RESOLVING INTER-GROUP CONFLICT IN WINTER RECREATION: CHILKOOT TRAIL NATIONAL HISTORIC SITE, BRITISH COLUMBIA

by

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ABSTRACT

This project is an exploration of the relationships between motorised and non-motorised winter recreationists, the resulting recreation conflict and the effectiveness of segregation as a conflict management tool. With a temporal segregation strategy in place that designated every third weekend for non-motorised use only, this study presented a unique opportunity to test the effectiveness of segregation on improving visitor satisfaction and reducing inter-group conflict.

Through both a literature review and visitor survey analysis, including principal components analysis, this study explored the research questions by exploring differences in attitudes and opinions between motorised and non-motorised winter recreation users. The Chilkoot Trail National Historic Site (CTNHS) Winter Recreational Use Study also collected information regarding the users' demographics and trip characteristics and perceptions about their recreation experience, and the CTNHS's new Winter Recreational Use Strategy (WRUS) in order to explore the recreation conflict research questions.

Results indicate that motorised and non-motorised winter recreationists have different underlying motivations for their recreation visit; motorised visitors are more likely to be motivated by social interaction and challenge and adventure, whereas non-motorised visitors are motivated by a natural and peaceful setting, as well as by social (family) interaction. Motorised visitors are less supportive overall of all management actions that restrict or prohibit activity than are non-motorised visitors, whereas non-motorised visitors are especially supportive of management actions that segregate motorised and non-motorised activity. Based on empirical evidence, the introduction of "non-motorised only" weekends increased the goal achievement of non-motorised recreationists. Segregation of conflicting activities, such as snowmobiling and skiing, mitigated the asymmetrical goal interference often experienced by non-motorised recreationists.

ACKNOWLEDGEMENTS

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Dr. Pamela Wright influenced my REM studies from the outset, and was instrumental in connecting me with the research programs and opportunities in Kluane and on the Chilkoot Trail.

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My baby daughter Fionnuala and Daddy Darren Sherbot played together while boring Mom worked on completing this paper. Fionnuala puts everything else in life into a new perspective - and I enjoy seeing the world anew through her exploring eyes and fingers.

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1 INTRODUCTION

1.1 Background

Protected areas and public lands have been an important venue for outdoor public recreation since their inception. In 1885 Banff National Park was created to serve for the enjoyment of Canadians in the pursuit of recreation. Today many parks and public lands attract outdoor recreationists taking part in a wide variety of activities.

It is this variety of activities that often leads to conflict in outdoor recreation settings. As in other areas of life, people in outdoor recreation tend to prefer meeting people most similar to themselves, and tend to dislike meeting other recreationists dissimilar to themselves. Recreation conflict occurs in campgrounds, on trails and in the backcountry.

1.2 Research Problem

Public recreation activities are diverse in several ways, including equipment, mode of travel, reasons for participation, and preferred setting. Through the pursuit of individual activities conflict can arise between users. This conflict is often between different types of users, such as mountain bikers and hikers, water skiers and anglers, or skiers and snowmobilers. Furthermore, conflict can occur at varying spatial or temporal levels. Understanding the recreational requirements, attitudinal differences and setting preferences of distinct activity groups is paramount to reducing and eliminating conflict in recreational areas.

This study contributes to the understanding of inter-group conflict in a winter recreational environment. The research question that emerges is twofold: what is the relationship between winter activity orientation and recreational motivations, attitudes toward CTNHS management and perception of problems in their recreational setting? And, how can understanding these differences contribute to the reduction and prevention of conflict between activity groups?

The inter-group conflict scenario has existed for several years in the Chilkoot Trail National Historic Site (CTNHS) area leading Park management to pursue a stakeholder-

based process to develop options for managing and resolving conflict between skiers and snowmobilers. To explore the causes of conflict and potential solutions a visitor survey collected a variety of information regarding winter recreational users, including main activity, visitor demographics and trip characteristics, motivations and achievement, attitudes, and perceptions about winter use, the proposed winter use fees, and the CTNHS' application of strategies for resolving conflict.

1.3 Purpose and Objectives

In order to answer the research questions posed above, this study was focused on several objectives. These are to:

- Examine the demographic and trip characteristics of motorised and non-motorised users.
- Explore how motorised and non-motorised winter recreationists vary in their motivations for their CTNHS visit.
- Examine the level of symmetry of goal achievement, or performance, between motorised and non-motorised winter recreationists.
- Determine the effect of non-motorised weekends on the goal-achievement of skiers.
- Explore the components of inter-group conflicts and preferences, including spatial or temporal conflict and differences in attitudes toward park management and perception of problems in the CTNHS.
- Explore the constituents' support for a conflict resolution strategy developed through a stakeholder based participation process, and thereby the success of the stakeholder process in representing their publics.

2 LITERATURE REVIEW

2.1 Introduction

In order to understand winter recreation conflict in the Canadian National Parks and Historic Sites context, several areas of previous research were reviewed. Relevant academic research has focused on recreation conflict, visitor motivations and goals (symmetry of goal achievement and importance-performance relationship), and visitor tolerance for inter-group encounters. Furthermore, applicable national and local policies regarding park activities were also considered.

2.2 Recreation Conflict

2.2.1 General Recreation Conflict Studies

Conflict is an unfortunate but rather frequent component of outdoor recreation experiences. Conflict is defined as "goal interference attributed to another's behaviour". In order to manage conflict, recreation managers need to understand the diversity of visitors' goals, the outcomes necessary to attain the tourists' goals and the consequences of people interacting with others with different agendas (Jacob and Schreyer, 1980).

In some areas, opportunities and access to recreation has increased due to other land uses (e.g. remnant and active logging roads increase access to the backcountry) and technological advances (modern recreation equipment enables people to recreate more safely and/or comfortably) (Cordell 1997). The demand for satisfactory outdoor recreation opportunities often outstrips the supply, as illustrated by the increasing instance of quotas and registration systems in many parks.

The ability for recreationists to achieve their recreation expectations can be affected several ways. First, their expectations must be realistic for the area, the permitted activities and the expected encounters (Shelby *et al* 1983). For example, recreationists who hold expectations for silence when visiting a popular public ski area are likely to be disappointed. Second, conflict can occur when somebody else's activities interfere with one's own expectations. For example, hikers may experience conflict if they expected to be

in a non-motorised area and they meet a motorised vehicle. Third, meeting others at unexpected times or locations, or pursuing different activities may negatively affect a users' experience, and result in conflict.

Previous inter-group conflict research theorised that there are three types of conflict (Williams, Dossa and Fulton 1994). These are: a) non-mechanised recreationists meeting mechanised recreationists, i.e. personal watercrafts vs. other water recreationists (Holland, Pybas and Sanders 1992), or motorboaters vs. canoeists (Ivy, Stewart and Lue 1992); b) asymmetrical conflict – conflict experienced only by, or more by, one group than another (Jackson and Wong 1982); and c) goal interference attributable to the behaviour of another user (Jacob and Schreyer 1980). This study focuses on and explores aspects of all three types of conflict in a winter recreation environment.

2.2.2 Motorised and Non-motorised Winter Recreation Conflict

In addition to personal motivation, activity specialisation is cited as a cause of recreation conflict, both between and within activity groups (Muth and Fairey 1995; Devall and Harry 1981). The general hypothesis is that user-perceived crowding results not only from too many users, but also from the mix of various technologies at the site. Additionally, the "low-tech" activities are often characterised by quiet, slow speed, and an appreciation for nature, while the increasingly "high-tech" activities are defined by parallel increases in speed and noise (Devall and Harry 1981). While conflicts between skiers and snowmobilers are easy to conceptualise in this manner, increasing technology and specialisation can occur within one activity group, for example,

> " ... snowmobile use conflicts with snowshoers, who conflict with cross-country skiers, and finally, there are the cross-country skiers who are "gliders" competing with the cross-country skiers who are "skaters." And so on and on and on, recreationists differentiate into increasingly specialised niches that are often in conflict." (Muth and Fairey 1995)

Adding to conflict situations is the increasing competition for outdoor resources on a limited public land base. Combined with a growing population, participation rates have steadily increased in almost all areas of outdoor recreation. The 1994/95 National Outdoor Recreation Survey summarises the implications of the growing participation:

> Overall, the trend for outdoor recreation participation indicates continued growth in the demand of outdoor recreation opportunities, facilities, and services...This growth will result in a greater demand for areas in which to recreate outdoors. Overall population growth, along with the increasing popularity of most outdoor recreation activities, will create problems and opportunities for land and water resource managers. A greater and changing demand is going to be placed on the public's natural resources through recreation. Managers need to anticipate and react to that demand. (Cordell 1997, Chapter 2)

Between 1982/83 and 1994/95 individual participation in winter recreation activities (in the United States) increased by the following amounts: downhill skiing 58.5%, cross-country skiing 22.6%, snowmobiling 34.0% and sledding 15.8% (Cordell 1997). Over the same period the frequency of participation (days per year) in cross-country skiing has increased, while the frequency of participation has decreased slightly for snowmobiling. It is therefore not unexpected to find increased competition for recreation areas, and an unfortunate coincidental trend in inter-group conflict.

As participation in winter recreation increases and evolves, so does the potential for conflict between non-motorised and motorised recreationists (often referred to as simply skier - snowmobiler conflict). Recent changes in snowmobile technology and design have enabled these machines to travel on steep slopes and through deep snow, terrain formerly accessible only by helicopter or skis (BC Provincial Backcountry Skiing-Snowmobiling Committee 1997).

In a recent study of winter visitors in Yellowstone National Park (Borrie *et al* 1999), researchers found that visitor expectations played a large role in visitors' acceptance of encountering other visitors. When visitors expected to encounter others they were generally accepting of those encounters. Similarly, when people had more encounters than they expected, they were less tolerant of the encounters (Borrie *et al* 1999). This outcome suggests that intolerance for encounters may be reduced by ensuring visitors are informed of and prepared for the experiences they will have during their recreation visit. For example, educating visitors that a recreation area is multi-use enables them to arrive with appropriate expectations or to move to a single-use different area.

Understanding the nature of participation in different forms of winter recreation can help land managers to manage future conflicts. One study found that there was a difference between snowmobilers' and ski-tourers' attitudes toward the environment and public land management (Knopp and Tyger 1973). From a conflict perspective, this means that managers may be able to make assumptions about participants on the basis of activity type - including individuals' reactions to potential management solutions.

McCool and Curtis (1980) focused their research on the similarities and differences between cross-country skiers' and snowmobilers' desired outcomes of recreational activity. Predominantly, nature tended to be important to skiers, whereas social interaction was important to snowmobilers. This same study also found that skiers travelled in smaller groups than snowmobilers, not surprising given the different motivations of each group.

McLaughlin and Paradice (1980) analysed winter recreationists on the basis of both activity (cross-country skiers, snowmobilers) and experience to determine which segmentation provided the most information about physical, social and managerial setting preferences. They found that analyses based on activity type was more effective in distinguishing preferences and attitudes than was experience type.

Recent efforts to resolve skier-snowmobiler conflicts have used a stakeholder or consensus approach. Entrenched recreation conflict in British Columbia's winter recreation areas resulted in a process designed to resolve future "ski-snowmobile" conflicts in an equitable and realistic manner. The BC Provincial Backcountry Skiing-Snowmobiling Committee (BC PBSSC 1997) undertook a stakeholder decision process to examine the "skier-snowmobiler" issue from a provincial perspective using a consensus-based approach to identify participant interests, characterise the nature of the conflict and develop broad provincial level recommendations. Among the principles from which the multi-user committee worked was "the key to reducing conflict is the premise that snowmobiles should be kept out of some areas". Rather than focusing on the motivations and attitudes of each group, the committee felt that recreation conflict resolution should occur at an operational level in conjunction with the Forest District Manager with the participation of

affected local groups. The committee recommended that recreation issues be addressed in the existing BC regional and local level land use planning processes, using a system such as the Recreation Opportunity Spectrum (ROS) to reflect the range of existing and potential recreation uses (BC PBSSC 1997).

