreation setting" and social encounter norms "represent the combined norms expressed by individual visitors or visitor groups" (Lewis, Lime et al. 1996 :144). Using this approach, personal norms are aggregated to test for existence of social norms or the degree to which norms are shared across groups. Social norms can be illustrated graphically by plotting the average acceptability ratings for encountering increasing numbers of visitors or other impact. Impacts are displayed on the horizontal or x-axis and acceptability or evaluation is displayed on the vertical or y-axis. The resulting curve can be analyzed for various normative characteristics including optimum conditions, range of acceptable conditions, norm strength and consensus (Vaske, Graefe et al. 1986), and more fully described in the results section.

5.3.4.2. Independent Variables: To determine the influence of characteristics affecting encounters, crowding and normative evaluations, this study examined responses by guided and non-guided trip type.

Additionally, this study examined responses by levels of experience or specialization and incorporated specialization theory to disaggregate visitors into appropriate subgroups. In developing the specialization index, a multidimensional approach was adopted consisting of the following variables: previous visits, years involved in kayaking, self reported level of experience, equipment owned and enduring involvement in the activity of kayaking, resulting in a comprehensive, interrelated and mutually reinforcing recreation specialization index (McIntyre & Pigram 1992; Scott & Shafer 2001). Assigning levels and values of specialization for the individual variables is highlighted in Table 5.2. Adopting the method of recent studies (Bricker & Kerstetter 2000) responses to the variables were reviewed, divided into low and high specialization levels and assigned values of “1” for low and “2” for high. For the variable skill level, those self reporting “novice” or “intermediate” were coded low specialized and assigned a value of “1” and those indicating “advanced” or “expert” were coded high specialized and assigned a value of “2”. It is hypothesized that those who own their own boat have invested highly into the activity of kayaking and therefore are more highly specialized receiving a value of “2” than those respondents who do not own their own boat who received a value of “1”. For the variable “first visit”, respondents answering “yes” received a low specialization level and a value of “1”, while respondents answering “no” received a high specialization level and a value of “2”. For the interval data question “years involved in kayaking” the median defined the cut point, as used in similar, previous studies (Donnelly, Vaske et al. 1986; Bricker & Kerstetter 2000). Individual overall mean scores were computed for the enduring involvement index ranging from zero to five and again, the median defined the point between low and high levels of specialization and corresponding values were assigned.

Table 5.2. Assigned Levels and Values for Specialization Variables

Specialization Variable	Assigned Level	Assigned Value
Reported Level of Experience		
Novice/Intermediate	Low	1
Advanced/Expert	High	2
Kayak Ownership		
No	Low	1
Yes	High	2
Years Involved with kayaking		
0 – 3 years	Low	1
4 or more years	High	2
First Visit		
Yes	Low	1
No	High	2
Enduring Involvement Index		
Mean Range		
0 – 3.2	Low	1
3.21 – 5	High	2

As in previous studies (Donnelly, Vaske et al. 1986; Graefe, Donnelly et al. 1986; Viriden & Schreyer 1988), a composite specialization index was created by summing the scores for each variable for each respondent, resulting in values ranging from five to ten. For the purposes of this analysis, the range of scores has been condensed into two categories. Scores of five to seven indicate low specialization and scores of eight to ten represent high specialization resulting in a low specialized group and high specialized group. This specialization index had an overall reliability of .66 as measured by Cronbach's Alpha. An "alpha value between 0.6 and 0.8 can be considered very reliable" (Mitra & Lankford 1999 :273), and is consistent with index reliability of similar studies (Donnelly, Vaske et al. 1986; Miller & Graefe 2000).

Applying this index to the data, results indicate that 73.6% (n = 466) of all respondents can be considered low specialized or generalist and 26.4% (n=167) of visitors can be considered highly specialized. Respondents with missing specialization index data were not included.

5.3.5 Participant Observer

To gain a richer understanding of the visitor experience and the role of the kayak guide in influencing visitor evaluations of encounters, the participant observation method was used. The principal investigator accompanied guided kayak tour groups on four separate excursions within the Broken Group Islands June and July, 2001.

The participant observer method allowed for social and environmental in-field observations of both clients and guides. For this study observations focused on guides' role in facilitating encounters with others and thus, potentially influencing visitors attitudes towards encounters on the water and in the campsites. Additionally, each participant (guides excluded) was asked to complete a pre trip questionnaire at the beginning of the trip and a post trip questionnaire immediately after the trip. All tour participants and guides were aware of the researcher's role.

Analysis of the data proceeded by reviewing and transcribing the field notes. A thorough review of the text revealed behavioural patterns or themes that were identified and grouped. Patterns were read in with and compared to the quantitative findings to demonstrate convergence of the findings, discover inconsistencies or contradiction and to elaborate on results.

5.4 Results and Discussion

5.4.1 Approaches to measuring crowding

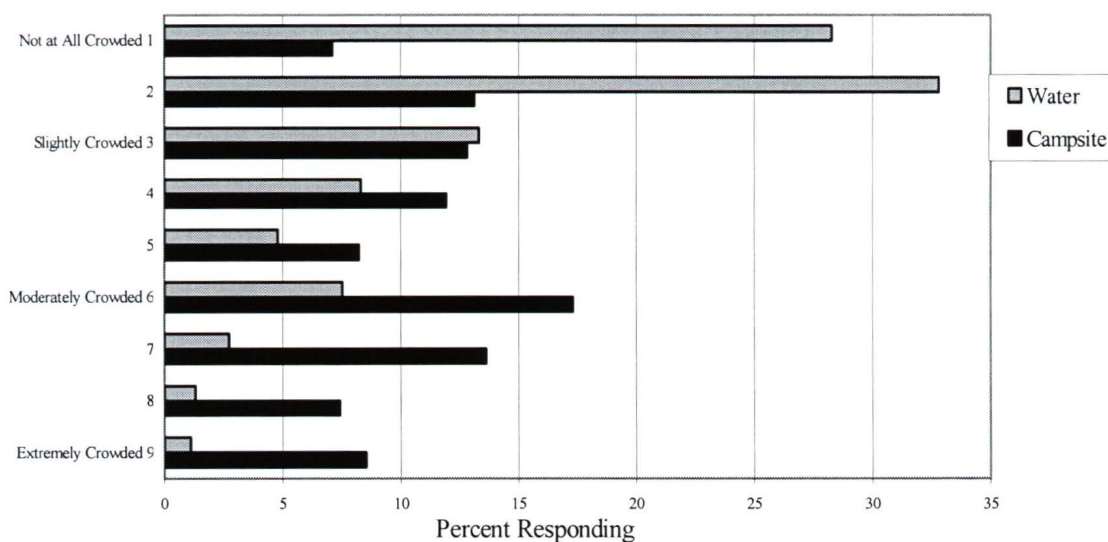
To understand visitors' crowding perceptions, this study employed two approaches to measuring crowding. One approach asked visitors to indicate whether their encounters with other kayaks or canoes, other motorboats and other people at campsites were "too few", "too many", or "about right". The second approach adopted Heberlein and Vaske's (1977) standardized 9 point scale, a more sensitive measure to crowding, ranging from "1 not at all crowded" to "9 extremely crowded", and asked visitors to indicate how crowded they felt "on the water" and "in the campsites" at the time of their visit.

When visitors were asked to evaluate encounters with others, results indicate that 18.8% of respondents found the number of canoes and kayaks were too many, 21.8% of respondents stated there were too many motorboats, and 53.8% of respondents stated there were too many people at the campsites. Results indicate that while a very large number of respondents consider their encounters on the water as "about right", the majority of respondents evaluate their encounters with others at campsites as crowded.

Using Heberlein and Vaske's (1977) scale indicates differences for crowding perceptions on the water and in the campsites as illustrated in Figure 5.1. 61.0% of respondents rated "on the water" use level as "1" "not at all crowded" or "2" and 39% rated "on the water" use levels as "3" "slightly crowded" or higher suggesting that most users did not perceive use levels on the water as crowded. However, when visitors were asked to rate the level of crowding in the "campsites at night", 79.8% reported a score of "3

slightly crowded" or higher indicating a very high number of respondents feeling some degree of crowding. Observed differences in mean crowding perceptions "on the water" (mean 2.74) and "in the campsites" (mean 4.95) are statistically significant, with visitors feeling significantly more crowded in the campsites (t-test, $t = -16.685$, $p = .000$).

Figure 5.1 Levels of Crowdedness on the Water and in the Campsites (n = 354)



Crowding variable is measured in the survey using Heberlein & Vaske's (1977) 9 point scale ranging from (1) "not at all crowded" to (9) "extremely crowded"

Crowding on the Water: Mean = 2.74; Median = 2.00; Mode = 2.00; SD = 1.86; 39.0% feel crowded (3-9 on scale)

Crowding in the Campsites: Mean = 4.95; Median = 5.00; Mode = 6.00; SD = 2.38; 79.7% feel crowded (3-9 on scale)

These findings confirm geographical spatial differences in crowding perceptions "on the water" and "in the campsites" within the same wilderness area. These findings are consistent with findings of Vaske et al (1996), who reported that perceived crowding scores varied at three locations: on the water, campsites and cultural sites with campsites receiving the highest perceived crowding score (Vaske, Donnelly et al. 1996). These findings also corroborate Rollins (1998) findings that crowding evaluations were higher within the campsites than along the trail, and Needham (2002) who found significant intra-site differences in perceived crowding of summertime users in the Whistler mountain area. These findings are consistent with other studies that suggest users have higher sensitivities to encounters at campsite locations, and provide further evidence to suggest that situational variables influence perceptions of crowding (Manning 1999).

Crowding can be considered a normative concept, in the sense that recreationists often have standards or preferences for determining if a situation is crowded or not, subject to the influence of a variety of visitor such as motivations, preferences, attitudes, demographics and experience (Manning 1999). A number of studies have found that more highly specialized recreationists report higher levels of crowding, suggesting a positive correlation between specialization and perceived crowding (Ditton, Fedler et al. 1983; Hammitt, McDonald et al. 1984; Graefe, Donnelly et al. 1986; Berry, Hals et al. 1993; Amistead & Ramthun 1996; Tarrant & Cordell 1997). In this study, 39% of visitors felt crowded on the water, yet 61% did not; 79.7% of visitors felt crowded in the campsites yet 20.3% did not. To address this variability, the specialization index developed for this study was applied. Results reveal statistically significant differences between more highly specialized respondents' perceived crowding level (5.34) and less specialized respondents' perceived crowding level (4.84) in the campsites only (Table 5.3). Further analysis of this relationship indicates a significant ($p < .05$), but weak (Pearson's $r = .108$) relationship between specialization and campsite crowding.

Table 5.3 Level of Perceived Crowding by Level of Specialization

Perceived Crowding Level	Mean Response		t	df	sig
	Low Specialized ¹ (n= 237)	High Specialized ¹ (n= 87)			
On the Water	2.65	2.95	-1.303	341	.09
In the Campsites	4.84	5.34	-1.647	320	.05*

1 tailed t-test, * significant at $p = .05$

¹ Specialization Index Scale Ranged from 5 to 10: Low = score 5-7 and High = score 8-10

Pearson's R Correlation (specialization index scale 5-10 and perceived crowding scale level 1-9)

On the Water: $R = .043$ $R^2 = .0018$, sig. = .212 ($p > .05$) (ns)

In the Campsites: $R = .108$; $R^2 = .011$; sig = .026 ($p < .05$)

As well as examining personal characteristics to possibly explain variation in results, studies have suggested that visitor characteristics of others such as group size and type may account for variation (Manning 1999). While most studies have focused on type of group defined by mode of travel (Vaske, Donnelly et al. 1996), this study examined the perceptions of encounters by guided and non guided trip type. Results indicate no statistically significant differences between guided and non-guided visitors in their crowding perceptions or evaluations of encounters with others, with the exception of 20.8% of non-

guided visitors evaluate the numbers of canoes and kayaks as "too many" compared to 12.7% of guided visitors (chi square analysis, χ^2 3.182, sig = .048). A plausible explanation may be that guided visitors travel, on average, in larger groups than non guided visitors and may be first time visitors; as a result, guided visitors may have a higher tolerance for a greater number of kayaks. Despite this finding, overall results suggest that specialization and group type are not sufficient to fully explain the variation in visitor's responses to evaluations of encounters in this study.

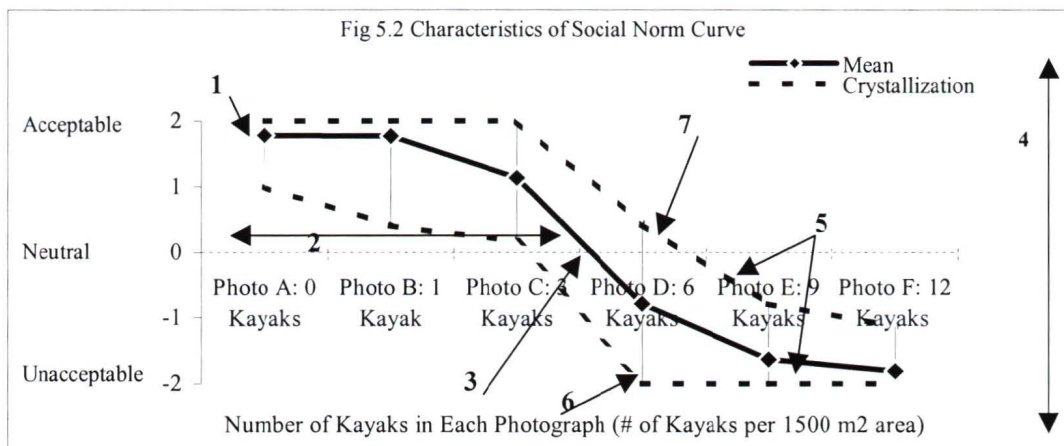
While perceived crowding is more useful as an evaluative criterion than satisfaction in determining quality visitor experiences, as well as simple and easy to apply, it does not provide complete information about impacts and standards (Shelby, Vaske et al. 1989). To address these limitations, the normative approach has been applied to this study to assist in the development of evaluative standards.

5.4.2 Analyzing Visitor Norms to Establish Standards of Quality

When individuals conclude that an area is crowded, they have likely compared the impact they have experienced with their perception of a standard or what they think is acceptable and found that the impact has exceeded their standard (Shelby, Vaske et al. 1989; Vaske & Donnelly 2002). The limitation with this approach to measuring crowding is that it does not provide managers with information about those visitors' standards. Because visitors often have preferences or standards that define their quality recreation experience, managers and researchers can evaluate and define the quality of that recreation experience by asking visitors about their reactions (e.g. acceptability) to different social and environmental conditions. Responses can then be measured and aggregated to test for social crowding norms (Manning 1999). This approach, the normative approach, is used to collect and measure these value judgments or norms (Shelby & Heberlein 1986; Vaske & Donnelly 1993; Shelby, Vaske et al. 1996).

Norms can be illustrated graphically (Figure 5.2). Average acceptability ratings can be plotted for each condition (e.g. increasing density of kayaks) and the resulting line is called an "encounter" or "contact preference curve" or simply a "norm curve" (Manning 1999). This norm curve has several important features. The "optimum condition" (1) is defined by the highest point on the curve and is the condition that received the highest rating of acceptability from the sample as a whole. All the points along the curve from the "optimum condition" to where the line crosses the "neutral line" or the point on vertical axis where the ratings fall from acceptable to unacceptable, is the "range of acceptable conditions" (2). All points

within this range is considered acceptable by approximately half of all the respondents. The mean "minimum acceptable condition" (3) is the condition defined as the point where the norm curve crosses the neutral line and where approximately half of the sample finds acceptable and half do not. "Norm intensity" or "salience" (4) refers the strength of respondents feelings about the importance of the indicator (eg. density of kayaks), and this is illustrated by the mathematical difference (or distance) in ratings between the optimal condition and the least acceptable condition. One of the most important features of the norm curve is "crystallization" (5) which concerns the amount of agreement or consensus around the norm or mean rating, and measured by standard deviations. The less dispersion around the mean, the more agreement or consensus there is among respondents about the acceptability of a specific condition. One standard deviation below the mean represents "lower tolerance respondents" (6) or those respondents who have lower acceptability ratings or tolerance for each specific indicator. One standard deviation above the mean represents the "higher tolerance respondents" (7) or those respondents with higher levels of acceptability ratings for each indicator.



¹Optimal/Preferred Condition

²Range of Tolerable/Acceptable Conditions

³Mean Minimum Acceptable Condition

⁴Intensity/Salience of Mean (Max = 4.0)

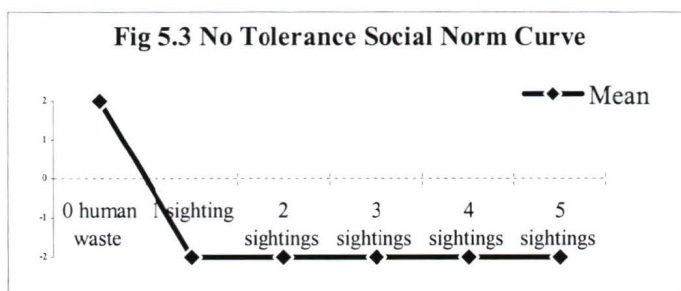
⁵ Crystallization of Mean measured by standard deviation and represents strength of normative consensus regarding acceptability

⁶ Lower Tolerance Respondents

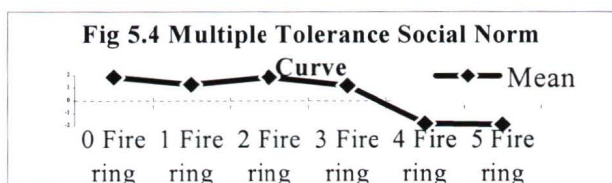
⁷ Higher Tolerance Respondents

Norms generally fall into one of three categories: no tolerance, single tolerance and multiple tolerance norm curves (Shelby, Vaske et al. 1996). Figure 5.2 illustrates a single tolerance curve where the

majority of respondents are willing to accept some degree of density for an indicator (e.g. kayaks) but unwilling to accept much impact beyond a certain point (e.g. between 3 and 6 kayaks). A no tolerance norm curve (Figure 5.3) drops off steeply and is characterized by a mode at zero, high intensity and high crystallization. No tolerance norms in recreation literature have been found with indicators such as signs of human waste along a trail, jetboaters, or discourteous behaviour (Manning 1999).



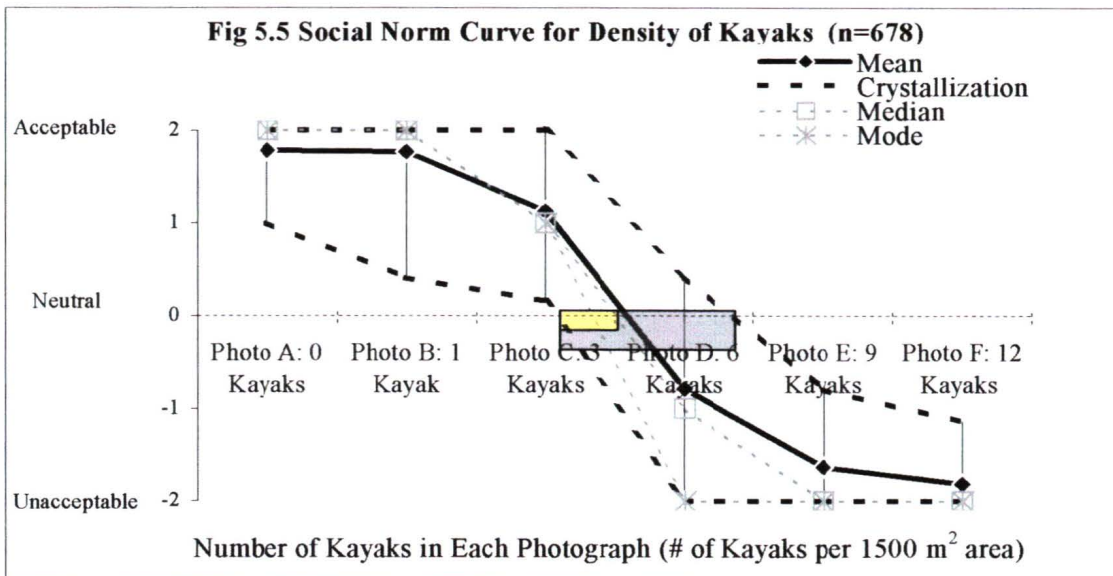
Finally, a multiple tolerance norm curve is characterized by multiple peaks (Figure 5.4), indicating two groups of respondents with distinctly different normative standards for a selected indicator. An example of multiple tolerance social norm curve within recreation literature has been found with fire ring impacts or stream flows for river kayaking (Manning 1999).



5.4.3.1 Norms and Standards of Quality for the "Kayaks on the Water at Any One Time" Indicator

The norm curve for the indicator "kayaks on the water at any one time" is illustrated in Figure 5.5. Results reveal that respondents feel that 0, 1 and 3 kayaks / 1500 m² at any one time are acceptable. However, when respondents are presented with 6, 9 and 12 kayaks, they feel that these conditions are unacceptable. Therefore, the *optimal or preferred condition* is zero kayaks and the *minimum acceptable*

condition, where the norm curve crosses the neutral line from acceptable to unacceptable conditions is between 3 and 6 kayaks (Manning, Valliere et al. 1999 :99). This is the condition that approximately one-half of the sample finds acceptable and other half unacceptable and usually represents the standard of quality for the indicator. Using the formula provided in Needham (2002 pp: 539-542), the minimum acceptable condition is calculated to be 4.76 kayaks per 1500 m² area. All points along the curve above the neutral line (the line that is formed by the point on the vertical axis where evaluation ratings fall from acceptable into the unacceptable range) define the *range of acceptable conditions*. All conditions represented between 0 and 4.76 kayaks are judged to meet some level of acceptability by about half of all respondents. Respondents also feel strongly about this indicator of quality as indicated by *norm intensity* or *salience*, the distance of the curve above and below the neutral line and calculated to be 3.28 out of a possible value of 4. This suggests that density of kayaks may be a good indicator of quality because respondents feel it is important (Manning 1999). Indicator strength suggests that "repercussions might occur if the norm is violated. In other words, a flat curve indicates few people will be upset; a curve that declines sharply and remains negative indicates that violation of the norm will have more impact on visitors" (Vaske, Donnelly et al. 1996 :22). Further, this indicator of quality is a single tolerance indicator, that is, respondents are willing to tolerate some encounters with kayaks, but are unwilling to accept much impact beyond a certain level, in this case 4.76 kayaks. The majority of respondents (97.3%) are able to specify a personal encounter norm for this indicator, referred to as *norm prevalence*, suggesting that this indicator is relevant and the measurement successful (Donnelly, Vaske et al. 2000). These results suggest visitors to the Broken Group Islands may have lower encounter norms for encountering other kayakers than visitors to Gwaii Haanas, considered to be a low density, wilderness experience. In a comparable study by Vaske and others (1996), the minimum acceptable condition for kayaker norms for encountering kayakers was estimated at approximately 8.5 kayaks for a "wild place" and higher still for kayaks at access points and attraction sites (Vaske, Donnelly et al. 1996). This difference in encounter norms may be a result of methodology. In Vaske and others (1996) visuals were illustrated using video scenes with kayakers set against a very distant background. This study sets kayakers against a definitive and measurable background of 1500m² constituting an improvement over previous visual techniques.



Optimal/Preferred Condition: **0 Kayaks / 1500 m²**

Range of Tolerable/Acceptable Conditions: **0 to 4.76 Kayaks / 1500 m²**

Minimum Acceptable Condition: **4.76 Kayaks / 1500 m²**

Crystallization (Standard Deviation) of Minimum Acceptable Condition: **1.10**

Norm Intensity/Salience of Mean (Max = 4.0): **3.58**

Norm Prevalence: 660/678 = **97.3%**

Standard of Quality Window = **3.22 - 7.05 kayaks / 1500 m²**

Optimal/Preferred Standard of Quality Window = **3.22 - 4.76 kayaks / 1500 m²**

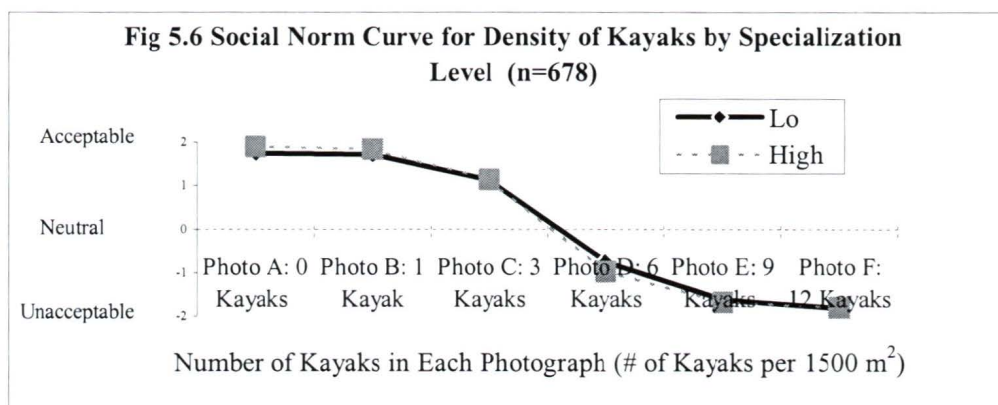
A characteristic with important management considerations is *crystallization*, or the amount of consensus or level of agreement about the norm, commonly measured by standard deviations (Lewis, 1996; Manning, Valliere et al. 1999). The less variance or dispersion of data around those points, the more consensus there is about social norms. According to Shelby and others (1996), a social norm is most useful in establishing a management standard when there is consensus (Shelby, Vaske et al. 1996). Manning states that "the more agreement about norms, the more confidence managers might have in using such data to formulate standards of quality" (1999 :147). Some authors have struggled with the question "how much agreement is necessary before a social norm can be said to exist" (Roggenbuck, Williams et al. 1991) and the issue of "what is high versus low consensus and how varying levels of consensus might influence management decisions regarding acceptable standards for social conditions" (Lewis, Lime et al. 1996 :158). There remains considerable debate in the literature concerning how recreation related norms should be interpreted (Roggenbuck, Williams et al. 1991; Lewis, Lime et al. 1996) as there are "no statistical guidelines or rules of thumb to indicate what constitutes high or low levels of agreement or consensus" (Manning 1999 :148). In addition to standard deviation, some authors recommend the use of median and

frequency (Shelby, Vaske et al. 1996). To aid in interpretation, in addition to reporting the standard deviation as a statistic for measuring norms and consensus, also reported is the percentage of respondents in agreement for each impact level, considered "intuitively meaningful" (Shelby, Vaske et al. 1996 :119).

Needham (2002), in addressing the questions concerning measurement of norms and levels of consensus, built on the original model developed by Jackson (1965) by developing an "Advanced Social Norm/Impact Acceptability Curve" illustrated in Figure 5.5 (Needham 2002 :243). In addition to the characteristics of the original model, a number of advancements are made. Most notably, level of agreement about the norm, or crystallization, is measured by standard deviation and illustrated graphically on the curve with one standard deviation above and below the norm curve representing 68% of responses. These lines above and below the mean curve, representing one standard deviation above and below the mean, represent the "lower tolerance respondents" and the "higher tolerance respondents". "In general, the lower tolerance respondents (one standard deviation below the mean) feel that each impact level is less acceptable than the higher tolerance respondents (one standard deviation above the mean)" (Needham 2002 :245). Needham (2002) states that the "point where the lower tolerance respondents line crosses the neutral point on the acceptability scale, 84% of the respondents feel that the level of impact to the indicator is acceptable. On the other hand, at the point where the "higher tolerance respondents line crosses the neutral point, only 16% feel that the level of impact is acceptable" (Needham 2002 :246). The levels of impact between where these standard deviation lines cross the neutral line can be used to create a "standard of quality window", and constitutes the area within which a manager could establish a standard of quality. However, setting a standard within the "standard of quality window" may represent the upper limits of a minimum acceptable condition and it is suggested that standards be set within what Needham terms "optimal or preferred standard of quality window" (2002 :246). The "optimal or preferred standard of quality window" represents the impact between the minimum acceptable condition and the point where the lower tolerance respondents' line crosses the neutral line. Setting standards within the "optimal or preferred standard of quality window" may represent a precautionary approach to management as the condition being managed is being maintained better than the minimum acceptable condition requires (Hendee 1990). These "standard of quality windows" provide the manager with a range within which to set standards, based on levels of acceptability and consensus rather than setting standards based on just the minimum acceptable

condition as found in most studies and represents an advancement to the social norm curve (Needham, 2002).

Therefore, results are discussed based on the foregoing. Generally, as the density of kayaks encountered on the water increases the level of acceptability decreases. It appears that 93.8% (mean 1.78 sd. 0.77) of respondents find encountering 0 kayaks acceptable, and 95.5% (mean 1.74 sd. 0.71) feel one kayak is acceptable with little variation in the responses. Respondents feel that encountering 3 kayaks is still acceptable (mean 1.13 sd. 0.96), however 42.8% find 3 kayaks 'somewhat acceptable' and 40.7% find 3 kayaks 'very acceptable' indicating increased variation in responses. As density increases to 6 kayaks, there is even more variability in responses (mean -0.79 sd. 1.21), however the majority of respondents (68.8%) feel that encountering 6 kayaks is unacceptable. 77% (mean -1.63 sd. 0.84) of the respondents feel that encountering 9 kayaks is very unacceptable and this increases to 89.3% (mean -1.18 sd. 0.67) as the density increases to 12 kayaks. Variation in the range of responses is indicated by the standard deviation of the mean illustrated graphically as the crystallization line in Figure 5.4. The minimum acceptable condition (MAC 4.76 sd 1.10) is not highly crystallized as indicated by the relatively high standard deviation. Therefore, managers could set the standard of quality for this condition within the optimal or preferred standard of quality window from 3.22 (84% acceptance) to 4.75 (50% acceptance) kayaks / 1500 m². However, as suggested by Rollins and Robinson (2002), when consensus does not exist, it may be possible to identify subgroups that share within each subgroup a higher level of consensus than in the whole of the group" (:131). Using the specialization index developed for this study, variability of social norms for different impact levels was addressed by examining the norms of low specialized visitors, or generalists and highly specialized visitors, or specialists.



Photograph 1: 2 tailed t-test ($t = -2.314$, $df 629$, $sig. .004$, $p < .05$)

Photograph 2: 2 tailed t-test ($t = -1.790$, $df 630$, $sig. .032$, $p < .05$)

Photograph 3: 2 tailed t-test ($t = -2.01$, $df 627$, $sig. .841$, $p > .05$ (ns))

Photograph 4: 2 tailed t-test ($t = 2.054$, $df 619$, $sig. .036$, $p < .05$)

Photograph 5: 2 tailed t-test ($t = 1.010$, $df 628$, $sig. .313$, $p > .05$ (ns))

Photograph 6: 2 tailed t-test ($t = -.272$, $df 629$, $sig. .786$, $p > .05$ (ns))

Visitor norms for acceptability of "kayaks on the water at any one time" appear to be related to their level of specialization (see Figure 5.6 and Table 5.4). As illustrated in Figure 5.6, statistically significant differences in mean acceptability ratings between low and highly specialized visitors exist for three of the six photographs. For the photograph showing 0 kayaks, highly specialized visitors, or specialists find the absence of kayaks more acceptable (mean 1.90 sd. 0.50) than low specialized visitors or generalists (mean 1.74 sd. .84) ($p < .05$). Similar findings exist for the photograph showing 1 kayak where specialists find the presence of 1 kayak more acceptable (mean 1.83 sd, 0.51) than generalists (mean 1.71 sd. 0.76) ($p < .05$). In both cases, not only do specialists find the conditions of 0 and 1 kayak more acceptable, but the mean is more highly crystallized, suggesting greater levels of agreement among specialists than generalists. Differences exist in mean acceptability ratings between generalists and specialists for the photograph showing 6 kayaks; generalists find this condition to be more acceptable (mean -0.73 sd. 1.22) than specialists (mean -0.96 sd. 1.16) ($p < .05$). These findings suggest that specialists find the absence of or one other kayak more acceptable than generalists, but find the condition with 6 kayaks less acceptable than generalists, echoing the findings of Inglis and others (1999). These results support the explanation that experienced wilderness users may "embrace the idea that wilderness is

for solitude" (Hammit, McDonald et al. 1984).

Table 5.4 Characteristics for Social Norm Curves for the "Number of Kayakers" Indicator for Low and Highly Specialized Groups

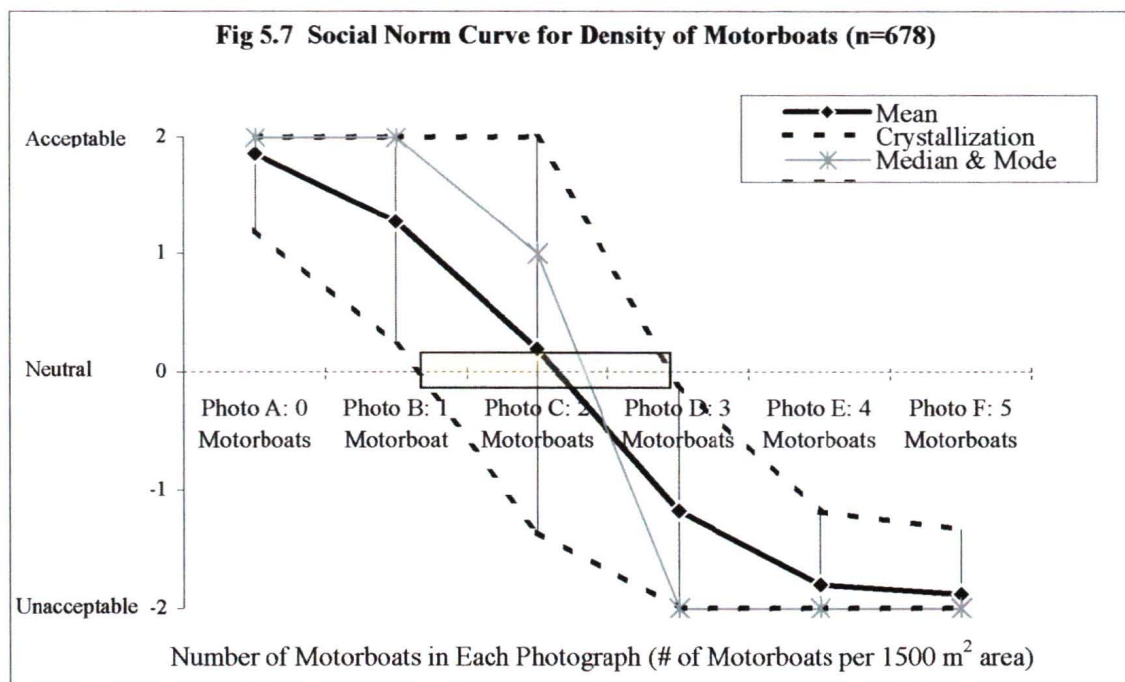
Characteristics of Norm Curve	Low Specialized (n = 466)	High Specialized (n = 166)	Total (n=678) ¹
Optimal/Preferred Condition	0	0	0
Norm Intensity/Salience (Max = 4.0)	3.56	3.71	3.58
Range of Acceptable Conditions	0 - 4.81	0 - 4.62	0 - 4.76
Minimum Acceptable Condition (MAC)	4.81	4.62	4.76
Crystallization of MAC	1.12	1.05	1.10
Norm Prevalence	97.8%	96.9%	97.3%
Standard of Quality Window	3.20 - 7.13	3.25 - 6.54	3.22 - 7.05
Optimal/Preferred Standard of Quality Window	3.20 - 4.81	3.25 - 4.62	3.22 - 4.76

¹Total (n = 678) is greater than the sum of each of the low specialized (n = 466) and high specialized (n = 166) as respondents with missing data were excluded from the specialization index

5.4.3.2 Norms and Standards of Quality for the "Motorboats on the Water At Any One Time" Indicator

The norm curve for the indicator "motorboats on the water at any one time" is illustrated in Figure 5.7. Results reveal that respondents feel that 0, 1 and 2 motorboats / 1500 m² at any one time are acceptable. However, when respondents are presented with 3, 4, and 5 motorboats, they feel that these conditions are unacceptable. Therefore, the optimal or preferred condition is zero motorboats and the minimum acceptable condition, where the norm curve crosses the neutral line from acceptable to unacceptable conditions is between 2 and 3 motorboats. The minimum acceptable condition is calculated to be 2.14 motorboats per 1500 m² area and therefore, the range of acceptable conditions is between zero and 2.14 motorboats per 1500 m². Respondents also feel strongly about this indicator of quality suggested by norm intensity or salience, the distance of the curve above and below the neutral line and calculated to be 3.73 out of a possible value of 4. This suggests that density of motorboats may be a good indicator of quality because respondents feel it is important (Manning 1999), and in fact respondents feel more strongly about the number of motorboats than the number of kayaks. Further, this indicator of quality is a single tolerance indicator, that is respondents are willing to tolerate some encounters with motorboats, but are unwilling to accept much impact beyond a certain level, in this case 2.14 / 1500m² motorboats. The majority of respondents (98.2%) are able to specify a personal encounter norm for this indicator, referred to

as norm prevalence, suggesting that this indicator is relevant (Donnelly, Vaske et al. 2000). Comparing these results to the findings of Vaske and others (1996), kayaker norms for encountering motorboats in Gwaii Hanaas were less tolerant, wanting to encounter 1 motorboat no more than twice a day in a wild place. Further, norm intensity in this study corroborates the findings of Vaske and others who found that kayakers felt strongly about encountering motorboats as illustrated by the sharp decline in the norm curve.