The PBSSC draft recommendations were followed in several areas of BC (Bulkley/Cassiar Forest District 1997). For example, conflict between skiers and snowmobilers has a long, embittered history in the Bulkley Valley, and was first addressed by the Forest District in 1975. In 1996, polarisation of the issues had become intense, and stakeholders were invited to a series of workshops to address the issues and develop solutions. The most contentious locations were designated as *either* a ski or a snowmobile area, whereas other areas remained shared use. Public support was stronger for segregation strategies than for shared use areas (Bulkley/Cassiar Forest District 1997). The one area remaining as shared use attempted to constrain but not prohibit snowmobile access. It is possible that the snowmobilers may resent the complex rules and regulations, while the skiers may still be disenfranchised from the area by the continued presence of snowmobilers.

2.2.3 Asymmetrical Conflict

Another route to understanding conflict is to explore the nature and direction of that conflict, as well as recreationists' motivations for participation. Jackson and Wong (1982) found that conflict between cross-country skiers and snowmobilers was asymmetrical; skiers perceived snowmobilers as interfering with their recreational enjoyment, whereas snowmobilers were not negatively affected by meeting skiers during their activity. However, when skiers lobby against snowmobilers, the conflict becomes symmetrical (Horn *et al* 1994). The incentive for both groups to work toward solutions becomes stronger. Skiers dislike snowmobile activity, and snowmobilers dislike skiers lobbying to reduce snowmobiling. While the causes of their conflicts are different, animosity between the groups can exist nonetheless.

Horn *et al* (1994) also found that inter-group conflict is initially asymmetrical but can quickly become symmetrical. In their study, walkers disliked meeting mountain-bikers on

the trail, while mountain bikers did not dislike meeting walkers. However, when complaints and conflict moved into the political arena as walkers (who were generally older and more politically savvy) lobbied against mountain bikers the conflict again becomes symmetrical (Horn *et al* 1994).

2.2.4 Goal Interference Theory

Goal interference theory (Jacob and Schreyer 1980) and earlier versions of motivation and goal attribute theory have been used as the basis of much inter-group conflict research, including conflict between downhill skiers and snowboarders (Williams, Dossa and Fulton 1994), mountain bikers and hikers (Watson, *et al* 1991; Horn *et al* 1994), water skiers and anglers (Gramann and Burdge 1981), and cross-country skiers and snowmobilers (Knopp and Tyger 1973; McCool and Curtis 1980; McLaughlin and Paradice 1980; Jackson and Wong 1982; Bulkley/Cassiar Forest District 1997; BC Provincial Backcountry Skiing-Snowmobiling Committee - PBSSC, 1997).

Jacob and Schreyer's (1980) model defines recreation conflict as "goal interference attributed to another's behavior" (p.369). Their model suggests that recreation activity style, resource specificity, mode of experience, and tolerance for lifestyle diversity also affect the presence and intensity of conflict. Different users have different motivations for participating in their activity, in that particular location. Their expected outcomes, or motivations for participation, may be compromised by the activities of other visitors (Jackson and Wong 1982). Furthermore, as discussed above, the nature of interference is usually asymmetrical, where only one user group is negatively affected by shared use of an area (Jackson and Wong 1982, Knopp and Tyger 1973).

Winter Recreation Goal Interference

Several studies have sought to understand the activity specific motivations of skiers and snowmobilers. Jackson and Wong (1982) found that skiers and snowmobilers were in general agreement as to the relative ordered importance of 16 motivational items, although there were significant differences in the strength of importance for numerous items. The 16 motivational items were organized into three distinct dimensions: natural environment,

escapism, and socialization. Cross-country skiers indicated a greater importance on the natural environment, including quiet and undisturbed nature, while snowmobilers perceived a greater importance on escapism and socialization factors, such as adventure, being away from work/TV/home and being with family and meeting others (Jackson and Wong 1982, 57-58).

Earlier work by McCool and Curtis (1980) found skiers placed significantly more importance on nature learning/appreciation and competence/challenge than did snowmobilers. Nature learning/appreciation was the most important and stress release/solitude was the least important dimension for skiers. Affiliation (socialization) was most important for snowmobilers, while competence/challenge was the least important.

All of these studies describe strong motivational differences between activity groups. As many of the skiers' goals are based on physical setting attributes, such as nature and quiet the shared use of an area with snowmobilers is likely to result in conflict. As many of the goals of snowmobilers are based on experiential and social attributes (e.g. adventure and being with family/friends) the presence of skiers during their recreation is unlikely to have a negative impact.

2.2.5 Importance-Performance Analysis

The relationship between attribute importance and customer satisfaction, or achievement of that attribute, is known in the market research field as Importance-Performance Analysis (Jacobs 1999). Attribute importance is the level of importance the consumer, or in this case park visitor, places on a particular characteristic of the product, or park visit. Self stated importance ratings of each characteristic are the common method for measuring attribute importance (Jacobs 1999).

The relationship between attribute importance and performance is analyzed by evaluating satisfaction (or achievement) with products or services comprised of multiple attributes (Martilla and James 1977). For outdoor recreation management, application of the results focuses on items that are perceived as important by visitors but do not perform well ("concentrate here"), as well as items that perform well but are not rated as important for

visitors ("low priority", potential wasted resources) (Figure 1). The "concentrate here" quadrant contains the attributes that may be of greatest concern to outdoor recreation managers because their poor performance is most likely to reduce visitor satisfaction. However, due to tight park resources, it is also significant to examine any potential "waste" of resources on attributes for which visitors indicate low importance.

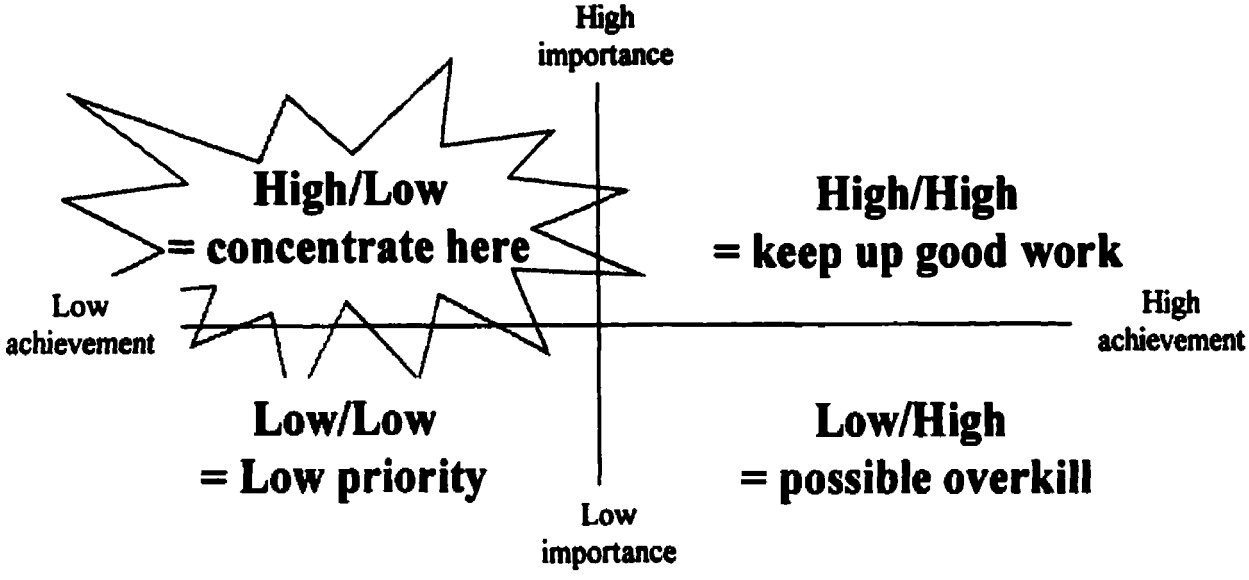

Figure 1. Importance Performance Matrix

2.2.6 Management Options For Minimising Recreation Conflict

Mountain bikers are often blamed for causing conflict for hikers and face reduced access to trails as a result. The International Mountain Biking Association (IMBA) supported the research and development of 12 principles for minimising conflicts on multiple-use trails (Moore 1994). These principles are broad enough in scope that they can be applied to other recreation conflict situations, such as skier-snowmobile conflicts.

1. **Recognise Conflict as Goal Interference** -- Do not treat conflict as an inherent incompatibility among different trail activities, but goal interference attributed to another's behavior.

2. **Provide Adequate Trail Opportunities** -- Offer adequate trail mileage and provide opportunities for a variety of trail experiences. This will help reduce congestion and allow users to choose the conditions that are best suited to the experiences they desire.

3. **Minimise Number of Contacts in Problem Areas** -- Each contact among trail users (as well as contact with evidence of others) has the potential to result in conflict. So, as a general rule, reduce the number of user contacts whenever possible. This is especially true in congested areas and at trailheads. Disperse use and provide separate trails where necessary after careful consideration of the additional environmental impact and lost opportunities for positive interactions this may cause.

4. **Involve Users as Early as Possible** -- Identify the present and likely future users of each trail and involve them in the process of avoiding and resolving conflicts as early as possible, preferably before conflicts occur. For proposed trails, possible conflicts and their solutions should be addressed during the planning and design stage with the involvement of prospective users. New and emerging uses should be anticipated and addressed as early as possible with the involvement of participants. Likewise, existing and developing conflicts on present trails need to be faced quickly and addressed with the participation of those affected.

5. **Understand User Needs** -- Determine the motivations, desired experiences, norms, setting preferences, and other needs of the present and likely future users of each trail. This "customer" information is critical for anticipating and managing conflicts.

6. **Identify the Actual Sources of Conflict** -- Help users to identify the specific tangible causes of any conflicts they are experiencing. In other words, get beyond emotions and stereotypes as quickly as possible, and get to the roots of any problems that exist.

7. **Work with Affected Users** -- Work with all parties involved to reach mutually agreeable solutions to these specific issues. Users who are not involved as part of the solution are more likely to be part of the problem now and in the future.

8. **Promote Trail Etiquette** -- Minimise the possibility that any particular trail contact will result in conflict by actively and aggressively promoting responsible trail behavior. Use existing educational materials or modify them to better meet local needs. Target these educational efforts, get the information into users' hands as early as possible, and present it in interesting and understandable ways (Roggenbuck and Ham 1986).

9. **Encourage Positive Interaction Among Different Users** -- Trail users are usually not as different from one another as they believe. Providing positive interactions both on and off the trail will help break down barriers and stereotypes, and build understanding, good will, and co-operation. This can be accomplished through a variety of strategies such as sponsoring "user swaps," joint trail-building or maintenance projects, filming trail-sharing videos, and forming Trail Advisory Councils.

10. **Favor "Light-Handed Management"** -- Use the most "light-handed approaches" that will achieve area objectives. This is essential in order to provide the freedom of choice and natural environments that are so important to trail-based recreation. Intrusive design and coercive management are not compatible with high-quality trail experiences.

11. **Plan and Act Locally** -- Whenever possible, address issues regarding multiple-use trails at the local level. This allows greater sensitivity to local needs and provides better flexibility for addressing difficult issues on a case-by-case basis. Local action also facilitates involvement of the people who will be most affected by the decisions and most able to assist in their successful implementation.

12. **Monitor Progress** -- Monitor the ongoing effectiveness of the decisions made and programs implemented. Conscious, deliberate. monitoring is the only way to determine if conflicts are indeed being reduced and what changes in programs might be needed. This is only possible within the context of clearly understood and agreed upon objectives for each trail area.

Figure 2. Principles for Minimising Recreation Conflict (Moore 1994)

2.3 Visitor Tolerance For Encounters

Visitor tolerance for encounters with other users, and specifically for other types of users, is one predictor of conflict in multi-use areas. In an Idaho study of the desirability of social encounters between motorised and non-motorised users (MacLaughlin and Paradice 1980), cross-country skiers indicated it was desirable to see non-motorised individuals and very undesirable to see motorised individuals or groups. Snowmobilers were less sensitive to intra and inter-group encounters, indicating it was desirable to see motorised or non-motorised individuals. Similarly, Jackson and Wong found that "cross-country skiers are annoyed by the presence of snowmobilers, whereas snowmobilers generally enjoy or are indifferent to meeting skiers" (MacLaughlin and Paradice 1980; p. 52). Furthermore, the majority of snowmobilers did not find anything in particular to dislike about skiers using the same area, whereas skiers...expressed dislikes about the presence of snowmobilers.

The acceptability of encounters was analysed by motivation grouping in a recent Yellowstone winter recreation study (Borrie *et al* 1999). Visitors who were there for "Quiet Fitness" were the least tolerant of encounters. Overall, visitors who expected a particular type or number of encounters were more likely to tolerate those encounters (Borrie *et al* 1999). Conversely, visitors who encountered more people than expected were less tolerant of those encounters.

3 STUDY AREA

3.1 Background

The CTNHS is a unique management area for Parks Canada as it blurs the lines between National Park and Historic Site. As a Historic Site the CTNHS is unique in several ways: it has a substantial "wilderness" land area, a high recreation population, and National Park Warden staffing. Without the clarity of defined appropriate activities the snowmobile/skier conflict has been able to escalate over time. The CTNHS's mandate for prohibiting snowmobiling is not as clear as it would be in a National Park, where the solution to conflict is removal of an inappropriate activity.

Adding further to the conflict scenario is the fact that winter use is concentrated in a small area around Log Cabin parking lot. This area is the staging area for cross-country skiers, backcountry skiers and snowmobilers. Furthermore, depending on weather and snow conditions, this small area sometimes offers the only opportunity for winter recreation (when conditions are unfavourable elsewhere they are often favourable in this area) (Elliot 1998 pers. comm.). As such, the setting and environment is set for inter-group conflict to occur. Over the last decade, Parks Canada has increasingly become aware of the inter-group conflict in this area, and has been taking a series of approaches to resolving the conflict.

3.1.1 Chilkoot Trail National Historic Site Management Plan

One early approach to resolving inter-group conflict came in the form of the 1988 CTNHS Management Plan (Parks Canada 1988), which prohibited motorised access to the CTNHS (with the exception of park operational needs and continued trapline access). A highly organized campaign, sponsored by the Klondike Snowmobile Association and other snowmobile interests, engendered the support of the local federal Member of Parliament (MP) and resulted in a reversal of the 1988 decision (Elliot 1998, pers. comm.). The snowmobile prohibition was implemented as a voluntary measure, and as such was largely ignored by snowmobilers. However, in 1993/94 the CTNHS was formally designated by the National Parliament, enabling legal authority to implement management controls

(National Parks Act). While this awarded some enforcement powers, the case for excluding motorised activities remained unclear under the banner of Historic Sites. Subsequently the issue of snowmobile access has been addressed through both the management plan review, and through a winter recreation stakeholder/focus group working with Parks Canada to resolve access issues (including primarily recreation conflict and trapline privacy) (Elliot 1996).

Official planning and management reports have not focused explicitly on appropriate activities to the same extent as they typically do in National Parks documents. A good example is the 1996 Current Situation Analysis Report (CSAR) for the Chilkoot Trail (Parks Canada 1996). This exercise focused primarily on managing impacts to cultural resources, communicating the commemorative integrity message, and developing and maintaining facilities. Although steps were being taken toward resolving winter recreation conflicts at that time, they were not discussed in the CSAR material. The CTNHS winter recreation issues have remained peripheral to commemorative integrity throughout formal planning and management processes to date, although they have been addressed separately through a public forum/working group.

3.1.2 CTNHS Winter Recreation Use Strategy

Arising in 1995 from the management plan review, a winter recreation working group was created to address all users' concerns and began working toward a fair access strategy for winter recreation. The working group included representatives from Parks Canada, the Yukon Outdoors Club, the Klondike Snowmobile Association, the Dog Drivers Association of the Yukon, a non-affiliated skier and the local First Nations trapline family. With the aid of a facilitator, the group worked to understand each other's interests and to brainstorm new strategies that would enhance everyone's enjoyment of the area and minimise inter-group conflict. The goals of the group reflect the diverse interests at the table: to ensure protection of the CTNHS's cultural and natural resources, to allow all winter recreationists to safely enjoy their respective activities without affecting the quality of each others' experience, and to ensure privacy around trapline holdings and prevent damage to the trapper's property and trails (Parks Canada 1997).

The Winter Recreational Use Strategy (WRUS) is the result of this co-operative process. The participants developed strategies that address visitor safety, responsibility/respect, access corridors, area closures, winter use scheduling, and parking (Parks Canada 1997):

- Safety – Winter users are responsible for their own safety and are expected to make their own evaluations of weather, snow stability, avalanche danger, campsite and route selection.

- Responsibility/Respect – All Chilkoot Trail users are expected to pack out garbage, stay on designated trails, avoid closed areas, respect trapline and trapline property, never feed or approach wildlife, be alert and courteous, lend a helping hand and respect a camping area quiet time. Snowmobilers are specifically asked to reduce speed in multi-use areas. Skiers and snowshoers are asked to move aside to allow snowmobilers and dog sleds to pass.

- Designated Access Corridors – Access corridors below and through the treeline will help to reduce damage to the area's cultural and natural resources. Eventually separate routes will be established for skiers, and for snowmobilers/dog sledders.

- Area Closures – Permanent closures near Bennett and Lindeman town sites will protect historic features and ensure the privacy of the trapper's cabin and trapline. Access to the Bennett Church, and between Lindeman's upper and lower cabins, is permitted only by foot, ski or snowshoe. Additional temporary area closures may be instituted as needed to protect natural and cultural resources.

- Winter Use Scheduling – Every third weekend (Friday to Sunday) will be set aside for non-motorised use; all other times will be multi-use. The schedule will be adjusted annually to accommodate multi-use on the Easter weekend and non-motorised use over the Buckwheat Ski Classic race weekend.

- Parking – The Chilkoot working group and Parks Canada will encourage YTG (Yukon Territory Government) to continue ploughing the upper and lower Log Cabin parking areas. The upper Log Cabin parking area is available for non-motorised users at all times, and the lower Log Cabin parking area is closed to motorised users on designated non-motorised weekends. The working group is exploring options for construction of a new parking area specifically for motorised users.

The strategy and approach taken by the working group seem to follow the core principles for minimising conflict established in a different recreational context (Moore 1994) (Figure 2). In particular, the WRUS focuses on providing adequate trail opportunities, minimising contact between conflict groups, involving users in developing solutions, promoting trail

etiquette (and education about WRUS), favouring light-handed management, planning and acting locally, and monitoring progress.

The Chilkoot working group monitors and evaluates the success of the WRUS on an ongoing basis. Measuring their constituents' support via the 1998 Winter Recreation visitor survey is one of the ways the group, and Parks Canada continues to monitor that success. The positive media and publicity about the co-operative process was effective in minimising winter conflict issues on the Chilkoot Trail by ensuring visitors were educated about the WRUS prior to arriving to the site.

3.2 Location

Most winter recreation activities are staged from the Log Cabin parking areas, and CTNHS access is primarily via the Whitepass and Yukon Railway tracks along the north-eastern boundary of the CTNHS. The Log Cabin winter recreation area of the CTNHS is located 140km from Whitehorse, Yukon Territory and 66km from Skagway, Alaska (Figure 3). The research activity focused here for two reasons: most users staged their activity from Log Cabin and most winter activity occurred near to Log Cabin.

3.3 Access Points

According to Park staff, most winter recreationists access the CTNHS (enter and exit) from one point: Log Cabin, a highway pull-off with two separate parking lots (see Figure 3). The upper Log Cabin parking lot is set aside for non-motorised users. The lower Log Cabin parking lot is open to all users on designated multi-use days, and reserved for non-motorised use on designated non-motorised weekends, as outlined in the WRUS (Parks Canada 1997).

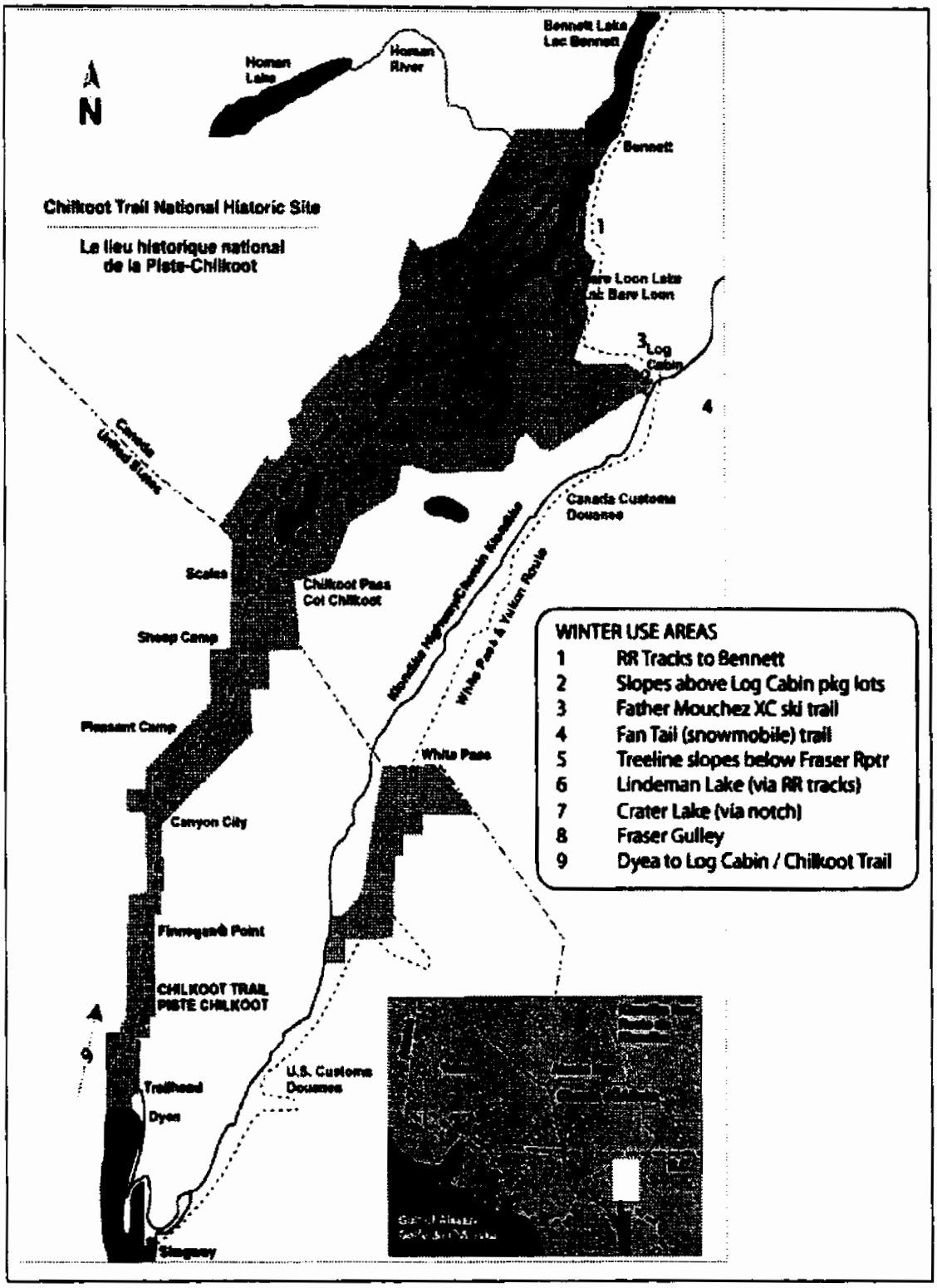

Figure 3. Location of Chilkoot Trail National Historic Site

Source: Parks Canada 2000 [http://parkscan.harbour.com/ct/chilkoot%20map.pdf]

4 SURVEY APPROACH AND DESIGN

4.1 Introduction

A key step in the process for resolving conflict is to understand recreationists' motivations and goals, their patterns of use and their overall satisfaction and opinions related to their visit. A visitor survey is the ideal tool to look at these questions.