Optimal/Preferred Condition: **0 Motorboats / 1500 m²**

Range of Tolerable/Acceptable Conditions: **0 to 2.14 Motorboats / 1500 m²**

Minimum Acceptable Condition: **2.14 Motorboats / 1500 m²**

Crystallization (Standard Deviation) of MAC: 1.31

Norm Intensity/Salience of Mean (Max = 4.0): **3.73**

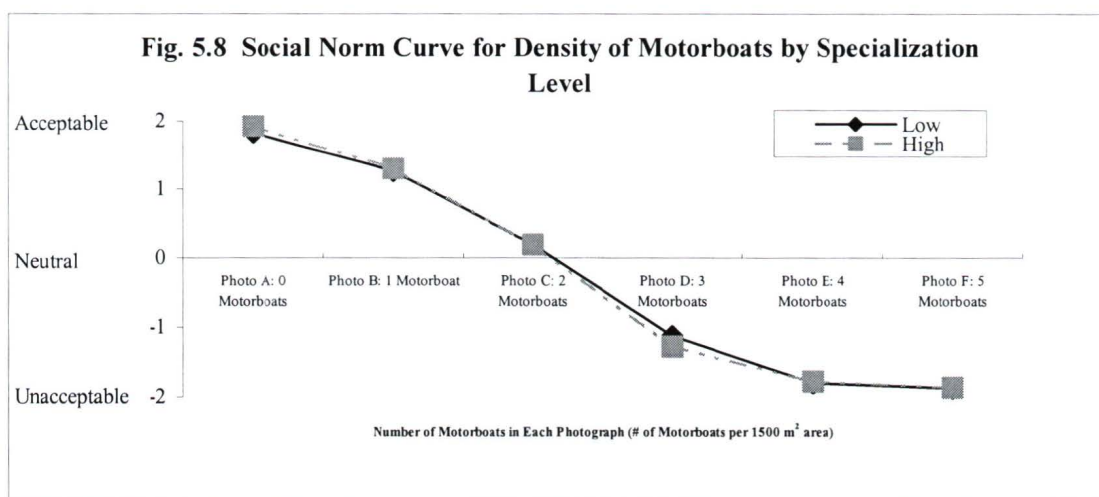
Norm Prevalence: 666/678 = **98.2%**

Standard of Quality Window: **1.17 - 2.94 Motorboats / 1500 m²**

Optimal/Preferred Standard of Quality Window: **1.17 - 2.14 Motorboats / 1500 m²**

Generally, as the density of motorboats encountered on the water increases the level of acceptability decreases. It appears that 95.7% of respondents find encountering zero motorboats acceptable. Respondents feel that encountering 1 motorboat is still acceptable, however 34.2% find 1 motorboat 'somewhat acceptable' and 52.8% feel 1 motorboat is 'very acceptable', indicating variation in responses. As density increases to 2 motorboats, there is even more variability in responses, 54.2% feel encountering 1 motorboat is acceptable and 33.7% feel it is unacceptable. It is when respondents are presented with the photograph of 3 motorboats that the majority of respondents (79.4%) find this condition unacceptable. Acceptability ratings continue to decline as the density of motorboats is increased: 96.4% of

respondents find 4 motorboats unacceptable and 97.4% of respondents find 5 motorboats unacceptable. Variation in the range of responses is indicated by the standard deviation of the mean illustrated graphically as the crystallization line in Figure 5.7. There is considerable variation in responses as shown by the low crystallization (large standard deviation) at the minimum acceptable condition (sd 1.31). Therefore, managers could set the standard of quality for this condition within the optimal or preferred standard of quality window from 1.17 (84% acceptance) to 2.14 (50% acceptance) motorboats / 1500 m².



Photograph A: 2 tailed t-test ($t = -1.536$, $df 628$, $sig. .071$, $p > .05$ (ns))
 Photograph B: 2 tailed t-test ($t = -.417$, $df 628$, $sig. .676$, $p > .05$ (ns))
 Photograph C: 2 tailed t-test ($t = .052$, $df 613$, $sig. .959$, $p > .05$ (ns))
 Photograph D: 2 tailed t-test ($t = 1.633$, $df 624$, $sig. .103$, $p > .05$ (ns))
 Photograph E: 2 tailed t-test ($t = -.138$, $df 628$, $sig. .891$, $p > .05$ (ns))
 Photograph F: 2 tailed t-test ($t = -.022$, $df 629$, $sig. .982$, $p > .05$ (ns))

Given the large standard deviation and low crystallization, it is important to examine levels of agreement among subgroups. In this study, visitor norms for acceptability of "motorboats on the water at any one time" do not appear to be related to their level of specialization (see Figure 5.8 and Table 5.5). As illustrated in Figure 5.8, there are no significant differences in mean acceptability ratings between low and highly specialized visitors for any of the conditions illustrated in the six photographs. These findings suggest that specialization, as developed for this study, does not account the variation in encounter norms for motorboats. Further research is required to examine the relationship between encounter norms with motorboats and other possible influences.

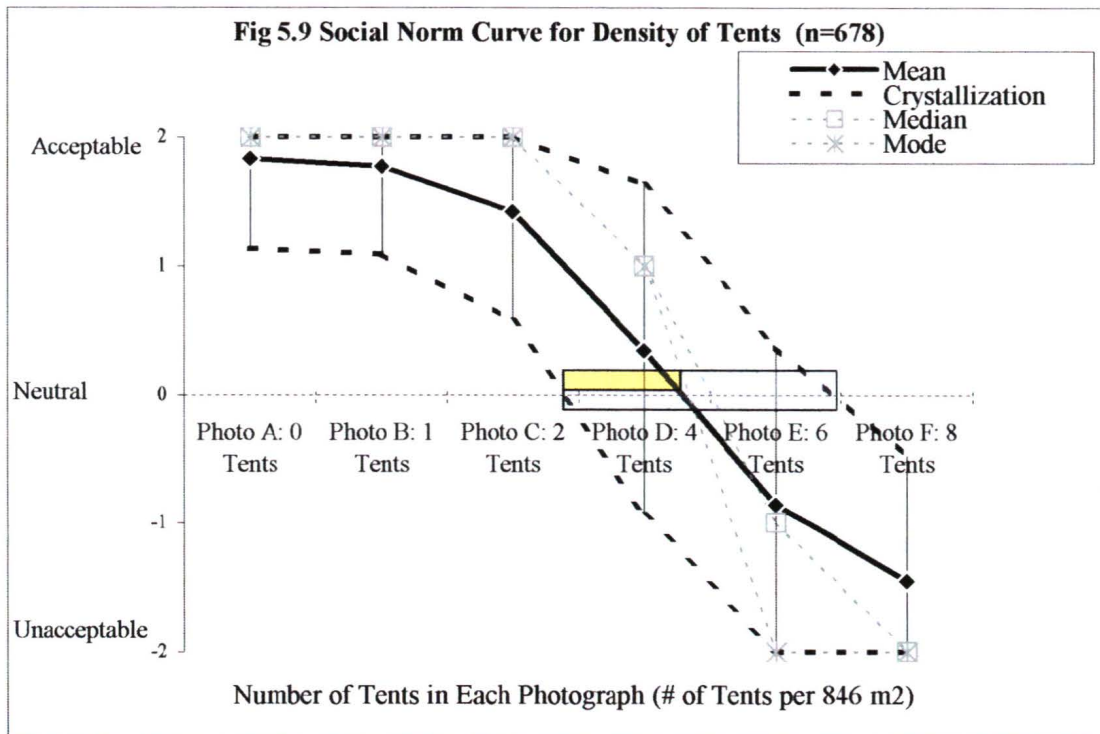
Table 5.5 Characteristics for Social Norm Curves for the Number of Motorboats Indicator for Low and Highly Specialized Groups

Characteristics of Norm Curve	Low Specialized (n = 466)	High Specialized (n = 166)	Total (n=678) ¹
Optimal/Preferred Condition	0	0	0
Norm Intensity/Salience (Max = 4.0)	3.70	3.80	3.73
Range of Acceptable Conditions	0 - 2.14	0 - 2.17	0 - 2.14
Minimum Acceptable Condition (MAC)	2.14	2.17	2.14
Crystallization of MAC	1.31	1.00	1.31
Norm Prevalence	98.9%	97.5%	98.2%
Standard of Quality Window	1.14 - 2.97	1.21 - 2.87	1.17 - 2.94
Optimal/Preferred Standard of Quality Window	1.14 - 2.14	1.21 - 2.17	1.17 - 2.14

¹Total (n = 678) is greater than the sum of each of the low specialized (n = 466) and high specialized (n = 166) as respondents with missing data were excluded from the specialization index

5.4.3.3 Norms and Standards of Quality for the "Number of Tents at a Campsite at Any One Time" Indicator

Results in Figure 5.9 reveal that respondents feel that 0, 1, 2 and 4 tents / 846 m² are acceptable. However, when respondents are presented with 6 and 8 tents, they feel that these conditions are unacceptable. Therefore, the optimal or preferred condition is zero kayaks and the minimum acceptable condition, where the norm curve crosses the neutral line from acceptable to unacceptable conditions is between 4 and 6 tents. The minimum acceptable condition is calculated to be 4.58 tents per 846 m² area and therefore, the range of acceptable conditions is between 0 and 4.58 tents per 846 m² area. This single tolerance indicator is important, suggested by norm intensity of 3.28, and relevant as indicated by norm prevalence of 87.9%. These results are similar to the findings of Roggenbuck and others (1993) who found that the standard using the median for "groups that camp within sight or sound of my campsite" was 3 and Watson (1995) who found that the standard, using the mean, was 2.5 - 5.7 "number of nearby campers" (in Manning, 1999 : 138).



Optimal/Preferred Condition: 0 Tents / 846 m²

Range of Tolerable/Acceptable Conditions: 0 to 4.582 Tents / 846 m²

Minimum Acceptable Condition: 4.582 Tents / 846 m²

Crystallization (Standard Deviation) of MAC: 1.29

Norm Intensity/Salience of Mean (Max = 4.0): 3.28

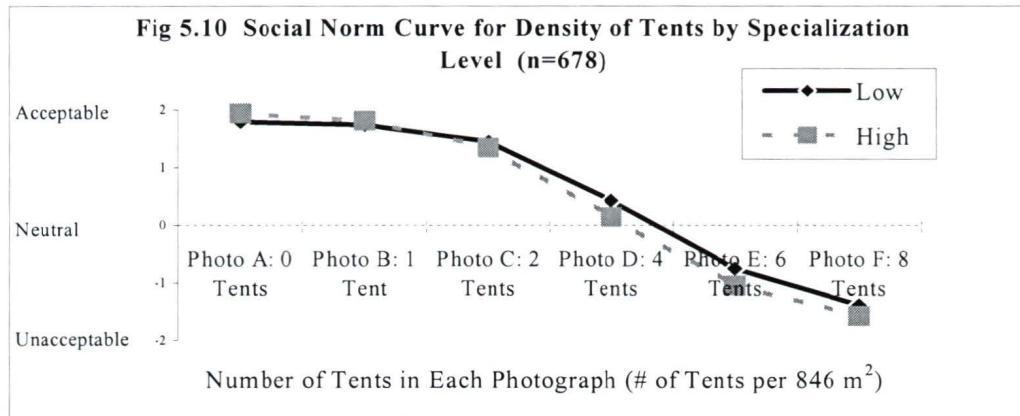
Norm Prevalence: 594/678 = 87.6%

Standard of Quality Windows: 2.74 - 6.90 Tents / 846 m²

Optimal Standard of Quality Windows: 2.74 - 4.58 Tents / 846 m²

Generally, as the density of tents per 846 m² increases the level of acceptability decreases. It appears that 95.3% (mean 1.83, sd 0.70) of respondents find 0 tents at a campsite acceptable and, interestingly more respondents, 96.2%, (mean 1.77 sd 0.68) find 1 tent at a campsite acceptable, with little variation in the responses. 91.7% (mean 1.43 sd 0.84) of respondents feel that 2 tents at a campsite is still acceptable, however 33.9% find 2 tents 'somewhat acceptable' and 57.8% find 2 tents 'very acceptable' indicating increased variation in responses. As density increases to 4 tents, there is even more variability in responses, however the majority of respondents 58.7% (mean 0.35 sd 1.27) feel that 4 tents is acceptable. 71.6% (mean -0.9 sd 1.23) of the respondents feel that 6 tents is unacceptable and this increases to 86.3% (mean -1.45 sd 0.98) as the density increases to 8 tents. Variation in the range of responses is indicated by the standard deviation of the mean illustrated graphically as the crystallization line in Figure 5.9. There is considerable variation in responses as shown by the low crystallization or large standard deviation at the minimum acceptable condition (sd 1.29). Therefore, managers could set the standard of quality for this

condition within the optimal or preferred standard of quality window from 2.74 (84% acceptance) to 4.58 (50% acceptance).



Photograph A: 2 tailed t-test ($t = -2.397$, $df 629$, $sig. .002$, $p < .05$)

Photograph B: 2 tailed t-test ($t = -1.094$, $df 629$, $sig. .221$, $p > .05$ (ns))

Photograph C: 2 tailed t-test ($t = 1.351$, $df 625$, $sig. .177$, $p > .05$ (ns))

Photograph D: 2 tailed t-test ($t = 2.431$, $df 618$, $sig. .015$, $p < .05$)

Photograph E: 2 tailed t-test ($t = 2.545$, $df 625$, $sig. .009$, $p < .05$)

Photograph F: 2 tailed t-test ($t = 2.000$, $df 627$, $sig. .037$, $p < .05$)

Again, a large standard deviation, or low crystallization suggests the need to examine results by subgroup. In this study, visitor norms for acceptability of "tents at a campsite" appear to be related to their level of specialization (see Figure 5.10 and Table 5.6). As illustrated in Figure 5.10, differences in mean acceptability ratings between low and highly specialized visitors exist for four of the six photographs. For the photograph showing 0 tents specialists find the absence of tents more acceptable than generalists ($p < .05$). Differences exist in mean acceptability ratings between generalists and specialists for the photographs showing 4, 6 and 8 tents; generalists find each condition to be more acceptable than specialists ($p < .05$). These findings suggest that specialists find the absence of others more acceptable than generalists, but find the conditions with increasing density such as 4, 6, and 8 tents less acceptable than generalists, echoing the findings of Inglis and others (1999). These findings further support the explanation that experienced wilderness users may "embrace the idea that wilderness is for solitude" (Hammit, McDonald et al. 1984).

Table 5.6 Characteristics for Social Norm Curves for the Number of Tents Indicator for Low and Highly Specialized Groups

Characteristics of Norm Curve	Low Specialized (n = 466)	High Specialized (n = 166)	Total (n=678) ¹
Optimal/Preferred Condition	0	0	0
Norm Intensity/Salience (Max = 4.0)	3.18	3.51	3.28
Range of Acceptable Conditions	0 - 4.71	0 - 4.24	0 - 4.58
Minimum Acceptable Condition (MAC)	4.71	4.24	4.58
Crystallization of MAC	1.25	1.31	1.29
Norm Prevalence	87.0%	89.7%	87.6%
Standard of Quality Window	2.85 - 6.86	2.48 - 6.34	2.74 - 6.90
Optimal/Preferred Standard of Quality Window	2.85 - 4.71	2.48 - 4.24	2.74 - 4.58

¹Total (n = 678) is greater than the sum of each of the low specialized (n = 466) and high specialized (n = 166) as respondents with missing data were excluded from the specialization index

5.4.4 Relationship between normative evaluations and guided and non guided trip type

Encounter norms may vary according to visitor characteristics, characteristics of those encountered and situational variables (Manning 1999). Most of the research has focused on differences in norms by activity type such as whether those encountered are canoers, fishers or boaters (Vaske, Donnelly et al. 1996). This study examined encounter norms by trip type, specifically guided and non-guided visitors. Results indicate (Table 5.7) that there are few statistically significant differences in encounter norms by guided and non guided visitors. Differences in encounter norms exist in only three conditions: non-guided visitors find the condition of 6 kayakers more unacceptable than guided visitors ($p = .015$); non guided visitors find the condition of 4 ($p = .002$) and 5 ($p = .048$) motorboats more unacceptable than guided visitors. This finding is interesting, as when the variation in responses to motorboat acceptability was examined by specialization, no significant differences were apparent suggesting the need to examine the variance of motorboat encounter norms by variables other than specialization. These results suggest that whether the visitor is guided or non-guided may influence visitor norms. These differences could be explained, in part, by the premise that guided visitors may very well be new and first time visitors to the area and have higher density tolerance (Hammit, McDonald et al. 1984; Roggenbuck 1991; Hall & Shelby 1996).

Table 5.7 Relationship Between Guided and Non Guided Visitors and Acceptability of Other Kayaks, Motorboats and Tents

# OF ITEMS	Mean Acceptability Rating ¹			
	Guided n = 152	Non Guided n = 525	Sig.	t
KAYAKS				
0 Kayaks	1.69	1.80	.142	-1.603
1 Kayak	1.68	1.76	.329	-1.185
3 Kayaks	1.15	1.12	.692	0.396
6 Kayaks	-0.58	-0.85	.015*	2.435
9 Kayaks	-1.50	-1.67	.067	2.146
12 Kayaks	-1.73	-1.83	.168	1.642
MOTORBOATS				
0 Motorboats	1.78	1.88	.126	-1.782
1 Motorboat	1.25	1.27	.859	-0.178
2 Motorboats	0.12	0.20	.558	-0.586
3 Motorboats	-1.05	-1.21	.113	1.586
4 Motorboats	-1.65	-1.83	.002*	3.156
5 Motorboats	-1.78	-1.90	.048*	2.352
TENTS				
0 Tents	1.76	1.85	.209	1.380
1 Tent	1.76	1.77	.984	-0.020
2 Tents	1.43	1.42	.907	0.116
4 Tents	0.31	0.35	.782	-0.277
6 Tents	-0.84	-0.85	.883	0.148
8 Tents	-1.47	-1.44	.803	-0.249

¹Mean acceptability rating ranged from -2 very unacceptable to +2 very acceptable

*Significant at $p < .05$ (2-tailed t-test)

5.4.5 Correlation between Density in Photographs and Acceptability Ratings

In addition to the previous findings which support the use of the visual approach, Table 5.8 illustrates the association between the density within each photograph and the acceptability ratings for each condition. Results illustrate statistically significant, strong negative correlations from $r = -.788$ for density of tents; $r = -.824$ for density of motorboats and $r = -.836$ for density of kayakers indicating that as density increases for each indicator acceptability ratings decrease. When amount of variation in acceptability ratings is examined by using the r^2 value, we see that 62.1% of variation in acceptability ratings for density of tents. 67.8% of variation in acceptability ratings for density of motorboats and 69.9% of variation in acceptability ratings for density of kayakers can be explained by the increasing density in each of the

photographs. These results indicate the strength of the visual technique in assessing normative evaluations.

Table 5.8 Correlation Between Density in Photographs and Acceptability^a

	# of Kayakers ^b (n = 4170) ^c	# of Motorboats ^c (n = 4154) ^c	# of Tents ^d (n = 4160) ^e
Pearson's R: Density/Acceptability	-.836	-.824	-.788
R ²	.699	.678	.621
Sig.	.000	.000	.000

^aResponse categories are -2 = Very Unacceptable to +2 Very Acceptable

^bDensity Ranges for 0 kayaks / 1500 m² to 12 kayaks / 1500 m²

^cDensity Ranges for 0 motorboats / 1500 m² to 5 motorboats / 1500 m²

^dDensity Ranges for 0 tents / 846 m² to 8 tents / 846 m²

^eThe sample sizes for each set of density situations are six times larger than the actual sample sizes. This is because there are six photographs (of increasing levels of density for each situation) and subsequent acceptability ratings for each respondent.

In addition to validating the visual technique as an effective measure of crowding norms, these results provide evidence of strong association between the measure of acceptability and numbers of kayaks, motorboats and tents within each photograph. Traditionally, research into the relationship between the effect of use levels on crowding perceptions reveal generally weak and nonexistent relationships in some studies and moderately strong relationships in others (Manning 1999; Stewart & Cole 2001). Studies by Tarrant & English (1996) and Tarrant, Cordell and others (1997) report weak to moderate correlations ($r^2 = .04$ to $r^2 .34$) (see Manning, 1999 for a more complete review). This means that only 4% to 34% of crowding perceptions can be explained by use levels in these studies. This study used the question wording "acceptability" and by correlating the acceptability ratings with the density or numbers in the photographs resulting correlations become much stronger ($r^2 = .62$ to $r^2 .69$). These results indicate that 62.0% to 69.0% of acceptability or perceptions of crowding can be explained by the numbers or use levels depicted in the photographs. These results represent a substantial increase in the strength of relationship from previous studies and further research is warranted given these findings.

5.4.6 Participant Observation Results

Manning (1999) calls for a need for behavioural measures of crowding and precisely, multiple measurement approaches. Sharpe (2002) states that "the lack of understanding about how people make sense of encounters during their outdoor recreation trip has led to contradictory research findings" (:98) and

led her to adopt a participant observation approach in her exploration of encounters of the guided group trip. Sharpe (2002) concluded that not only were encounters treated as events that visitors made sense of as they happened, but the guide had an influential role in "negotiating" the encounter experience. By adopting the participant observation as a complementary approach to the survey technique in this study, the researcher was able to explore the encounters of the guided group trip.

Field notes, generated from the participant observation portion of this study, provide insights into social encounters on the water and in the campsites. Selected notes are presented here to support the quantitative findings and add richness and depth to this study.

Excerpts from field notes corroborate the quantitative findings of spatial variance in crowding perceptions on the water and in the campsites. While numbers of encounters on the water varied greatly among the different trips, for the most part when encountering other kayakers on the water, other groups initiated greetings. There were no apparent concerns about encountering others or perceptions of crowding while on the water. As well as encountering other kayakers, there were few motorboat encounters on the water during these four trips. However, one exceptional encounter is worth noting.

"While traveling between islands as a group in our kayaks, a zodiac pulled up and gave our guide some items from the outfitters head office needed for the group. The wind had picked up considerably and the zodiac captain told our guide that he had just assisted a single capsized in Coaster Channel. Our guide commented that motorboats are one of the first responders in times of rescue".

Although no trip members commented on this encounter, this experience suggests that while kayakers have low levels of acceptability for encountering motorboats, motorboats have been integral in the safety of kayakers experiences, providing a positive context for the encounter. Overall, there was no evidence to suggest the perceptions of crowding on the water or encounters on the water were perceived negatively.

The density of campers at Dodd Island provided interesting insights into crowding and influencing factors. Approximately twenty five people, in fifteen tents were within an area approximately 150 feet in length and half that in width. Two of our ten group members appear disappointed at this level of density and agitated with one commenting "it's too crowded here for me". When we returned back from our day's outing, there were now forty-five people camping here. The group response appears stronger:

"A group have camped right beside us despite having the south end of the island campsite completely free. This group is considerably noisier than the previous group taking up space

psychologically and socially. All of our group members comment that it's crowded. However, our guides' responses are mixed. The male guide does not appear to be upset at any of this and the female guide is particularly upset with their camping right beside us".

Campsite encounters appear to be "negotiated" much differently than encounters on the water.

While water encounters were generally positive and social, there appeared to be tremendous variation by group and by guide in the social negotiation of encounters in the campsites.

"When this couple and their two kids arrived, a group of three men from non commercial groups were very social and helpful, offering to assist them to move their boat. However, the same interaction did not occur between our group and them".

"Tonight a couple arrived late and were about to put their tent up in the middle between our groups where there was very little room, while there was lots of campsite room a little further down. Our guide approached the female and told her about the available space and the woman was terribly offended".

Guides were, typically, very conscious of other groups and particularly spatial issues within campsites, as indicated in the following field note excerpt:

"When we arrived at the campsite, although no others were in sight, our guide explained that we needed to keep our tents close together to allow room for others who might be camping here, indicating to me a concern about social contacts with other groups and not wanting to take up too much space"

This consideration was also evident by other guides when approaching a much more crowded campsite; however it is the guests' reactions that were somewhat surprising:

"Our guides are very conscious of other groups. When we arrived on Benson Island there were a number of people around and a group of seven arrived. Our guides wanted to ensure we made room for them. However, our guests' comments were opposite with one stating "make them go away". Our guide responded that he wanted us to camp close together to ensure that we did not take up too much space".

These findings corroborate the findings of Sharpe (2002) who concluded that the guide was integral in establishing contact and creating the "environment" for the encounter. However, guides were highly variable in their efforts to manage social encounters. One guide commented:

"I consider it important in maintaining good relationships as the kayaking world is a small world and it is very important to remain social with all groups".

However, this perspective is startlingly different from the perspective of a trip guide on a different trip:

"this particular guide does not encourage shared campfires because people stay past their time and ask many questions. He feels that because the sport is so popular now that there is a greater variability in paddlers, some/many less knowledgeable. The guide admits that he promotes social contact with guided groups before non guided groups".

This lack of social interaction with non-guided groups is further evidenced during a different trip:

"tonight we have a fire below the winter high tide line, while the non-guided group next door has a fire as well. Despite these fires being less than eight to ten feet apart, there was no social interaction between the groups".

Variation in response to encounters by guided and non guided visitors as well as by guides suggests that encounters and perceptions of crowding are situationally "negotiated" based on the individuals involved, the location and the nature of the interaction as suggested by Jonas and others (2000) and Sharpe (2002). One explanation for the variation in responses to social situations between guided and non guided visitors may be linked to the concept of "perceptions of alikeness", that is the degree to which groups are perceived as being alike may affect crowding perceptions (Manning 1999). This theory would suggest that non-guided and guided visitors perceive the other as substantially different from themselves. Field excerpts provide evidence to support this concept. The role of the kayak guide provides another explanation for variation in responses to social conditions. Field excerpts suggest that the kayak guide is important in the how, what and when social encounters with others are mediated, corroborating the findings of Sharpe (2002). Manning (1999) suggests that past research indicates "as long as contacts with other groups are not considered disturbing, they may not engender feelings of crowding" (:107). Guides may play an important role in managing for positive group interactions, thereby potentially reducing visitors perceptions of crowding. However, results indicate significant variation between guides in how these contacts or encounters are negotiated.

5.5 Conclusions

This chapter was designed to reveal evaluative information regarding social conditions in the Broken Group Islands. Specifically, visitors' evaluations of encounters, perceptions of crowding and norms for three social indicators number of kayaks, number of motorboats and number of tents were examined. Additionally, the situational and personal factors that interact to influence perceived crowding, such as the influence of spatial differences, specialization and trip type were also examined. This chapter concludes with a summary of findings, study limitations, advancements and management implications.

5.5.1 Summary of Findings

Crowding measures used in this study reveal substantial and significant differences in crowding perceptions between "on the water" and "in the campsites" with 39% feeling crowded on the water and almost 80% of visitors feeling some degree of crowding in the campsites. This finding indicates that crowding is a problem in the campsites and supports the need to examine spatial differences in crowding within a single wilderness area. While the perceived crowding approach to managing the visitor experience informs managers when crowding is a problem, it lacks complete information about impacts and standards needed for defining a quality recreation experience (Shelby, Vaske et al. 1989). To address this, this study adopted the normative approach, using visual techniques to collect and organize data to formulate standards. Overall the approach adopted for this study appears successful, as respondents were able to specify their preferences, which were then aggregated and displayed on a social norm curve. The characteristics of this social norm curve help to define visitors' standard for a quality recreation experience summarized in Table 5.9.

Table 5.9 Summary of Characteristics and Standards for Social Norm Curves for the Indicators Number of Kayaks, Motorboats and Tents

Characteristics of Norm Curve	Kayaks / 1500 m ²	Motorboats / 1500 m ²	Tents / 846 m ²
Optimal/Preferred Condition	0	0	0
Norm Intensity/Salience (Max = 4.0)	3.58	3.73	3.28
Range of Acceptable Conditions	0 - 4.76	0 - 2.14	0 - 4.58
Minimum Acceptable Condition (MAC)	4.76	2.14	4.58
Crystallization (Standard Deviation) of MAC	1.10	1.31	1.29
Norm Prevalence	97.5	98.2	87.6
Standard of Quality Window	3.22 - 7.05	1.17 - 2.94	2.74 - 6.90
Optimal/Preferred Standard of Quality Window	3.22 - 4.76	1.17 - 2.14	2.74 - 4.58
Total (n = 678)			

However, an important finding is that there is variation in these responses and that not all visitors define a "quality recreation experience" the same way. When the variation in responses was examined by specialization level, it becomes apparent that specialists and generalists have different perspectives regarding a quality recreation experience. In general, specialists appear to value solitude and the absence of others more highly than generalists and have a lower acceptability of higher densities of kayaks and tents in

a campsite. Whether the visitor was guided or non-guided was not as powerful in explaining the variation in responses.

5.5.2 Management implications

These results have implications in a number of areas of recreation management. First, assessment of the crowding perception (cf.) Shelby and others (1989) indicates that the carrying capacity judgment for the water component of the study area, where 39% of visitors feel crowded, can be considered “low normal” and that a carrying capacity problem does not exist at this time. In contrast, evaluations of the campsite component where 79.8% of visitors feel crowded can be considered “more than capacity” to “much more than capacity” and management actions are necessary to preserve the experience, manage for high-density recreation or “sacrifice the area” (Shelby, Vaske et al. 1989 :285). Given that the study area is a National Park, management actions are warranted.

As the goal of management is to offer high quality recreation opportunities, management actions can benefit from the social science study of visitors. Current frameworks for resource management require managers to specify standards for the condition they aim to provide (e.g. number of campers in a given area). While managers may use a number of different sources in developing those standards and deciding on the appropriate management action including sources such as legal mandates, Parks Canada policy, stakeholder input and user opinion, research information about visitors' norms and minimum levels of acceptability are a useful component of a more informed decision environment (Shelby & Vaske 1991).

Managers could respond with a number of direct or indirect approaches. Direct approaches regulate visitor behaviour and may include establishing a quota or reservation system and zoning. The results reveal limits of acceptable change by defining visitors' minimum acceptable conditions for numbers of kayaks, motorboats and tents, information considered important in establishing reservation systems. While crowding issues are not currently apparent "on the water", crowding is an issue in the campsites and therefore the focus should be on the establishment of management standards for the campsites based on the standards revealed in this study. Using the "preferred standard of quality window" of 2.74 - 4.58 tents at one time, and assuming an average of two people/tent and seven available camping islands, the daily total number of tents allowed would be between 19 and 31.5 tents or approximately 38 to 63 people allowed to camp in the Broken Group Islands each day. Considering users stay an average of three nights, this

standard translates into limiting use to a range of 1900 to 3200 users over the entire season of 150 days. This management standard reflects the impacts acceptable to between 50% and 84% of visitors. Considerations important to this equation are the dispersal of users spatially and temporally, as over two thirds of the visitors travel in July and August and visitors rarely distribute themselves evenly across the campsites (Cochlin 1993). A reservation and quota system would allow for the even spatial and temporal distribution of visitors and have been shown to be most effective in mitigating visitor crowding (Manning 1999).

The analysis reveals the presence of two distinct groups of kayak visitors based on specialization levels: specialists and generalists who have statistically significant differences in sensitivity to crowding and normative standards. Manning (1999) suggests that to the extent feasible, recreation opportunities should be designed and managed for these segments. A management practice that may accomplish this is a zoning system that assigns types of users to a selected area. In this case, visitors could be segmented spatially and assigned to a particular camping island, for example, specialists in the outer islands and generalists and large groups to the inner islands. This approach can help to reduce crowding and conflict and increase social carrying capacity of the Broken Group Islands (Manning 1999).

Indirect management approaches place an emphasis on influencing or modifying visitor behaviour and include communication strategies that promote education. To assist with visitor dispersal, managers may want to consider pre trip information packages and site information that inform visitors of the various opportunities within the park, such as opportunity for solitude on the outer islands. Communication strategies such as this could be also targeted to the commercial visitor as this study reveals that guides may play an influential role in mediating social conditions and encounters with others. Managers should work with guides to provide information about expected use levels and encounters and how crowding is likely to vary across sites.

However, managers need to have an understanding of the consequences and impacts of any management strategy employed. The model proposed by Duffus and Dearden (1990) appears to be an appropriate framework for addressing this issue. Their model links the concepts of "limits of acceptable change" and specialization by examining how a destination, over time, increases in popularity and tends to attract fewer specialized visitors and more generalist visitors, often with different setting preferences. "As

the awareness of the site and associated activity grows, a less ambitious user will dominate the group. There will be a concomitant demand for more facility development, more mediation and increased pressure on both the social system and the ecosystem of the host area" (Duffus and Dearden, 1990). Study results reveal that 73.6% of users can be considered generalists who are less sensitive to crowding and tolerate higher density situations. By adopting management strategies that accommodate the evaluative standards of the generalist, "managers may inadvertently aggravate undesirable impacts from this recreational succession" (Hendee 1990 :191).