The CTNHS Winter Recreational Use Study was conducted co-operatively by Canadian Heritage - Parks Canada, Yukon District and the Centre for Tourism Policy and Research, School of Resource and Environmental Management at Simon Fraser University. The survey was developed jointly by Park staff and researchers (Appendix 1. Survey Instrument). Consistent with the study purpose, the survey collected information pertaining to demographics and trip characteristics of winter recreationists, as well as to their motivations, attitudes, and perceptions about their on-site experience, proposed winter use fees, and the CTNHS's new WRUS.

4.2 Purpose and Design

The 1998 winter survey built upon data collected in a 1993 summer survey of Chilkoot Trail hikers (Elliot 1994), and worked in concert with a 1998 summer season survey. Many of the questions were designed to enable comparison with both the 1993 and the 1998 summer surveys. In addition, several questions were designed to explore recreation conflict, and winter users' support for the new Winter Recreational Use Strategy (WRUS), which was phased in during the 1997/98 winter season.

Visitor motivations for visiting CTNHS were measured using a Recreation Experience Preference (REP) motivation scale. The REP scale is used to identify and quantify the relative importance of different psychological and physical outcomes that are desired and expected from recreation participation (McCool and Curtis 1980, 65). Although the original REP scale was very lengthy, this survey used a modified subset of 26 items. Many of these items were adopted from the 1993 CTNHS summer survey, or modified when the winter context required wording modifications. The specific scale items reflected the general categories of natural experience, social experience, exercise and fitness, culture

and history, and psychological experience. To maintain comparison capabilities a four-point importance scale similar to that used in the 1993 survey was employed.

In order to measure visitors' *goal achievement* visitors were asked to rank on a 4-point scale the extent to which they had achieved each possible motivation (the 26 variable subset discussed above). This question enabled the examination of one of the key elements of recreation conflict theory, that of asymmetrical goal interference. It also mimicked the marketing research method known as Importance-Performance Analysis (Martilla and James 1977).

Visitors' tolerance for inter-group encounters was measured by asking respondents how these encounters influenced their recreational experience in the parking area, along the trail, and at a backcountry setting. Visitors rated their encounters on a 7-point scale ranging from greatly detracted to greatly enhanced.

Visitors' perceptions of problems were measured using a list of possible issues they may have encountered during their current trip. Each item was rated on a 5-point scale ranging from not a problem to very serious problem, and also allowed an "unsure" option. Key potential problem items related to recreation conflict were noise associated with motorised or non-motorised users, activities of motorised or non-motorised users.

As the CTNHS was already following a stakeholder approach to resolving conflict, it was desirable to assess the constituents' response to the strategy that the stakeholder group and Parks Canada developed. Respondents were asked to indicate their level of support for each strategy component on a 5-point scale ranging from "strongly oppose" to "strongly support". This study offered a unique opportunity to examine the degree to which the constituents agreed with the strategy that was developed *on their behalf* by the stakeholder group.

The discussion above indicates the use of more than one scale throughout the survey; specifically a 4-point, a 5-point and a 7-point scale were employed. Although a consistent scaling approach would have been more desirable and easier to respond to, during

questionnaire development it was decided that comparison with the previously completed 1993 CTNHS survey was more important. For new questions, a 5-point scale was chosen that enabled a "neutral" middle response.

4.3 Survey Administration and Data Collection

4.3.1 Study Population

The target population was defined as all recreation users of the CTNHS during the 1998 winter season. The survey population was defined as all individuals, 16 years or older, accessing the CTNHS parklands from the Log Cabin parking area on a weekend, statutory holiday, or school holiday between February 14 and April 19, 1998. This sample period was chosen to correspond to the CTNHS's Winter Monitoring Program, and to encompass the peak use periods. Individuals not using any area of the CTNHS except the parking lot were not included in the survey.

4.3.2 Sample Frame and Sample Selection

The sample frame is the "list" of the target population from which the sample will be drawn (Gray and Guppy 1999: 153). For this study, the sample frame consisted of all visitors on eligible days during the sample period. Sampling occurred only on weekends, statutory holidays, and 3 of 5 randomly selected public school holiday days. There were 26 survey days during the study period. Excluded from this schedule of survey days was the Saturday of the Buckwheat Classic Ski Race, as the race traditionally draws over 1,000 people into the area for an annual event and is not representative of use over the entire winter season.

Information requirements as well as the need to contact visitors upon completion of their trip led to the development of a self-administered, on-site visitor survey for this research. Survey intercepts occurred opportunistically upon exit from the trail and prior to departure from the area. Each member of a group was asked to complete a survey. Once the researcher had finished with a selected group, the next available group was approached. This approach enabled each member of a group to express their own opinions regarding their winter recreation visit. Selected visitors were asked to voluntarily

participate in the self-administered on-site survey. Due to inclement weather conditions or respondent time constraints, respondents occasionally took surveys home and either mailed back, dropped off at the Parks Canada Whitehorse office, or returned to me on a subsequent weekend. A self-addressed, stamped envelope was provided for those who took the survey home.

4.3.3 Sample Size

The optimal sample size was calculated using a standard sample size formula (Dillman 1978). The standard sample size of 384 was adjusted based on the population size estimate of 958, determined from the corresponding use levels for the same period in 1997. Based on this population size estimate, the optimal sample size was 274.

4.3.4 Selection of Survey Days and Time Blocks

Because the number of daylight hours affects temporal use patterns, particularly site exit times, it was necessary to create survey time blocks that varied by month. This was especially important given that specific recreation activities tended to differ in terms of when they occurred. Time blocks for mid-March through April alternated between early shifts and late shifts in order to capture respondents across all times of day (Table 1).

Table 1. Sampling Schedule and Expected Contacts

	mid-February	end of February to mid-March	mid-March to April
Sampling period	Noon-16:00	Noon-17:00	Noon-15:00 15:00-18:00
Expected daily contacts	10-20	10-20	20-40

Based on discussions with Park staff, researchers expected to contact approximately 10 to 20 visitors per day during February and 20-40 visitors per day during March and April (Table 1). Based on these figures, and the draft-sampling schedule, researchers expected to contact between 310 to 610 visitors[1] over the course of the sample period. Actual daily contacts ranged from about 15 visitors per day in February to about 40 visitors per day in

April. Many repeat users were encountered through the survey period, which affected the actual number of new surveys completed daily.

4.3.5 Official Language Requirements

The survey was made available to participants in both English and French, as per Federal Parks Canada policy.

4.3.6 Confidentiality

Several measures ensured protection of the confidentiality and rights of the respondents. All data was analysed and presented in an aggregate manner such that no individual respondent could be identified. Records of respondents' names and addresses voluntarily provided as part of a prize draw were destroyed at the end of the coding process and draw period. In addition to review by Parks Canada, the Simon Fraser University Research Ethics Review Committee also reviewed the survey instrument.

4.4 Data Analysis

Data was analysed using a combination of descriptive and multivariate statistics associated with the Statistical Package for the Social Sciences (SPSS). An alpha a priori of .05 ($p<.05$) was used for all comparative analyses between motorised and non-motorised user segments.

Descriptive statistics (frequencies and means) were calculated for all questions. Relative response frequencies show the valid percent of respondents. In addition to presenting frequency and mean responses, analysis was done on the basis of activity orientation as the dependent variable (motorised, non-motorised). Respondents' self-identified activities were grouped on the basis of motorization. Measures of motivations, perception of problems and attitudes toward natural, social and managerial setting served as independent variables.

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[1] Based on 10-20 visitor contacts per block during February, 20-40 per full day block during March and April, and 10-20 per half-day block during March and April.

For questions in which respondents were asked to rate an item along a 5-point "extent of problem" scale, mean responses were interpreted as shown in Table 2. Responses for all questions utilising a 4, 5 or 7 point scale were interpreted in a like manner, including importance scales, support vs. oppose scales, and disagree vs. agree scales.

Table 2. Interpretation of a 5-point 'Extent of Problem' Scale

less than 1.5	not a problem
1.5 to 2.49	slight problem
2.5 to 3.49	moderate problem
3.5 to 4.49	serious problem
4.5 or greater	very serious problem

The questions focusing on visitor motivations were analysed using Principal Component Analysis (PCA). PCA is a data reduction technique used to identify a relatively small number of independent components that represent relationships among larger sets of interrelated variables (Norusis 1993). It was used in this study to determine the underlying broad motivation categories of the two activity groups.

In PCA the first component maximises the explanatory power of the entire data set. Thereafter each consecutive component maximises the remaining variability, resulting in all components being independent of each other. Only components with eigenvalues greater than 1 were retained. Essentially, unless a component explains the variability at least as much as the equivalent of one original variable, it is not included in the results (StatSoft, Inc. 1997).

Survey analysis also compared the response means of the two main activity groups: motorised and non-motorised users. In total, 77 motorised and 184 non-motorised respondents were identified according to their main recreation activity. In most cases independent samples t-tests were used to determine if there were statistically significant differences between these groups (at the .05 level). Table 3 shows how the comparison of means is presented in the results tables in sections 5.3 and 5.4.

Table 3. Interpretation of a Means Comparison Table

Winter users continue to be responsible for own safety	4.29	4.37	✖
Joint stakeholder patrols to inform about WRUS	3.04	3.69	✓
Temporary area closures to protect natural/cultural resources	2.82	3.84	✓
Permanent area closures to protect trapper privacy	1.99	2.83	✓
Permanent area closures to protect cultural resources	1.90	3.79	✓

[1] Based on a scale ranging from 1 = strongly oppose to 5 = strongly support.

[2] ✓ indicates a statistically significant difference between the mean response of motorised and non-motorised users (alpha *a priori* = .05).

4.5 Limitations

As always with visitor surveys, a number of limitations to the data exist. An explicit discussion of the limitations may assist interpretation of the current results, and the design of future research.

Methods

There were limitations with some of the survey questions themselves. The question used to identify visitor motivations was asked at the end of their trip. Although specifically asked about the reasons they came to the area, visitors' responses may have been affected by their just completed trip.

Some of the variables within the question regarding visitors' level of support for management activities may not have resulted in clear responses. For example, visitors were asked to indicate their level of support for the "winter use schedule". This schedule set aside specified periods (e.g. every third weekend) for non-motorised use only and multi-use at all other times. It is possible that a skier may have indicated "strongly oppose" because they felt that there was not enough non-motorised time set aside, while a snowmobiler may have indicated "strongly oppose" because they felt there was too much non-motorised time set aside. While most respondents answered according to the general principle of setting aside exclusive non-motorised time, some may have responded to the specific every third weekend schedule. The other variables in this suite of questions were less ambiguous, relating to the general components of the winter use strategy.

The use of weekend sampling periods corresponded with periods of peak use. As such mid-week users were not surveyed unless they also happened to be weekend users. Another limitation of the on-site surveying was that the sampling location at Log Cabin was spread between an upper and lower parking area, with about 200m separating the two areas. Most surveys were conducted in the lower parking area where the majority of visitors parked (particularly cross-country skiers and snowmobilers). The surveyor attempted to contact visitors when they were observed in the upper lot as well, however this was not always possible.

As always with an on-site visitor survey, the target population consisted of current users, and did not include non-users. In an area with a diverse user population under park management, a distinct segment of potential visitors may not attend the area due to negative expectations about some aspect of their trip or better recreation conditions elsewhere.

Activity Participation

For the purpose of data analysis and comparisons, motorised users were defined as "visitors using a snowmobile for all or part of their recreation visit" and non-motorised users were defined as "visitors using non-motorised modes of travel for their entire recreation visit, excluding vehicle access". These categories contain more than just skiers and snowmobilers, and the results of this study best reflect the broad categories of motorised and non-motorised recreationists.

5 FINDINGS AND DISCUSSION

5.1 Introduction

This section presents the results of the winter visitor survey as related to the primary study objectives. The first section below outlines the response rate for the survey, including a breakdown of on-site and mail-back completions and level of use information. Next, the survey results are presented as they specifically address the research questions, purpose and objectives of this study. The first theme is the identification of each activity group (motorised and non-motorised), and the presentation of each groups' demographic and trip characteristics. The second theme is goal interference, explored with a set of motivations, motivation-achievement rates, and inter-group encounters for both the full sample and separately for motorised and non-motorised users. Within this section the effectiveness of non-motorised weekends is examined to determine if there is a net positive change in motivation achievement for non-motorised users during that time. In addition to this temporal effect, spatial preferences for separating user groups is also examined. The final theme explores each groups' attitudes and perceptions regarding the CTNHS' winter use strategy, and therefore the congruency between their support and the support of their representatives in developing and promoting the WRUS. This final section also explores the perception of problems in the CTNHS.

5.1.1 Response Rate

Overall, 327 visitors received a survey. With 264 completed returns there was an overall response rate of 80.73%. The majority of the surveys (230) were completed on-site, and there were 8 refusals[2]. As a result, the on-site response rate was 96%. Of the 89 surveys taken off site, 36 were returned, resulting in a mail-back response rate of 40%.

[2] In addition to outright refusals, a small number of groups and couples decided among themselves that each one of them did not need to complete a survey. In each instance the group was informed that each person was invited to complete the survey, as opinions can differ within a family or group of friends. There were 12 such occurrences and they were not counted as refusals.

As the survey instrument was lengthy to complete (approximately 10 - 15 minutes) and the winter Yukon weather was not always amenable to the activity of survey completion, the response rates above should be viewed very positively. Despite the cool weather and a long drive home ahead, many visitors willingly participated in the survey.

5.1.2 Level of Use Information

The total amount of participation in each activity is based on observations made by Parks Canada staff between February and mid-April of the CTNHS' Winter Monitoring Program. Due to the northern latitude and short daylight hours prior to February, the majority of winter use occurs between February and April. As indicated in Table 4, use increased 39% between 1996 and 1997, despite relatively poor snow conditions during both February and April of 1997. As such, Park staff anticipated the increase in use at the CTNHS (of 83%) from 1997 to 1998.

Table 4. Winter Recreational Use Levels for 1996 and 1997[1]

Motorised	410	59.5 %	527	55 %	874[3]	49.8 %
Non-motorised[2]	279	40.5 %	431	45 %	881	50.2 %
TOTAL	**689**	**100%**	**958**	**100%**	**1755**	**100%**

1 Data are approximate, based on counts made during the period February through mid-April, as part of the CTNHS Winter Monitoring Program. 1996, 1997 and 1998 data are based on 22, 20 and 22 days of observation, respectively.

2 Non-motorised use levels exclude the Buckwheat Classic Ski Race weekend.

3 Total motorised use originating from the Log Cabin parking area was 874 visitor days, however some only recreated outside the CTNHS parklands.

The relative proportion of motorised and non-motorised users was fairly constant from 1996 to 1998 (Figure 4). The decrease in 1998 is likely partially attributable to the new non-motorised weekend policy.

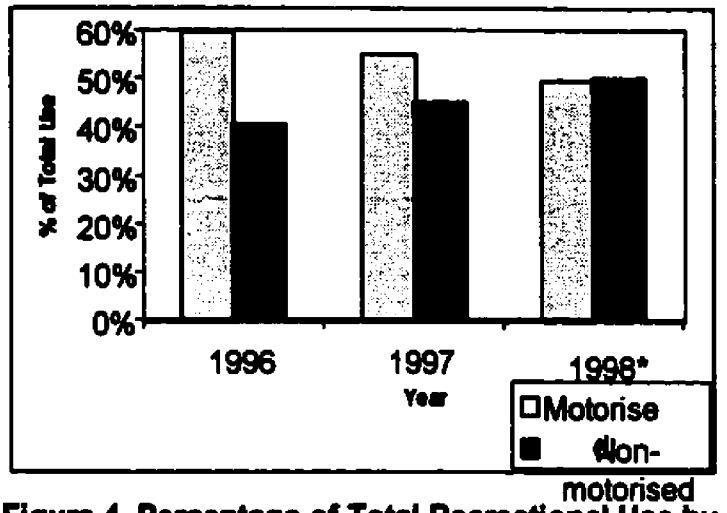

Figure 4. Percentage of Total Recreational Use by Mode of Travel.

* In 1998 CTNHS records distinguish between in-Park and out-of-Park use, resulting in 29% motorised and 71% non-motorised use within park.

5.2 Demographics and Trip Characteristics

5.2.1 Main Activity

About 70% of respondents participated in non-motorised forms of travel (Table 5). Non-motorised activities included cross-country skiing (44.3%), telemark skiing (10.6%), snowboarding (7.6%), snowshoeing (2.3%), downhill skiing (2.3%), dog mushing (1.1%), ski jöring (.8%), and tobogganing (.8%). Motorised users comprised 29% of the survey respondents. Motorised activities included snowmobile touring (17%), highmark snowmobiling (5.3%), snowmobile-assisted snowboarding (5.3%) and snowmobile-assisted skiing (1.5%).

The survey contained a minor bias in favour of motorised travellers. Parks Canada data suggest that 22% of CTNHS users[3] were motorised, while 29% of survey respondents indicated that they were motorised users.

By far the most popular non-motorised activity was cross-country skiing (44.3% of all users, 63.2% of non-motorised users), while the most popular motorised activity was

[3] Table 4 shows the total number of motorised users, but does not distinguish between in-Park and out-of-Park use. In 1998 only 249 (22%) winter users were identified as being motorised, *in-Park* users.

snowmobile touring (17% of all users, 58.4% of motorised users). These categories were self-selected by respondents, however there was likely some activity overlap, e.g. telemark skiers may also have used cross-country areas, and snowmobile tourers may have been high-marking.

Table 5. Main Activity of Winter Recreationists

Activity	Respondents		Respondents by Activity (%)	
	Number	Percentage	Motorised	Non-motorised
Cross-country skiing	117	44.3		63.2
Telemark skiing	28	10.6		15.1
Snowboarding	20	7.6		10.8
Snowshoeing	6	2.3		3.2
Downhill skiing	6	2.3		3.2
Dog mushing	3	1.1		1.6
Ski joring	2	.8		1.1
Toboggan/sledding	2	.8		1.1
Non-motorised Sub-Total	184	69.7		100 %
Snowmobile touring	45	17.0	58.4	
Snowmobile-assisted snowboarding	14	5.3	18.2	
Highmark Snowmobile	14	5.3	18.2	
Snowmobile-assisted skiing	4	1.5	5.2	
Motorised Sub-Total	77	29.1	100 %	
Course/Group Activity	1	.4		
Family	2	.8		
Other Sub-Total	3	1.2		
TOTAL	264	100		

5.2.2 Use Areas and Time Spent in the CTNHS

On average, visitors they spent about six hours in the area (Table 6). On the basis of days, non-motorised users were more likely to spend multiple days than were motorised users (1.3 days vs. 1.1 days).

Table 6. Time Spent in the CTNHS

Time Spent in the CTNHS	Mean Time Spent in CTNHS			Sig. Diff.
	All Users	Motorised	Non-motorised	
Hours	5.96 hours	6.53 hours	5.78 hours	✖
Days	1.25 days	1.12 days	1.30 days	✓

Respondents were asked to indicate which areas of the CTNHS they used while on their current trip. Many visitors used several areas during a single visit. As a result, the overall "area use" percentages total to more than 100%. It is important to remember that respondents who only used areas outside the CTNHS (such as the Fan Tail trail) were not

surveyed. As a consequence, the percentage shown for the Fan Tail trail reflects the proportion of CTNHS visitors that also used the Fan Tail trail (see map Figure 3).

The most popular area was the railroad tracks to Bennett (41.8%), or a portion thereof (Table 7). Close behind in popularity were the (ski) slopes above Log Cabin parking lot (37.2%) and Fr. Mouchez's cross-country ski trail (25%). Approximately 10% of respondents travelled the Fan Tail trail, the slopes below the Fraser Repeater and Lindeman Lake via the railroad tracks. Crater Lake, the mountains west of the CTNHS and the Dyea to Log Cabin route received less use. All are further away from the parking area than the other use areas (see map Figure 3).

Motorised visitors used a variety of areas in and near the CTNHS parklands (Table 7). The most popular motorised use areas were the railroad tracks to Bennett, above the treeline slopes below the Fraser Repeater, Lindeman Lake via railroad tracks, and the slopes above Log Cabin parking lot. Non-motorised users' activities focused on the railroad tracks to Bennett (or part), the slopes above Log Cabin parking lot, and the Father Mouchez cross-country ski trail. Some motorised users (4.9%) also indicated using the Fan Tail trail, although it is outside the CTNHS parklands and is used primarily by snowmobilers.

Table 7. Winter Access and Use Corridors of the CTNHS

Area	Percentage of Respondents		
	All Users	Motorised	Non-motorised
1 Railroad tracks to Bennett	41.8	43.4	41.0
2 Slopes above Log Cabin parking lots	37.2	27.6	41.5
3 Fr Mouchez Trail	25.0	0.0	35.7
4 Fan Tail trail [1]	11.1	26.3	4.9
5 Above treeline slopes below Fraser Repeater	9.3	28.9	1.1
6 Lindeman Lake via railroad tracks	8.5	28.9	0.0
7 Crater Lake (via notch)	3.1	10.5	0.0
8 Fraser gulley	.8	1.3	0.0
9 Dyea to Log Cabin via Chilkoot Trail	0.0	0.0	0.0

[1] Outside the CTNHS boundary.

5.2.3 Previous Use in the CTNHS

Respondents were asked to indicate how much time they spend in the CTNHS in an average winter. On average, respondents spend about 7 day-trips and 1 overnight trip in

the CTNHS per winter (Table 8). Repeat visitation to the CTNHS in the winter is high. Mean annual use was 7.8 days and 1.5 nights for motorised users and 6.5 days and .9 nights for non-motorised users. Caution should be exercised when examining repeat use, as some respondents may have reported their annual use of the entire area, including visits outside of the CTNHS.

The fact that most people are repeat visitors is important to consider when reviewing the results of this study and potential solutions.