5.5.3 Advancements

Most crowding studies are situated within terrestrial settings. Inglis and others (1999) suggest that marine environments are very different from those considered in existing crowding research due to the relative openness of marine settings. Further, Rollins (1998) suggests that while marine or coastal wilderness settings share similar visitor management challenges as found in other types of settings, coastal wilderness settings present more management difficulties due to the difficulties and complexity of dispersing use away from the marine/terrestrial interface. This work represents one of the few studies to apply the visual approach to normative theory in defining and developing standards for management within a marine setting. Further, this research adopts and tests the advanced social norm curve model of Needham (2002) in setting and defining standards. Finally, this study provides evidence that the indicators used in this study, number of "kayaks", "motorboats" and "tents" are relevant and important indicators within a marine setting.

This work also incorporates and tests the visual approach to normative theory, considered a methodological advancement in accessing norms as it provides a visual cue (Manning, Lime et al. 1996). The use of photographs to illustrate encounter levels by embedding the photographs into the questionnaire may be considered a methodological improvement. While this method is expensive to employ, it allows for respondents to complete the questionnaire at their leisure, taking the time needed to evaluate each of the photographs. This methodological improvement may account for the very high norm prevalence results. However, there are limitations with a visual approach and these are addressed below.

Additionally, this is one of few studies that applies a diversified research approach to examining social conditions and encounters as suggested by Manning (1999). The participant observer approach,

while not definitively explaining variation in perceptions of social conditions and encounters, does suggest that the guide has an influential role in mediating or negotiating encounters with others, and supports the work of Jonas and others (2000) and Sharpe (2002).

5.5.4 Limitations

A number of limitations to the study need to be recognized. Firstly, the landscape and spatial arrangement of the features in the illustration or photograph may affect preferences for social conditions (Inglis, Johnson et al. 1999). However, in a study testing landscape perspective on responses, Manning and others (2002) found a small, but significant difference between one of six sets of photographs with different landscape perspectives. In comparison with other studies, this analysis resulted in lower norms for kayakers and higher norms for motorboats than Vaske and others (1996) whose visuals had a more open landscape perspective. This suggests the need for further research on landscape perspective on social crowding norms. A further limitation with the visual approach is that it does not account for behavioural factors, such as noise level nor does it account for the length of time in sight or the number of hours that pass without seeing anyone else. Thirdly, this study did not ask respondents how many times a day they were willing to encounter kayaks, motorboats and tents. However, encounter norm studies have consistently found that norms for encountering other groups during a wilderness experience are quite low, about four or fewer (Manning 1999). While this is not an acceptable substitute for actual study results, in order to calculate a daily standard for encountering kayaks and motorboats, it is suggested that managers use the encounter norm of four as suggested by a number of studies.

Another limitation is the measurement of evaluative standards. Using alternative evaluative dimensions can result in evaluative standards that range from a low associated with "preference" to a high associated with "tolerance". This study used "acceptability" as the evaluative dimension as "acceptability" results are considered to be mid-range and its common use allows for comparisons across studies (Manning, Valliere et al. 1999). Finally, this study does not sample all visitors to the Broken Group Islands, only those visitors who were kayaking within the Broken Group Islands. Prior to implementation of any management strategy it is important to understand the desired social conditions of all visitors to the area, including those visitors in motorboats and sailboats. However, it is important to understand that kayakers (and canoers) presently make up more than 94% of the users (Parks Canada 1994).

5.5.5 Further Research

There are two key areas where further research is warranted. First, this approach used the question wording "acceptability" and by correlating the acceptability ratings with the density or numbers in the photographs resulting correlations become much stronger ($r^2 = .62$ to $r^2 .69$). These results indicate that 62.0% to 69.0% of acceptability or perceptions of crowding can be explained by the numbers or use levels depicted in the photographs. These results represent a substantial increase in the strength of relationship from previous studies and further research is warranted given these findings.

Secondly, researchers have been recently concerned that studies of evaluative standards do not explicitly address the consideration of the tradeoffs associated with the evaluative judgments (Heywood 2000). That is, if respondents report being relatively intolerant of crowding impacts, then visitor use levels may be restricted. However, initial research indicates that when respondents are made more explicitly aware of the tradeoffs between the level of impacts they judge acceptable and the potential restriction on visitor use levels, evaluative standards are substantially higher than if such evaluative standards are measured in isolation (Manning, Valliere et al. 1999). This study did not ask respondents to explicitly consider the tradeoffs between crowding and access and further research is warranted.

Chapter 6: General Conclusions, Implications and Recommendations

6.1 Introduction

This study examined visitor management issues in the Broken Group Islands, Pacific Rim National Park Reserve (PRNPR). Effective visitor management becomes increasingly important given the growth of tourism and recreation within parks and protected areas coupled with the central position of the maintenance of ecological integrity as the National Park mandate. Managers must seek a balance between the provision of a quality visitor experience and the protection from the problems associated with increased visitor use (Cole & McCool 2000). As a result of excessive visitor use, problems such as crowding and overharvesting of resources are evident in many of our National Parks, and in particular the Broken Group Islands, PRNPR. However, ecological integrity is affected not just by the impacts of particular activities or particular levels of use, but also by the attitudes, values, beliefs and behaviours of parks visitors, regional communities, business, government and park partners (Parks Canada Agency 2000 11-2) which frame this study.

One approach to visitor management with a view to meet the above mandate is through park interpretation. Interpretation plays an essential role in educating visitors about ecological integrity and shaping their attitudes, values, beliefs and behaviours, both inside and outside of National Parks (Parks Canada Agency 2000 :11-2). However, as a result of reduced budgets, National Parks are not equipped to serve their visitors through this strategy; therefore there is recognition that collaboration with tourist operators may be an alternative option for the delivery of information. This general situation is also accompanied by a significant lack of information on both visitors in general and kayak tourism impacts.

The overall purpose of this exploratory study was to gain an understanding of protected area visitor management within the Broken Group Islands, (PRNPR) by examining three identified issues:

- (1) the role of commercially guided kayak ecotourism in the delivery of National Park messages;
- (2) visitor attitudes towards the "voluntary no fishing policy"; and
- (3) managing for visitor crowding.

Results from the study of these foci are used to develop recommendations to management and ecotourism operators to improve visitor management and use within protected areas while striving to protect natural resources.

6.2 Summary of Findings

The main findings of this study are summarized and organized by the chapter in which they were discussed.

6.2.1 Chapter 2: Recreational Use of Broken Group Islands

This chapter focused on descriptive information, providing valuable baseline data about visitor demographics and activities.

- Over 70% of visitors are from Canada, with 52% from British Columbia;
- The majority of visitors are between 30 and 49 years of age;
- The majority of visitors travel in groups of four or less;
- Visitors camp an average of four nights in the BGI;
- Camping use is concentrated on two inner islands: Willis, Dodd with similar levels of use experienced on Gibraltar and Clarke;
- While most visitors engage in wildlife viewing and hiking up to 18.2% engage in some form of harvest;
- Most visitors travel without a guide, however approximately 22.4% travel with a guide;
- Examination of specialization variables reveals that visitors are typically first time visitors, with two years or fewer kayaking experience, consider themselves novice or intermediate, do not own a kayak and have varying levels of enduring involvement in kayaking.

A significant finding of this chapter, in addition to the baseline information, is that kayakers vary in demographics, activities engaged in, experience, involvement in the activity of kayaking and how they travel. These results provide evidence that there is diversity within this visitor group and they cannot be considered a homogenous population; these findings are consistent with recreation research (Manning 1999).

The majority of visitors are highly satisfied with 85% reporting good or very good levels of overall satisfaction and over 80% are satisfied with individual aspects of satisfaction, with the exception of availability of firewood.

Results regarding visitor levels of knowledge revealed that half of the park heritage messages are not understood by approximately half of the respondents. These findings are similar to other studies of measuring visitor knowledge in wilderness settings (Manning & Lime 2000), and suggest possible improvement for visitor learning could potentially lead to improved visitor behaviour.

The success of a "voluntary no fishing policy", implemented as a resource management tool to protect threatened rock cod populations in the park, depends upon visitor support. However, results reveal variability in visitor attitudes as half of the respondents support the policy and half do not. As expected,

results show that respondents have a diverse range of opinions regarding the beliefs underlying their attitudes towards the policy. Of the positive beliefs, opinions are divided, 58.3% believe that the voluntary no fishing policy would retain food sources for other creatures. Regarding negative beliefs, opinions are also divided with 44.4% believing the policy will detract from visitors' satisfaction.

Visitors have different perceptions of crowding depending on whether the setting is on the water or in the campsites. 39% of visitors found the water setting crowded, however 80% found the campsites crowded. This spatial difference in crowding perceptions is consistent with the findings of previous studies (Rollins 1998; Needham 2002) and contributes to understanding spatial differences in crowding perceptions within marine wilderness settings. As this study reflects, crowding in wilderness settings continues to be a concern with users, and may be enhanced in marine settings due to the marine and terrestrial interface concentrating use on the beaches of small islands. While these results are useful in indicating a problem, they do not answer the questions "what is the level of acceptable use" and "at what point does crowding occur" as discussed in Chapter 5.

A significant finding in this chapter is the variability in visitors' demographics, experience, knowledge, attitudes and preferences within the same activity, and reinforces the sentiment that "there is no such thing as an average camper" (Clark & Stankey 1979). A leading approach to this feature is through the concept of "specialization". Recreation specialization, defined as a "continuum of behaviour from the general to the particular, reflected by equipment, skills used in the sport and activity setting preferences" has been advanced as a way of meaningfully disaggregating participants in specific activities into more homogenous subgroups (Bryan 1977: 175). Following the approach of previous studies (Donnelly, Vaske et al. 1986; Virden & Schreyer 1988), a summative specialization index was created using the five variables: first visit, experience, years involved, boat ownership and level of involvement. As discussed throughout this study, there are limitations with a summative index such as obscuring the strength of individual variables to account for variation (McIntyre & Pigram 1992). Despite limitations, the summative index is easily understood, simple to apply and considered exploratory. However, there is no consensus on index construct (Scott & Shafer 2001), consequently further research is warranted that investigates the strength of variables that comprise a specialization index as well as alternative measures of specialization.

Applying this study's index to the data, results indicate that 73.6% (n = 466) of all respondents can be considered "low specialized", a generalist or novice and 26.4% (n = 167) of visitors can be considered "highly specialized", a specialist or expert.

6.2.2 Chapter 3: Interpretation and Role of the Guide

Based on a ten-item knowledge quiz of natural heritage messages, results reveal that the generalist visitor has significantly lower knowledge levels than a specialist visitor suggesting the need for improved interpretation services. Significant differences observed in guided pre to post learning scores suggest two important findings: firstly, that pre trip exposure to interpretation messages may influence visitors overall knowledge gain; and secondly, that the guide may have an influential role in guided participants' learning experience. Given that many visitors to the area are novices, the role of the tour guide becomes critical for improving the understanding of heritage messages and modeling and shaping appropriate visitor behaviour and values of the guided visitor.

An examination of the role of the tour guide adopted the model based on the work of Cohen (1985) and modified by Weiler (1992). Cohen (1985) first conceptualized the role of the guide in four distinct sub roles of guiding:

- (1) an instrumental role focused on organization and management;
- (2) an interactionary role focused on the facilitation of encounters with the host populations;
- (3) a social role centered on leadership in the form of social interaction; and
- (4) a communicative role involving information dissemination.

Weiler (1992), noting that the model did not incorporate the needs of the host or natural environment extended the model to include two roles encompassing the dimension of the host environment: motivator of responsible behaviour and environmental interpreter.

Importance-performance analysis of the role of the guide suggests that while kayak tour guides perform highly in instrumental and interactionary roles that include skills such as safety, navigation, and organization, they have yet to perform their communicative, environmental interpreter and motivator of responsible environmental behaviour roles to the level desired or expected by tour participants. This provides some indication that the guide's role must evolve from the "original pathfinder" focused on

instrumental skills to “professional guide” focused on communicative and interpretive skills to meet visitor demands.

Cohen's (1985) model, adapted by Weiler (1992) appears to have been an appropriate framework within which to examine the role of the guide, as respondents were able to differentiate between role dimensions and attributes. Importance-performance analysis enhanced the interpretation of the results by illustrating visually the areas of strength and improvement, as well as the variability of responses. This study builds on the work of Cohen (1985) and Weiler (1992) by applying the model to marine based tourism. However, given the relative paucity of studies investigating the role of the guide and the limited data on marine based tourism, further research is warranted that investigates the role of the guide within a marine setting in enhancing the visitors experience and the natural environment. Additionally, this study found that participant observation enhanced the quantitative findings, suggesting that future research should incorporate both survey based and qualitative methods.

6.2.3 Chapter 4: Determining Attitudes Towards the Voluntary No Fishing Policy

The Theory of Reasoned Action was used as a framework for examining visitor attitudes towards the voluntary no fishing (VNF) policy. This theory posits that "behavioural intentions" (eg. comply with the policy) are shaped by a person's attitude to the policy and social pressures (from the kayaking group) regarding the policy. The application of this model indicates that intention to support the policy is more heavily influenced by visitors' attitude. This implies that if managers want to change visitors' intention to support the policy, managers need to strengthen the attitude toward performing that behaviour, by changing or reinforcing visitors' salient beliefs by enhancing perceived benefits or diminishing perceived concerns.

The influence of normative beliefs (i.e. social group) was particularly high for the participant observation sample, suggesting that the guide may be an important referent to guided visitors, supporting the findings of Bange (1984). When results were examined by guided and non guided visitor type, findings suggest that the guide may be in a position to influence visitor attitudes towards the policy, as respondents whose guide commented on the policy were more supportive of the policy than respondents whose guide did not comment on the policy. Managerial implications of this finding include the need for park management to align tour operators and guides with the VNF and to ensure that guides are able to

communicate the salient beliefs to guided visitors to reinforce or change visitor attitudes and support towards the policy.

Attitude influenced intention to a greater extent for specialists than for generalists, and the normative beliefs for generalists had a greater influence than did normative beliefs for specialists, supporting the findings by Manfredo et al (1992) that first time visitors would be more influenced by situational factors rather than attitudes to the specific behaviour. As well, specialists tend to be more supportive of the policy than generalists.

This study has contributed to an increased understanding of resource management within National Parks, and in particular, visitors' support of a voluntary no fishing policy. Given its utility in recreation research environments characteristic of this study, the Theory of Reasoned Action was an appropriate model to examine visitor attitudes, normative influences and underlying beliefs towards the policy. The significant correlation observed among the components of the model supported a connection between visitor beliefs, attitudes and intention to support the policy while providing support for the model. The success of this model in predicting intentions is suggestive of future applications of the Theory of Reasoned Action to other resource management issues in National Parks. Further research applying the Theory of Reasoned Action model to a variety of management issues is warranted to assist park managers in developing interpretive programs designed to enhance visitor support or modify visitor behaviour.

6.2.4 Chapter 5: Perceived Crowding in the Broken Group Islands

The results reveal that crowding is a problem in both campsites and on the water and supports the need to examine spatial differences in crowding within a single wilderness area, as discussed under section 6.2.1. However, just knowing that some people are crowded, does not provide managers with enough information to take appropriate actions. To address this need, the normative approach was adopted to measure visitors' acceptance for differing densities as portrayed in photographs depicting various density levels. Overall this approach appears successful, as respondents were able to specify their preferences for the density of kayaks, motorboats and tents. Results were displayed on a social norm curve. Characteristics of the norm curve assist in identifying those conditions that visitors find minimally acceptable, and can be used as standards of quality to define the recreation experience. Applying Needham's (2002) advanced social norm curve, standard of quality windows and optimal/preferred standard

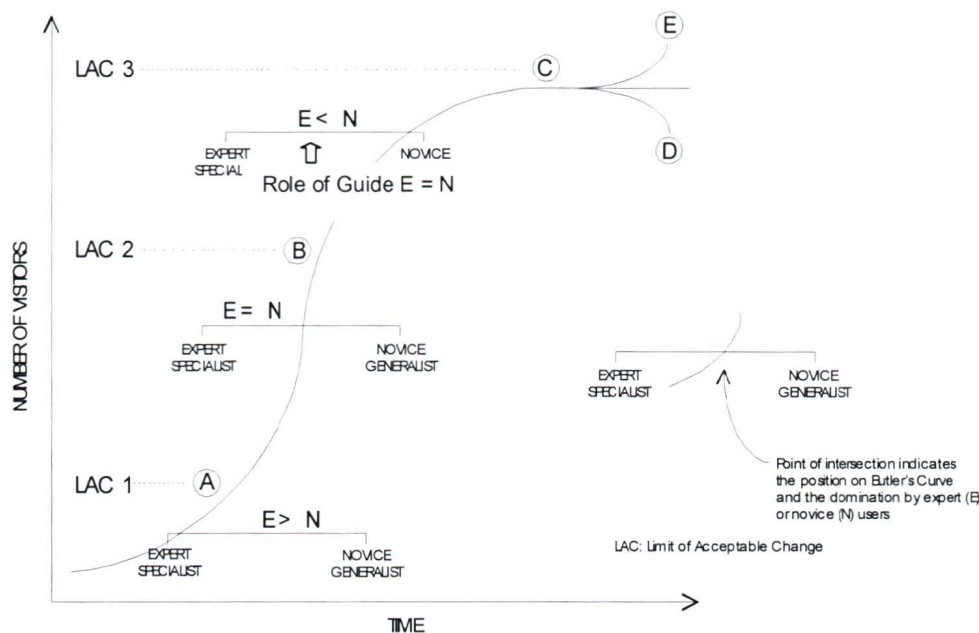
of quality windows were developed providing a range of conditions acceptable to the visitor according to visitor characteristics. For example, the Standard of Quality Window reveals density acceptability ranges from 3.22 - 7.05 kayaks per 1500 m²; 1.17 - 2.94 motorboats per 1500 m² and 2.74 - 6.90 tents per 846m².

However, an important finding is that there is variation in visitor's levels of acceptability, and that not all visitors define a quality recreation experience the same way. This study reveals that specialists and generalists have statistically significant differences in sensitivity to crowding and normative standards. Consistent with other studies, specialists are more sensitive to crowding, appear to value solitude and the absence of others more highly than generalists and have a lower acceptability of higher densities for two of the social indicators, kayaks and tents in a campsite. The application of recreation specialization theory to this study was appropriate allowing the segmentation of visitors into distinct groups and a useful technique to account for response variability in setting preferences.

6.3 Management Implications

These findings can be linked to the model proposed by Duffus and Dearden (1990) (Figure 6.1) which builds on the work of Butler (1980) and incorporates the concepts of specialization after Bryan, (1977) and limits of acceptable change after Stankey et al (1985). As predicted by the model "as the awareness of the site and associated activity grows, a less ambitious user will dominate the group. There will be a concomitant demand for more facility development, more mediation and increased pressure on both the social system and the ecosystem of the host area" (Duffus and Dearden, 1990). The model suggests that if the dominant level of specialization among the user groups is known, the relative level of maturity of the destination can be estimated, providing valuable indicator information for management. Specifically, a specialist majority implies fewer visitor numbers and little management intervention, while a generalist majority implies greater visitor numbers, greater pressure on the tourist area, and a demand for more interpretation (Duffus & Dearden 1990). As an example, if the majority user in the Broken Group Islands is found to be a low specialized user or a generalist, demanding easier access and developed campsites while tolerating higher density situations, then it is very likely that the specialized user seeking a wilderness experience and solitude has been displaced (Manning 1999). However, Hendee (1990) states that managers may inadvertently aggravate undesirable impacts from this "recreational succession" by

responding to increases and changes in users with development to accommodate generalist demands, such as allowing a greater number of tents at campsites (:190).



LAC 1: May allow for a maximum number of visitors with minimum facilities and negligible impact. Depending upon the management goals for the site this point may define the carrying capacity or limits of acceptable change (after Stankey, 1975)

LAC 2: Broadening of LAC to accommodate increased facilities upon increased visitor demands

LAC 3: May be the point where maximum visitors can still maintain the activity

Point D: Past LAC 3, experience degrades and visitors decrease

Point E: May represent a related but different experience at the site with a less sensitive LAC

Figure 6.1 Relationship Between User Specialization, Role of the Guide and Site Evolution (After Duffus and Dearden (1990))

The results indicate the majority of kayaking visitors can be considered to be generalists (73.6%) as opposed to specialists (26.4%). Study results reveal that generalists tend to have lower levels of knowledge of heritage messages, lower levels of support for the VNF, are less sensitive to crowding and find higher density situations more acceptable than specialists. As the values and behaviour of specialists can be viewed as being more congruent with the National Parks mandate regarding visitor services, adopting management strategies that accommodate the standards of a quality experience of the generalist will tend to displace specialists and further compromise ecological integrity.

Results indicate the majority of *all* kayaking visitors are generalists and guided visitors tend to be generalists compared to non-guided visitors. From this we can conclude that guided kayak tourism within the BGI brings in more generalists than non-guided kayak tourism with greater demands for services, such as access services (eg. water taxi) and facilities, which can compromise natural park values and ecological integrity. An important finding however is that the guide may be influential in guided visitors' knowledge

gains and therefore, instrumental in shaping visitors values and behaviour. Therefore, from a National Park perspective, the role of a tour guide is critical in shaping use values and behaviour more to the specialist end of the spectrum. Using the model developed by Duffus and Dearden (1990), enabled an understanding that the tour guide may play an integral role in influencing generalists attitudes, beliefs and values to become more like specialists, potentially contributing to a reduced or stabilized demand for more facility development and services as well as decreased pressure on both the social system and the ecosystem of the host environment.

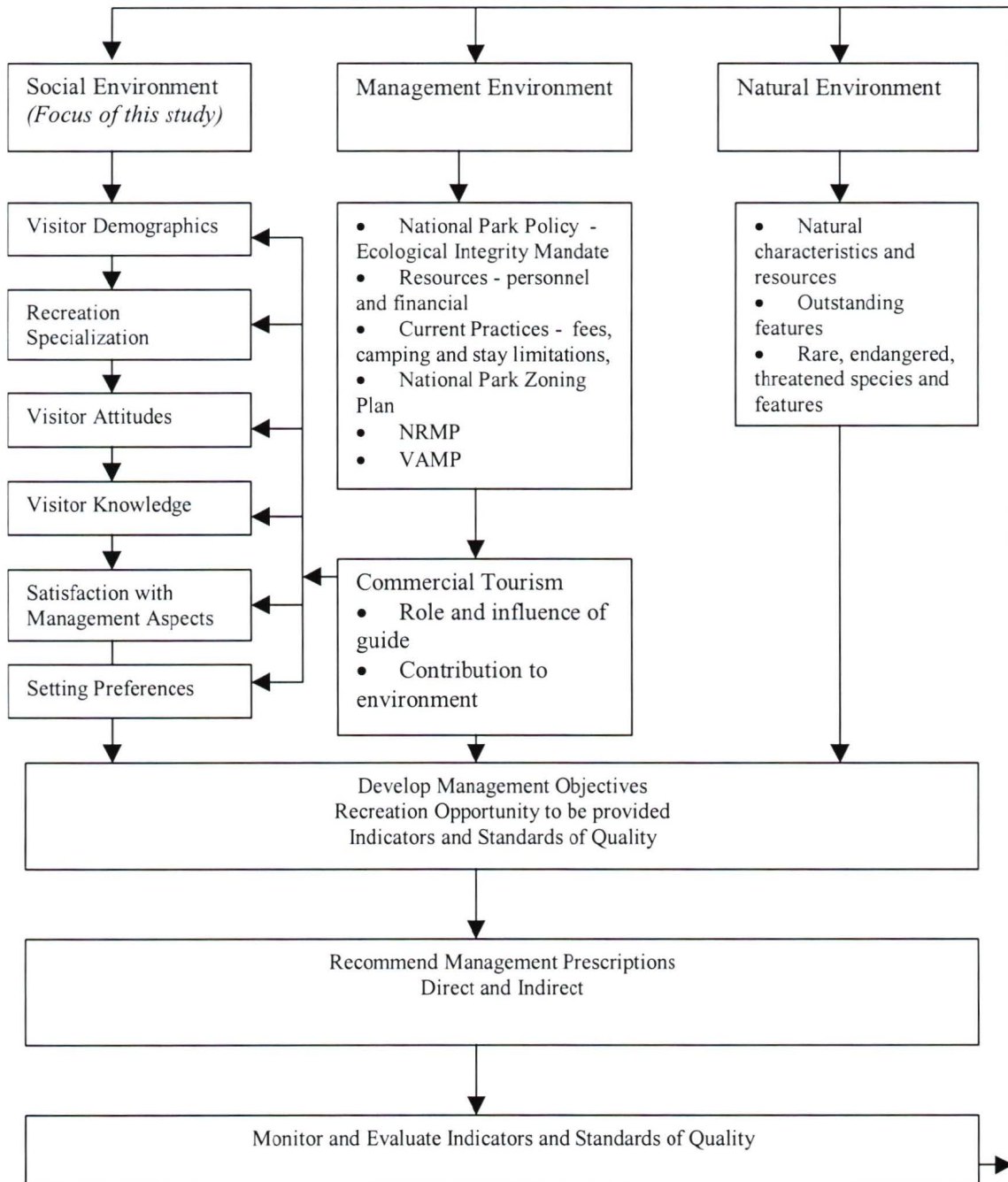
6.4 Recommendations

One of the objectives of this study was the development of recommendations to managers and ecotourism operators to improve visitor management within protected areas while striving to protect natural resources. The following discussion of recommendations is aided by the structured recreation management framework adapted from Manning (1999) (Figure 6.2). Recognizing the complexity and multidisciplinary nature of recreation of management, this model incorporates baseline data from the social, management and natural environment components in management decision making.

An inventory of the management environment includes an understanding of legislative mandates, existing personnel and financial resources, the park zoning scheme as well as recognition of existing managerial frameworks such as Visitor Activity Management Process (VAMP), developed in the late 1980's to complement its existing Natural Resource Management Process (NRMP) (Payne & Nilsen 2002). VAMP framework focuses on visitor activity profiles commensurate with natural resource characteristics identified under the NRMP process. This process provides managers with a detailed understanding of visitor activities enabling the tailoring of programs, services and facilities accordingly (Payne & Nilsen 2002). Additionally, an examination of commercial tour activities is appropriate under management environment as this study has shown that commercial tourism, particularly the guide, may influence visitors' attitudes, beliefs and behaviours.

The social environment, the focus of this study, recognizes the inherent diversity of park visitors and incorporates input based on visitor demographics, specialization, attitudes, knowledge, satisfaction and setting preferences which all contribute to an informed decision making environment and the development of management objectives based on science.

Figure 6.2 Recreation Management Framework for Broken Group Islands, Pacific Rim National Park Reserve (after Manning, 1999)



This model reflects the need to consider social indicators as well as the contributions from and potential of commercial tour operators in managing for the protection of ecological integrity. Working from this model, recommendations for improved visitor management for the Broken Group Islands with direct and indirect management prescriptions are summarized as follows:

- **Kayak tour guide education focused on interpretation and environmentally responsible behaviour is critical in order to safeguard the natural resource.**

In addition to focusing on “hard” skills such as paddling technique, theory such as navigation and weather, safety, and group management, tour guide training models should also focus on protecting the natural environment. Although it is recognized that low impact camping techniques are incorporated into many kayak guide training programs, it is evident from this study's results that guides as motivators of responsible behaviour have the potential for improvement. To build on the guides' potential as an interpreter and motivator of environmental behaviour, Parks Canada should collaborate with tourist operators by developing and delivering training models focusing on interpretation and National Park heritage messages with an ecological integrity focus. While there is little literature on guide training (Gurung, Simmons et al. 1996; Weiler & Ham 2002), Parks Canada Agency could approach guide education from training models such as the newly developed "model for sustainable tour guide training" (Weiler & Ham 2002). Additionally, National Park agency involvement in the form of operating standards that reflect the needed skills set and knowledge to protect the natural resource are essential. However, operating standards should ideally have mandatory licensing requirements, as past studies indicate the vast majority of tour operators do not use professionally trained interpreters and only one third used the staff training services provided by the park agency (Hockings 1994).

To operate within Gwaii Haanas National Park, guides must attend a business workshop that overviews the management regime of Gwaii Haanas, the National Parks Act and Regulations, and the visitor orientation (Parks Canada Agency 1999). Further, the management plan proposes the development of an “apprenticeship program” allowing trainees the opportunity to gain local knowledge and heritage interpretation skills (Parks Canada Agency 1999). Models such as this would strengthen the role of the guide as an information conduit and model for responsible behaviour while attempting to satisfy Ecological Integrity Report recommendations to expand interpretive efforts through collaboration with tourist operators (Parks Canada Agency 2000).

- **Management must ensure that first time visitors to the park are well aware of the voluntary no fishing policy and the salient beliefs underlying a supportive attitude towards the policy.**

It is recognized that since August 2002 the VNF has been replaced by regulatory compliance restricting fishing of rockfish in the waters of the Broken Group Islands. Although it is no longer voluntary, compliance is even more important now due to the difficulties in enforcement given the current state of park resources.

Understanding that the majority of visitors are generalists who are generally less supportive of the policy than specialists has significant implications for management. In order to shape the generalist attitude and beliefs to align with the National Park mandate of the protection of ecological integrity these messages must be targeted to the majority of visitors. This could be achieved through orientation programs, pre trip information, and greater warden presence considered critical to a successful voluntary resource management program (Gubbay 1995, Osborne, Koski et al. 2001), and more critical given the lack of park resources.

Support for this policy is more heavily influenced by visitors' attitude than social group. By changing or reinforcing visitors' salient beliefs, managers can change or reinforce attitudes. In this case, to increase support for the no fishing regulation, interpretive messages would be developed around the beliefs that the policy would reduce litter caused by fishing, and more importantly, help to retain food sources for other creatures and protect marine life for future generations. Alternatively, messaging could be designed to weaken opponents' beliefs that a no fishing regulation would detract from their kayak experience or the satisfaction of visitor. Finally, given the potentially influential role of the kayak guide, park management should align tour operators and guides with the regulation and ensure that guides are able to communicate the salient beliefs to guided visitors to reinforce or change visitor attitudes and support towards the regulation.

- **Spatially and temporally manage visitor use to minimize social impacts at campsites.**

This study and previous studies have shown that over two thirds of the visitors travel in July and August and that visitors rarely distribute themselves evenly across the campsites, concentrating use primarily on two inner islands (Cochlin 1993; Rollins & Randall 2001 Unpublished Report). Managers could respond with a number of direct or indirect approaches. Direct approaches regulate visitor behaviour

and may include establishing a quota or reservation system and zoning scheme shown to be most effective in mitigating visitor crowding (Manning 1999). As crowding is more apparent in the campsites than on the water, the focus should be on the establishment of management standards for the campsites based on the standards revealed in this study. Using the standards of quality defined by visitors' minimum acceptable conditions for numbers of kayaks, motorboats and tents (Chapter 5), a reservation and quota system could be developed and would allow for even spatial and temporal distribution. However, care must be taken to consider the range of evaluative standards to ensure that managers are not accommodating just the values of the generalist, who tends to be more accepting of higher densities and less sensitive to crowding.

This study reveals two distinct groups of kayak visitors based on specialization levels: specialists and generalists who have statistically significant differences in sensitivity to crowding and normative standards. Manning (1999) suggests that to the extent feasible, recreation opportunities should be designed and managed for these segments. A management practice that may accomplish this is a zoning system that assigns types of users to a selected area. In this case, visitors could be segmented spatially and assigned to a particular camping island, for example, specialists in the outer islands and generalists and large groups to the inner islands. This approach can help to reduce crowding and conflict and increase social carrying capacity of the Broken Group Islands (Manning 1999).

Indirect management approaches place an emphasis on influencing or modifying visitor behaviour and include communication strategies that promote education. To assist with visitor dispersal, managers may want to consider pre trip information packages and site information that inform visitors of the various opportunities within the park, such as opportunity for solitude on the outer islands. Communication strategies such as this could be also targeted to the commercial visitor as this study reveals that guides may play an influential role in mediating social conditions and encounters with others. Managers should work with guides to provide information about expected use levels and encounters and how crowding is likely to vary across sites.

- **Finally, monitor social indicators of quality established in this study.**

Monitoring, the "systematic gathering, comparing and evaluation of data" (Hendee 1990 :190) is an important and inherent part of contemporary management frameworks (Manning & Lime 2000). Managers need to gather future data that reveals whether a crowding problem still exists with the

implementation of a quota or zoning system; if visitors' levels of knowledge have improved, if the interpretive and motivator roles of the guide are performed to the extent expected by management and visitors; and if visitors support of resource management policies increases with the implementation of an educational campaign designed to shape visitor attitudes and beliefs. Only with monitoring will managers understand if management prescriptions assist in shaping visitors attitudes, values, beliefs and behaviours that align with National Parks mandate to protect ecological integrity.

The importance and need for monitoring has two implications for park management:

1. Park management must allocate resources for scientific research within National Parks to inform management. Clearly, science and particularly social science as a basis for management is critical: "given the range of human management issues facing parks, the lack of sound social science advice is particularly worrying" (Parks Canada Agency 2000 :4-8);
2. Parks Canada Agency must embrace, value and incorporate science in its efforts to become a knowledge-based culture with a focus on ecological integrity.

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Appendix 1 Definitions:

Carrying Capacity: Is a fundamental concept in natural resources and environmental management referring to the ultimate limits to growth as constrained by environmental factors (Odum, 1959 cited in Manning, 1999).

Carrying capacity has also been defined as the level of use beyond which impacts exceed acceptable levels specified by evaluative standards (Shelby & Heberlein, 1984).

It is suggested that carrying capacity might vary according to the type and amount of management activity. The quality of a recreation experience might be maintained or even enhanced in the face of increasing use by means of more even distribution of visitors, appropriate rules and regulations, provision of additional visitor facilities and educational programs designed to encourage desirable user behavior. Thus, carrying capacity, as applied to outdoor recreation, was expanded to a three-dimensional concept: environmental, social and management considerations (Manning, 1999 :69)

Social Carrying Capacity:

Refers to the amount of visitor use that individual visitors can sustain before the number of visitors begins to intrude upon individual quality of the experience. Social carrying capacity is not an exact science and is highly dependent upon individual perceptions of the experience (Manning & O'Dell, 1997 :35)

Environmental Carrying Capacity:

Is concerned with the perceived and actual impacts on the ecosystem, and how use level affects plants, animals, soil, water and air quality (Shelby & Heberlein, 1986 :19).

Use level:

Is a physical concept relating number of people per unit of space; it is strictly neutral and suggests no psychological or experiential evaluation or interpretation (Manning, 1999 :93)

Crowding:

Has a psychological meaning; it is a negative and subjective evaluation of a use level (Manning, 1999 :93)

Encounter Norms:

Norms are standards that individuals use in evaluating behavior, activities, environments or management proposals as good or bad, better or worse. Recreation related norms address conditions that are the result of behavior and measure the degree to which certain conditions ought to exist. Encounter norms then are the levels of encounters, use or tolerance for density of other users that individuals have indicated as acceptable or unacceptable (Manning, 1999).

Limits of Acceptable Change:

Rests on the notion that recreational use inevitably produces change in both the social and environmental setting. It provides for a planning framework that establishes the identification of location, type and level of change considered appropriate and acceptable in recreation settings as well as the appropriate management strategies for maintaining and achieving those conditions (adapted from Hendee et al., 1990 :533; Stankey & McCool, 1984)

Specialization:

Based on the concept that through a process of socialization, recreationists may acquire specialized knowledge, skills, attitudes and norms that define their development from beginner to expert. Specialization is defined as a continuum of behavior from the general to the particular reflected by equipment and skill used in the sport and activity setting preferences. Grouping recreationists on

the basis of equipment, skill, experience, and other psychological components is a useful tool when determining setting preferences and attitudes of these different groups (Manning, 1999).

**Theory of
Reasoned Action:**

Initially developed by Fishbein & Ajzen in 1975, the theory of reasoned action is based on the assumption that human beings are usually quite rational and make systematic use of information available to them, and that people consider the implications of their actions before they decide to engage or not engage in a given behavior. The theory of reasoned action is used as a tool to predict and understand behavior by its underlying influences of intention to perform the behavior, attitude towards the behavior and group pressures to perform or not perform the behavior (adapted from Ajzen & Fishbein, 1980).

APPENDIX 2: Pre and Post Survey Instruments

2A: PRE TRIP SURVEY:

A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS



OJ Heggen ©

Survey of Visitors to the Broken Group Islands, Pacific Rim National Park Reserve

May – September 2001



University of Victoria
Department of Geography
PO Box 3050
Victoria, BC Canada V8W 3P5

YOUR EXPERIENCE IN THE BROKEN GROUP ISLANDS

Welcome to the Broken Group Islands. The purpose of this study is to gain an understanding of visitor opinions about the Broken Group Islands. The information from this study will be used to assist in the management of the area. Please complete this questionnaire and return it to the research attendant. Thank you for your cooperation. Your opinions are important.

Q1. Is this your first kayak visit to the Broken Group Islands?(Please circle appropriate number)

- 1 YES
- 2 NO

Q2. If this is NOT YOUR FIRST KAYAK VISIT, please indicate how many previous kayak trips to the Broken Group Islands were taken WITH A COMMERCIAL GUIDE and how many previous trips were taken WITHOUT A COMMERCIAL GUIDE (answer as many as applicable)

- _____ NUMBER OF PREVIOUS TRIPS TAKEN WITH A COMMERCIAL GUIDE
- _____ NUMBER OF PREVIOUS TRIPS TAKEN WITHOUT A COMMERCIAL GUIDE
- _____ OTHER
- _____ N/A

Q3. Are you using a commercial guide on THIS trip?

- 1 YES
- 2 NO

Q4. What activities do you plan to engage in while visiting the Broken Group Islands? (Circle all that apply)

- 1 CAMPING
- 2 HIKING/WALKING
- 3 WILDLIFE VIEWING
- 4 SALMON FISHING
- 5 FISHING FOR BOTTOM FISH
- 6 SHELL FISH GATHERING
- 7 CRABBING
- 8 KAYAKING
- 9 OTHER (please state: _____)

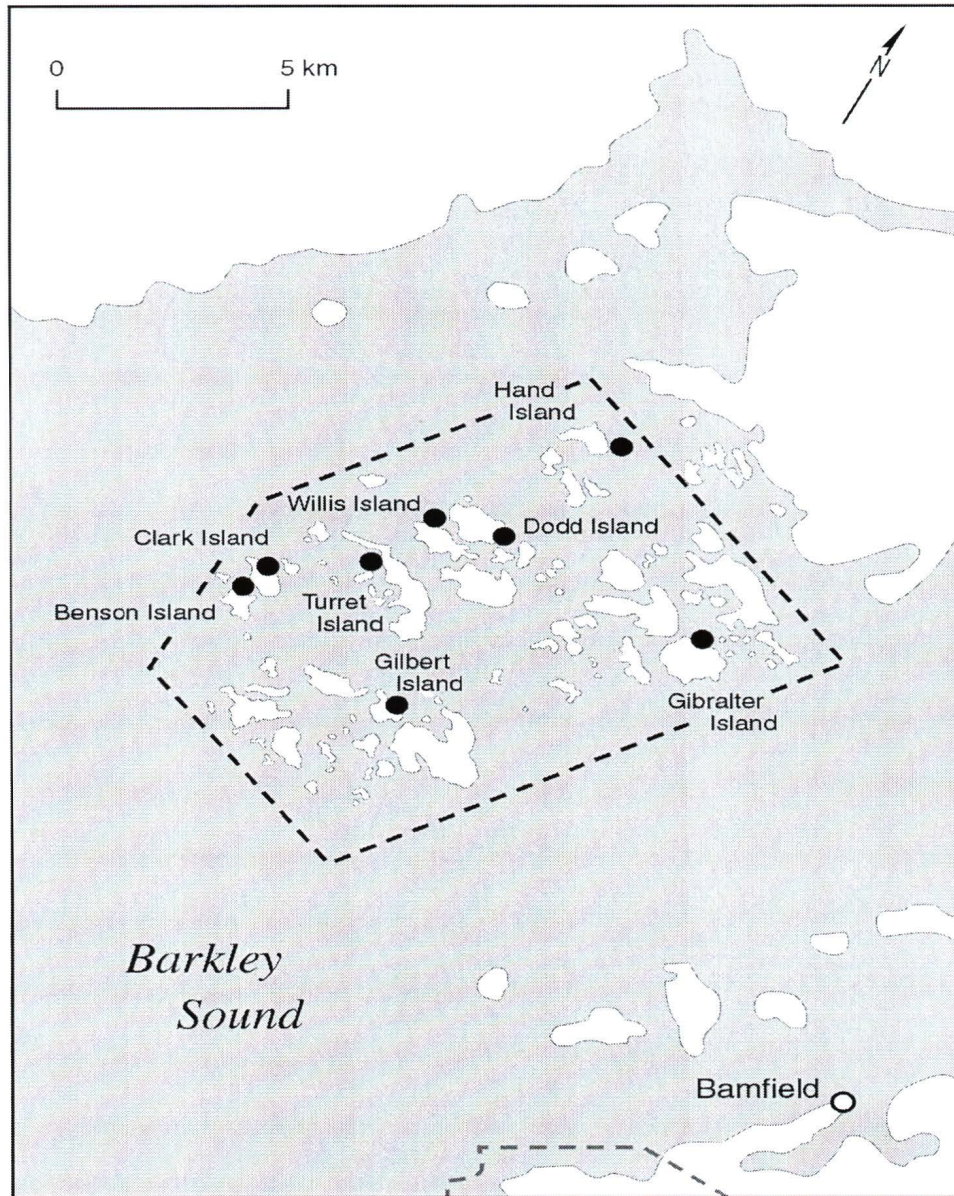
Q5. How many nights do you plan to spend at each of the following places?

- _____ NIGHTS CAMPING IN THE BROKEN GROUP ISLANDS
- _____ NIGHTS AT SECHART LODGE
- _____ NIGHTS CAMPING AT TOQUART BAY
- _____ NO PLAN

Q6. Referring to the map on the opposite page, how many nights do you plan to spend on each of the following islands? Answer as many as applicable.

- _____ NIGHTS ON HAND ISLAND
- _____ NIGHTS ON DODD ISLAND
- _____ NIGHTS ON WILLIS ISLAND
- _____ NIGHTS ON TURRET ISLAND
- _____ NIGHTS ON CLARK ISLAND
- _____ NIGHTS ON BENSON ISLAND
- _____ NIGHTS ON GILBERT ISLAND
- _____ NIGHTS ON GIBRALTER ISLAND
- _____ NIGHTS ON ANY OTHER ISLAND(S)
- _____ NO PLAN

MAP OF BROKEN GROUP ISLANDS



SEEING OTHER KAYAKERS ON THE WATER

Q7. The illustrations below portray different levels of contact with GROUPS OF KAYAKERS ON THE WATER AT ANY ONE TIME. Please rate how unacceptable or acceptable you feel about the numbers of other kayaks shown in each photograph by **circling your response below** where: **1 = VERY UNACCEPTABLE; 2 = SOMEWHAT UNACCEPTABLE; 3=NOT SURE; 4 = SOMEWHAT ACCEPTABLE; AND 5 = VERY ACCEPTABLE.**

PHOTO A

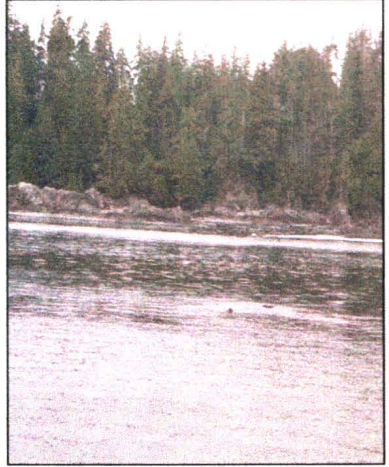


PHOTO B

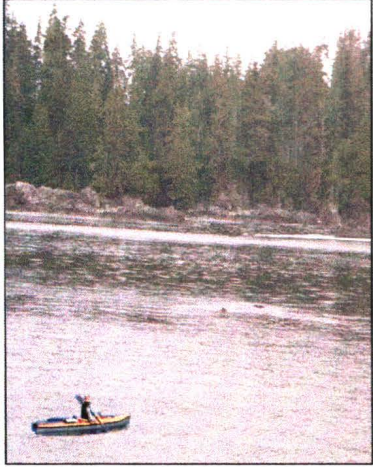


PHOTO C

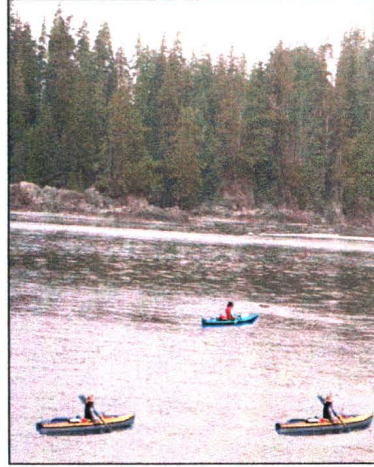


PHOTO D

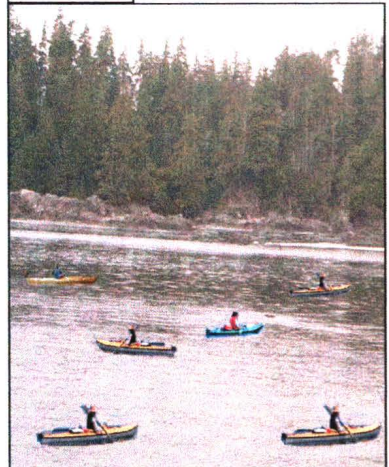


PHOTO E

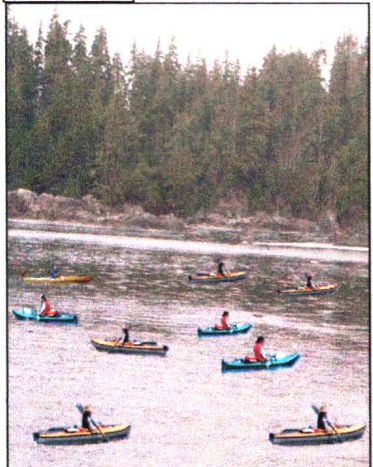
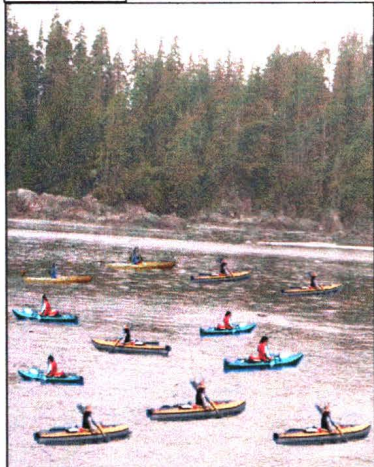


PHOTO F



YOUR RATING

	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
A Photograph A	1	2	3	4	5
B Photograph B	1	2	3	4	5
C Photograph C	1	2	3	4	5
D Photograph D	1	2	3	4	5
E Photograph E	1	2	3	4	5
F Photograph F	1	2	3	4	5

SEEING MOTORBOATERS ON THE WATER

Q8. As well as kayaks, it is important to know how you feel about seeing **MOTORBOATERS ON THE WATER AT ANY ONE TIME**. Please rate how unacceptable or acceptable you feel about the numbers of motorboaters shown in each photograph.

PHOTO A

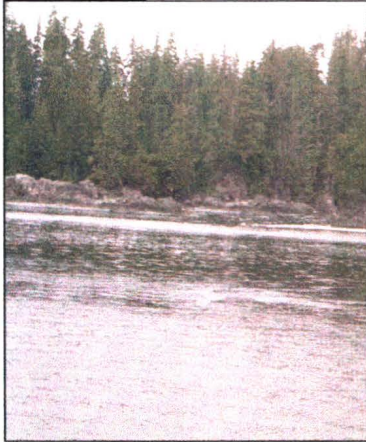


PHOTO B

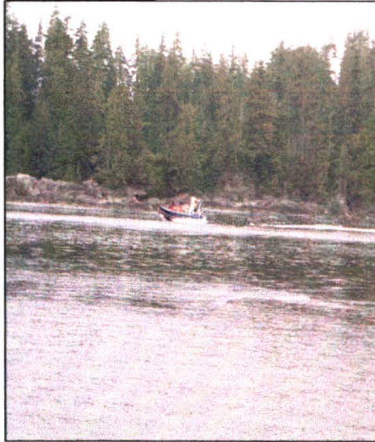


PHOTO C

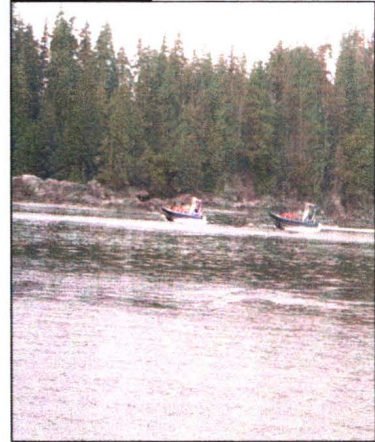


PHOTO D

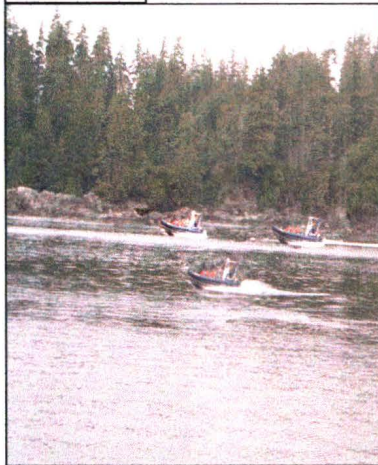


PHOTO E

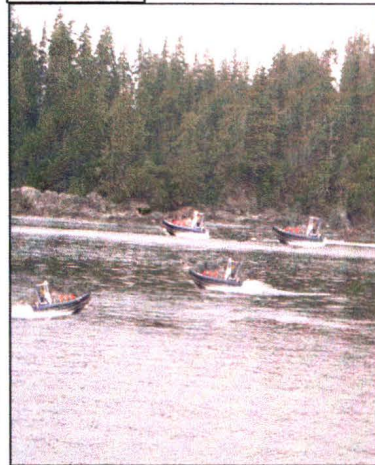
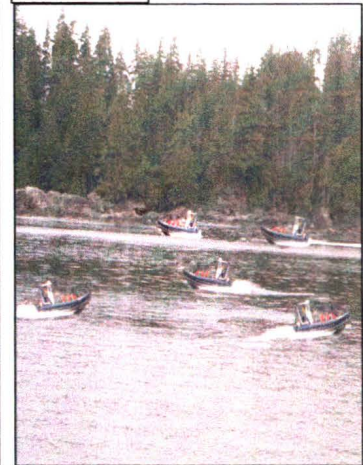


PHOTO F



YOUR RATING

	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
	▼	▼	▼	▼	▼
A Photograph A	1	2	3	4	5
B Photograph B.....	1	2	3	4	5
C Photograph C.....	1	2	3	4	5
D Photograph D.....	1	2	3	4	5
E Photograph E.....	1	2	3	4	5
F Photograph F.....	1	2	3	4	5

SEEING OTHERS AT CAMPSITES

Q9. It is important to know how you feel about the number of tents at campsites you may stay at. Focusing on the NUMBER OF TENTS AT A CAMPSITE AT ANY ONE TIME please rate how unacceptable or acceptable you feel about the numbers of other tents shown in each photograph.

PHOTO A



PHOTO B



PHOTO C



PHOTO D



PHOTO E



PHOTO F



YOUR RATING		VERY	SOMEWHAT	NO T	SOMEWHAT	VERY
		UNACCEPTABLE	UNACCEPTABLE	SURE	ACCEPTABLE	ACCEPTABLE
		▼	▼	▼	▼	▼
A	Photograph A	1	2	3	4	5
B	Photograph B.....	1	2	3	4	5
C	Photograph C.....	1	2	3	4	5
D	Photograph D.....	1	2	3	4	5
E	Photograph E.....	1	2	3	4	5
F	Photograph F.....	1	2	3	4	5

YOUR LEARNING EXPERIENCE

Q10. Below are a series of questions about the education and learning opportunities presented in the Broken Group Islands. For each question, please indicate whether you believe the answer is 1 = TRUE, 2 = FALSE, or 3 = DON'T KNOW.

Question:	TRUE ▼	FALSE ▼	DON'T KNOW ▼
A When watching marine life, such as whales, you should not get closer than 100 feet.....	1	2	3
B The BGI area is known as the "Graveyard of the Pacific"	1	2	3
C Sea stars are a common predator in the intertidal zone	1	2	3
D When having a fire and driftwood is not available, it is acceptable to use wood from the forest	1	2	3
E The BGI are administered by the Province of B.C.	1	2	3
F All of the BGI are protected from the Pacific's full force	1	2	3
G The BGI were historically inhabited by Coastal First Nations groups.....	1	2	3
H The BGI are along the migration path of Gray Whales.....	1	2	3
I Feeding wildlife is alright because they are probably hungry	1	2	3
J The First Nation's peoples in this area were whalers.....	1	2	3

Q11. Overall, how IMPORTANT would you rate the learning opportunities in the BGI?

1. NOT AT ALL IMPORTANT
2. SOMEWHAT IMPORTANT
3. VERY IMPORTANT
4. EXTREMELY IMPORTANT
5. NO OPINION

VOLUNTARY NO FISHING POLICY IN THE BROKEN GROUP ISLANDS

Q12. The Broken Group Islands is a marine protected area. Some people believe fishing in the Broken Group Islands is appropriate, while others believe it is not an appropriate activity in the Broken Group Islands. We would like your views. Please indicate how you feel about A VOLUNTARY NO FISHING POLICY WITHIN THE BROKEN GROUP ISLANDS (BGI) by circling one number beside each statement.

		STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
Do you agree or disagree that:						
A	A voluntary no fishing policy in the BGI will protect marine life for future generations	1	2	3	4	5
B	A voluntary no fishing policy in the BGI will detract from the satisfaction of other park visitors.....	1	2	3	4	5
C	A voluntary no fishing policy in the BGI will reduce the amount of litter caused by fishing	1	2	3	4	5
D	A voluntary no fishing policy in the BGI will have a negative economic impact on the sports fishery ...	1	2	3	4	5
E	A voluntary no fishing policy in the BGI will retain food sources for other creatures	1	2	3	4	5
F	A voluntary no fishing policy in the BGI decreases my food source while in the BGI	1	2	3	4	5
G	A voluntary no fishing policy in the BGI will have a low compliance rate	1	2	3	4	5
H	A voluntary no fishing policy in the BGI will take away from my kayak experience	1	2	3	4	5

Please indicate how you feel about a voluntary no fishing policy in the BGI by placing an X at the appropriate location beneath each of the following statements:

Q13. How strongly do you support or oppose a VOLUNTARY NO FISHING POLICY IN THE BGI:

OPPOSE: _____ : _____ : _____ : _____ : _____ : _____ : _____ : SUPPORT
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q14. Most members of my kayaking group think I SHOULD OR SHOULD NOT SUPPORT THE VOLUNTARY NO FISHING POLICY IN THE BGI

SHOULD NOT: _____ : _____ : _____ : _____ : _____ : _____ : _____ : SHOULD
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q15. Generally speaking, I want to do what most members of my kayaking group think I should do

NOT AT _____ : _____ : _____ : _____ : _____ : _____ : _____ : A GREAT
 ALL: Extremely Quite Somewhat Neither Somewhat Quite Extremely :DEAL

Q16. For me to support the VOLUNTARY NO FISHING POLICY IN THE BGI in the future is:

UNLIKELY: _____ : _____ : _____ : _____ : _____ : _____ : _____ : LIKELY
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

ROLE OF THE GUIDE

Q17. It is very important to understand the role of commercial tourism within National Parks. The presence of commercial tourism such as kayak tour guides may impact positively or negatively on your experience, even if you are not traveling with a commercial guide. Thinking about travel with a commercial kayak tour guide, please provide your opinions on the role of a tour guide. Please indicate HOW IMPORTANT or UNIMPORTANT you feel each of the following statements is by circling a number beside each statement.

How important is:		NOT AT ALL IMPORTANT ▼	SOMEWHAT IMPORTANT ▼	VERY IMPORTANT ▼	EXTREMELY IMPORTANT ▼	NO OPINION ▼
A	The guide sets a pace for the trip that is comfortable for you.....	1	2	3	4	5
B	The guide discusses hazards that may be present in the BGI	1	2	3	4	5
C	Any tension or conflict that emerges is handled quickly and effectively by your tour guide.....	1	2	3	4	5
D	The guide promotes a social and happy group environment	1	2	3	4	5
E	The guide reduces conflict with other groups at campsites or on the water	1	2	3	4	5
F	The guide keeps the group organized and on schedule	1	2	3	4	5
G	The guide introduces you to cultural points of interest such as 1 st Nations' history	1	2	3	4	5
H	The guide provides field guides and books for the group	1	2	3	4	5
I	The guide discusses "Leave No Trace" camping ethics with the group	1	2	3	4	5
J	The guide highlights the importance of not removing any First Nation artifacts or relics	1	2	3	4	5
K	The guide helps you to develop a keener awareness and appreciation of the area.....	1	2	3	4	5
L	The guide increases your knowledge and understanding about the natural environment of the BGI.....	1	2	3	4	5

ABOUT YOU

To help us understand your views, we would like to know about your kayaking experience.

Q18. About how many years have you been involved in kayaking?

_____ YEARS

Q19. Do you own your kayak?

- 1 YES
- 2 NO

Q20. How would you describe your level of experience in kayaking?

- 1 NOVICE
- 2 INTERMEDIATE
- 3 ADVANCED
- 4 EXPERT

Q21. Regarding your involvement in the activity of kayaking, please indicate how much you agree or disagree with the following statements

		STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
Do you agree or disagree that:		▼	▼	▼	▼	▼
A	Kayaking is one of the most enjoyable things I do.....	1	2	3	4	5
B	Kayaking offers me relaxation when life's pressures build up.....	1	2	3	4	5
C	I enjoy discussing kayaking with my friends.....	1	2	3	4	5
D	Kayaking is very important to me.....	1	2	3	4	5
E	Kayaking says a lot about who I am	1	2	3	4	5
F	When I am kayaking I can really be myself.....	1	2	3	4	5
G	When I am kayaking others see me the way I want them to.....	1	2	3	4	5
H	You can tell a lot about a person when you see them participating in kayaking.....	1	2	3	4	5
I	I find that a lot of my life is organized around kayaking.....	1	2	3	4	5
J	Most of my friends are in some way connected with kayaking.....	1	2	3	4	5
K	I chose kayaking because I believe it to be the most low impact of other boating activities	1	2	3	4	5
L	I am involved in kayaking because it is popular with my friends	1	2	3	4	5

Q22. Where do you live? Please specify.

_____ CITY OR TOWN
_____ PROVINCE OR STATE
_____ COUNTRY

Q23. How many people are in your group?

_____ PEOPLE

Q24. Finally, how old are you?

_____ YEARS

Is there anything else you would like to tell us about the Broken Group Islands? If so, please use the space below to express your views.

THANK YOU for completing this questionnaire, as your opinions are important to us. Please return your completed questionnaire to the researcher.

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A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS



Survey of Visitors to the Broken Group Islands, Pacific Rim National Park Reserve

May – September 2001



University of Victoria
Department of Geography
PO Box 3050
Victoria, BC Canada V8W 3P5

YOUR EXPERIENCE IN THE BROKEN GROUP ISLANDS

Welcome to the Broken Group Islands. The purpose of this study is to gain an understanding of visitor opinions about the Broken Group Islands. The information from this study will be used to assist in the management of the area. Please complete this questionnaire and return it to the research attendant. Thank you for your cooperation. Your opinions are important.

Q1. Is this your first kayak visit to the Broken Group Islands? (Please circle number)

- 3 YES
4 NO

Q2. If this is NOT YOUR FIRST KAYAK VISIT to the Broken Group Islands (BGI) please indicate how many previous kayak trips to the Broken Group Islands were taken WITH A COMMERCIAL GUIDE and how many previous trips were taken WITHOUT A COMMERCIAL GUIDE:

- _____ NUMBER OF PREVIOUS TRIPS TAKEN WITH A COMMERCIAL GUIDE
_____ NUMBER OF PREVIOUS TRIPS TAKEN WITHOUT A COMMERCIAL GUIDE
_____ OTHER
_____ N/A

Q3. Did you use a commercial guide on THIS trip?

- 3 YES
4 NO

Q4. What activities did you engage in while visiting the Broken Group Islands? (Circle all that apply)

- 5 CAMPING
6 HIKING/WALKING
7 WILDLIFE VIEWING
8 SALMON FISHING
9 FISHING FOR BOTTOM FISH
10 SHELL FISH GATHERING
11 CRABBING
12 KAYAKING
13 OTHER (please state: _____)

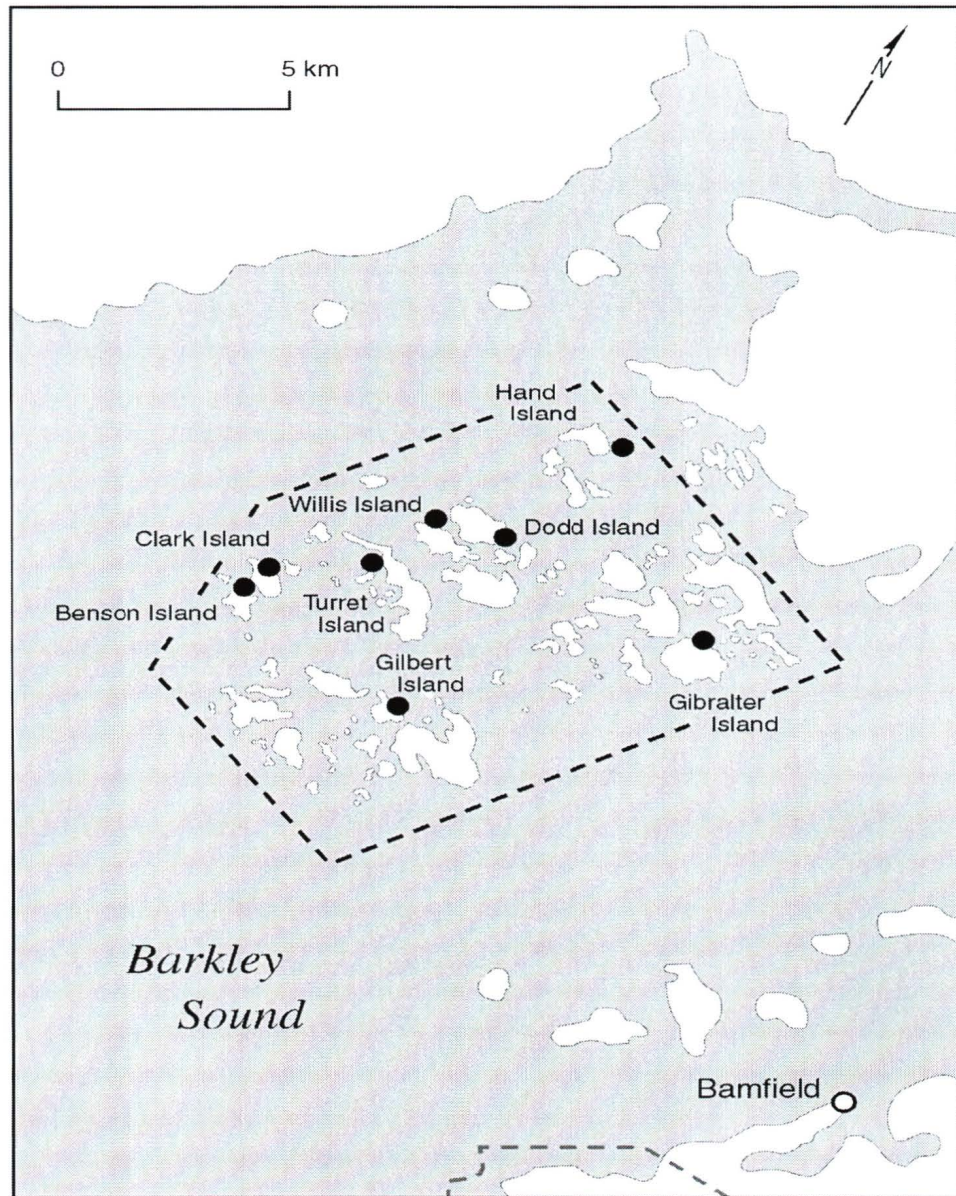
Q5. How many nights did you spend at each of the following places?

- _____ NIGHTS CAMPING IN THE BROKEN GROUP ISLANDS
_____ NIGHTS AT SECHART LODGE
_____ NIGHTS CAMPING AT TOQUART BAY

Q6. Referring to the map on the opposite page, how many nights did you spend on each of the following islands? Answer as many as applicable.

- _____ NIGHTS ON HAND ISLAND
_____ NIGHTS ON DODD ISLAND
_____ NIGHTS ON WILLIS ISLAND
_____ NIGHTS ON TURRET ISLAND
_____ NIGHTS ON CLARK ISLAND
_____ NIGHTS ON BENSON ISLAND
_____ NIGHTS ON GILBERT ISLAND
_____ NIGHTS ON GIBRALTER ISLAND
_____ NIGHTS ON ANY OTHER ISLAND(S)

MAP OF BROKEN GROUP ISLANDS



SATISFACTION WITH YOUR EXPERIENCE

Q7. Please indicate how you feel about the encounters you experienced with others on this trip, by circling the appropriate number beside each statement.

Do you feel that:		TOO FEW ▼	TOO MANY ▼	ABOUT RIGHT ▼
A	The number of canoes or kayaks seen was.....	1	2	3
B	The number of motorboats seen was.....	1	2	3
C	The number of sailboats seen was.....	1	2	3
D	Number of park wardens seen was	1	2	3
E	Number of other people seen at campsites was	1	2	3

Q8. Thinking about the total number of other visitors you have encountered ON THE WATER today, please indicate on the scale how crowded you felt (circle one number on the scale).

1	2	3	4	5	6	7	8	9
NOT AT ALL CROWDED		SLIGHTLY CROWDED			MODERATELY CROWDED			EXTREMELY CROWDED

Q9. Thinking about the total number of other visitors you have encountered IN THE CAMPSITE AT NIGHT today, please indicate on the scale how crowded you felt (circle one number on the scale).

1	2	3	4	5	6	7	8	9
NOT AT ALL CROWDED		SLIGHTLY CROWDED			MODERATELY CROWDED			EXTREMELY CROWDED

Q10. Please rate how you feel about the following management aspects of your experience:

How do you feel about:		VERY POOR ▼	POOR ▼	NOT SURE ▼	GOOD ▼	VERY GOOD ▼	
A	Amount of garbage	1	2	3	4	5	
B	Damage to trees or vegetation at campsites ...	1	2	3	4	5	
C	Availability of firewood	1	2	3	4	5	
D	Quality of toilets.....	1	2	3	4	5	
E	Cleanliness of seawater	1	2	3	4	5	
F	Amount of wildlife seen	1	2	3	4	5	
G	Overall wilderness quality	1	2	3	4	5	
H	Overall satisfaction	1	2	3	4	5	
I	Likelihood of returning	1	2	3	4	5	
J	Likelihood of recommending to a friend	1	2	3	4	5	
K	If applicable, your overall satisfaction with the Lady Rose/Francis Barkley marine transport services	1	2	3	4	5	N/A

SEEING OTHER KAYAKERS ON THE WATER

Q11. The illustrations below portray different levels of contact with GROUPS OF KAYAKERS ON THE WATER AT ANY ONE TIME. Please rate how unacceptable or acceptable you feel about the numbers of other kayakers shown in each photograph by CIRCLING your response below where: 1 = VERY UNACCEPTABLE; 2 = SOMEWHAT UNACCEPTABLE; 3 = NOT SURE; 4 = SOMEWHAT ACCEPTABLE; AND 5 = VERY ACCEPTABLE.

PHOTO A

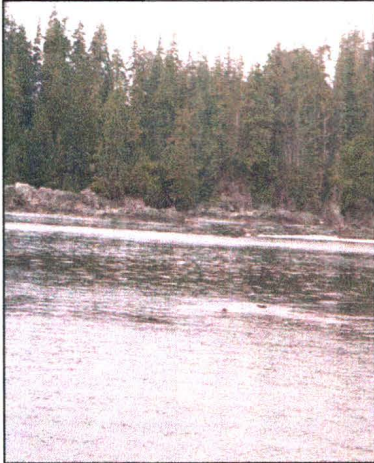


PHOTO B

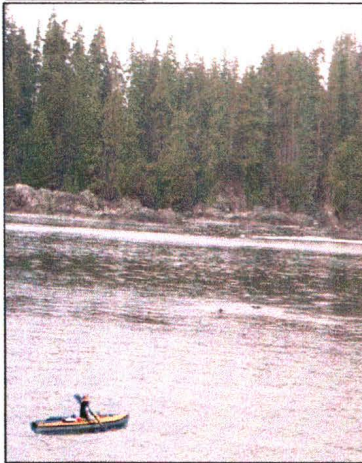


PHOTO C

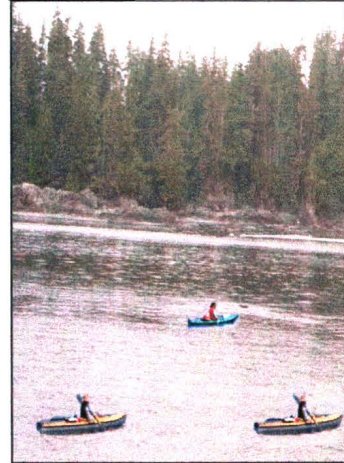


PHOTO D

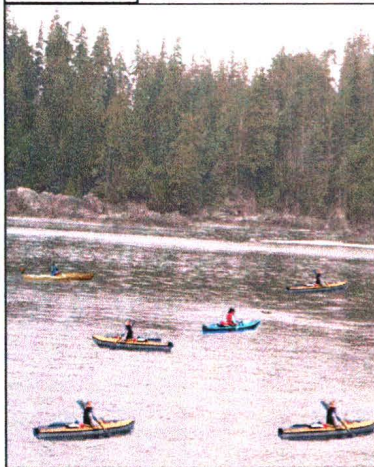


PHOTO E

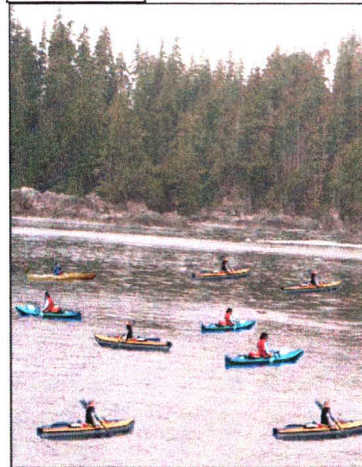
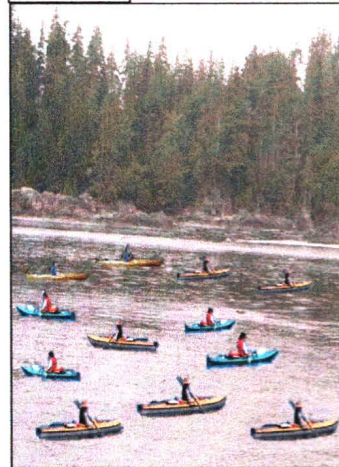


PHOTO F



YOUR RATING

	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
A Photograph A	1	2	3	4	5
B Photograph B.....	1	2	3	4	5
C Photograph C.....	1	2	3	4	5
D Photograph D.....	1	2	3	4	5
E Photograph E.....	1	2	3	4	5
F Photograph F.....	1	2	3	4	5

SEEING MOTORBOATERS ON THE WATER

Q12. As well as kayaks, it is important to know how you feel about seeing **MOTORBOATERS ON THE WATER AT ANY ONE TIME**. Please rate how unacceptable or acceptable you feel about the numbers of motorboaters shown in each photograph.