Table 8. Day and Overnight Use in the CTNHS

Time Period	Mean Average Annual Use			Sig. Diff.
	All Users	Motorized	Non-motorized	
Day use	6.87 days	7.81 days	6.46 days	*
Overnight use	1.11 nights	1.50 nights	.94 nights	*

5.2.4 Group Composition

Respondents were asked to best describe the type of personal party in which they travelled. Most respondents were travelling with other people. Overall, about 50.2% were with friends, 24.3% were with family and friends, and 21.6% were with their spouse and/or family. Only 3.9% of respondents were travelling alone on this trip (Table 9).

Motorised users were most frequently travelling with friends (57.9%) or with family and friends (30.3%). Non-motorised users were also most frequently travelling with friends (47%), and then with either family and friends (22%) or with a spouse and/or family (26.5%) (Table 9).

The tendency for motorised users to travel in large groups beyond family association aligns with other winter recreation studies which found that snowmobilers prefer to travel in larger groups than do skiers, and place a high importance on the socialization aspects of their visit (Borrie *et al* 1999, McCool and Curtis 1980, Jackson and Wong 1982).

Table 9. Type of Personal Party

Personal Party Type	Percentage of Respondents		
	All Users	Motorised	Non-motorised
Friends	50.2	57.9	47.0
Family and friends	24.3	30.3	22.1
Spouse and/or family	21.6	9.2	26.5
Alone	3.9	2.6	4.4

Respondents were asked how many people were in their personal party. Including themselves, respondents reported travelling with an average of about 4 adults and 1 child. The mean number of adults and children in each group did vary according to mode of travel (Table 10). Motorised users travelled in an average adult group size of 5.16 persons, significantly more than the 3.41 persons reported by non-motorised users.

Non-motorised users tended to travel in small groups (mean 3.4 persons), and often with family members. Motorised users tended to be in larger groups (mean 5.1 persons) that were a mix of family and friends.

Table 10. Group Size, By Activity

Number of People	Mean Party Size			Sig. Diff.
	All Users	Motorised	Non-motorised	
Adults	3.91	5.16	3.41	✓
Children	.70	.81	.65	✖

5.2.5 User Demographics

Respondents were asked to provide demographic information about themselves. This included their age, gender and completed education level (Table 11 and Table 12). Respondents were, on average, 36 years of age. About three-fifths of respondents were male, and the remainder were female. There was no statistically significant difference between the average ages of motorised and non-motorised visitors. About 82.1% of motorised users were male, and 17.9% were female. Conversely, non-motorised users were evenly split according to gender; 49.1% of non-motorised users were male, and 50.9% were female.

Table 11. Age and Gender of Respondents, By Activity

Demographic		All Users	Motorised	Non-motorised
Age (mean)		36.35 years	35.03	36.92
Gender	Male	58.3%	82.1%	49.1%
	Female	41.7%	17.9%	50.9%

The majority of respondents had university level education (75%), including some university/college (20.2%), university/college graduate (39.5%) and graduate school (14.9%). The type of education completed varied between motorised and non-motorised users. Overall 65.6% of non-motorised users and 25.7% of motorised users indicated that they had completed at least a college or university degree. Motorised users most frequently had completed high school (27%), vocational or technical school (26%) or university/college (24%), whereas non-motorised users most frequently had completed university/college (46%), some university/college (22%) or graduate school (20%).

Table 12. Highest Level of Education of Respondents, By Activity

Education Level	Percentage of Respondents		
	All Users	Motorised	Non-motorised
University or college graduate	39.5	24.2	45.6
Some university or college	20.2	16.7	21.9
Graduate school	14.9	1.5	20.0
High school	11.8	27.3	5.6
Vocational or technical school	11.8	25.8	6.3
Grade school	1.8	4.5	.6

Respondents were asked where their permanent residence was located (Table 13). The majority of winter users were from Whitehorse, and the Yukon Territory (about 77% each). About 16% of users were from Juneau and Skagway, Alaska. Other survey respondents were from such distant locations as Yellowknife, Ontario, Washington State and Australia, as well as from the Yukon's Carcross, and Teslin.

The majority of motorised users were from Whitehorse, or other places in the Yukon Territory (98.5% each), while non-motorised users were also from Whitehorse, as well as from Juneau and Skagway, Alaska. Very few motorised users were from outside the Yukon Territory, while non-motorised users came from various locations including Alaska, British Columbia, Yellowknife, Ontario, Washington State and Australia.

Table 13. Permanent Place of Residence, By Activity

Province	Percentage of Respondents		
	All Users	Motorized	Non-motorized
Yukon	77.3	98.6	68.4
Alaska	17.0	-	24.7
BC	2.2	-	3.2
Ontario	1.7	1.4	1.9
NWT	.9	-	.6
Washington	.4	-	.6
(Australia)	.4	-	.6

City	Percentage of Respondents		
	All Users	Motorized	Non-motorized
Whitehorse (YT)	77.2	98.5	67.8
Juneau (AK)	9.6	-	14.1
Skagway (AK)	6.4	-	9.4
Carcross (YT)	1.8	-	2.7
P. George (BC)	.9	-	1.3
Yellowknife (NWT)	.9	-	.7
Toronto (ON)	.9	-	1.3
Ottawa (ON)	.5	-	.7
Kitimat (BC)	.5	-	.7
Seattle (WA)	.5	-	.7
Vancouver (BC)	.5	-	.7
Teslin (YT)	.5	1.5	-

5.3 Visitor Motivations and Achievement, and Inter-Group Encounters

5.3.1 Experience-Based Motivations

Respondents were asked to rate the importance of twenty-six possible reasons for visiting the CTNHS (Table 14). Respondents indicated that the five most important motivations for them were to observe its scenic beauty, enjoy the sights/smells of nature, and be with others who enjoy the same things [they] do, experience the peace and tranquillity, and to improve [their] physical health. Respondents indicated that their five least important motivations were to: retrace the steps of a goldrush era relative, be able to say "I travelled the Chilkoot Trail", learn about the history of the goldrush, learn about native culture and history and re-live the stampeders use of the trail.

Table 14. Importance of Motivations for Visiting CTNHS

I visited the Chilkoot Trail to:	Mean Importance[1]	Percentage of Respondents			
		Very Important	Moderately Important	Slightly Important	Not At All Important
Observe its scenic beauty	1.42	67.2	25.0	6.6	1.2
Enjoy the sights/smells of nature	1.57	56.3	33.6	6.7	3.4
Be with others who enjoy same things	1.60	55.8	32.5	7.1	4.6
Experience the peace and tranquillity	1.65	54.0	31.8	9.2	5.0
Improve my physical health	1.72	49.8	33.3	11.8	5.1
Get away from crowds	1.72	47.7	36.4	11.7	4.2
Be with friends	1.75	50.4	32.9	7.5	9.2
For the adventure	1.76	50.4	29.4	14.3	5.9
Release tension	1.89	41.9	32.9	19.2	6.0
Because of its challenge	2.07	33.8	37.7	16.5	12.1
Escape noise	2.12	39.8	25.4	17.8	16.9
Develop my skill/abilities	2.13	34.9	32.8	17.0	15.3
Experience solitude	2.17	30.9	34.3	21.3	13.5
Be unconfined by rules and regulations	2.18	36.2	25.9	21.6	16.4
Do something with my family	2.24	43.0	19.1	8.7	29.1
View wildlife in its natural habitat	2.41	25.7	25.7	30.5	18.1
Let my mind move at a slower pace	2.42	23.0	31.4	26.1	19.5
Be where I can make my own decisions	2.58	23.3	25.0	22.0	29.7
Learn more about nature	2.64	16.0	27.6	32.9	23.6
Observe historic features and artifacts	3.23	6.1	14.8	29.6	49.6
Meet new people	3.26	5.2	17.0	24.3	53.5
Re-live the stampeders use of the trail	3.41	4.4	8.3	28.9	58.3
Learn about native culture and history	3.42	3.6	8.5	30.8	57.1
Learn about the history of the goldrush	3.42	3.5	11.9	23.9	60.6
Say "I travelled the Chilkoot Trail"	3.52	7.0	5.7	16.2	71.2
Retrace the steps of goldrush relative	3.62	2.2	6.2	18.6	73.0

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

5.3.2 Achievement of Motivations

Respondents were also asked the degree to which they achieved each of twenty-six possible motivations for visiting the CTNHS (Table 15). The highest levels of motivation achievement were associated with observe its scenic beauty, be with others who enjoy the same things I do, be with friends, enjoy the sights/smells of nature, and for the adventure. The lowest levels of motivation achievement were associated with retrace the steps of a goldrush era relative, learn about native culture and history, learn about the history of the goldrush, re-live the stampeders use of the trail, and be able to say "I travelled the Chilkoot Trail".

As illustrated in Table 15, a comparison of importance versus achievement levels suggests that those motivations that were most important to visitors generally had the highest

achievement levels. Those motivations that were least important to visitors generally had the lowest achievement ratings. Several motivations were achieved at a statistically significantly lower level than they were rated in importance. To enjoy the sights and smells of nature and to view wildlife in its natural habitat were moderately important to respondents, but were only moderately and slightly achieved. Table 15 displays other discrepancies between the importance and achievement of visitor motivations.

Table 15. Importance-Achievement Comparison of Motivations For CTNHS Visit

Motivation	Mean Importance[1]	Mean Achievement[2]	Sig. Diff.[3]
Observe its scenic beauty	1.42	1.37	*
Enjoy the sights/smells of nature	1.57	1.67	(–)
Be with others who enjoy same things I do	1.60	1.44	(+)
Experience the peace and tranquillity	1.65	1.74	*
Improve my physical health	1.72	1.72	*
Get away from crowds	1.72	1.81	*
Be with friends	1.75	1.60	(+)
For the adventure	1.76	1.68	*
Release tension	1.89	1.90	*
Because of its challenge	2.07	1.91	(+)
Escape noise	2.12	2.26	*
Develop my skill/abilities	2.13	2.01	(+)
Experience solitude	2.17	2.22	*
Be unconfined by rules and regulations	2.18	2.15	*
Do something with my family	2.24	2.26	*
View wildlife in its natural habitat	2.41	2.93	(–)
Let my mind move at a slower pace	2.42	2.24	(+)
Be where I can make my own decisions	2.58	2.16	(+)
Learn more about nature	2.64	2.71	*
Observe historic features and artifacts	3.23	3.38	(–)
Meet new people	3.26	2.98	(+)
Re-live the stampeders use of the trail	3.41	3.52	(–)
Learn about the history of the goldrush	3.42	3.58	(–)
Learn about native culture and history	3.42	3.59	(–)
Be able to say "I travelled the Chilkoot Trail"	3.52	3.46	*
Retrace the steps of a goldrush era relative	3.62	3.66	*

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

[2] Based on a scale ranging from 1 = highly achieved to 4 = not at all achieved.

[3] A paired samples t-test was used to test significance. A (+) indicates the item was achieved at a significantly higher level than its importance rating. A (–) indicates the item was achieved at a significantly lower level than its importance rating.

5.3.3 Motorised and Non-Motorised Motivations and Achievement

Several variables were significantly more important to motorised users than to non-motorised users (Table 16). These were for the adventure, because of its challenge, observe historic features and artefacts, be able to say "I travelled the Chilkoot Trail", learn about the history of the goldrush, learn about native culture and history, retrace the steps of a goldrush era relative, be with others who enjoy same things I do, be with friends, be unconfined by rules and regulations, be where I can make my own decisions, meet new people, and to re-live the stampeders use of the trail. Motivations perceived as more important by non-motorised users than by motorised users were: observe its' scenic beauty, improve my physical health, experience the peace and tranquillity, experience solitude, let my mind move at a slower pace, and escape noise (Table 16).