PHOTO A

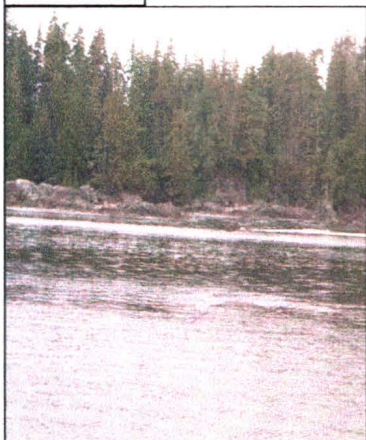


PHOTO B

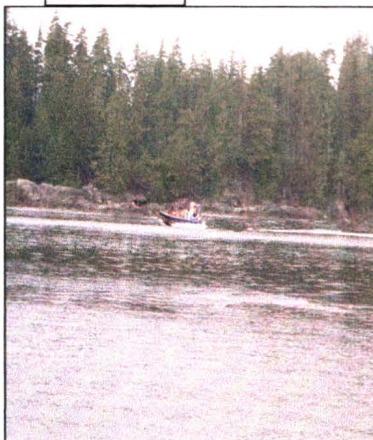


PHOTO C

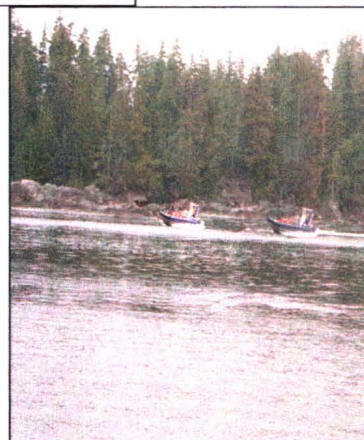


PHOTO D

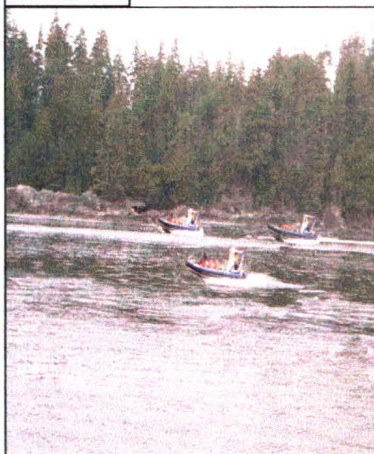


PHOTO E

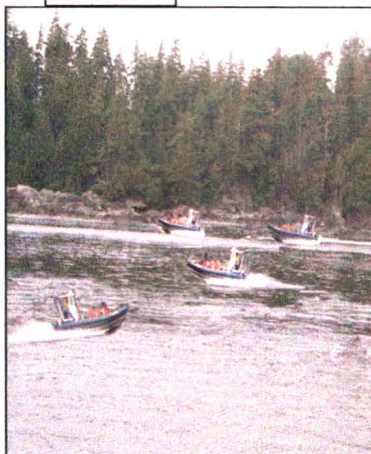
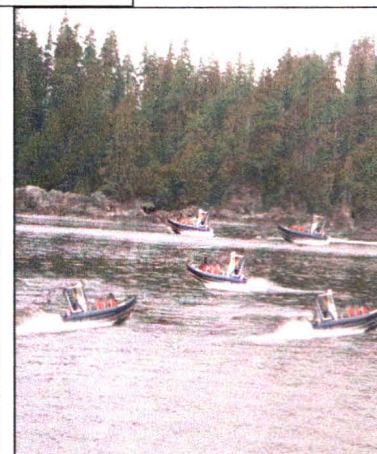


PHOTO F



YOUR RATING	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
	▼	▼	▼	▼	▼
A Photograph A	1	2	3	4	5
B Photograph B.....	1	2	3	4	5
C Photograph C.....	1	2	3	4	5
D Photograph D.....	1	2	3	4	5
E Photograph E.....	1	2	3	4	5
F Photograph F.....	1	2	3	4	5

SEEING OTHERS AT CAMPSITES

Q13. It is important to know how you feel about the number of tents at campsites you may stay at. Focusing on the **NUMBER OF TENTS AT A CAMPSITE AT ANY ONE TIME** please rate how unacceptable or acceptable you feel about the numbers of other tents shown in each photograph.

PHOTO A



PHOTO B



PHOTO C

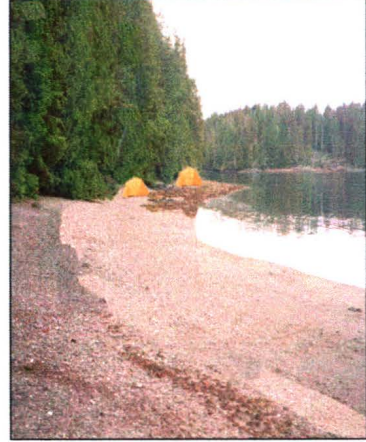


PHOTO D

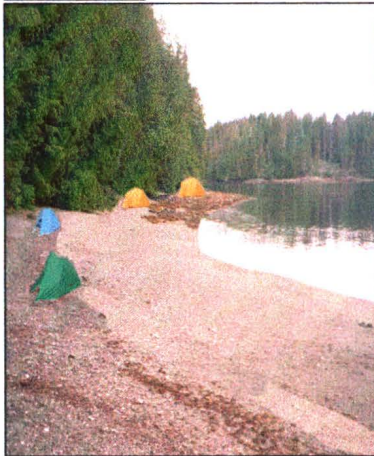


PHOTO E



PHOTO F



YOUR RATING		VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
		▼	▼	▼	▼	▼
A	Photograph A	1	2	3	4	5
B	Photograph B.....	1	2	3	4	5
C	Photograph C.....	1	2	3	4	5
D	Photograph D.....	1	2	3	4	5
E	Photograph E.....	1	2	3	4	5
F	Photograph F.....	1	2	3	4	5

VOLUNTARY NO FISHING POLICY IN THE BROKEN GROUP ISLANDS

Q14. The Broken Group Islands is a marine protected area. Some people believe fishing in the Broken Group Islands is appropriate, while others believe it is not an appropriate activity in the Broken Group Islands. We would like your views. Please indicate how you feel about A VOLUNTARY NO FISHING POLICY WITHIN THE BROKEN GROUP ISLANDS (BGI) by circling one number beside each statement.

		STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
Do you agree or disagree that:						
A	A voluntary no fishing policy in the BGI will protect marine life for future generations	1	2	3	4	5
B	A voluntary no fishing policy in the BGI will detract from the satisfaction of other park visitors.....	1	2	3	4	5
C	A voluntary no fishing policy in the BGI will reduce the amount of litter caused by fishing	1	2	3	4	5
D	A voluntary no fishing policy in the BGI will have a negative economic impact on the sports fishery ...	1	2	3	4	5
E	A voluntary no fishing policy in the BGI will retain food sources for other creatures	1	2	3	4	5
F	A voluntary no fishing policy in the BGI decreases my food source while in the BGI	1	2	3	4	5
G	A voluntary no fishing policy in the BGI will have a low compliance rate	1	2	3	4	5
H	A voluntary no fishing policy in the BGI will take away from my kayak experience	1	2	3	4	5

Please indicate how you feel about a voluntary no fishing policy in the BGI by placing an X at the appropriate location beneath each of the following statements:

Q15. How strongly do you support or oppose a VOLUNTARY NO FISHING POLICY in the BGI:

OPPOSE : _____ : _____ : _____ : _____ : _____ : _____ : SUPPORT
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q16. Most members of my kayaking group think I SHOULD OR SHOULD NOT SUPPORT THE VOLUNTARY NO FISHING POLICY IN THE BGI:

SHOULD NOT: _____ : _____ : _____ : _____ : _____ : _____ : SHOULD
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q17. Generally speaking, I want to do what most members of my kayaking group think I should do

NOT AT _____ : _____ : _____ : _____ : _____ : _____ : A GREAT
 ALL: Extremely Quite Somewhat Neither Somewhat Quite Extremely :DEAL

Q18. For me to support a VOLUNTARY NO FISHING POLICY in the BGI in the future is:

UNLIKELY: _____ : _____ : _____ : _____ : _____ : _____ : LIKELY
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

YOUR LEARNING EXPERIENCE

Q19. Below are a series of questions about the education and learning opportunities presented in the Broken Group Islands. For each question, please indicate whether you believe the answer is 1 = TRUE, 2 = FALSE, or 3 = DON'T KNOW.

Question:	TRUE	FALSE	DON'T KNOW
A When watching marine life, such as whales, you should not get closer than 100 feet	1	2	3
B The BGI area is known as the "Graveyard of the Pacific"	1	2	3
C Sea stars are a common predator in the intertidal zone	1	2	3
D When having a fire and driftwood is not available, it is acceptable to use wood from the forest	1	2	3
E The BGI are administered by the Province of B.C.	1	2	3
F All of the BGI are protected from the Pacific's full force	1	2	3
G The BGI were historically inhabited by Coastal First Nations groups.....	1	2	3
H The BGI are along the migration path of Gray Whales.....	1	2	3
I Feeding wildlife is alright because they are probably hungry	1	2	3
J The First Nation's people in this area were whalers	1	2	3

Q20. Overall, how would you rate your learning experience?

1. VERY GOOD
2. GOOD
3. NOT SURE
4. POOR
5. VERY POOR

Q21. Were you greeted by a Park Warden when you arrived at the Broken Group Islands?

1. YES
2. NO
3. N/A

Q22. Is there anything you would like to tell us regarding your learning experience in the BGI?

ROLE OF THE GUIDE

Q23. It is very important to understand the role of commercial tourism within National Parks. The presence of commercial tourism such as kayak tour guides may impact positively or negatively on your experience, even if you are not traveling with a commercial guide. Thinking about travel with a commercial kayak tour guide, please provide your opinions on the role of a tour guide. Please indicate HOW IMPORTANT or UNIMPORTANT you feel each of the following statements is by circling a number beside each statement.

How important is:		NOT AT ALL IMPORTANT ▼	SOMEWHAT IMPORTANT ▼	VERY IMPORTANT ▼	EXTREMELY IMPORTANT ▼	NO OPINION ▼
A	The guide sets a pace for the trip that is comfortable for you.....	1	2	3	4	5
B	The guide discusses hazards that may be present in the BGI	1	2	3	4	5
C	Any tension or conflict that emerges is handled quickly and effectively by your tour guide.....	1	2	3	4	5
D	The guide promotes a social and happy group environment	1	2	3	4	5
E	The guide reduces conflict with other groups at campsites or on water.....	1	2	3	4	5
F	The guide keeps the group organized and on schedule	1	2	3	4	5
G	The guide introduces you to cultural points of interest such as 1 st Nations' history	1	2	3	4	5
H	The guide provides field guides and books for the group	1	2	3	4	5
I	The guide discusses "Leave No Trace" camping ethics with the group	1	2	3	4	5
J	The guide highlights the importance of not removing any First Nation artifacts or relics	1	2	3	4	5
K	The guide helps you to develop a keener awareness and appreciation of the area.....	1	2	3	4	5
L	The guide increases your knowledge and understanding about the natural environment of the BGI.....	1	2	3	4	5

ABOUT YOU

To help us understand your opinions, we would like to know about your kayaking experience.

Q24. About how many years have you been involved in kayaking?
 _____ YEARS

Q25. Do you own your kayak?

- 1 YES
- 2 NO

Q26. How would you describe your level of experience in kayaking?

- 1 NOVICE
- 2 INTERMEDIATE
- 3 ADVANCED
- 4 EXPERT

Q27. Regarding your involvement in the activity of kayaking, please indicate how much you agree or disagree with the following statements

Do you agree or disagree that:	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
A Kayaking is one of the most enjoyable things I do	1	2	3	4	5
B Kayaking offers me relaxation when life's pressures build up.....	1	2	3	4	5
C I enjoy discussing kayaking with my friends.....	1	2	3	4	5
D Kayaking is very important to me.....	1	2	3	4	5
E Kayaking says a lot about who I am	1	2	3	4	5
F When I am kayaking I can really be myself.....	1	2	3	4	5
G When I am kayaking others see me the way I want them to.....	1	2	3	4	5
H You can tell a lot about a person when you see them participating in kayaking.....	1	2	3	4	5
I I find that a lot of my life is organized around kayaking.....	1	2	3	4	5
J Most of my friends are in some way connected with kayaking.....	1	2	3	4	5
K I chose kayaking because I believe it to be the most low impact of other boating activities	1	2	3	4	5
L I am involved in kayaking because it is popular with my friends.....	1	2	3	4	5

Q28. Where do you live? Please specify.

_____ CITY / TOWN
 _____ PROVINCE / STATE
 _____ COUNTRY

Q29. How many people are in your group?

_____ PEOPLE

Q30. Finally, how old are you?

_____ YEARS

Is there anything else you would like to tell us about the management of or your experiences within the Broken Group Islands? If so, please use the space below to express your views.

THANK YOU for completing this questionnaire, as your opinions are important to us. Please return your completed questionnaire to the researcher.

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NG1

APPENDIX 2C: Post Trip Survey for Guided Visitors

POST TRIP SURVEY FOR NON GUIDED VISITORS

A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS



Survey of Visitors to the Broken Group Islands, Pacific Rim National Park Reserve

May – September 2001



University of Victoria
Department of Geography
PO Box 3050
Victoria, BC Canada V8W 3P5

YOUR EXPERIENCE IN THE BROKEN GROUP ISLANDS

Welcome to the Broken Group Islands. The purpose of this study is to gain an understanding of visitor opinions about the Broken Group Islands. The information from this study will be used to assist in the management of the area. Please complete this questionnaire and return it to the research attendant. Thank you for your cooperation. Your opinions are important.

Q1. Is this your first kayak visit to the Broken Group Islands? (Please circle number)

- 5 YES
6 NO

Q2. If this is NOT YOUR FIRST KAYAK VISIT to the Broken Group Islands (BGI) please indicate how many previous kayak trips to the Broken Group Islands were taken WITH A COMMERCIAL GUIDE and how many previous trips were taken WITHOUT A COMMERCIAL GUIDE:

- _____ NUMBER OF PREVIOUS TRIPS TAKEN WITH A COMMERCIAL GUIDE
_____ NUMBER OF PREVIOUS TRIPS TAKEN WITHOUT A COMMERCIAL GUIDE
_____ OTHER
_____ N/A

Q3. Did you use a commercial guide on THIS trip?

- 5 YES
6 NO

Q4. What activities did you engage in while visiting the Broken Group Islands? (Circle all that apply)

- 14 CAMPING
15 HIKING/WALKING
16 WILDLIFE VIEWING
17 SALMON FISHING
18 FISHING FOR BOTTOM FISH
19 SHELL FISH GATHERING
20 CRABBING
21 KAYAKING
22 OTHER (please state: _____)

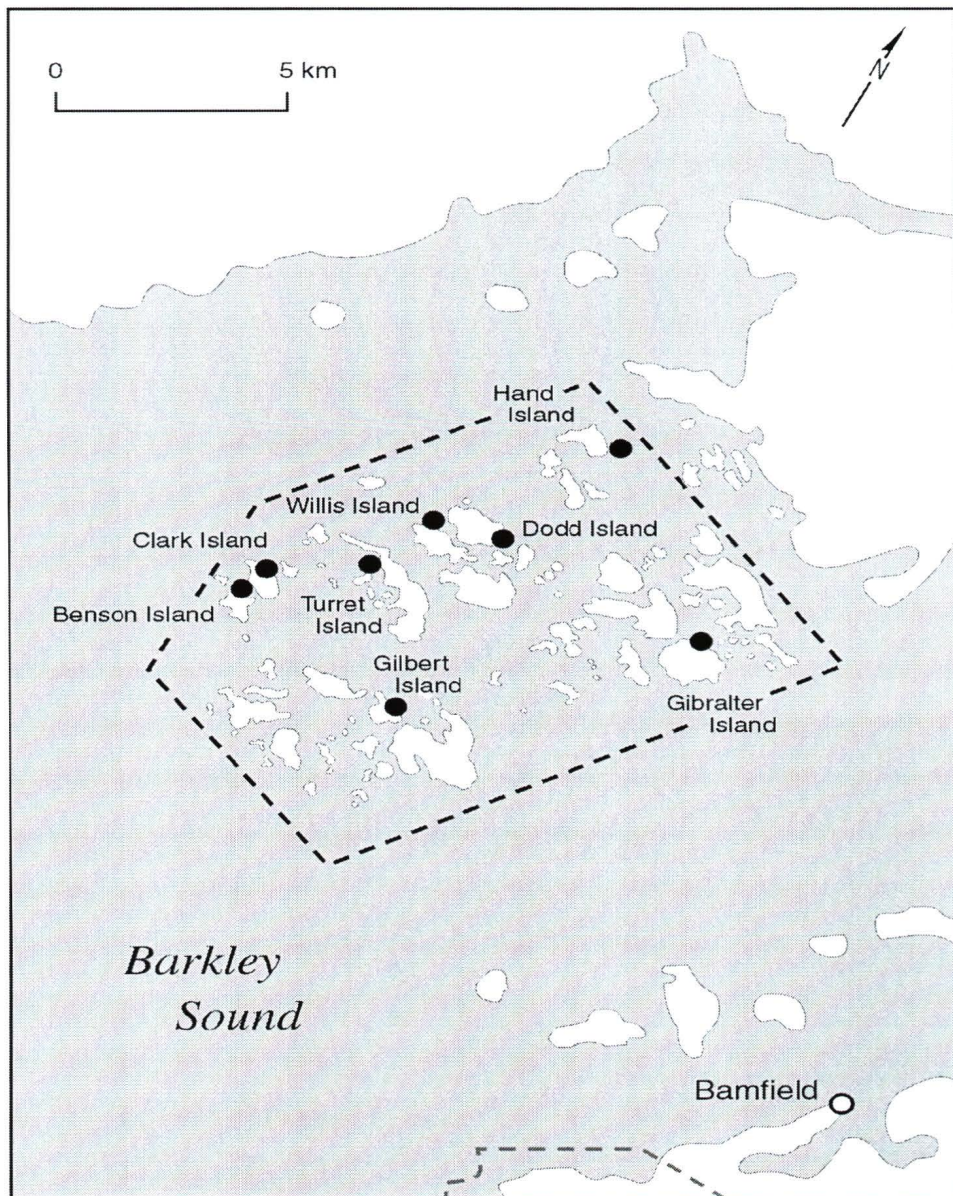
Q5. How many nights did you spend at each of the following places?

- _____ NIGHTS CAMPING IN THE BROKEN GROUP ISLANDS
_____ NIGHTS AT SECHART LODGE
_____ NIGHTS CAMPING AT TOQUART BAY

Q6. Referring to the map on the opposite page, how many nights did you spend on each of the following islands? Answer as many as applicable.

- _____ NIGHTS ON HAND ISLAND
_____ NIGHTS ON DODD ISLAND
_____ NIGHTS ON WILLIS ISLAND
_____ NIGHTS ON TURRET ISLAND
_____ NIGHTS ON CLARK ISLAND
_____ NIGHTS ON BENSON ISLAND
_____ NIGHTS ON GILBERT ISLAND
_____ NIGHTS ON GIBRALTER ISLAND
_____ NIGHTS ON ANY OTHER ISLAND(S)

MAP OF BROKEN GROUP ISLANDS



SATISFACTION WITH YOUR EXPERIENCE

Q7. Please indicate how you feel about the encounters you experienced with others on this trip, by circling the appropriate number beside each statement.

Do you feel that:	TOO FEW ▼	TOO MANY ▼	ABOUT RIGHT ▼
A The number of canoes or kayaks seen was.....	1	2	3
B The number of motorboats seen was.....	1	2	3
C The number of sailboats seen was.....	1	2	3
D Number of park wardens seen was	1	2	3
E Number of other people seen at campsites was	1	2	3

Q8. Thinking about the total number of other visitors you have encountered ON THE WATER today, please indicate on the scale how crowded you felt (circle one number on the scale).

1	2	3	4	5	6	7	8	9
NOT AT ALL CROWDED		SLIGHTLY CROWDED			MODERATELY CROWDED			EXTREMELY CROWDED

Q9. Thinking about the total number of other visitors you have encountered IN THE CAMPSITE AT NIGHT today, please indicate on the scale how crowded you felt (circle one number on the scale).

1	2	3	4	5	6	7	8	9
NOT AT ALL CROWDED		SLIGHTLY CROWDED			MODERATELY CROWDED			EXTREMELY CROWDED

Q10. Please rate how you feel about the following management aspects of your experience:

How do you feel about:	VERY POOR ▼	POOR ▼	NOT SURE ▼	GOOD ▼	VERY GOOD ▼	
A Amount of garbage	1	2	3	4	5	
B Damage to trees or vegetation at campsites ...	1	2	3	4	5	
C Availability of firewood	1	2	3	4	5	
D Quality of toilets.....	1	2	3	4	5	
E Cleanliness of seawater	1	2	3	4	5	
F Amount of wildlife seen	1	2	3	4	5	
G Overall wilderness quality	1	2	3	4	5	
H Overall satisfaction	1	2	3	4	5	
I Likelihood of returning	1	2	3	4	5	
J Likelihood of recommending to a friend	1	2	3	4	5	
K If applicable, your overall satisfaction with the Lady Rose/Francis Barkley marine transport services	1	2	3	4	5	N/A

SEEING OTHER KAYAKERS ON THE WATER

Q11. The illustrations below portray different levels of contact with GROUPS OF KAYAKERS ON THE WATER AT ANY ONE TIME. Please rate how unacceptable or acceptable you feel about the numbers of other kayakers shown in each photograph by CIRCLING your response below where: 1 = VERY UNACCEPTABLE; 2 = SOMEWHAT UNACCEPTABLE; 3 = NOT SURE; 4 = SOMEWHAT ACCEPTABLE; AND 5 = VERY ACCEPTABLE.

PHOTO A

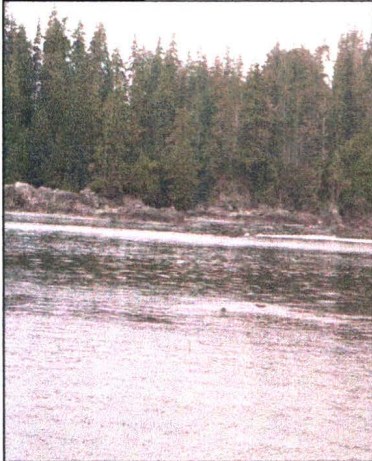


PHOTO B

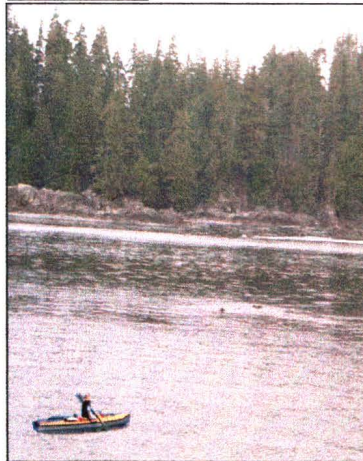


PHOTO C

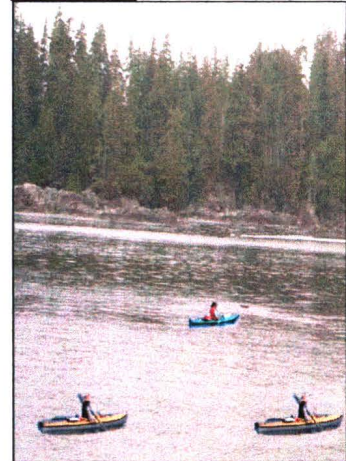


PHOTO D

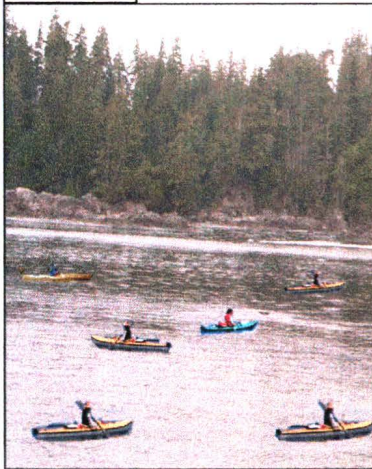


PHOTO E

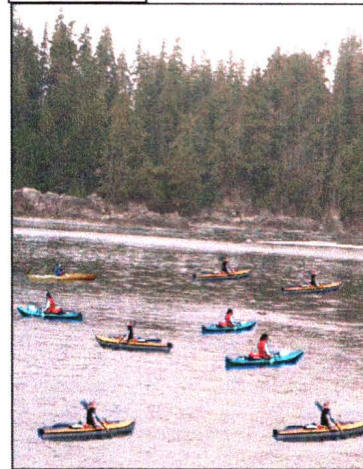
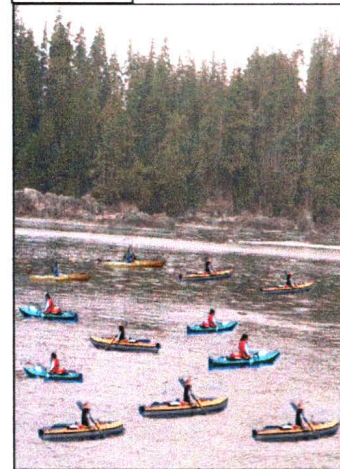


PHOTO F



YOUR RATING

	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
A Photograph A	1	2	3	4	5
B Photograph B	1	2	3	4	5
C Photograph C	1	2	3	4	5
D Photograph D	1	2	3	4	5
E Photograph E	1	2	3	4	5
F Photograph F	1	2	3	4	5

SEEING MOTORBOATERS ON THE WATER

Q12. As well as kayaks, it is important to know how you feel about seeing **MOTORBOATERS ON THE WATER AT ANY ONE TIME**. Please rate how unacceptable or acceptable you feel about the numbers of motorboaters shown in each photograph.

PHOTO A

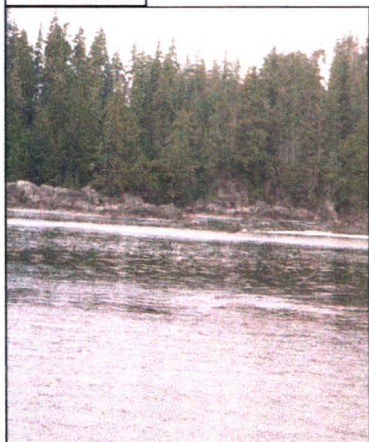


PHOTO B

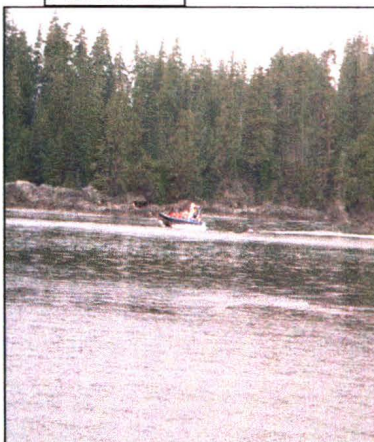


PHOTO C

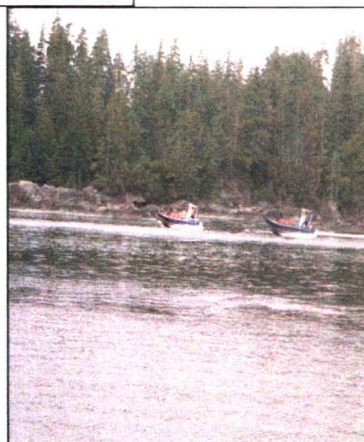


PHOTO D

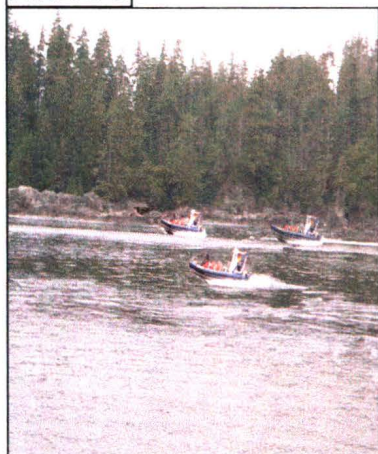
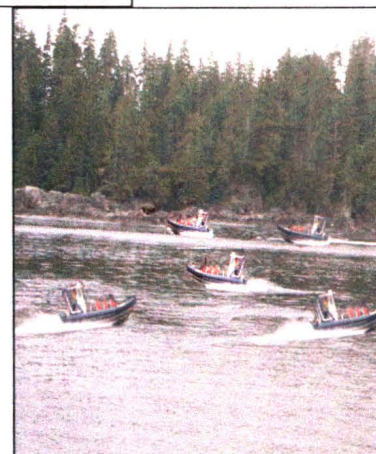


PHOTO E



PHOTO F



YOUR RATING	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
	▼	▼	▼	▼	▼
A Photograph A	1	2	3	4	5
B Photograph B.....	1	2	3	4	5
C Photograph C.....	1	2	3	4	5
D Photograph D.....	1	2	3	4	5
E Photograph E.....	1	2	3	4	5
F Photograph F.....	1	2	3	4	5

SEEING OTHERS AT CAMPSITES

Q13. It is important to know how you feel about the number of tents at campsites you may stay at. Focusing on the NUMBER OF TENTS AT A CAMPSITE AT ANY ONE TIME please rate how unacceptable or acceptable you feel about the numbers of other tents shown in each photograph.

PHOTO A



PHOTO B



PHOTO C



PHOTO D

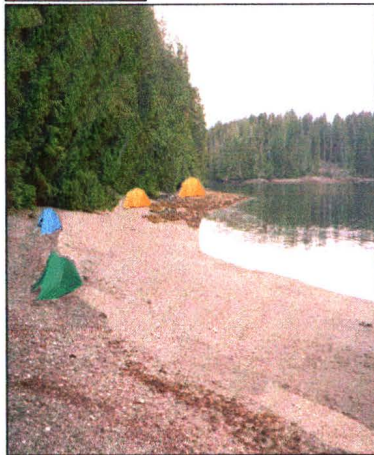


PHOTO E



PHOTO F



YOUR RATING	VERY UNACCEPTABLE	SOMEWHAT UNACCEPTABLE	NOT SURE	SOMEWHAT ACCEPTABLE	VERY ACCEPTABLE
	1	2	3	4	5
A Photograph A	1	2	3	4	5
B Photograph B.....	1	2	3	4	5
C Photograph C.....	1	2	3	4	5
D Photograph D.....	1	2	3	4	5
E Photograph E.....	1	2	3	4	5
F Photograph F.....	1	2	3	4	5

VOLUNTARY NO FISHING POLICY IN THE BROKEN GROUP ISLANDS

Q14. The Broken Group Islands is a marine protected area. Some people believe fishing in the Broken Group Islands is appropriate, while others believe it is not an appropriate activity in the Broken Group Islands. We would like your views. Please indicate how you feel about A VOLUNTARY NO FISHING POLICY WITHIN THE BROKEN GROUP ISLANDS (BGI) by circling one number beside each statement.

	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
Do you agree or disagree that:					
A A voluntary no fishing policy in the BGI will protect marine life for future generations	1	2	3	4	5
B A voluntary no fishing policy in the BGI will detract from the satisfaction of other park visitors.....	1	2	3	4	5
C A voluntary no fishing policy in the BGI will reduce the amount of litter caused by fishing	1	2	3	4	5
D A voluntary no fishing policy in the BGI will have a negative economic impact on the sports fishery ...	1	2	3	4	5
E A voluntary no fishing policy in the BGI will retain food sources for other creatures	1	2	3	4	5
F A voluntary no fishing policy in the BGI decreases my food source while in the BGI	1	2	3	4	5
G A voluntary no fishing policy in the BGI will have a low compliance rate	1	2	3	4	5
H A voluntary no fishing policy in the BGI will take away from my kayak experience	1	2	3	4	5

Please indicate how you feel about a voluntary no fishing policy in the BGI by placing an X at the appropriate location beneath each of the following statements:

Q15. How strongly do you support or oppose a VOLUNTARY NO FISHING POLICY in the BGI:

OPPOSE : _____ : _____ : _____ : _____ : _____ : _____ : SUPPORT
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q16. Most members of my kayaking group think I SHOULD OR SHOULD NOT SUPPORT THE VOLUNTARY NO FISHING POLICY IN THE BGI:

SHOULD NOT: _____ : _____ : _____ : _____ : _____ : _____ : SHOULD
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q17. Generally speaking, I want to do what most members of my kayaking group think I should do

NOT AT _____ : _____ : _____ : _____ : _____ : _____ : A GREAT
 ALL: _____ : _____ : _____ : _____ : _____ : _____ : DEAL
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q18. For me to support a VOLUNTARY NO FISHING POLICY in the BGI in the future is:

UNLIKELY: _____ : _____ : _____ : _____ : _____ : _____ : LIKELY
 Extremely Quite Somewhat Neither Somewhat Quite Extremely

Q19. Did your guide comment on the VOLUNTARY NO FISHING POLICY in the BGI?

- 1 YES
- 2 NO

YOUR LEARNING EXPERIENCE

Q20. Below are a series of questions about the education and learning opportunities presented in the Broken Group Islands. For each question, please indicate whether you believe the answer is 1 = TRUE, 2 = FALSE, or 3 = DON'T KNOW.

Question:	TRUE	FALSE	DON'T KNOW
A When watching marine life, such as whales, you should not get closer than 100 feet	1	2	3
B The BGI area is known as the "Graveyard of the Pacific"	1	2	3
C Sea stars are common predators in the intertidal zone	1	2	3
D When having a fire and driftwood is not available, it is acceptable to use wood from the forest	1	2	3
E The BGI are administered by the Province of B.C.	1	2	3
F All of the BGI are protected from the Pacific's full force	1	2	3
G The BGI were historically inhabited by Coastal First Nations groups.....	1	2	3
H The BGI are along the migration path of Gray Whales.....	1	2	3
I Feeding wildlife is alright because they are probably hungry	1	2	3
J The First Nation's people in this area were whalers	1	2	3

Q21. Overall, how would you rate your learning experience?

1. VERY GOOD
2. GOOD
3. NOT SURE
4. POOR
5. VERY POOR

Q22. Were you greeted by a Park Warden when you arrived at the Broken Group Islands?

1. YES
2. NO
3. N/A

Q23. Is there anything you would like to tell us regarding your learning experience in the BGI?

Q24. It is very important to understand the role of commercial tourism within National Parks. The presence of commercial tourism such as kayak tour guides may impact positively or negatively on your experience. Kayak tour guides play an important role in your experience. Please indicate how you feel about the role of your tour guide by circling one number beside each statement.

		STRONGLY DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	STRONGLY AGREE	NOT SURE
Do you agree or disagree that:		▼	▼	▼	▼	▼
A	Your guide set a pace for the trip that was comfortable for you.....	1	2	3	4	5
B	Your guide discussed hazards that may be present in the BGI	1	2	3	4	5
C	Any tension or conflict that emerged was handled quickly and effectively by your guide.....	1	2	3	4	5
D	Your guide promoted a social and happy group environment	1	2	3	4	5
E	Your guide reduced conflict with others at campsites and on the water	1	2	3	4	5
F	Your guide kept your group organized and on schedule	1	2	3	4	5
G	Your guide introduced you to relevant cultural points of interest such as 1 st Nations' history	1	2	3	4	5
H	Your guide provided field guides and books for the group	1	2	3	4	5
I	Your guide discussed "Leave No Trace" camping ethics with the group	1	2	3	4	5
J	The guide highlighted the importance of not removing any First Nation artifacts or relics	1	2	3	4	5
K	Your guide helped you to develop a keener awareness and appreciation of the area.....	1	2	3	4	5
L	Your guide increased your knowledge about the natural environment of the BGI.....	1	2	3	4	5

ABOUT YOU

To help us understand your opinions, we would like to know about your kayaking experience.

Q25. About how many years have you been involved in kayaking?
_____ YEARS

Q26. Do you own your kayak?
3 YES
4 NO

Q27. How would you describe your level of experience in kayaking?
5 NOVICE
6 INTERMEDIATE
7 ADVANCED
8 EXPERT

Q28. Regarding your involvement in the activity of kayaking, please indicate how much you agree or disagree with the following statements

	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NOT SURE	SOMEWHAT AGREE	STRONGLY AGREE
Do you agree or disagree that:					
A Kayaking is one of the most enjoyable things I do	1	2	3	4	5
B Kayaking offers me relaxation when life's pressures build up.....	1	2	3	4	5
C I enjoy discussing kayaking with my friends.....	1	2	3	4	5
D Kayaking is very important to me.....	1	2	3	4	5
E Kayaking says a lot about who I am	1	2	3	4	5
F When I am kayaking I can really be myself.....	1	2	3	4	5
G When I am kayaking others see me the way I want them to.....	1	2	3	4	5
H You can tell a lot about a person when you see them participating in kayaking.....	1	2	3	4	5
I I find that a lot of my life is organized around kayaking.....	1	2	3	4	5
J Most of my friends are in some way connected with kayaking.....	1	2	3	4	5
K I chose kayaking because I believe it to be the most low impact of other boating activities	1	2	3	4	5
L I am involved in kayaking because it is popular with my friends.....	1	2	3	4	5

Q29. Where do you live? Please specify.
_____ CITY OR TOWN
_____ PROVINCE OR STATE
_____ COUNTRY

Q30. How many people are in your group?
_____ PEOPLE

Q31. Finally, how old are you?
_____ YEARS

Is there anything else you would like to tell us about the management of or your experiences within the Broken Group Islands? If so, please use the space below to express your views.

THANK YOU for completing this questionnaire, as your opinions are important to us. Please return your completed questionnaire to the researcher.

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Appendix 3: Certificate of Approval



University of Victoria

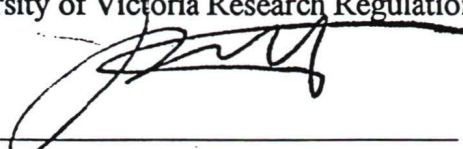
Human Research Ethics Committee

CERTIFICATE OF APPROVAL

<u>PRINCIPAL INVESTIGATOR</u> B. Carleigh Randall Graduate Student	<u>DEPARTMENT/SCHOOL</u> GEOG	<u>SUPERVISOR</u> Dr. Rick Rollins	
<u>CO-INVESTIGATOR(S):</u>			
<u>TITLE: A Study of Nature-Based Marine Tourism within the Broken Group Islands</u>			
<u>PROJECT No.</u> 116-01	<u>START DATE</u> 4/24/2001	<u>END DATE</u> 4/23/2002	<u>APPROVAL</u> 4/24/2001

CERTIFICATION

This is to certify that the University of Victoria Ethics Review Committee on Research and Other Activities Involving Human Subjects has examined the research proposal and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Subjects.



 J. Howard Brunt,
 Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the procedures. Extensions/minor amendments may be granted upon receipt of "Request for Continuing Review or Amendment of an Approved Project" form.

OFFICE OF VICE PRESIDENT RESEARCH
 Room 424, Business & Economics Building
 P.O. Box 1700
 Victoria, BC V8W 2Y2

Tel: (250) 472-4362
 Fax: (250) 721-8960
 E-mail: ovprrc@uvic.ca

Appendix 4: Letters of Voluntary Participation

A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS, PACIFIC RIM NATIONAL PARK RESERVE

Dear Broken Group Islands Visitors

You are being invited to participate in a study entitled A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS that is being conducted by CARLEIGH RANDALL who is a Graduate Student in the department of Geography Department at the University of Victoria and you may contact her if you have further questions by calling (250)468-1861.

As a Graduate student, this research is part of the requirements for a Master of Arts degree and it is being conducted under the supervision of Dr. Rick Rollins. You may contact the supervisor at (250)753-3245 (2413) or (250)592-1355.

The purpose of this study is to gain an understanding of protected area management strategies as applied to kayak ecotourism in the Broken Group Islands, Pacific Rim National Park. This is achieved by examining the delivery of national park messages and interpretation through the measurement of environmental attitudes, learning and behavioral intentions of park visitors. This research is important because it examines strategies that minimize environmental and social impact in heavily used recreation settings while maximizing visitor satisfaction and benefits. The results of this study will contribute to the development of improved management strategies in marine protected areas.

You are being invited to participate in this study because the opinions and perceptions of kayakers within the Broken Group Islands are very important in our study. As one of many kayakers entering or leaving the Broken Group Islands, you have been randomly selected to participate in this study. If you agree to voluntarily participate in this research, your participation will include the completion of the questionnaire, entitled A STUDY OF MARINE-BASED NATURE TOURISM WITHIN THE BROKEN GROUP ISLANDS, which will take approximately 10 minutes to complete. Questionnaire participation will occur at the primary launch sites within the Broken Group Islands: Toquart Bay and Sechart Whaling Station and on the Lady Rose or Francis Barkley transport ships.

There are no known or anticipated risks to you by participating in this research, however the questionnaire is expected to take approximately 15 minutes of your time to complete.

The potential benefits of your participation in this research include contributions to education techniques as appropriate management strategies within marine based tourism settings. Further, benefits to the natural resource and to subsequent park visitors will accrue with additional knowledge of effective strategies to minimize negative environmental and social impacts and maximize visitor satisfaction.

CONSENT TO PARTICIPATE:

I understand that my participation is entirely voluntary and my choice to participate will have no bearing on me whatsoever. I can withdraw from this study at any time without any consequences or any explanation. However, if I do withdraw from the study after I have completed the questionnaire in whole or in part, I realize that the data that I have provided may still be used in the final analysis because removal of the data is logistically impossible since my name will not be connected with this questionnaire in any way at any time during the study.

I understand that my participation in this study is completely voluntary, there are no anticipated risks as a result of participating, and that all of the collected data will remain confidential as all completed surveys will be kept in a locked cabinet in a locked room which will only be accessible to the researcher and her direct supervisor (named above). I understand that all of the individual questionnaires will be destroyed (shredded) upon completion of the research, and only summarized tabulated and statistical information from the questionnaires will be reported in any results made available to any persons other than the interviewer.

I understand that it is anticipated that the results of this study will be shared with others mainly through one primary outlet: a Master's Thesis to be held at the University of Victoria and the National Library of Canada. I am also aware that a copy of this work may be provided to Parks Canada as the Broken Group Islands are a National Park. I also understand that dissemination of research results may also occur through academic journal publications, government documents, conference presentations and proceedings, and presentations to private companies.

In addition to being able to contact the researcher and her direct supervisor at the above telephone numbers, I may verify the ethical approval of this study, or raise any concerns I may have, by contacting the Associate Vice President of Research at the University of Victoria at (250) 721-7968.

My signature below indicates that I have read and fully understand the above conditions of participation in this study and that I have had the opportunity to have any questions I may have regarding this study answered by either the researcher and/or her direct supervisor.

Participant Signature: _____

Date: _____

A COPY OF THIS LETTER OF CONSENT WILL BE LEFT WITH YOU, AND A COPY WILL BE RETAINED BY THE RESEARCHER

THANK YOU IN ADVANCE FOR YOUR PARTICIPATION

A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS, PACIFIC RIM NATIONAL PARK RESERVE

Dear Broken Group Islands Visitors

You are being invited to participate in a study entitled A STUDY OF NATURE-BASED MARINE TOURISM WITHIN THE BROKEN GROUP ISLANDS that is being conducted by CARLEIGH RANDALL who is a Graduate Student in the department of Geography Department at the University of Victoria and you may contact her if you have further questions by calling (250)468-1861.

As a Graduate student, this research is part of the requirements for a Master of Arts degree and it is being conducted under the supervision of Dr. Rick Rollins. You may contact the supervisor at (250)753-3245 (2413) or (250)592-1355.

The purpose of this study is to gain an understanding of protected area management strategies as applied to kayak ecotourism in the Broken Group Islands, Pacific Rim National Park. This is achieved by examining the delivery of national park messages and interpretation through the measurement of environmental attitudes, learning and behavioral intentions of park visitors. This research is important because it examines strategies that minimize environmental and social impact in heavily used recreation settings while maximizing visitor satisfaction and benefits. The results of this study will contribute to the development of improved management strategies in marine protected areas.

You are being invited to participate in this study because the opinions and perceptions of kayakers within the Broken Group Islands are very important in our study. As one of many kayakers entering or leaving the Broken Group Islands, you have been randomly selected to participate in this study. If you agree to voluntarily participate in this research, your participation will include the completion of the questionnaire, entitled A STUDY OF MARINE-BASED NATURE TOURISM WITHIN THE BROKEN GROUP ISLANDS, which will take approximately 15 minutes to complete. Completion of this survey will occur at the beginning of the trip and at the end of the trip at the primary launch sites of Toquart Bay or Sechart Whaling Station. Additionally, to supplement the questionnaire items, the researcher will observe the behaviors of the group and the group's guide to gain a deeper understanding of the role of the guide in influencing attitudes, learning and environmental behavior. Your participation will include being observed, as a group, by the researcher who will be a part of your group for the duration of your trip. Observation will occur in a natural setting and there will be no staging of events for research purposes. Any notes taken by the researcher will be completely anonymous, as your name will not appear in any notes regarding observed behaviors.

There are no known or anticipated risks to you by participating in this research, however the questionnaire is expected to take approximately 15 minutes of your time to complete. The researcher has fully disclosed her role in the natural observation and trip component of this study.

The potential benefits of your participation in this research include contributions to education techniques as appropriate management strategies within marine based tourism settings. Further, benefits to the natural resource and to subsequent park visitors will accrue with additional knowledge of effective strategies to minimize negative environmental and social impacts and maximize visitor satisfaction

CONSENT TO PARTICIPATE:

I understand that my participation is entirely voluntary and my choice to participate will have no bearing on me whatsoever. I can withdraw from this study at any time without any consequences or any explanation. During the course of the trip and natural observation, the researcher will remind me periodically of the voluntary nature of my participation and my ability to withdraw from the study at any time. However, if I do withdraw from the study after I have completed the questionnaire in whole or in part, I realize that the data that I have provided may still be used in the final analysis because removal of the data is logistically impossible since my name will not be connected with this questionnaire in any way at any time during the study.

I understand that my participation in this study is completely voluntary, there are no anticipated risks as a result of participating, and that all of the collected data will remain confidential as all completed surveys, notes, diaries will be kept in a locked cabinet in a locked room which will only be accessible to the researcher and her direct supervisor (named above). I understand that all of the individual questionnaires, notes, and diaries will be destroyed (shredded) upon completion of the research, and only summarized tabulated and statistical information from the questionnaires will be reported in any results made available to any persons other than the interviewer.

I understand that it is anticipated that the results of this study will be shared with others mainly through one primary outlet: a Master's Thesis to be held at the University of Victoria and the National Library of Canada. I am also aware that a copy of this work may be provided to Parks Canada as the Broken Group Islands are a National Park. I also understand that dissemination of research results may also occur through academic journal publications, government documents, conference presentations and proceedings, and presentations to private companies.

In addition to being able to contact the researcher and her direct supervisor at the above telephone numbers, I may verify the ethical approval of this study, or raise any concerns I may have, by contacting the Associate Vice President of Research at the University of Victoria at (250) 721-7968.

My signature below indicates that I have read and fully understand the above conditions of participation in this study and that I have had the opportunity to have any questions I may have regarding this study answered by either the researcher and/or her direct supervisor.

Participant Signature: _____

Date: _____

A COPY OF THIS LETTER OF CONSENT WILL BE LEFT WITH YOU, AND A COPY WILL BE RETAINED BY THE RESEARCHER

THANK YOU IN ADVANCE FOR YOUR PARTICIPATION.

Appendix 5 Detailed Tables

Table 1.0 Location of Completion of Survey

Location	Response (%)	(n)
Toquart Bay	25.9	(181)
Frances Barkley	68.1	(476)
Participant Observation	6.0	(42)
Total	100%	(699)

n = 699

Table 2.0 Type of Survey Completed

Type of Survey	Response (%)	(n)
Pre Trip Guided	6.7	(47)
Post Trip Guided	12.0	(84)
Pre Trip Non Guided	36.6	(256)
Post Trip Non Guided	38.6	(270)
Participant Observation Pre	3.0	(21)
Participant Observation Pre	3.0	(21)
Total	100%	(699)

n = 699

Table 3.0 Questionnaires Completed by Month

Month	Response (%)	(n)
June	6.2	(56)
July	30.5	(214)
August	46.0	(312)
September	17.3	(117)

n = 699

Table 4.0 First Kayak Visit to the Broken Group Islands (Q. 1)

First Visit to Broken Group Islands	Response (%)	(n)
Yes	79.2	(558)
No	20.6	(140)
Missing	0.1	(1)

n = 678

Table 5.0 Repeat Visitors' Previous Kayak Visits to the Broken Group Islands (Q. 2)

Previous Visits	Response (%)	(n)
Previous Guided Trips		
One	1.8	(12)
Two	0.4	(3)
Three - Five	0.4	(3)
Six or more	0.1	(1)
Not Applicable	96.5	(654)
Missing	0.7	(5)
Total	(100%)	(678)
Previous NonGuided Trips		
One	11.2	(76)
Two	2.8	(19)
Three - Five	3.2	(22)
Six or more	0.8	(7)
Not Applicable	81.1	(550)
Missing	0.6	(4)
Total	(100%)	(678)
Previous Trips Other		
All	0.8	(7)
Not Applicable	98.4	(667)
Missing	0.6	(4)
Total:	(100%)	(678)

N =678

Table 5.0 Use of a commercial guide on this trip (Q. 3)

Use of a guide	Response (%)	(n)
Guided	22.4	152
Non Guided	77.6	526

N = 678

Table 6.0 Activities Engaged In (Q.4)

Activities Engaged In	Response (%)	(n)
Kayaking	96.6	(655)
Camping	91.3	(619)
Wildlife Viewing	90.8	(613)
Day hike/walk	75.8	(515)
Salmon Fishing	18.3	(125)
Fishing for bottom fish	16.2	(110)
Other	15.2	(104)
Crabbing	11.9	(81)
Shell fish gathering	7.1	(50)

N=678

*Totals do not equal 100% due to multiple response

Table 7.0 Nights Spent (Q.5)

NIGHTS SPENT	RESPONSE (%)									Mean
	1 % (N)	2 % (N)	3 % (N)	4 % (N)	5 % (N)	6 % (N)	7+ % (N)	N/A % (N)	Missing % (N)	
IN BGI	0.7 (5)	10.3 (70)	25.8 (175)	30.2 (204)	11.1 (76)	5.5 (37)	7.5 (51)	8.6 (58)	0.3 (2)	3.98
SECHART LODGE	2.5 (17)	5.3 (36)	2.8 (19)	2.1 (14)	0.0 (0)	0.0 (0)	0.6 (4)	86.4 (586)	0.3 (2)	2.55
TOQUART BAY	7.7 (53)	0.7 (5)	0.1 (1)	0.0 (0)	0.0 (0)	0.1 (1)	0.1 (1)	90.9 (615)	0.3 (2)	1.31

N=678

Table 8.0 Nights Spent on Islands (Q. 6)

Islands	Number of Nights on Islands (%)							Total % (n)	Missing % (n)	Mean
	1 % (n)	2 % (n)	3 % (n)	4 % (n)	5 % (n)	6 % (n)	7+ % (n)			
Willis	7.7 (52)	7.2 (49)	7.4 (44)	3.7 (25)	1.0 (7)	0.0 (0)	0.0 (0)	27.0 (183)	0.6 (4)	2.37
Dodd	10.0 (65)	4.4 (30)	6.2 (42)	4.3 (29)	0.6 (4)	0.0 (0)	0.0 (0)	25.9 (176)	0.6 (4)	2.25
Gibraltar	10.9 (74)	7.7 (52)	2.7 (15)	1.2 (2)	0.0 (0)	0.0 (0)	0.1 (1)	22.6 (153)	0.6 (4)	1.77
Clarke	5.2 (35)	6.5 (4)	7.2 (49)	1.5 (7)	0.3 (2)	0.0 (0)	0.1 (1)	20.8 (141)	0.6 (4)	2.33
Hand	14.9 (98)	2.9 (20)	0.9 (6)	0.4 (3)	0.0 (0)	0.0 (0)	0.0 (0)	19.1 (130)	0.6 (4)	1.31
Turret	5.5 (37)	8.4 (57)	2.5 (17)	1.0 (7)	0.1 (1)	0.1 (1)	0.1 (1)	17.7 (120)	0.6 (4)	2.03
Gilbert	4.4 (30)	3.2 (22)	2.2 (15)	0.3 (2)	0.0 (0)	0.0 (0)	0.0 (0)	10.1 (68)	0.6 (4)	1.84
Benson	1.8 (12)	3.1 (18)	0.9 (6)	0.9 (6)	0.4 (3)	0.0 (0)	0.0 (0)	7.10 (48)	0.6 (4)	2.31
Other	0.7 (5)	1.6 (11)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	2.39 (16)	0.6 (4)	1.68

n=678

Table 9.0 Levels of Acceptability Regarding Numbers of Other Kayakers (Q.7)

Number of Other Other Kayakers	RESPONSE					Missing % (n)	Mean	SD
	Very Unacceptable 1	Somewhat Unacceptable 2	Not Sure 3	Somewhat Acceptable 4	Very Acceptable 5			
	% (n)	% (n)	% (n)	% (n)	% (n)			
Photo A: 0 Kayakers	2.8 (19)	0.9 (6)	2.2 (15)	3.7 (25)	90.1 (611)	0.3 (2)	1.78	0.77
Photo B: 1 Kayaker	1.8 (12)	1.5 (10)	1.3 (8)	12.2 (82)	83.0 (656)	0.1 (1)	1.73	0.72
Photo C: 3 Kayakers	1.5 (10)	9.0 (61)	5.4 (36)	42.8 (294)	40.7 (273)	0.6 (4)	1.13	0.97
Photo D: 6 Kayakers	34.4 (235)	34.4 (233)	8.3 (54)	16.8 (114)	4.4 (30)	1.8 (12)	-0.78	1.21
Photo E: 9 Kayakers	77.7 (530)	14.2 (93)	2.8 (19)	2.8 (18)	2.1 (15)	0.4 (3)	-1.63	0.84
Photo F: 12 Kayakers	89.3 (608)	6.3 (47)	1.3 (7)	0.4 (4)	2.1 (14)	0.3 (2)	-1.81	0.67

n=678

Table 10.0 Levels of Acceptability Regarding Numbers of Other Motorboaters (Q.8)

Number of Other Other Motorboaters	RESPONSE										Mean	SD		
	Very Unacceptable 1		Somewhat Unacceptable 2		Not Sure 3		Somewhat Acceptable 4		Very Acceptable 5				Missing	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)				
Photo A: 0 Motorboats	2.1	(13)	0.9	(6)	0.9	(6)	1.3	(9)	94.4	(641)	0.4	(3)	1.85	0.66
Photo B: 1 Motorboats	4.3	(28)	4.9	(33)	3.4	(23)	34.2	(236)	52.8	(355)	0.4	(3)	1.26	1.03
Photo C: 2 Motorboats	16.7	(114)	16.8	(114)	9.1	(64)	39.5	(270)	14.7	(97)	2.9	(20)	0.19	1.35
Photo D: 3 Motorboats	51.2	(347)	28.2	(190)	7.7	(50)	9.4	(67)	2.4	(15)	1.2	(9)	-1.17	1.07
Photo E: 4 Motorboats	86.4	(582)	10.0	(69)	1.3	(9)	1.00	(7)	1.2	(8)	0.4	(3)	-1.80	0.61
Photo F: 5 Motorboats	93.4	(629)	4.0	(31)	0.6	(4)	0.4	(3)	1.3	(9)	0.3	(2)	-1.88	0.55

n=678

Table 11.0 Levels of Acceptability Regarding Numbers of Other Tents (Q. 9)

Number of Other Other Tents	RESPONSE										Mean	SD		
	Very Unacceptable 1		Somewhat Unacceptable 2		Not Sure 3		Somewhat Acceptable 4		Very Acceptable 5				Missing	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)				
Photo A: 0 Tents	2.4	(16)	0.7	(5)	1.3	(9)	1.8	(12)	93.5	(634)	0.3	(2)	1.83	0.70
Photo B: 1 Tent	1.3	(9)	2.1	(14)	0.1	(1)	10.9	(75)	85.3	(577)	0.3	(2)	1.70	0.68
Photo C: 2 Tents	1.8	(13)	3.4	(24)	2.2	(15)	33.9	(231)	57.8	(672)	0.9	(6)	1.43	0.84
Photo D: 4 Tents	11.1	(77)	18.4	(127)	10.0	(66)	41.7	(279)	16.7	(115)	2.1	(14)	0.35	1.27
Photo E: 6 Tents	38.9	(263)	32.7	(221)	7.2	(51)	15.0	(101)	5.2	(36)	0.9	(6)	-0.86	1.23
Photo F: 8 Tents	68.9	(465)	17.4	(120)	5.0	(33)	6.0	(33)	2.1	(15)	0.6	(4)	-1.45	0.98

n=678

Table 12.0 Learning Experience (Q. 10)

QUESTION	RESPONSE							
	True % (n)	False % (n)	Don't Know % (n)	Missing % (n)	Correct Responses % (n)			
When watching marine life, such as whales you should not get closer than 100 feet	80.2 (539)	7.8 (54)	14.5 (82)	0.4 (3)	7.8 (54)			
The BGI area is known as the "Graveyard of the Pacific"	36.7 (242)	18.0 (125)	44.7 (236)	0.6 (4)	36.7 (242)			
Sea stars are a common predator in the intertidal zone	51.3 (337)	14.5 (99)	33.3 (236)	0.9 (6)	51.3 (337)			
When having a fire and driftwood is not available it is acceptable to use wood from the forest	7.1 (47)	87.0 (588)	5.2 (37)	0.9 (6)	87.0 (588)			
The BGI are administered by the Province of BC	29.9 (200)	47.3 (319)	22.0 (154)	0.7 (154)	47.3 (319)			
All of the BGI are protected from the Pacific's full force	7.4 (50)	80.2 (537)	11.5 (85)	0.9 (6)	80.2 (537)			
The BGI were historically inhabited by Coastal First Nations groups	81.1 (537)	2.4 (16)	16.2 (123)	0.3 (2)	81.1 (537)			
The BGI are along the migration path of Gray Whales	77.4 (516)	1.9 (14)	20.2 (145)	0.4 (2)	77.4 (516)			
Feeding wildlife is alright because they are probably hungry	0.1 (1)	99.3 (673)	0.3 (2)	0.3 (2)	99.3 (673)			
The First Nations' people in this area were whalers	39.7 (264)	14.9 (103)	45.1 (309)	0.3 (2)	39.7 (264)			

n=678

Table 12.1 Learning Quiz Scores (Q.10)

Quiz Score	Correct Response (%)	(n)
Score of 20%	2.3	(16)
Score of 30%	4.1	(29)
Score of 40%	6.7	(47)
Score of 50%	9.7	(68)
Score of 60%	17.5	(117)
Score of 70%	19.0	(131)
Score of 80%	23.2	(157)
Score of 90%	12.4	(80)
Score of 100%	1.0	(6)
Missing	4.0	(27)

N=678

Table 13.0 Importance of BGI Learning Opportunities (Pre-trip Questionnaire Q. 10)

Importance of Learning	Response (%)	(n)
Not At All Important	0.3	(1)
Somewhat Important	24.5	(77)
Very Important	40.4	(127)
Extremely Important	31.2	(98)
No Opinion	3.5	(11)

N=314

Table 13.1 How would you rate your BGI Learning Experience (Post-Trip Questionnaire Q. 20)

Learning Experience	Response (%)	(n)
Very Good	34.1	(120)
Good	50.0	(176)
Not Sure	12.5	(44)
Poor	2.8	(10)
Very Poor	0.6	(2)

N=352

Table 14.0 Voluntary No Fishing Policy Beliefs in the Broken Group Islands (Pre trip questionnaire Q. 12 Post Trip Questionnaire Q 14)

A Voluntary No Fishing Policy in the BGI	RESPONSE								Mean ¹	SD
	Strongly Disagree	Somewhat Disagree	Not Sure	Somewhat Agree	Strongly Agree	Missing				
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)				
Will protect marine life for Future generations	8.6 (58)	19.5 (131)	17.4 (115)	31.0 (212)	21.5(149)	2.1 (13)	3.38	1.26		
Will detract from the satisfaction of other park visitors	14.0 (93)	22.0 (149)	17.3 (118)	37.8 (257)	6.6(46)	2.4 (15)	3.01	1.20		
Will reduce the amount of Litter caused by fishing	9.0 (62)	20.1 (135)	22.7 (153)	30.1 (205)	16.4 (112)	1.8 (11)	3.25	1.21		
Will have a negative economic impact on the sports fishery	19.8 (135)	23.5 (160)	27.6 (186)	22.1 (149)	4.7(33)	2.4 (15)	2.67	1.16		
Will retain food sources for other creatures	5.6 (38)	14.6 (98)	19.2 (130)	38.5 (266)	19.8 (131)	2.4 (15)	3.53	1.13		
Will decrease my food source while in the BGI	46.0 (313)	18.7 (127)	8.7 (58)	18.0 (123)	6.6(45)	1.9 (12)	2.18	1.36		
Will have a low compliance rate	4.6 (28)	17.1 (116)	33.8 (230)	32.4 (222)	10.0 (69)	2.1 (13)	3.26	1.01		
Will take away from my kayak experience	47.8 (324)	18.6 (126)	6.5 (43)	17.6 (120)	7.4(51)	2.2 (14)	2.16	1.38		

n=678

¹ Responses ranged from Strongly Disagree - 1; Somewhat Disagree -2; Not Sure - 3¹ Somewhat Agree - 4; Strongly Agree - 5"

Table 15.0. Support of Voluntary No Fishing Policy in the Broken Group Islands (Pre trip Questionnaire Q. 13 Post Trip Questionnaire Q. 15)

How strongly do you support or oppose A Voluntary No Fishing Policy in the BGI	Response (%)	(n)
Extremely Oppose	5.9	(41)
Quite Oppose	11.2	(75)
Somewhat Oppose	16.1	(110)
Neither	18.1	(124)
Somewhat Support	16.7	(112)
Quite Support	16.7	(112)
Extremely Support	13.4	(91)
Missing	1.9	(13)

N = 678

Table 16.0. Support of Voluntary No Fishing Policy in the Broken Group Islands (Pre trip Questionnaire Q. 14 Post Trip Questionnaire Q. 17)

Most members of my kayaking group think I Should or should not support the Voluntary No Fishing Policy in the BGI	Response (%)	(n)
Extremely Should Not	4.6	(31)
Quite Should Not	11.4	(77)
Somewhat Should Not	9.4	(66)
Neither	36.3	(246)
Somewhat Should	12.2	(83)
Quite Should	12.2	(84)
Extremely Should	9.1	(59)
Missing	4.7	(32)

N=678

Table 17.0. Support of Voluntary No Fishing Policy in the Broken Group Islands (Pre trip Questionnaire Q. 15 Post Trip Questionnaire Q. 17)

I do what most members of my kayaking group think I should do	Response (%)	(n)
Extremely Not At All	14.3	(97)
Quite Not At All	9.6	(65)
Somewhat Not At All	10.0	(68)
Neither	28.0	(190)
Somewhat A Great Deal	16.2	(110)
Quite A Great Deal	14.2	(96)
Extremely A Great Deal	3.8	(26)
Missing	3.8	(26)

N=678

Table 18.0. Support of Voluntary No Fishing Policy in the Broken Group Islands (Pre trip Q. 16; Post Trip Q. 18)

For me to support the Voluntary No Fishing Policy in the BGI in the Future is:	Response (%)	(n)
Extremely Unlikely	6.3	(43)
Quite Unlikely	9.9	(67)
Somewhat Unlikely	10.9	(74)
Neither	14.2	(96)
Somewhat Likely	16.8	(114)
Quite Likely	16.5	(112)
Extremely Likely	23.0	(156)
Missing	2.4	(16)

N = 678

Table 19. Importance of the Role of the Guide (Pre Trip Questionnaire Q.17 and Non-Guided Post Trip Questionnaire Q. 23)

ROLE	RESPONSE										Mean	SD		
	Not At All Important		Somewhat Important		No Opinion		Very Important		Extremely Important				Non Response	
	1	2	3	4	5	6	7	8	9	10				
%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)			
The guide sets a pace for the trip that is comfortable for you	3.1	(17)	13.1	(71)	8.1	(44)	36.7	(199)	38.9	(211)	8.7	(52)	3.95	1.13
The guide discusses hazards that may be present in the BGI	0.4	(2)	5.5	(30)	4.8	(26)	24.7	(134)	64.6	(350)	8.7	(52)	4.47	0.85
Any tension or conflict that emerges is handled quickly and effectively by your tour guide	2.2	(120)	16.2	(88)	8.5	(46)	36.5	(198)	36.5	(198)	8.7	(52)	3.88	1.13
The guide promotes a social and happy group environment	2.2	(13)	19.7	(106)	7.6	(41)	36.8	(198)	33.5	(180)	9.4	(56)	3.79	1.17
The guide reduces conflict with other groups at campsites or on the water	3.9	(21)	16.4	(89)	7.2	(39)	35.1	(190)	37.4	(203)	8.7	(52)	3.85	1.19
The guide keeps the group organized and on schedule	2.8	(15)	20.0	(107)	5.6	(30)	40.3	(216)	31.3	(168)	9.8	(58)	3.77	1.17
The guide introduces you to Cultural points of interest such as First Nation's History	1.8	(10)	16.6	(90)	2.7	(31)	25.6	(193)	40.2	(218)	8.7	(52)	3.97	1.13
The guide provides field guides and books for the group	14.1	(76)	37.9	(204)	7.6	(41)	22.3	(120)	18.0	(97)	9.4	(56)	2.92	1.37
The guide discusses "Leave No Trace" camping ethics with the group	1.8	(10)	3.9	(21)	6.1	(33)	18.6	(101)	69.6	(378)	8.6	(51)	4.50	.908
The guide highlights the importance of not removing any First Nation artifacts or relics	1.8	(10)	5.4	(29)	5.5	(30)	19.0	(103)	68.3	(37)	8.7	(52)	4.46	.950
The guide helps you to develop a keener awareness and appreciation of the area	0.6	(3)	10.3	(56)	6.8	(37)	32.7	(177)	49.6	(269)	8.7	(52)	4.20	.993
The guide increases your knowledge and understanding of the natural environment of the BGI	0.7	(4)	9.6	(52)	6.5	(35)	33.6	(182)	49.6	(269)	8.7	(52)	4.21	.982

n=594 Includes All Pre Trip Respondents and Non-Guided Post Trip Respondents

Table 20. Satisfaction with the Role of the Guide (Guided Post Trip Questionnaire Q. 24)

ROLE	RESPONSE (%)												Mean	SD
	Strongly Disagree		Somewhat Disagree		No Opinion		Somewhat Agree		Strongly Agree		Non Response			
	1	2	3	4	5	6	7	8	9	10	11			
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)		
The guide set a pace for the trip that was comfortable for you.	0.0	(0)	1.2	(1)	0.0	(0)	15.5	(13)	78.6	(66)	4.8	(4)	4.79	0.47
The guide discussed hazards that may be present in the BGI	0.0	(0)	4.8	(4)	0.0	(0)	22.6	(19)	67.9	(57)	4.8	(4)	4.62	0.73
Any tension or conflict that emerged was handled quickly and effectively by your tour guide	1.2	(1)	6.0	(5)	7.1	(6)	17.9	(15)	63.1	(53)	4.8	(4)	4.34	1.01
The guide promoted a social and happy group environment	1.2	(1)	1.2	(1)	2.4	(2)	10.7	(9)	79.8	(67)	4.8	(4)	4.63	0.84
The guide reduced conflict with other groups at campsites or on the water	1.2	(1)	6.0	(5)	6.0	(5)	9.5	(8)	72.6	(61)	4.8	(4)	4.52	0.96
The guide kept the group organized and on schedule	0.0	(1)	2.4	(2)	1.2	(1)	10.7	(9)	90.5	(76)	9.5	(8)	4.80	0.55
The guide introduced you to Cultural points of interest such as 1 st nations history	3.6	(3)	15.5	(13)	2.4	(2)	21.4	(18)	52.5	(44)	4.8	(4)	4.15	1.17
The guide provided field guides and books for the group	16.7	(14)	6.0	(5)	2.4	(2)	17.9	(15)	52.4	(44)	4.8	(4)	4.02	1.49
The guide discussed "Leave No Trace" camping ethics with the group	4.8	(4)	6.0	(5)	4.8	(4)	19.0	(16)	60.7	(51)	4.8	(4)	4.41	1.06
The guide highlighted the importance of not removing any First Nation artifacts or relics	7.1	(6)	11.9	(10)	8.3	(7)	17.9	(15)	47.9	(40)	7.1	(6)	5.74	.132
The guide helped you to develop a keener awareness and appreciation of the area	2.4	(2)	2.4	(2)	2.4	(2)	21.4	(18)	66.7	(56)	4.8	(4)	4.57	0.81
The guide increased your Knowledge and understanding of the natural environment of the BGI	2.4	(2)	8.3	(7)	4.8	(4)	14.3	(12)	65.5	(55)	4.8	(4)	4.46	0.99

n=105

Includes Post Trip, Guided Responses Only

Table 21. Years Involved in Kayaking (Pre Trip Questionnaire Q. 18) (Guided Post Trip Questionnaire Q. 25) (Non Guided Post Trip Questionnaire Q. 24)