Reflecting the results of earlier studies, skiers found physical exercise, tranquillity, and solitude to be more important than did snowmobilers. Furthermore, being with family and friends, adventure and challenge, and meeting other people were each more important to snowmobilers than to skiers.

Motorised users most often achieved their motivations to be with others who enjoy the same things I do, for the adventure, be with friends and observe its scenic beauty. Non-motorised users most frequently achieved their motivations to: observe its scenic beauty, be with others who enjoy the same things I do, enjoy the sights and smells of nature and improve my physical health (Table 16).

Table 16. Motivations and Achievement for CTNHS Visit, By Activity

I Visited The Chilkoot Trail To:	Mean Importance			Mean Achievement		
	Motorised	Non-motorised	Sig.[3]	Motorised	Non-motorised	Sig.[3]
Be with others who enjoy same things	1.44	1.67	+m	1.41	1.44	*
For the adventure	1.45	1.86	+m	1.47	1.75	+m
Be with friends	1.54	1.83	+m	1.49	1.64	*
Observe its scenic beauty	1.57	1.36	+n	1.49	1.32	*
Because of its challenge	1.77	2.18	+m	1.59	2.04	+m
Enjoy the sights/smells of nature	1.82	1.48	*	1.97	1.56	+n
Be unconfined by rules and regulations	1.86	2.29	+m	2.04	2.20	*
Release tension	1.89	1.90	*	1.91	1.90	*
Get away from crowds	1.90	1.66	*	1.92	1.77	*
Improve my physical health	1.92	1.65	+n	1.97	1.61	+n
Experience the peace and tranquillity	1.97	1.54	+n	1.94	1.66	+n
Do something with my family	2.02	2.33	*	2.19	2.30	*
Develop my skill/abilities	2.05	2.15	*	2.06	1.98	*
Be where I can make my own decisions	2.29	2.69	+m	1.99	2.25	*
Experience solitude	2.42	2.08	+n	2.33	2.17	*
View wildlife in its natural habitat	2.55	2.35	*	2.95	2.94	*
Let my mind move at a slower pace	2.66	2.32	+n	2.44	2.17	*
Learn more about nature	2.71	2.61	*	2.80	2.68	*
Escape noise	2.86	1.83	+n	2.53	2.15	+n
Observe historic features and artifacts	2.90	3.34	+m	3.11	3.49	+m
Meet new people	2.90	3.39	+m	2.76	3.07	*
Say "I travelled the Chilkoot Trail"	3.13	3.66	+m	3.18	3.58	+m
Re-live the stampeders use of the trail	3.17	3.50	+m	3.44	3.56	*
Learn about the history of the goldrush	3.19	3.50	+m	3.36	3.66	+m
Learn about native culture and history	3.22	3.48	+m	3.38	3.67	+m
Retrace the steps of a goldrush relative	3.33	3.73	+m	3.41	3.76	+m

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

[2] Based on a scale ranging from 1 = highly achieved to 4 = not at all achieved.

[3] Indicates statistically significant difference between the mean response of each group (alpha *a priori* = .05). "+m" indicates the item was more important for or achieved by motorised users. "+n" indicates the item was more important for or achieved by non-motorised users.

The difference between motivation importance and motivation achievement may highlight issues of visitor concern (see Table 17, Figure 5). Motorised users did not report the achievement of any motivations being statistically significantly lower than their importance rating for that motivation. Non-motorised users, however, reported that the following motivations' achievement ratings were statistically significantly lower than their corresponding importance rating: experience the peace and tranquillity, escape noise, view wildlife in its natural habitat, learn about native culture and history, and learn about the history of the goldrush. The first three items in this list were each rated as moderately

important by non-motorised users, while the last two items in this list were rated not at all important.

Many non-motorised users who came to the CTNHS did not achieve their desire for peace, tranquillity and quiet. As most of these users were on front-country trails near Log Cabin (Table 7) the management implication is that actions to reduce noise conflicts and increase education should be focused at the parking and access point.

Table 17. Comparison of Importance-Achievement, By Activity

I visited the Chilkoot trail to:	Motorised			Non-motorised		
	Mean Import.[1]	Mean Achieve.[2]	Sig Diff.[3]	Mean Import.[1]	Mean Achieve.[2]	Sig Diff.[3]
Observe its scenic beauty	1.57	1.49	*	1.36	1.32	*
Enjoy the sights/smells of nature	1.82	1.97	*	1.48	1.56	*
Experience the peace and tranquillity	1.97	1.94	*	1.54	1.66	(-)
Improve my physical health	1.92	1.97	*	1.65	1.61	*
Get away from crowds	1.90	1.92	*	1.66	1.77	*
Be with others who enjoy same things	1.44	1.41	*	1.67	1.44	(+)
Be with friends	1.54	1.49	*	1.83	1.64	(+)
Escape noise	2.86	2.53	(+)	1.83	2.15	(-)
For the adventure	1.45	1.47	*	1.86	1.75	*
Release tension	1.89	1.91	*	1.90	1.90	*
Experience solitude	2.42	2.33	*	2.08	2.17	*
Develop my skill/abilities	2.05	2.06	*	2.15	1.98	(+)
Because of its challenge	1.77	1.59	*	2.18	2.04	(+)
Be unconfined by rules / regulations	1.86	2.04	*	2.29	2.20	*
Let my mind move at a slower pace	2.66	2.44	(+)	2.32	2.17	*
Do something with my family	2.02	2.19	*	2.33	2.30	*
View wildlife in its natural habitat	2.55	2.95	*	2.35	2.94	(-)
Learn more about nature	2.71	2.80	*	2.61	2.68	*
Make my own decisions	2.29	1.99	(+)	2.69	2.25	(+)
Observe historic features and artifacts	2.90	3.11	*	3.34	3.49	*
Meet new people	2.90	2.76	*	3.39	3.07	(+)
Learn about native culture and history	3.22	3.38	*	3.48	3.67	(-)
Learn about history of the goldrush	3.19	3.36	*	3.50	3.66	(-)
Re-live the stampeders use of the trail	3.17	3.44	*	3.50	3.56	*
Say "I travelled the Chilkoot Trail"	3.13	3.18	*	3.66	3.58	*
Retrace the steps of goldrush relative	3.33	3.41	*	3.73	3.76	*

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

[2] Based on a scale ranging from 1 = highly achieved to 4 = not at all achieved.

[3] Indicates a statistically significant difference between the mean response of each group (alpha *a priori* = .05). (+) indicates items achieved at a higher level than their importance rating. (-) indicates items not achieved as high as their importance rating.

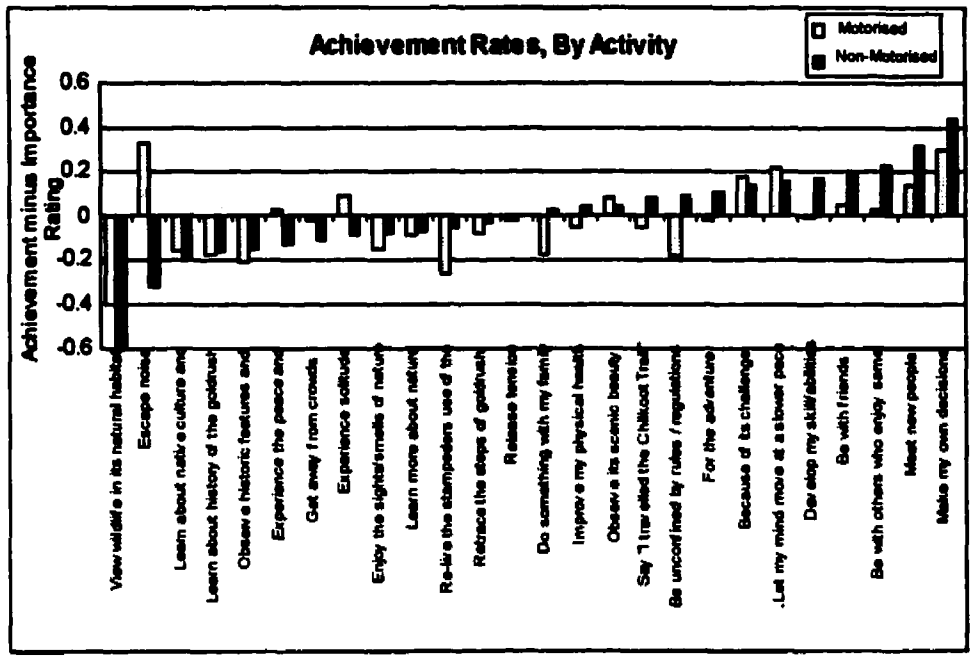

Figure 5. Mean Achievement Minus Mean Importance, By Activity
Non motorised users achieved less (compared to the parallel importance) than motorised users for escape noise, experience solitude, experience peace/tranquillity, get away from crowds, and view wildlife. Motorised users achieved less than non-motorised users for re-live stampeders experience, be unconfined by rules/regulations, do something with family, experience adventure, develop skills, be with others who enjoy same things.

Given the implementation on "non-motorised" weekends, a key question is whether temporal segregation has a positive effect on the goal-achievement of non-motorised users. Using an independent-samples t-test, the mean achievement of non-motorised users was compared based on whether they were surveyed on a multi-use weekend or a non-motorised weekend (Table 18). A number of elements related to setting were significantly more achieved by those on non-motorised weekends, including observe its scenic beauty, enjoy the sights/smells of nature, escape noise, experience solitude, experience the peace and tranquillity, get away from crowds. This analysis suggests that the non-motorised weekends are having the desired result: non-motorised users are able to better achieve their most important setting-related goals during non-motorised weekends.

Table 18. Non-Motorised Users' Goal Achievement, By Weekend Type[2]

	Non-motorised Only Weekend		Motorised Weekend		Sig. Diff.
	N	Mean Score[1]	N	Mean Score[1]	
Observe its scenic beauty	77	1.12	95	1.48	.000
Enjoy the sights/smells of nature	74	1.22	93	1.78	.000
Escape noise	75	1.76	91	2.45	.000
Experience solitude	73	1.82	91	2.42	.000
Improve my physical health	74	1.42	90	1.77	.002
Experience the peace and tranquillity	73	1.45	91	1.79	.005
Be where I can make my own decisions	67	1.97	89	2.37	.021
Develop my skill/abilities	75	1.84	89	2.13	.039
Get away from crowds	75	1.61	94	1.86	.043

[1] Based on a scale ranging from 1 = highly achieved to 4 = not at all achieved.

[2] Table presents items for which a significant different exists only. All items were tested.

5.3.4 Principal Components Analysis of Motivations

The twenty-six possible reasons for visiting the Chilkoot Trail were analysed to identify sub-sets of motivations to draw out the broad categories that each activity group may be associated with (components) (Table 19). The six resulting components cumulatively account for 64.4 percent of the total variation.

The first component, which accounted for thirty percent of the total variation, combined the items of low importance related to historic learning and historic features. All five variables in this category loaded strongly on this dimension. This dimension has been named Historic/Heritage Significance.

Passive aspects of nature and solitude, and opportunity to view wildlife dominated the second component, which accounted for about twelve percent of the total variation. The strong emphasis on nature and quiet led to the label Nature/Peace.

The third component, which accounted for about eight percent of the total variation, was dominated by variables relating to the active qualities of the activities, including challenge or skills, learning and doing. The variable "learn about nature" also loaded strongly onto component two. This dimension is known as Challenge/Outdoor Experience.

The fourth, fifth and sixth components accounted for about five percent each of the total variation. Less clear label associations emerged, however the fourth component was

labelled Personal Release, the fifth component Companionship, and the sixth component Independence.