Years	Response (%)	(n)
No Experience	21.8	(148)
One year	15.5	(105)
Two years	11.1	(76)
Three years	9.7	(65)
Four years	7.2	(49)
Five years	7.4	(50)
Six years	5.0	(34)
Seven years	1.8	(12)
Eight years	3.2	(22)
Nine years	0.4	(3)
Ten years	5.0	(34)
Eleven to Fifteen Years	5.1	(35)
Sixteen to Twenty Years	3.4	(21)
Over Twenty	2.0	(15)
Missing	0.3	(7)

N=678

Table 22. Kayak Ownership (Pre Trip Questionnaire Q. 19) (Guided Post Trip Questionnaire Q. 26) (Non Guided Post Trip Questionnaire Q. 25)

Kayak Ownership	Response (%)	(n)
Yes	31.7	(215)
No	67.8	(460)
Missing	0.4	(3)

N=678

Table 23. Self Reported Level of Experience (Pre Trip Questionnaire Q. 20) (Guided Post Trip Questionnaire Q. 27) (Non Guided Post Trip Questionnaire Q. 26)

Level of Experience	Response (%)	(n)
Novice	37.3	(353)
Intermediate	47.1	(215)
Advanced	13.6	(92)
Expert	1.3	(9)
Missing	0.7	(5)

N=678

Table 24. Level of Involvement in the Activity of Kayaking (Pre Trip Questionnaire Q. 21) (Guided Post Trip Questionnaire Q. 28) (Non Guided Post Trip Questionnaire Q. 27)

Involvement	RESPONSE						Mean	SD
	Strongly Disagree	Somewhat Disagree	Not Sure	Somewhat Agree	Strongly Agree	Missing		
	1 % (n)	2 % (n)	3 % (n)	4 % (n)	5 % (n)	% (n)		
Kayaking is one of the most enjoyable things I do	1.5 (10)	5.9 (40)	13.1 (89)	42.6 (289)	36.3 (246)	0.6 (4)	4.08	.926
Kayaking offers me relaxation when life's pressures build up	1.0 (7)	6.3 (43)	13.3 (90)	44.7 (303)	33.9 (230)	0.7 (5)	4.04	.917
I enjoy discussing kayaking with my friends	3.2 (22)	8.1 (55)	16.1 (109)	45.3 (307)	26.3 (178)	1.0 (7)	3.82	1.03
Kayaking is very important to me	4.4 (30)	17.6 (119)	21.7 (147)	31.7 (215)	23.5 (159)	1.2 (8)	3.52	1.16
Kayaking says a lot about who I am	11.7 (79)	21.5 (146)	26.0 (176)	27.9 (189)	11.4 (77)	1.6 (11)	3.05	1.19
When I am kayaking I can really be myself	6.3 (43)	13.6 (92)	25.1 (170)	36.4 (247)	16.1 (109)	2.5 (17)	3.44	1.01
When I am kayaking others see me the way I want them to	10.8 (73)	17.0 (115)	35.4 (240)	24.8 (168)	9.4 (64)	2.7 (18)	3.07	1.12
You can tell a lot about a person when you see them participating in kayaking	9.9 (67)	21.8 (148)	29.8 (202)	32.0 (217)	5.0 (34)	1.5 (10)	3.01	1.07
I find that a lot of my life is organized around kayaking	47.6 (323)	30.5 (207)	8.8 (60)	9.4 (64)	2.1 (14)	1.5 (10)	1.86	1.06
Most of my friends are in some way connected with kayaking	47.1 (319)	33.0 (224)	5.8 (39)	10.8 (73)	2.4 (16)	1.0 (7)	1.86	1.07
I chose kayaking because I believe it to be the most low impact of other boating activities	17.6 (119)	19.6 (133)	11.9 (81)	33.2 (225)	16.4 (111)	1.3 (9)	3.11	1.38
I am involved in kayaking because it is popular with my friends	42.2 (286)	27.7 (188)	9.9 (67)	16.5 (112)	2.2 (15)	1.5 (10)	2.07	1.18

n = 678

Table 25. Origin of Visitor (Pre Trip Q. 22) (Guided Post Trip Q. 29) (Non Guided Post Trip Q. 28)

Origin	Response (%)	(n)
Total Principal residence in Canada	70.2	(477)
British Columbia	52.7	(357)
Alberta	13.5	(92)
Ontario	2.2	(15)
Saskatchewan	0.7	(5)
Quebec	0.6	(4)
Manitoba	0.4	(3)
Nova Scotia	0.1	(1)
Total Principal residence in United States	20.9	(142)
Pacific Northwest		
Washington State	6.3	(43)
Oregon	5.2	(35)
California	3.1	(21)
Other United States	6.3	(43)
Total Principal residence another country	3.1	(21)
Germany	1.0	(7)
Holland/The Netherlands	1.3	(8)
Ireland	0.6	(4)
New Zealand	0.1	(1)
Australia	0.1	(1)
Missing	5.6	(38)

n=678

Table 26. Visitors' Age (Pre Trip Questionnaire Q. 23) (Guided Post Trip Questionnaire Q. 30) (Non Guided Post Trip Questionnaire Q. 29)

Age Category	Response (%)	(n)
10 – 19 Years	1.2	(8)
20 – 29 Years	17.8	(120)
30 – 39 Years	28.0	(189)
40 – 49 Years	32.6	(220)
50 – 59 Years	17.0	(115)
60 – 69 Years	3.0	(20)
Over 70 Years	0.4	(3)
Missing	0.4	(3)

N=678

Table 27. Group Size (Pre Trip Questionnaire Q. 24) (Guided Post Trip Questionnaire Q. 31) (Non Guided Post Trip Questionnaire Q. 30)

Group Size	Response (%)	(n)
1 Person	0.4	(3)
2 People	20.6	(140)
3 People	9.0	(61)
4 People	21.4	(145)
5 People	5.6	(68)
6 People	9.0	(31)
7 People	3.2	(22)
8 People	9.6	(65)
9 People	4.8	(32)
10 People	6.8	(46)
More than 10	8.9	(60)
Missing	1.4	(5)

N=678

Post Trip Survey Descriptive Results**Table 28. Encounters Experienced with Others (Q.7)**

Encounter	Response							
	Too Few		Too Many		About Right		Missing	
	%	(n)	%	(n)	%	(n)	%	(n)
The number of canoes or kayaks seen was	1.7	(6)	18.6	(66)	79.1	(280)	0.5	(2)
The number of motorboats seen was	0.6	(2)	21.5	(76)	76.3	(270)	1.7	(6)
The number of sailboats seen was	17.5	(62)	2.5	(9)	77.7	(275)	2.3	(8)
Number of park wardens seen was	14.7	(52)	2.0	(7)	79.9	(282)	3.4	(12)
Number of other people seen at campsites was	0.3	(1)	52.0	(184)	44.4	(257)	3.4	(12)

n=375

Table 29. Level of Crowdedness on the Water and in the Campsites (Q 8)

Crowdedness		Response			
		On the Water		In the Campsites	
		%	(n)	%	(n)
Not at All Crowded	1	28.3	(93)	7.1	(17)
	2	32.8	(119)	13.1	(41)
Slightly Crowded	3	13.3	(48)	12.8	(45)
	4	8.3	(30)	11.9	(40)
	5	4.8	(17)	8.2	(29)
Moderately Crowded	6	7.5	(28)	17.3	(61)
	7	2.7	(10)	13.6	(46)
Extremely Crowded	8	1.3	(5)	7.4	(24)
	9	1.1	(4)	8.5	(28)
Missing		0.0	(0)	6.5	(23)
Mean		2.74		4.95	
SD		1.86		2.38	

N = 375

Table 30. Perceptions of Management Issues (Q. 10)

Management Aspect	RESPONSE (%)						Mean ¹	SD
	Very Poor % (n)	Poor % (n)	Not Sure % (n)	Good % (n)	Very Good % (n)	Missing % (n)		
Amount of Garbage	0.6 (2)	4.5 (16)	3.7 (13)	41.5 (147)	48.9(173)	0.8 (3)	4.33	0.89
Damage to Trees or vegetation At campsites	0.8 (3)	6.5 (23)	8.2 (29)	41.5 (147)	40.1(142)	2.8 (10)	4.14	0.92
Availability of Firewood	7.1 (25)	28.2(100)	11.3 (40)	36.4 (129)	11.9 (42)	5.1 (18)	3.18	1.20
Quality of toilets	0.6 (2)	7.1 (25)	5.6 (20)	36.7 (130)	47.2(167)	2.8 (10)	4.28	0.89
Cleanliness of seawater	0.3 (1)	3.4 (12)	7.3 (26)	43.8 (155)	44.6(158)	0.6 (2)	4.29	0.76
Amount of wildlife seen	0.8 (3)	8.2 (29)	3.7 (13)	51.1 (181)	35.9(127)	0.3 (1)	4.12	0.88
Overall wilderness quality	1.1 (4)	3.4 (12)	3.7 (13)	42.4 (150)	49.4(175)	0.0 (0)	4.35	0.80
Overall satisfaction	0.0 (0)	0.6 (2)	2.5 (9)	33.6 (119)	63.3(224)	0.0 (0)	4.58	0.56
Likelihood of returning	0.6 (2)	1.7 (6)	11.9 (42)	29.1 (103)	56.8(201)	0.0 (0)	4.39	0.80
Likelihood of recommending to a friend	0.3 (1)	1.4 (5)	1.4 (5)	24.0 (85)	71.8(254)	1.1 (4)	4.66	0.60
Overall satisfaction with Lady Rose/Frances Barkley Services*	0.0 (0)	0.8 (2)	3.2 (8)	35.7 (89)	60.2 (150)	29.7(105)	4.55	0.60

N=375 Post Trip Respondents

¹ Response categories ranged from Very Poor - 1; Poor --2; Not sure - 3; Good - 4; Very Good - 5

*This question was not relevant to Toquart Bay visitors and therefore, does not include non responses but calculates valid percent of those responding

Table 31. Where you greeted by a Park Warden Upon Arrival (Q. 21)

Greeted	Response (%)	(n)
Yes	57.6	(216)
No	39.5	(148)
Missing	2.9	(11)

N=375 of post trip respondents

*Percentage of people who responded

Table 32. Guide Commented on Voluntary No Fishing Policy to Guided Visitors (Guided Post Trip Questionnaire Q. 19)

Guide Comment	Response (%)	(n)
Yes	30.5	(23)
No	59.0	(62)
Missing	10.5	(11)

N=105 post trip guided respondents

APPENDIX 6: Open Ended Questionnaire Comments

Question #4 What activities did you engage in while visiting the Broken Group Islands: Responses to other activities:

Improving navigational skills
Navigation
Beer drinking
Site seeing
relax and enjoy nature
Snorkeling
Canoeing
Canoeing
canoeing
swimming
Socializing
photography
Campfire cooking
R&R
Caving and night paddling
History of area, native village remains
Beach lounging
Suntanning, reading, starwatching, snoozing, swimming
canoeing
Canoeing
Visit to archaeological dig
Relaxing
Socializing, relaxing
Reading
sketching
Sunning
Sunbathing and beaching
swimming
photography
Whalewatching
Swimming
Reading
Photography
Relaxing
Beachcombing – for interest not for gathering
Whale watching
reading
sunning
Canoeing
Canoeing
Canoeing
Canoeing
Canoeing
canoeing
Exploring intertidal zone
Whalewatching
Archaeological dig visit
Reading
socializing

Playing cards
Relaxing
Isolation, relaxation
Archaeological Site Visit
Archaeological Site Visit
Archaeological Site Visit
Archaeological Site Visit
Having Fun (made your own campfire)
photography
Socializing/bonding
Reading
Photography
Orientation of Archaeological site at Benson Island.
Writing, reading, photography
Photography
Photography
Sunbathing and reading.
swimming
Canoeing
canoeing
canoeing
Snorkeling, crafting
Relaxing, snorkeling
Swimming, snorkeling
Marine life observation
crafting
Cliff jumping, swimming
Canoe
Climbing
Climbing
swimming
Sitting, reading, sunning, napping
Swimming
Canoeing
Canoeing
Canoeing
canoeing
Canoeing
canoeing
Tree searching and viewing
Photography
Sightseeing
Relaxing; enjoying nature
Visit archaeological dig
Visit archaeological dig
Canoeing
canoeing
beaches
Canoeing
Canoeing

POST TRIP SURVEY (Guided Question #23) (Non-guided Question #22)

Is there anything else you would like to tell us about your learning experience?

Having Carleigh, Brian and Gillian increased my awareness and curiosity re: environmental issues. Brian & Gillian were a good example to me of how to camp cleanly. I really enjoyed my time here and feel like I know a lot more about the ocean now.
It's beautiful – let's try to keep it that way for future generations!
I just wish I could have stayed longer – too short a visit.
Fantastic opportunity to visit natural and historical park setting
We were on a self administered tour. Our knowledge of area was enriched with Mary Anne Snowdens' kayak book. No history/education was presented to us by the kayak service at Sechart.
A profound experience: not at all what I was expecting. The casual atmosphere let me learn without even being aware I was learning. Absolutely the best way to see the Broken Group is by <u>kayaking it</u> .
Very little contact with resources for learning other than books for sale in neighboring vicinity
Please collect park fee's before kayakers set out. It felt like I was camping At Cultus Lake or something. Also, remove all unnecessary signs like the ones on Hand Island (yuk). Am I at Stanley Park or something? Please keep this a wild experience, and limit the tour guide syndrome (K2, Everest). Inexperienced people who other wise wouldn't even bother, can now bring the cooler and a couple of lawnchairs. Yuk!
More interpretive signage at campsites and historical sites. Some cautionary signage at fish traps, etc. to indicate that they are protected sites.
Native historic sites need to be marked and expectations posted for respect to be given.
A fishing ban should be mandatory. Since this is unlikely to come about, have revised regs for the BGI; eg. Allow each group to catch 1 salmon for the entire stay and crab once. This allows people to enjoy the experience of fresh seafood in the wilderness while protecting fish stocks.
We learned that 4 litres of water/person/day is much more than we need. Also how to travel more safely and how to camp while having little effect on our surroundings.
The bioluminescent algae was the coolest thing I have ever seen.
We must do everything possible to keep intertidal zone full of life.
Willis needs more toilets – had too many campers – made for heavy environmental impact.
General information brochure provided by the warden, upon arrival would have been nice, with brief notes on native history, wildlife and pictures, and points of interest and danger areas.
I appreciated the laminated posters at the washrooms. Could have a few more of these specific to BGI
Terrific experience – has stimulated a desire to know more.
It was a very positive and informative experience. The Sechart Lodge helped in that process. What a jewel of an area.
There are no signs, there is no literature available, there were no teaching aids. I left with the knowledge I arrived with except for being better at kayaking. Would like to see more information available to the public. Would like to see public potable water available.
The weather was wonderful – a great few days.
This is our second visit. Our first was in May several years ago. This one was September. We had good weather both times, but enjoyed the greater solitude several years ago. Group tours seem to be less aware of the need for quiet, solitude and serenity. If one wants a group social activity, they should congregate in a mall.
I always learn something new when I visit the BGI because it is so conducive to natural observation and exploration. I wish there were more "information boards" to help me learn..
Signposts at each campsite with a map, brief note on highlights (eg. History) and suggestion box
I felt sad when I saw motorboats whiz by me because of the dangers to others in the water and to wildlife. I also felt sad to see so many campers at islands even though admittedly, I and my group were a part of the camping crowd.
This was my first trip and it came with no planning beforehand.

Great camping – crowded
Impressive outhouse experience.
There is a lot of evidence of human inhabitancy at BGI. There are several locations, large industrial drums on shore. There should also be some education of the visitors as to the appropriate camping techniques, for example I had to stop someone on Dodd who was burning a Styrofoam cooler
Would like to have more education on wildlife etc. and more explanation of low impact camping.
It is beautiful here that's why there are so many people. It's too busy too active for me to consider it wilderness.
Concerned about controlling human influx.
Only negative is that the campsites were too crowded. I would strongly support a permitting and quota system.
Let's make sure we preserve this experience for future generations
The staff of the Lady Rose Marine Group and Sechart Lodge add a lot to feeling welcomed to the area. They set the tone for safe recreation while being respectful of nature and weather elements.
Possible to take surveys on a day to day basis to determine how crowded each campsite will be? I am thinking of a rough guidelines rather than specific reservations etc
Very remote. Extremely well laid out campgrounds. More sanitary than expected.
Very quick changes in weather/wind.
I learned from members of our group however some history of the shipwrecks etc. posted in campgrounds would be interesting.
My learning was the result of both observing and of the knowledgeable people in my group
Lots to learn.
I would like to see a reservation system, for campsites implemented to avoid crowding. I would be annoyed if strictly guided trips only were to be permitted in the BGI. Information regarding the park rules should be readily available for all visitors.
On each adventure there is always something new to discover and new to learn about – and leaving the BGI the way I had discovered it is important to me
I appreciated the value of preparing for inclement weather
Very much enjoyed the presentation regarding the excavation sites on Benson Island. Very informative.
Keep a close eye on volumes. Kayaking no problem but camping impact a problem. Guided tours should likely use less accessible areas or other specialized camp sites.
Excellent tour on Benson – provided good information about 1 st nations peoples in the area.
We had the chance to listen to the 1 st nations talk on Benson Island, which was very informative and added lots to our experience.
Guided tour on Benson Archaeological dig very interesting
As it is very accessible to novice kayakers more ranger visibility would be good. Love it – saw whales feeding, a puffin, great moss, Benson Island Archaeological Tour
Quite interesting to learn more about the preservation plans of the First Nations. Canada's general public needs to know more about this.
Any learning was the result of reading guidebooks and talking casually with people
A Park warden we could question regarding issues that arose would have been good.
Voluntary no fishing policies won't work – make it mandatory or not at all Assumption is that tourists are Canadian and know about the area – we as a group of foreign visitors did not! The BGI are a superb amenity and reserve – I am surprised that shellfishing and fishing is allowed at all
It was great to tour the archaeology dig.
I disagree with only 8 sites (as they are now).I would rather see either more open spaces for tents at the existing sites or more sites, even smaller would be OK (eg. 2 tents)
The Benson Island historical excavation was amazing. Will was super informative.
I believe that a stronger emphasis on the historical aspect of the BGI.
Wind, weather, tidal action, seafog.

Had a great time.
I would like to see more (maybe 2 more) campsites opened up. They are very crowded in the summer and these might spread out the people.
Like the archaeological dig, maybe an interpretive program at some of the campsites.
There could be more information available somehow?
Benson Archaeological sites was not giving tours when we arrived @ 10:00 am.
Very disappointed with the First Nations guide @ Benson Island. We arrived at 10:00 for tour. Guide was bordering on rude and would not bother talking to us or the other person present.
Found out a great deal from reading guidebooks, information on islands, talking to others. Guides answered questions adequately, but did not volunteer much information.
National parks not all equally tourist friendly
Loved the biodegradable washrooms; although they did stink sometimes. Beautiful country and lots of interesting, friendly people met.
What a wonderful way to initiate my sixties...with some initial trepidation., reflecting back, I am so, so, so very pleased I DID IT!
I felt I could have used more 'basic training' about sea kayaking before setting off, unguided, into the BGI.
Awesome scenery great efforts in maintaining/preserving natural habitat on islands.
A wonderful experience in which many memorial memories were made.
These questions are senseless and are aloof and vague. It is like they are directing the answer and do not have much purpose.
This was a very positive experience for myself and I would like to return for more, in depth experience. This is a very well run, well developed resource.
I honestly can't think of any negative aspects of my trip. The BGI seems to be thriving, well run, beautiful taste of nature.
Loved it! Internet says easy paddling for novice kayakers, found this not always to be true and the channel crossings could be quite difficult.
I loved the idea that this park is protected and will be conserved for others to enjoy for years to come. I also believe that the number of visitors should be controlled to limit the impact on the environment. I would pay more than \$5/night to make this feasible.
The islands are a wonderful environment that deserve to be preserved (even under extreme conditions) so that they can be kept intact for every year to come
I would like more big panels to read such as the ones on Hand Island. That information is succinct and informative.
It is important for new comers to have tide and water activity information. Inlanders know very little about tide times. Standing bulletins ie. Hand Island on more islands would benefit new comes – to avoid fear.
It is a wonderful place to view marine wildlife. I think it should be up to the marine biologists to decide about fishing irrespective of what people want.
We saw a grey whale by Clarke Island. There is also a huge number of bald eagles and seals. We weren't able to make it to Wower to see the sea lions this year.
Would be nice to have more history. What we know we got from a book purchased beforehand, or from the back of the chart or from friends on previous trips.
Usually met nice people – everyone has good stories. I learn much from guides (some) I talk to.
Different from anything I have ever experienced.
A guide book to indigenous wild life would be good (hand out)
That it was a wonderful opportunity to enjoy the beauty of these islands.
It was an awesome experience. I am definitely coming back.
Amazing sea life is found all over the area. Eagles are in abundance.
We had books with us so it made a difference every day when we went out.
Small brochure identifying the various species seen in tidal pools and ocean bottom would be helpful
Sport and commercial fishing should be prohibited in the BGI park
I would hate to see it turn into Coney Island that is to say get overrun by huge groups that perhaps

don't get it. Also I prefer canoes
I was absolutely delighted at the intertidal life and whales I observed. As soon as I return home I am heading to the library to learn more about them. I would also like to learn more about the First Nations history.
<ol style="list-style-type: none"> 1) Ban campfires 2) Fishing should be banned (not voluntary) 3) Numbers should be regulated (use a West Coast Trail type registration system) 4) Do NOT build more campsites – this would be like building more roads – you just get more cars and more congestion
Archaeological dig site tour was interesting; accounted for our learning experience
Everyone we came into contact with via Lady Rose/Frances Barkley and Sechart Lodge was very knowledgeable and helpful in providing us with great day trips into the BGI thus enhancing our kayaking experience immensely.
Wonderful area to take the whole family kayaking
Enjoyed learning about First Nations midden sights.
A fantastic place to learn but the “guide” (commercial or otherwise) must have skills and knowledge – skills being both interpersonal and the hard skills of kayaking. But knowledge is the key.
A voluntary fishing ban would be hard to enforce – especially with so many visitors from outside Canada.
It was wonderful. A bit overcrowded but I am not sure quotas will work. If it gets too busy, like the WCT, quotas are acceptable as long as tour groups do not get priority.
Most learning was prior research
Just that I wish I could have stayed longer – too short a visit.
Fantastic opportunity to visit natural and history park setting
Fresh water sources
Set up an interpretive centre at Toquart Bay and have lectures, slides by naturalists to help educate visitors especially children
I've enjoyed my experiences in previous visits

PRE TRIP SURVEY: Is there anything else you would like to tell us about the Broken Group Islands?

The reason I have so few opinions re: kayaking is because it is my first time and this is an awareness and new activity trip. I also came because I really want to spend time by the ocean and learn more about it.
Fishing in the BGI – I would respect a no fishing policy. I am surprised fishing is currently allowed by power boats. Why not allow only kayak fishing.
Very beautiful area – numbers entering area should be tightly controlled. Thank you!
This will be my first kayaking trip. I am really looking forward to it.
I look forward to checking out the islands.
In terms of photos and the amount of people in the BGI, acceptable numbers are extremely closely related to those people's willingness to carry out litter and respect nature and noise levels.
I have been coming to the BGI for 15 years and naturally I expected it to be more popular which it has become. I object to the increasing number of commercial groups as it overcrowds camping, etc. As in most resource management issues commercial interest supersedes the private interest. Just look at whitewater rafting interest. I suspect that permits to boat the BGI will be a reality some day. I dread the day, because the private boater will lose. Also, put commercial in their own campsites. Have one or two of these away from non commercial groups. Limited commercial activity not non-commercial activity. Limit group size for all trips.
It is wonderful. I hope it can stay pristine.
I read today that Barkley Sound area is noted to be 'best in the world for winter scuba diving?'. I cam to kayak but would have brought my dive card if I had known.

I am from Europe and I know what happens when things are/were free. It becomes polluted and depleted. I support a total restriction on fishing – it is easier to control.
Any relatively small area like BGI, as it becomes more popular, is going to have to be monitored closely... may even have to limit numbers in the busy months, and may have to control (ie. Guides) so that the quality of the area is preserved.
I am looking forward to my visit and at this point I really don't know what to expect. Good luck with your study Carleigh... I think what you are undertaking is and will be very important in the scheme of things to come.
I don't know a whole lot about the BGI as I have never been there and only know what I've read about them. I look forward to spending time with nature and experience things I've never experienced before.
Great outhouses – good architecture – great view.
Definitely increased presence on the camping areas, toilets are beginning to get disgusting occasionally. Would mind some restriction on numbers.
A large part of overuse problems could be stemmed with a park restriction on campers and boat/group mooring. This would also decrease over fishing of groundfish and crabs.
Shellfish information? Post tide warnings?
I chose kayaking because I enjoy outdoor activity as opposed to whether or not it is low impact or popular
I would like to see the park 'well managed' by individuals whom are looking to assist or education kayakers, boaters, etc. I do not want to see a 'dictatorial' approach! Further, I agree that this area should maintain a strong attitude that is sensitive to the environment and encourages low impact visitors, boaters, etc.
Regarding fishing: last year we spent a very enjoyable couple of hours catching perhaps half a dozen crabs and cooking them to have with our dinner. Surely this level of fishing is tolerable and without significant environmental impact and can greatly add to the enjoyment of kayakers in the BGI.
I think I see where you are going with this: <ol style="list-style-type: none"> 1. commercial fishing – no 2. recreation fishing – limit it 3. recreational motor boats – no 4. add more camping sites 5. tour groups – good – but limit them and their sizes max 8-10 6. Do not license kayakers/paddlers like the West Coast Trail.
Since most people come kayaking in order to get away from it all, it would be nice if motor boat access to BGI was restricted. This would encourage marine mammals to come to the area and increase enjoyment for kayakers and canoeists.
Mandatory no fishing an option? No \$\$ reservation fee, but possibly limit amount of people going.
Keep them the way they are
I support as stated previously a mandatory no fishing policy for the BGI. Give its small area however, this may have little effect on humanity's impact on the overall ecosystem and resultant decrease in biodiversity
Some of my expectations include: <ol style="list-style-type: none"> 1) viewing a pristine environment as far as experiencing low to no human impact 2) viewing wildlife 3) finding secluded, protected and private areas 4) variety of kayaking conditions 5) interesting landforms and islands 6) other visitors to the park are thoughtful and courteous in their actions
With regard to a voluntary no fishing policy in the BGI, I suspect kayakers would have a relatively small impact on fishing even without a ban. For a voluntary no fishing policy to be successful, you need support and compliance from power boaters, because they do far more fishing than kayakers.
I might have different opinions after I visit the BGI – it's been 20 years since my last visit.
People should definitely be able to explore and enjoy the BGI because people need to be educated about wilderness areas. It is because of areas like his that our awareness of the beauty is being

increased. My no fishing opinion only applies to power boaters in this area.
Kayaking is one of many outdoor activities I participate in. I like variety; this will be my first experience paddling a kayak for more than 1 day. My husband owns 2 kayaks, one for him and one my university-aged children and I share.
I appreciate that you are doing this survey. I hope that the results create a manageable use plan for the BGI. I worry that this beautiful place will be destroyed from overuse and lack of knowledge.
By requiring reservations for campsites could result in less impact and control of numbers on the islands
Hopefully it will remain unspoiled for generations to come.
Protect it sensibly.
I would appreciate a quota system for kayak campers to ensure reasonable density
Beautiful.
I am excited to get an opportunity to meet them. I hope they are as amazing as I imagined – also untouched and well taken care of.
Wow! Beautiful.
Guided tours have a greater impact because of the number of people. It is important for the government to recognize Tsessaht rights in the BGI and work with them in the on-going operation and administration of the area. I hope you have the Tsessaht 'on board' with your research project.
Really, really, really like the eco-outhouses that were built for campers on a few of the islands. Think they are excellent and that all of the Islands that have camping allowed should have them.
The outhouses are a great luxury and benefit to campers. They are also better on the environment. Thanks to Parks for maintaining them.
The sea lions, many birds and starfish are spectacular. Can't wait to enjoy this experience again.
I don't agree with guided tours.
Don't commercialize the wilderness. Don't use the 'Parks' to exploit the wilderness for the purpose of tourism (like Banff and all the others) I don't agree with guided tours.
Minimize commercial services, - tours, whale watching. Maintain campgrounds @ current level of development.
Beautiful Environment.
I like the King crabs and fishing around there. I like the powerboats as well. The scenery is beautiful, also nice to bird watch.
They are a wonderful natural resource that must be sensitively opened to ecotourism for only 'zero-impact' and self-sufficient groups/individuals. They are a treasure that should <u>not</u> be commercialized in any way. Guided groups must be limited in number and size of group to avoid overwhelming the limited number of campsites. I have kayaked BGI 2 times already and will not come anymore if I perceive it is being mismanaged or overused. I am happy to <u>pay a fee to enjoy</u> my peace and solitude (eg. Rent a campsite for \$20 night!) I am not willing to participate in a draw or lottery to determine my privilege or time kayaking the Broken Group or doing the West coast Trail. That could be available for those of low income and more time (students, retired etc.) As a member of a higher income group (professional 6 figure US income) I have a limited amount of time and want to be able to go on the eco-trip I want when I want and I may have to pay for it. In fact, I would be <u>willing</u> to pay for my reservation or camping license as a non-resident pays more for their fishing or hunting license. I hope that this will not be required in the future – but I would be willing to abide by these rules or fees if this preserved my choice of location, choice of time etc. Thanks.
Enroute to my first experience in Broken Group. I understand reservations about fishing, however, I enjoy the activity of catching and eating 1 fish now and then, and believe this to be an acceptable and sustainable behavior
I am against commercial tourism in the BGI. I have taken guided trips and unguided. I prefer the unguided because most tourism guides have an attitude best expressed 'this is my space'. Commercialism also would make a reservation system and mandatory and commercial use would dominate.
Concern for the BGI environment with increasing popularity of kayaking (especially marine life)
I very strongly object to large guided groups (companies) making money in the BGI island. Some of

these guides can be very rude with people who are not in their group as they don't want other people interfering with these customers' 'wild nature' experience.
I have fished in the Bamfield area, including the outer islands of the Broken Group for many years. I believe that closing the BGI to fishing is doable and strongly support it.
Regarding the voluntary no fishing: I don't really fish in the first place, so it's not a big deal to commit myself to the voluntary no fishing policy.
No impact and fishing guidelines and park rules should be given out to the visitors at every opportunity. Education of visitors to parks and reserves is the most potent weapon against accidental damage and impact. Sustainable management is the key.
First visit – never kayaked before. I hope survey helpful. It would be interesting to complete this survey after this 5-day trip.
I am very excited to see a natural place rich in cultural history and wildlife. Working in the tourism business (Tourism BC) it is important to learn about the tourist areas of BC. This is another reason for my trip.
Get with me after my trip – I'm sure I'll have something to say.
Mandatory no fishing, not voluntary should be the way.
Voluntary fishing ban is a nice idea if backed by scientific data. Would have some tourism/sport fishing impact, but most kayakers do not use kayak as a way to get fishing (it's more a bonus than a need) – it's just one fish. Ban would be very tough to enforce. I would fully support a ban on motorized boats in BGI (other than ranger) is there one? Also, sites need interpretive signs, effects of fishing, history, cautionary notes.
What about a catch and release program only for sport fishing.
Definitely needs serious protection as 'ecotourism' becomes more popular. Needs lots of research and knowledge to be shared, to educate people.
Visiting BGI is a small goal in my life that will soon be met. I am looking forward to my trip.
I love coming out to the BGI for the sandy campsites and calm water. I do have an opinion about guided groups. They tend to bring people into an area who have not developed their skill in paddling or camping, thus too high a dependency on the guide. I think that the survey should ask the question about how people who are not on guided trips feel about guided trips.
I believe the BGI should be treasured for its natural beauty and solitude from working day pressures that do not presently hit you when you visit the islands. All reasonable means should be employed to limit the impact on the islands.
Reliable water would be an asset. Limiting the larger pleasure craft.
Fishing in BGI – I would respect no fishing policy. I'm surprised fishing is currently allowed by power boats. Why not allow only kayak fishing?
Very beautiful area – numbers entering area should be tightly controlled. Thank you.
This will be my first kayak trip – I am really looking forward to it.
A beautiful place which I would love to enjoy and would support sustainable policies.
This type of activity is also important to and for families and the development and education of children (of all ages). In order to teach children conservation it is becoming more difficult to find remote areas for them to experience. PS I find no logic or connection to the national parks backcountry fee structure
Can't wait to explore them.
Ban or limit the number of motorized boats in the BGI. No fishing policy should also be applied to the motorized boats.
Instead of a voluntary no fishing policy, would recommend a 'not motor boat' policy
This is my 'big' summer vacation this year so am hoping it is great. We've been planning this trip for a year and have this location because we have heard it is the best there is.
I think there may well need to be a reservation system for the Broken Group.

POST TRIP SURVEY: Is there anything else you would like to tell us about the management of or your experiences within the Broken Group Islands?

The greatest disappointment of the trip was viewing the affects of clear cutting from the water.
Need more campgrounds; no access to motor or fishing in a smaller area of the BGI, but not the whole area
The park management of camp areas and designated sites is necessary. If use of the area would warrant further campsites to be available, I would favor that over restriction of access or reservation of campsites. I would like to see as many people who are interested in seeing this area have access and availability to it.
Some sort of "use permit" system needs to be established that will limit the number of visitors in a given year. There would need to be separate categories for licensed guides/commercial operators and individuals. There could also be separate permits for high season and shoulder season. These could be done like game hunting draws. Thanks.
Permits should be issues to use the BGI. More information needs to be provided about fishing regs, garbage and firewood.
Garbage pick up for a fee would help people attain a higher level of impact free camping. I ran into a couple camping on Jacques Island. They knew this was wrong because they had their stuff hidden way up in the trees. When I pointed out there was no camping there, they pretended to be unable to speak English. More enforcement may be necessary to preserve the Park. The Lady Rose and other tour operators should have to share an allotment of kayak slots. Toquart Bay camping should be similarly limited to preserve the Park.
Paid garbage pick up service available, if people want it.
It is time to regulate access. I found there are far too many people in the park. Campsites are over crowded with groups in excess of 10-18 people. The outhouses are great. Access needs to be restricted and park fees revised. A trail system needs to be built to prevent damage to forested areas. Fees for outfitters should be higher to cover the cost of wear and tear on "our" park.
My only complaint is the numbers of people at Willis Island. No path to outhouse off the beach. Also, I answered your questionnaire as a canoeist. Perhaps a permit fee for outfitters.
Groups should be kept small and encouraged to take up as little camping space as possible
Excellent response of Warden Dan to an emergency situation.
We love the Broken Group Islands. We found it to be more crowded in the campsites this year than it was last year. But overall there is enough beach area to spread out and keep away from other groups. We noted there were fewer small animals in our food this year ie. Raccoons, mice and crows - perhaps because we were in a different location than last year.
I would leave the decision on fishing to the biologists. I have no idea what is needed to preserve the fishery. I think there should be fewer permits for camping issued or open more campgrounds.
I guide commercial trips but will likely not come back unless BGI gets regulated. Too much pressure on tour guides to scramble for sites. I understand how difficult it is to regulate but it should be done. Thanks.
Feel that it is good to encourage responsible commercial tourism activities in national parks.
We picked up garbage and carried it out. We wanted more adventure in rougher water; wanted to see islands with seals but didn't get to. Should have been told more about options which are available at various islands. I would have gone to an island like Clarke near the seals, near Dicebox or the island where the investigation of seals is going on. Would have enjoyed less downtime at lunch.
Favor protecting environment or protecting individual desires. I feel strongly about it and the same for the animals. We need to do what it takes to protect the land. Brochure/sings about tidepools to develop respect and appreciation, however few people are readers. Permit process should not become a revenue process – don't increase fees or charge a reservation fee.
Fishing boats ok – not a lot of outboard recreation boats.
<ol style="list-style-type: none"> 1. Provide Firewood: a) for safety; and b) to preserve the setting. 2. Provide Information Brochure at outset. See "your learning experience". 3. Good to have Search and Rescue visit during storm – very reassuring. 4. At&T cell phones do work out here. We were told otherwise. 5. Put hooks in washrooms at Sechart.

I felt very safe. We had one scary night in a gale on Clark. A visit from the coast guard fellow was very reassuring. Also the daily visit from park staff was helpful. Small laminated charts would be helpful if available for purchase.
No mosquitoes or insects – what a pleasure. Good that personnel were out checking on groups in really inclement weather and marine conditions. Lovely facilities with unique natural embellishments. Information pamphlets on wildlife, native lore, history, etc. Firewood would be nice. Can be a necessity for keeping warm and drying gear when storms hit hard. Many beaches are picked pretty clean.
AT&T cell phones do work. Very few bugs. Good that during big storm sea rescue checked in with us to make sure we were ok. Would like to be able to buy small laminated charts on boats or dock. Need more pamphlets on wildlife and geology and history. Need to supply wood to preserve natural drift wood.
There should be more campsites at Gibraltar or have another campground option within easy paddling distance of Sechart. Too many people congregate there on their last night.
Sport and commercial fishing/big boats do more to deplete stocks!
How about banning the charter/sport fisherman? If there is a problem, don't fish and apply it to all. I am opposed to resource extraction in a national park.
Management is being handled effectively. A visit to the BGI allows you to experience and observe many of the wonders of nature feel the full force of the elements of nature.
More education is needed to persuade people to practice no trace camping. Possibly firewood should be provided as campers are disturbing the forests seeking out fuel for their fires.
Worried that park will charge entry fee; user fee. Worried about the impact as it is so popular.
Need to find a way to limit numbers of campers. Perhaps a reservation system as unfortunate as that would be. Also, more orientation re; noise in campgrounds especially at night. I have been in crowded provincial campgrounds that were way quieter. Little doubt it is the presence of authority that keeps it that way. Also question whether water taxi should be allowed to land at the islands. I suspect if they couldn't then you might only get a certain "breed" of kayaker going there.
Yes – noise factor and a basic disregard of large groups for other campers and low impact camping. The warden informed us that no mention is made in his orientation about quiet hours at 10:00 pm, which I found surprising. On the outer island, Benson, I had a good experience. On the inner islands, we had a terrible experience with large (unescorted groups) who drank lots, stayed up till midnight then noisily went paddling in the dark. I've had better experiences in crowded campsites where wardens were present on land. Second recommendation: prohibit water taxis from the outer islands therefore offering more experienced paddlers the chance for a bit of "wilderness experience". There is something to be said for "paying your dues" and "earning your way". I feel the BGI is a little out of control regarding administration. What about those who miss the orientation at Sechart? What about spot checks, random on island By someone with authority. We saw people feeding deer. We need to teach people how to be in the wilderness, minimize impact both social and environmental – respect for fellow campers and the environment. I am also concerned about the fee contract. I hate contracting out because contracting out is inherently problematic. It is arm's length and when there is the loss of authority, loss of investment in the park and loss of feedback channel.
The voluntary no fishing policy begs the question of whether or not people should be allowed to fish in the BGI: People should be able to do so. Regarding the question "do you support a fishing closure in the BGI: I strongly disagree. I strongly oppose a ban of fishing – why implement a voluntary no fishing policy? If someone chooses to fish s/he fishes; if not s/he does not.
Do not implement a reservation system such as the West Coast Trail
<i>"The trouble with normal is it always gets worse" Bruce Cockburn</i>
If you want an outdoor/wilderness experience, the BGI is not the best or appropriate destination in the summers. The lodge/water taxi service is bringing inexperienced paddlers to the islands of their choice

(very small children and coolers included). It is a huge change from a few years ago.
Really feel that the BGI has become a place for people to be introduced to kayaking rather than a wilderness experience. I have not been there during the summer for years and won't come again from June through August. It's just change and inevitability really. The lodge and services they provide are designed to put as many boats as possible in the water, as are all the other kayak companies between the BGI and the lower mainland. I feel things are becoming strained however. I was on one of the beaches on Willis and counted 23 boats (half were doubles), the beach next to ours had even more boats. When the tents were all set up it looked like a Kmart parking lot in terms of density. The toilets were close to full, people jockeying for camping space, just too much for the park to bear over time.
Reservations of campsites on islands. Great sanitation, but need more woodchips in bins at the composting toilets on camping islands. Wonderful tour – 1 st experience – would come again!!
I understand there may be concerns about bottom fish #'s, and this is why a <u>voluntary</u> no fishing policy is being considered. I think it would be more appropriate for DFO to decrease limits or close the fishery. DFO has the expertise dedicated to managing a fishery. Parks Canada should relay their concerns to DFO and then step back and allow the fisheries biologists to do their job. Parks staff have so much to manage, they should be efficient and trust the other resource agencies.
Should make it "no fishing" to allow stocks to regenerate. Need proper camping places – stop destruction of sites – tent pads/platforms; need tables; more toilets (either end of beach); smaller group campsites
Could have used more information available to public regarding toilet availability and water. As well, zodiac assisted ventures don't fit with the experience. Big high speed powerboats to drop people off into campsites negatively impact the experience.
This is what a guide should be, but usually isn't. They should be trained and knowledgeable, not just a college kid out to enjoy nature and get paid for it.
I would differentiate between bottom fish and salmon, mackerel etc. I read an article regarding Cape Canaveral's prohibition on any fishing within their military zone for a couple of decades has given that area a very important base line for comparison on the East Coast. If the BGI has a no fishing policy it could result in similar results. I absolutely would not fish bottom fish anymore anywhere.
How pristine the campsites are. How cool other kayakers are privacy, isolation and no radio.
Generally excellent – but getting crowded.
I feel strongly that commercial guides of a high quality (subjective opinion) can contribute greatly to the knowledge, and quality of the experience gained by holiday kayakers. BGI trips must depend on very low impact or no impact on campsites and guides are in a position of responsibility to teach those skills to inexperienced backcountry kayakers.
Overall good experience. Really enjoyed seeing wildlife and especially sea lions. I liked not having to get a permit prior to the 1 st night at a campsite.
I thought guide/outfitter was worth the money. We do not fish, those sea lions must eat a lot of fish. Both U.S. and Canada allow commercial fishing on huge scale, BGI voluntary fishing is a drop in the bucket. We practice low impact camping as it is. We really had a good time, being wet most of the time was hard. We knew to stay away and do not bother the whales and sea lions. Bathrooms were great.
Found everyday – picking up other people's garbage. Warden in boat is in a good position to pick up garbage and collect shoreline garbage.
I worry about guided tours taking over the Broken Group. If a quota system is put into place, I would like to see a <u>small</u> amount of allotted spots going to guided groups and specific campgrounds allotted to the groups. I find encountering guided groups (and very large groups as a whole) as somewhat detracting from my BGI experience.
If it becomes necessary to limit the number of kayakers in the BGI at any given time (and this might not be a bad idea) it would be important to also limit the number of guided groups. While I think guided tours are necessary and important it was much more enjoyable to camp with a number of smaller groups rather than a large one and all the large groups at least during our trip were guided. This is in addition to the concern of keeping the BGI affordable and accessible to everyone.
Would like to have toilet paper supplied in outhouses. Would like to see the park ranger somewhat more

<p>frequently for questions etc. Would like to see the group size (no more than 10) enforced more. The guided groups seem to be larger than this. The Gibraltar campsite could be larger to accommodate more people as the closer (to Sechart) campgrounds are concentrated with people on the days that the boat drops people off. More interpretive signage would be helpful for the overall learning experience.</p>
<p>Interpretive information at the campsites would help visitors to learn more about the Broken Group Islands with respect to natural and cultural history.</p>
<p>My expectations on coming to BGI was to encounter other kayakers – more than have when going to other remote areas I have gone. In past trips to BGI I encountered many kayakers (not as many as this time) so I was expecting large groups of people. However, even though this was shoulder season, the number of people in the BGI was about as many as I would like to encounter. I would not (and have not in the past) plan on visit the BGI during July and August, when I know the numbers are much, much higher.</p>
<p>I would like to see more interpretive signage in campsites emphasizing some of the features in the immediate area.</p>
<p>I find the number of power boats surprisingly low. Why do so few powerboaters use the BGI?</p>
<p>Please prohibit motorized personal watercraft (jet skis) from ever entering this peaceful area. Might it eventually be necessary to limit the number of visitors at any particular time? Outhouse designs are delightful, but by the end of the season they seem a little odiferous.</p>
<p>It would be really great if there were a team of naturalists available to circulate among the islands and stop at each campsite on a scheduled program to aid visitors in learning about the natural wonders of the park. On thing, also, that would help toward this goal would be “bulletin boards” with information that visitors could study on their own. “Garbage” could be handled better if there were two or three pick ups per week in the peak season. Visitors could pay a nominal fee to deposit their trash that could be properly burned. Perhaps an emergency signal system could also be installed at each campground. I love your park.</p>
<p>Guided provided great service – very ecologically friendly. It is ok with me if sport fishing is allowed.</p>
<p>The campgrounds seemed too few and too small. The guided trips did well to minimize their presence and helped other people not on their trip. Very helpful.</p>
<p>Some of my answers regarding preferences on crowding of campsites might be misleading. I prefer, overall, less crowded campsites. Yet, I like that within the BGI you are restricted to 8 campsites – leaving much of the BGI untouched/unmarred by camping. The campsites although somewhat crowded, are incredibly well maintained – making it a wonderful compromise.</p>
<p>I loved this place – I want to be buried here. The toilets are outstanding. Campsites seemed slightly crowded, but I am glad that camping is restricted to the designated sites.</p>
<p>I became acclimated to crowded campsites and ended up feeling supportive of the policy to limit campsites. People were friendly and well behaved, which I attributed to them being kayakers and mostly Canadian. Our lucky sunny weather also helped me feel less claustrophobic/crowded.</p>
<p>Follow up to questions 11 and 13 – the acceptance of other kayakers and tents is enhanced by the fact that the campsites are all very well maintained; little to no garbage, vegetation not destroyed or cut down.</p>
<p>I find that people who tour these islands are very respectful of the area. Fellow kayakers are very useful sources of information – ie. Go see this, go see that”. It wasn’t that crowded anywhere, and it was great to chat with others. It made my experience more positive. My only concern would be that guided tour numbers don’t get much larger. Groups of ten are borderline too many people based on the size of campsites. Good luck.</p>
<p>I feel that the BGI should be open to everyone not just people who can afford guided tours and that guided tours should be kept to a minimum.</p>
<p>I think the Broken Group Islands experience should remain open to individuals not just guided groups.</p>
<ol style="list-style-type: none"> 1. Limit the # of guides and outfitters into the BGI @ 1 time. 2. Make sure all guides are certified 3. Make sure that the BGI is open for all people.
<p>As far as fishing, I feel people should limit their catch, not catch their limit. If I had been camping, I probably would have wanted to fish and have a meal of fish. I feel there should be a limit to the number of guided tours at one time. I would not want to see it be available only with a guide. We did not have one and were fine.</p>
<p>We’ll be back as life allows. Lovely attitudes among fellow campers on island campsites. Naturally good</p>

attitude toward preserving nature. Made me happy here.
I saw too many other kayaking groups paddling too close to the sea lions.
A little bit too crowded – but a very nice place.
Markers for flora/fauna on trail. Pamphlets in bathrooms. Enhance web site. Educate kids – educate parents to educate kids. Enforcement of rules that they don't hurt anything – the bush is not a babysitter. Evening education talks by warden with trips like beach/tide pool trips.
Voluntary no fishing and long term sustainability of resources cannot be explicitly linked. Given climate impacts and natural variability of popus, promised fish for future generations given no fishing may not be appropriate. Additionally, federal dollars spent on hatchery salmon should mean that opportunities to fish them should exist. This applies to exotics such as sardines and mackerel. No fishing in a BGGI setting is best guided to “leave to look at”. Leave to Sea program appeals to more people.
The park wardens were very friendly and helpful.
Too many rules, too many restrictions. Crow populations should be culled. Fees should be charged to powerboaters as many use facilities. Mooring buoys for boats would be popular. Regarding the voluntary no fishing policy, - we pay good dollars for licence, we catch and eat, it is not commercial volumes. The policy waives 1 more right as a tax payer. There is an abundance of fish, the voluntary ban is redundant – what about trawlers etc. It is a silly policy. It manages by guilt – it is posted everywhere – everyone knows – becomes a social taboo and a guilt trip. Comments toward us was that we were poaching – getting people to police each other is uncomfortable.
Loved the toilets. Maybe a warden's presence would deter offenders? Really beautiful – keep it safe and beautiful for the future.
The parks should be run with Bowren Lakes Provincial Park as a model. There needs to be more respect shown to the environment by the novice kayakers who are here. LNT camping techniques were not in place at this park. There was lots of garbage, burned Styrofoam, moving sand into the forest, and leaving fire rings. More wardens and more penalties needed, pamphlets – LNT – pretrip as well.
Toquart Bay needs warden for explaining Park rules to permit holders before leaving and RV parking lot needs to be cleaned up, dogs, toys etc. Like the idea of keeping this area a secret. – ie. Keep road to Toquart Bay dirt not paved to prevent it from becoming overrun. Reduce promotional advertisement of area. Better visible/accessible information for participants on low impact camping/education; Increase warden presence for fines for littering, etc. Too much trash – need cleaning crews. What is no trace camping? Easy handouts before leaving R.V. parking lot to campers. Permit usage only to keep numbers down. Once this area is discovered, you must have your rules in places or it will be a mess.
I believe that fewer campsites at more locations would be lovely. I am looking forward to returning to the islands with Majestic in the off season.
We are very active boaters and outdoors people. This was our first kayak trip and was very happy with kayaking and the BGI. It is on par with being in the mountains, other boating and travel.
1 st night we were here – stayed on Hand Island – lots of people – can get crowded. Crows here in BGI, even in August were not bad at all.
The ranger briefing was effective and very good. The Port Alberni Marine Group seem to be doing a fabulous job as well. The campsites are definitely getting crowded at this time for year but the big groups all seem to be guided and well conducted. Benson and Clark overcrowded.
I am not in favor of commercial fishing in the BGI
Appreciate the 1 page navigational chart of the BGI. Would be nice to have educational materials available – guide to plants, marine wildlife, points of interest.
I wonder what the BGI is evolving to? Is this it – has it peaked or is it going to grow in popularity? I have read books on Everest climbers and because of the \$\$ and technology more people than ever are accessing these places. These are people who might not necessarily be able to access it, and once they are there do they fully appreciate the delicate nature of the place and the safety factors involved as well? It is not like driving into a provincial park to car camp.
I am very happy to see composting toilets at the campsites. I think that the Lady Rose Frances Barkley boat and kayak rentals are well organized.
Lady Rose/Frances Barkley or Sechart Lodge should provide charts and pointers or guidance on kayaking to ensure a safer experience for everyone. There should be an optional log for people to let someone know where they should be and when.
I was sick during my trip and my guides handled it exceptionally well. No more seadoos please.

Need a complete ban on seadoos. We saw 3 of them on day and it irritated everyone in our group
I was surprised to see seadoos. I thought they would be banned from a park like this. They are banned from the lakes in Algonquin Park in Ontario,
I was very upset to see 'jet skiis' in the Broken Islands. I would support a complete ban in the area. They are intrusive and disruptive to the quiet natural beauty of the islands. Not only are they noisy but scare off any wildlife which one may enjoy seeing in their natural environment. I strongly dislike them.
I disagree with guided trips.
Don't believe commercial guides are positive – do not support guided tours.
I think I was greeted by a park warden but I wasn't sure what her title was.
Generally everyone we met was friendly and considerate. We did not experience crowding, except near camps. We expected to encounter more people and watercraft near campsites. Ideas:
<ol style="list-style-type: none"> 1. consider providing campsites on one or two more islands 2. continue limiting size of groups 3. reservation system OK similar to West Coast Trail or Grand Canyon USA
We like the composting toilets
We had a very good experience. We did not have overcrowded camps or beaches, but it was rainy half the time and people were hunkered under their rainflys. I don't think very many kayakers and canoeists bother with fishing and I don't think they will have an impact on the fishery because they won't keep more than enough for the next meal. I do think there would be a big impact on the shellfish if people were encouraged to harvest oysters, clams, mussels, etc., and the campgrounds would be a mess.
It is great that camping is restricted to 7 or 8 areas. More visible park warden/naturalist would be good. That is without over feeding of information. Discovery is more exciting than a step by step guide.
I like the way that some areas are fenced off, allowing the vegetation to grow back. We are trying (in Victoria) to get a group organized to watch the 55+ commercial whale watching companies. It would be wonderful to get a standard of 100 metres distance away from whales everywhere in Canada.
I had a very good time and experience. The only complaint was the ratio of kayaks to available campsites.
Food garbage floating near Nettle Island (south side). Large leaves of lettuce, cantaloupe skins. Look like it came from a large boat.
I appreciate that these islands are not heavily regulated with rules and restrictions in the manner that other provincial areas are eg. West Coast Trail. I hope that the data derived from this study in no way helps to implement the licensing of kayakers in the area and/or regulate the number of kayakers in the area at one time.
Regarding the voluntary no fishing policy, I was unaware of the policy before arriving here or my trip. I came prepared to fish. I did fish, taking only one for the group and only as much as we could eat one night. Before following the voluntary no fishing policy I would like to understand if there is still commercial fishing in the BGI or nearby.
The trips have always been of low impact activity and gaining new skills to practice low impact camping. Time management and trip planning have always been well organized and thought out. Safety is always paramount. Guide to client ratio is very good
I was very impressed with the people – those who worked on the Lady Rose and at Sechart. They were skilled, efficient and had a nice manner. I also was very impressed with the type of people that kayaking seems to attract – very polite, considerate, intelligent, healthy and enthusiastic about being in the outdoors. Kids were well behaved and family units appeared to be cohesive, cooperative and loving. Great people to be around.
Really enjoyed the area. Ideas – when park collectors comes every morning, it would be nice if they would take a bag of garbage with them. Plaques on islands with names of island.
We visited Benson Island and found the tour there very interesting. That could be mentioned before kayakers start out.
<p>Keep the park marking off regeneration areas</p> <p>Keep quality toilets (provide toilet paper)</p> <p>Continue to emphasize low impact camping</p> <p>Patrol wardens more. I never saw on the water in 5 days</p> <p>Most campers/kayakers are very social, friendly, ecological and responsible in my experiences here. This standard is very important to the areas maintenance</p>

Monitor the volume of guided tour groups and maybe consider a registry for camping if overall volumes increase
Sechart Lodge people were excellent. Ban all motorboats. Limit the number of people in the islands. Last week in July too busy. Divers using generators should not be allowed.
We visited the group 5 years ago – found that this time there were more people and more motorboats. Generators being used on Turrett Island by divers – definitely detracted from a ‘quiet wilderness experience’ Too many tour groups can also be a problem
I definitely felt that noise pollution was the main problem in our experience. Far too many motorboats are allowed in the BGI. Also one group had a very loud generators going for hours a day which was very frustrating.
The only negative experience was a group of Americian camper/divers who ran a generator on Turret Island and used two motorboats. I am strongly in favor of limiting the number of motor boats to the islands.
Like to see the Benson Island Tours continued – no camping ban to continue – a super learning experience. No education available other than what we researched ourselves and reading the Lady Rose newspaper on board. A ranger chat on board to educate on wildlife watching, no impact camping, dangers to watch for ie. Good winds/bad winds and a general history/information.
We received mixed messages from the ranger and Sechart folks who sold permits. Ranger said no harvesting seafood but ok to take shells. Sechart people said fishing and shellfish etc. ok to do.
Impressed with the composting toilets- like to see these in Desolation Sound and other high impacted areas.
Our group was surprised to see people collecting shellfish and fishing for bottom fish and salmon within the park boundaries. In one campsite several young girls were even trying to sell mussels and oysters they and picked up and their parents did not try to explain otherwise. Canada’s National parks should be seen as sanctuaries for wildlife, regardless of whether they are on land or sea. Visitors to these parks should know that harvesting of wildlife is prohibited – there should not be different rules for different parks. Enforcing such a rule may require additional park wardens to educate the public on local natural history and ecology. More education would be a great benefit to park visitors and to the health of the local fauna and flora. The BGI is attractive and accessible to many kayakers including the novice adventurer. As more people continue to visit the BGI impacts will continue to accumulate. The park could be much more proactive in educating the public at large.
I believe there may be too much stress on the staff at Sechart to handle incoming and outgoing kayakers. I suppose budget dictates this, however, having another staff member would ensure the visitors are greeted and tended to enthusiastically and efficiently.
If the archaeological sites were more established it may promote a stronger respect for the park as more than just a fishing ground
The number of campsites is too low for the amount of park users, including sailboat/motorboats/whalewatching stopovers etc. PLEASE manage the park as well as the rest of Pacific Rim National park. Either increase the camping sites or reduce the number of users. Definitely establish more ecological standards which all must adhere to.
I found the general preparedness of the staff at the kayak rental area in Sechart no sufficient. The large groups should be set aside in an area separate from the smaller groups to avoid congestion and long waits. As I mentioned before, there is room for improvement at the Sechart Lodge kayak rental site. The staff was not very knowledgeable or overly helpful. Other than that, we had a great time..
Equipment supplied when renting kayaks was not clearly stated prior to arriving to pick up kayaks and as a result my group was on the water without compasses, flares or a proper waterproof chart of the area. However, it was most enjoyable two days.
The advertising/guide book information re: BGI seems to indicate that everything will be provided at Sechart Lodge ie. All kayaking equipment. At no point were we information that we should take along our own wet gear and navigation equipment (no compass). We should have been better informed. There should be the possibility of getting lessons before you rent. And you should be able to rent all necessary equipment. We were at Sechart Lodge for 3 rainy days with no drying facilities for clothes...not good.
Information on what essential (eg. Compass) to bring would have been useful. Some of the visitors I

<p>spoke to at Sechart Lodge felt that a compass should have been part of the gear supplied with the kayaks. Otherwise, they should have been for sale at the lodge</p>
<p>The overall experience of the BGI was wonderful despite the rain. Development of tourist facilities should be kept to a minimum</p>
<p>I don't think tour groups should be able to use the park for profit. My experience was they think they own the island. We were told that there was no room on Dodd Island when there was plenty of room.</p>
<p>Batstar tour guide (Matt) attempted to prevent our unguided group from camping at Dodd Island despite there being plenty of room. He met us at the water and said he had a group of 11 coming in and we had to find somewhere else to camp. Very unfriendly and unprofessional!! Parks should enforce the maximum of 10 to a group rule! Too many groups exceeded this rule.</p>
<p>Willis Island toilets are badly overdue for an emptying.</p>
<p>The campsites need to be attended to. People need to know before leaving Sechart if there will be enough room for their tent that night. Arriving late in the day and expecting a campsite to be available, especially for those traveling with young children, should be known to the travelers. During our stay, there were 70 campers estimated at Willis the night we arrived – seemed like too few spaces for that many people. We would have gone elsewhere if we had known</p>
<p>Something needs to be done about the heavy use of the campsites at this time of year. Parks Canada seems to be very reactive as opposed to proactive. The justification for 8 campsites was that each outhouse costs \$25,000! That is just plain silly logic and is just an excuse. This gem of the Pacific needs protection but there must be a smart person in their bureaucracy who can design a system to <u>alleviate</u> (not eliminate) damage.</p>
<p>Willis Island was too crowded, but we made do. It may provide prudent to have another campsite or perhaps some method of assuring campsites. Reservations may be something to think about.</p>
<p>The Archaeological dig on Benson added to my enjoyment and I believe that future digs would be beneficial to the Park</p>
<p>Firewood maybe should be sold same time as park fees are collected to prevent forests being robbed or damaged?</p>
<p>Park personnel visiting sites where very amiable, tactful and informative, they took time to interact with each small group and encouraged each to ask questions and extend their explorations.</p>
<p>I feel campfire banning would be appropriate. Too many fires on the beach. If all campsites were open it would reduce the pressures on each (crowding is evident)</p>
<p>Some sort of management would be more ecologically sustainable on the island either campsite designation, number caps or space caps.</p>
<p>With amount of usage, campsites could be better set up – in cold, inclement weather a fire is very welcome – in pits. Wardens would have to bring wood. Tent pods may also be a good idea, and could actually reduce damage done by the random camping.</p>
<p>Busy! Lots of impact on camping spots! Pretty laissez-faire – luckily many people respect the signage – but some don't. Could a booking system be implemented. Guided trips could be extremely beneficial, but I felt we needed more information – history, itinerary, etc. I think our guide is “peopled out” !!?</p>
<p>The guided trip was an OK first experience, but subsequent ones (if any) would not likely be a ‘tour’ experience. I did appreciate the safety aspects afforded by guides, as well as map reading, radio contact etc.</p>
<p>With the numbers entering the area, more camping spaces should be developed.</p>
<p>Campsites have the possibility of getting crowded</p>
<p>I was extremely pleased/relieved with the excellent condition of the equipment rented at Sechart. It made the whole experience stress-less! Also the staff at Sechart were so friendly/helpful. It is pleasing to know that this type of research is being done – hopefully to reduce human impact in this, to me, very sacred part of the planet ...so exquisite. I feel truly honored to have been there.</p>
<p>Great trip all around.</p>
<p>RE: Q. 17. Most of the people in my kayaking group in 1999 and 2000 did what the leader wanted ...get up early, kayak when its calm; arrive at our next destination, set up tents, relax. We did not get to go see the archaeological digs at Benson. This time, with a much small group, the kayakers were novices and the water was so choppy that we could not get to Benson. So I wonder the about the question itself, normally I do what I want to do, which is fine some quite time and enjoy the eagles and other wild life. I dislike</p>

loud campers who focus on beer drinking. I also believe in 0 impact camping.
I am unwilling to respond to the voluntary no fishing policy as I am not familiar with the fish situation within the waters of the BGI.
More education about kayaking itself. For example, how to get into a boat! How to manage a capsized situation and how to avoid it. Education about handling the kayak was lacking.
Boaters on Nettle – bothersome, noisy. Obscenities by motorboaters. Want groups to be intra-social, not necessarily inter-social. Noise and alcohol are a concern, it is a not a party place. I am concerned about large groups in close proximity. What we learned we learned from previous trips and books – not into signs. How about an inexpensive book to buy on the boat – history, natural history, culture.
Not too busy. Limitations with the photograph technique – duration and noise factors need to be considered. The lodge accommodates and exposes those who may not otherwise be possible. Access is important – but need balance.
Number of people not knowing where they were despite having charts. People taking crabs that are too small and ling cod that are too small. I didn't fish, although had a rod – too busy. Past experience with sea lions on Wower – a guide took clients through slot right beside sea lions and then afterwards realized the inherent danger. Saw whales tried to avoid it – noticed whale behavior change when it noticed people around – avoided people. The numbers of people on Hand have made it less of a wild island now but more like a stop along a highway. There is some crowding, but I mind less when it's like minded people. More warden presence and something more permanent to disseminate information. All the years coming here – no social concerns with other people, but unsure about the level of environmental impact.
This has been one of the best outdoor experiences of my life. From what I have seen, the kayaking 'culture' is very environmentally friendly, no one has taken anything or left anything. I have seen many different forms of wildlife from eagles to whales. I will most definitely be back. I hope that the area is managed well enough to allow people to continue using the park without any adverse effect on the wildlife.
I worry that the BGI will become similar to the West Coast Trail in that a reserve system will be required. I don't have an answer but I imagine I would go elsewhere ie. Hot Springs Cove, Flores etc.
The solar powered fans and skylights in the washrooms require maintenance. Perhaps have a park beach cleanup week; have a voluntary garbage pick up program. Parks people supply bags and pickup. People who fill bags with garbage are exempt from campsite fees.
Some coordination of tour groups for campsites to avoid 2-3 groups overwhelming site and congestion, to allow room for smaller non guided groups.
I did not see anyone fishing in the BGI except natives. I would like to reserve the right to fish for a supper fish if I choose, though I brought neither rod nor reel. A voluntary 'ban' is merely a suggestion. Does it extend to shrimp too? What about the commercial fishery at the gates. Native fisherman were see on 2 nights – number fish in boat - soliciting campers to give away to. Very friendly, but how is this in the spirit of a volunteer ban. Furthermore, is it fair? Love the place – what it to remain available to as many as want to see it. Overcrowding could be modified by opening another 5 or 6 camp spots. Perhaps same islands are currently, but separated by some distance. Don't' rush to institute restrictions to access a la West Coast Trail.
I think the BGI is one of the most beautiful places in BC. But it will be ruined if too many people start coming. Bathrooms need toilet paper. I feel we need to preserve the fish and other sea life and over fishing is definitely a risk and a problem. But a single fish caught by someone in a kayak would hardly hurt the environment.
All of the people encountered on a professional basis were friendly and competent.
Re: Q. 10 – I felt there was little firewood available and I thought that was good. I like that campers are encouraged to go without fires or to be build only small ones below the high water mark. Re: Q14 – While a voluntary no fishing policy may detract from the satisfaction of other park visitors or have some kind of negative economic impact on the sports fishing I would still advocate for and support the policy because of its immediate and long term gains for the natural habitat to evolve without the interference of sports fishing RE: Q. 25-27 – Although I started kayaking about 3-4 years ago, I have taken wet exit courses, amp and chart courses etc. I still consider myself a novice because I have only kayaked a few times each summer and generally in a day tour. This was my first multi-day trip.

Limit the big groups of 10 that are coming (perhaps a lottery). All people should apply for camping permits in that way you can protect area more.
I would recommend that there be a greater park Warden presence in the park. An official presence would deter modification of the landscape, point out safety precautions when kayaking, and generally serve as a reminder that the area is a national park worthy of protection. I appreciate that commercial groups give people access to BGI they might not get otherwise, but BGI managers should consider limited the # of commercial groups/or group sizes.
Should encourage and/or institute catch and release policy as needed based on status of fisheries.
I would consider a return visit however, like most great places they get too popular and would most likely be not what I am looking for in a vacation. It was however a great experience.
Instead of no fishing impose low limits that can be enforced. Voluntary no fishing policy is only for people who already care. The people who overfish today will overfish tomorrow.
Spending time in the Broken Islands was a wonderful experience. The islands are beautiful. I would like to commend Parks Canada for the exceptional management of this park, and their low key but active presence.
Although many of us seek a solitary experience at campgrounds I am prepared to accept the current density because would not wish to see more sites created. In the same way that increase in highways is followed by an increase in traffic, so would an increase in sites inevitably result in an increase in campers. I would prefer to see a reservation system into the park as a whole rather than site by site. I would strongly recommend a ban of motorized boats; these boats can travel anywhere – let's keep some areas pristine. The drawback to the S. Gulf Islands is the presence of, and therefore noise, pollution, wakes, litter etc. of these boats. Ban ALL fishing. The richness of the waters is magnificent. Ban ALL fires May – September. People are pulling limbs off trees and destroying woods.
Our cell phone (telus) did not work – we were unable to get service. I'm not sure if this was our phone or if it was typical of the area. We were not relying on it for safety but we assumed it would work based on my husband's previous experience in this area
I've paddled mostly in the Bay of Fundy which is quite polluted compared to the Broken Islands. Surprised at number of inexperienced kayakers/campers in area. Concerned about number of pesty crows – strange! Fantastic experience.
The BGI is a magical place – it must be protected and cared for. I have led groups of high school student on trips in Bay of Fundy and Newfoundland and this is a rare spot. We saw a lot of grey whales and sea otters. The sea otters were encouraging.
People being dropped off by water taxi puts more pressure on the islands. Crabbing should be banned.
I would prefer to see a 'ban' for all kayakers as compared to a voluntary ban if a species population is possibly endangered. I feel too many undersized crab are being kept. A full ban might be necessary. Does a dig on Clarke mean this island might be closed to camping? I would not like to see Canadian federal ownership of the BGI and Pacific Rim given up. I do not agree with the transportation of kayaks by motorboat by commercial outfitters into the BGI. More campsites should be developed.
Well managed. I would like more hiking trails as long as the trails do not negatively impact wildlife. If there is a negative impact, then I can go without hiking in the BGI. There is always the WCT which is also very beautiful.
Well taken care of. Friendly wardens.
Overall Great!
Need more campgrounds. No access to motor or fishing in a smaller area of BGI but not the whole area.
The park management of camp areas and designated sites is a necessary choice. If use of the area would warrant further campsites to be available, I would favor that over restriction of access or reservation of campsites. I would like to see as many people who are interested in seeing this area have access and availability to it.
Need a park interpretive centre
Lots of eagles – golden and bald.

In our group of four kayaking in the Broken Group Islands in mid-August we were all dismayed and discouraged by the use of commercial ventures, especially the water taxi, in the Park. The enclosed Photo was a large group that descended on Clarke Island. As a long term, long time kayaker part of the beauty of places like Clarke Island is the reward of arriving on your own steam, it adds the remoteness that most of us crave in our busy city lives. Bringing large groups in by water taxi creates a fast food mentality to the campsite and surroundings. The large groups are noisy as there is safety in numbers and disturb the tranquillity. A commercial venture in a publicly owned park seem antithetical to the National Parks mandate on conservation and preservation before recreation.

Road to Toquart Bay needs work and campsite needs water. Fresh water at island campsites potable or not, seems doable and worthwhile.

A suggested code of ethics code be posted in the outhouses (which are excellent by the way) which would include groups camping in a compact area, rather than spreading out across a large area. (Did not observe this among organized tours, just families).

Also noise a Toquart Bay from some people staying in campers and motorhomes, appearing to be staying long term, was rude and ran late at night. This was not the kayaking crowd.

Water taxi info posted at outhouses could be a good safety measure.

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Publications

Randall, B.C. & Rollins, R.B. (2003 forthcoming). Voluntary Policies as a Way to Manage for Ecological Integrity: An examination of visitor attitudes towards a voluntary no fishing policy in the Broken Group Islands, Pacific Rim National Park Reserve. Paper presented at the Fifth International Science and Management of Protected Areas Conference (SAMPAA V) May 11 - 16, Victoria, BC.

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Title of Thesis:

An Examination of Visitor Management Issues Within the Broken Group Islands,
Pacific Rim National Park Reserve

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April 28, 2003