Table 19. Principal Component Analysis of Motivations for CTNHS Visit

Motivation[1]	% Var Exp.	Mean Score	Varimax Rotated Factor Loadings By Component					
			1	2	3	4	5	6
HISTORIC/HERITAGE SIGNIFICANCE	**30.3%**	**3.44**						
Retrace the steps of a goldrush relative		3.62	**0.84**	0.07	0.12	0.09	-0.03	0.08
Learn about the history of the goldrush		3.42	**0.83**	0.17	0.14	0.13	0.11	-0.01
Re-live the stampeders use of the trail		3.41	**0.82**	0.11	0.02	0.04	-0.01	0.10
Observe historic features and artifacts		3.23	**0.82**	0.17	0.11	-0.06	0.13	-0.02
Learn about native culture and history		3.42	**0.78**	0.21	0.15	0.15	-0.01	0.05
Say "I travelled the Chilkoot Trail"		3.52	**0.75**	0.00	0.15	0.00	0.11	0.05
NATURE/PEACE	**12.1%**	**1.87**						
Enjoy the sights/smells of nature		1.57	0.13	**0.79**	0.11	-0.03	0.14	-0.05
Experience the peace and tranquillity		1.65	0.09	**0.79**	0.04	0.16	0.01	0.04
Escape noise		2.12	0.06	**0.72**	0.01	0.11	-0.07	0.19
Get away from crowds		1.72	0.13	**0.70**	0.15	0.00	-0.03	0.19
Observe its scenic beauty		1.42	0.08	**0.70**	0.09	0.00	0.22	-0.09
Experience solitude		2.17	0.15	**0.64**	0.09	0.33	-0.09	0.28
View wildlife in its natural habitat		2.41	0.31	**0.58**	0.18	0.28	0.06	-0.28
CHALLENGE/OUTDOOR EXPERIENCE	**8.1%**	**2.31**						
Because of its challenge		2.07	0.11	0.05	**0.80**	0.01	0.12	0.13
Develop my skill/abilities		2.13	0.16	0.14	**0.77**	-0.07	0.11	-0.16
For the adventure		1.76	0.09	0.11	**0.67**	0.12	0.23	0.28
Learn more about nature		2.64	0.34	**0.40**	**0.54**	0.16	-0.09	-0.26
Meet new people		3.26	**0.44**	-0.03	**0.51**	0.13	0.13	0.06
Make my own decisions		2.58	0.32	0.17	**0.48**	0.12	-0.12	0.32
Improve my physical health		1.72	-0.08	**0.44**	**0.48**	0.40	0.09	0.09
PERSONAL RELEASE	**5.1%**	**2.18**						
Release tension		1.89	0.06	0.27	0.28	**0.70**	-0.03	0.05
Do something with my family		2.24	0.20	-0.02	-0.17	**0.66**	0.29	-0.04
Let my mind move at a slower pace		2.42	0.08	**0.49**	0.15	**0.54**	-0.07	0.12
COMPANIONSHIP	**4.8%**	**1.97**						
Be with friends		1.75	0.19	0.06	0.21	-0.07	**0.78**	-0.10
Be with others who enjoy same things		2.18	0.00	0.08	0.14	0.24	**0.75**	0.18
INDEPENDENCE	**4.0%**	**1.60**						
Be unconfined by rules and regulations		1.60	0.18	0.23	0.18	0.06	0.08	**0.79**

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

[2] Principal component names were created to best reflect the motivation items within each category.

The motivations of non-motorised and motorised users were also analysed individually to uncover group specific component sub-sets (Table 20). The dimensions that were extracted bear a strong resemblance to the dimensions identified for the respondents as a

whole, but are not identical. While both groups had a strong loading of similar items on Component One (accounting for 28.2% and 38.5% total variance respectively), labelled *Historic/Heritage Significance*, the nature component was less strong for motorised users (only 5.2% explained variance) and some nature related variables were also loaded, although not strongly, in the *Heritage* component for motorised users.

The second component for non-motorised users, accounting for about 12% of total variation, was dominated by the nature and solitude variables, which resembles Component Two and Four combined for motorised users. The strong associations lead to the labelling of this category as *Nature/Peace.*

The third component for non-motorised users accounted for about eight percent of total variation, and was dominated by action related items, including skills, challenge and learning. This category is called *Learning / Challenge.*

The second component for motorised users accounts for just over ten percent of total variation, is concisely related to solitude of experience and was therefore labelled simply *Solitude / Peace.*

The third component for motorised users relates to active challenge and adventure variables, and accounts for almost eight percent of total variation. It was labelled *Challenge / Adventure*.

The other components for each group are seen in Table 20, accounting for about five percent or less each of total variation.

The primary, yet important, difference between the groups is the strength of the nature-based component for non-motorised users. As found in other recreation conflict studies, in both winter and non-winter recreation settings, the underlying goals and implied expectations lay the foundation for conflict to arise from inter-group encounters (Jacob and Schreyer 1980; Jackson and Wong 1982; Borrie *et al* 1999). Skiers are almost "setting themselves up" for disappointment when venturing into a multi-use area if they are expecting a peaceful, nature based experience. The moment a snowmobile enters the area,

there is the potential for the skier to experience goal-interference. Conversely, the snowmobiler is likely to be expecting social interaction, and challenge/adventure. The snowmobilers' goals are unlikely to be affected by skiers' on-site presence and activities. Hence we see the basis for asymmetrical conflict to occur on-site, and for goal-interference to impede the skiers' enjoyment of the area.

Table 20. PCA for Motorised and Non-Motorised Users, By % Variance Explained

Non-Motorised Users (N=138)	% Var Expl.	Mean Score
HISTORIC/HERITAGE SIGNIFICANCE[2]	**28.2%**	**3.57**
Re-live stampeders use of the trail		3.52
Learn about the history of goldrush		3.54
Observe historic features / artefacts		3.40
Retrace steps of goldrush relative		3.76
Learn about native culture / history		3.49
Say "I travelled the Chilkoot Trail"		3.72
NATURE / PEACE	**11.8%**	**1.75**
Enjoy the sights/smells of nature		1.48
Observe its scenic beauty		1.37
Experience peace and tranquillity		1.53
Get away from crowds		1.68
Escape noise		1.81
View wildlife in its natural habitat		2.33
Experience solitude		2.06
LEARNING / CHALLENGE	**8.1%**	**2.33**
Develop my skill/abilities		2.25
Because of its challenge		2.22
For the adventure		1.84
Improve my physical health		1.64
Learn more about nature		2.62
Meet new people		3.39
RELAXATION	**5.8%**	**2.18**
Release tension		1.90
Let my mind move at a slower pace		2.32
Do something with my family		2.31
FREEDOM/INDEPENDENCE	**5.2%**	**2.56**
Be unconfined by rules / regulations		2.35
Make my own decisions		2.77
SOCIAL INTERACTION	**4.2%**	**1.79**
Be with others who enjoy same things		1.69
Be with friends		1.90

Motorised Users (N=53)	% Var Expl.	Mean Score
HISTORIC/HERITAGE SIGNIFICANCE[2]	**38.3%**	**3.08**
Retrace steps of goldrush relative		3.28
Learn about native culture / history		3.25
Learn about the history of goldrush		3.17
Observe historic features / artefacts		2.85
Say "I travelled the Chilkoot Trail"		3.13
Re-live stampeders use of the trail		3.13
Learn more about nature		2.74
Escape noise		2.87
View wildlife in its natural habitat		2.58
SOLITUDE / PEACE	**10.4%**	**2.22**
Get away from crowds		1.85
Let my mind move at a slower pace		2.66
Experience solitude		2.42
Experience peace and tranquillity		1.96
CHALLENGE / ADVENTURE	**7.6%**	**2.04**
Because of its challenge		1.83
Release tension		1.91
Improve my physical health		2.06
For the adventure		1.47
Meet new people		2.91
NATURE	**5.2%**	**1.96**
Observe its scenic beauty		1.57
Enjoy the sights/smells of nature		1.81
Develop my skill/abilities		2.13
Make my own decisions		2.30
SOCIAL INTERACTION	**5.0%**	**1.53**
Be with friends		1.60
Be with others who enjoy same things		1.45
FAMILY	**4.4%**	**2.06**
Do something with my family		2.06
FREEDOM	**3.9%**	**1.91**
Be unconfined by rules / regulations		1.91

[1] Based on a scale ranging from 1 = very important to 4 = not at all important.

[2] Component names were created to best reflect the motivation items within each category.

5.4 Encounters With Other Users

Respondents were asked to indicate how many inter-group encounters they had while visiting the CTNHS. In particular, they were asked to estimate the number of motorised and non-motorised users they encountered in the parking area, while using the CTNHS travel corridors and while at Bennett or Lindeman Lake. (It should be noted that only 60 respondents estimated encounters at Bennett and Lindeman Lake, the rest of respondents did not travel to this area on the day they were surveyed.)

Table 21. Number of Other Winter Visitors Encountered, By Activity and Location

Encounters with:	Mean Encounters
Motorised groups per day at:	
Log Cabin parking lot	6.47
Access/use corridors	2.05
Lindeman, Bennett City area	1.57
Non-motorised groups per day at:	
Log Cabin parking lot	7.79
Access/use corridors	3.60
Lindeman, Bennett City area	.56

Encounters with other users had varying effects on respondents, according to both the type of visitor met and where the meeting occurred. Generally, encounters along use corridors and at backcountry sites (Lindeman or Bennett City) detracted from visitor experiences more than did those in the parking lot (Table 22). In all areas, the majority (at least 60.5%) of respondents were neutral toward their encounters with non-motorised users. Slightly fewer (at least 48.4%) were neutral toward meeting motorised users. However, on average, respondents' experiences were slightly enhanced by encounters with non-motorised users while meeting motorised users slightly detracted from visitors' recreation experiences (Table 22).

Table 22. Effect of Encounters with Other Users, By Activity and Location

Effect of encounter with:	Mean Effect[1]	Percentage of Responses						
		Greatly detracted			Neutral			Greatly enhanced
Non-motorised groups at:								
Log Cabin parking lot	4.47	1.3	1.7	4.3	66.7	6.5	6.5	13.0
Access/use corridors	4.45	3.0	2.5	5.0	60.5	7.5	8.5	13.0
Lindeman, Bennett City area[2]	4.22	1.6	3.2	3.2	77.6	1.6	3.2	9.6
Motorised groups at:								
Log Cabin parking lot	3.61	13.9	8.5	9.9	55.6	2.2	2.7	7.2
Access/use corridors	3.52	14.6	10.9	12.5	48.4	4.7	1.6	7.3
Lindeman, Bennett City area[2]	3.99	7.6	5.1	6.8	63.6	5.1	1.7	10.2

[1] Based on a scale ranging from 1 = greatly detracted to 4 = neutral and 7 = greatly enhanced.

[2] Many non-motorised users did not travel to Lindeman and Bennett City, possibly accounting for the different response pattern compared to Log Cabin and the access/use corridors.

In all locations encounters with motorised users detracted from recreational experiences statistically significantly more for non-motorised users than for motorised users (Table 23). Conversely, encounters with non-motorised users, in all locations, enhanced recreation experiences statistically significantly more for non-motorised users than for motorised users. Not surprisingly, encounters with other similar users enhanced experiences more so than encounters with other types of users.

The results of the recent Yellowstone winter recreation study (Borrie *et al* 1999) suggest that expectations of encounters play a major role in the tolerance for or effect of those encounters. There is potential that as elements of the WRUS for the Chilkoot Trail area become known amongst local users, winter recreationists will arrive on-site with expectations that are attuned with actual circumstances. Skiers will be able to plan their visit for non-motorised weekends, if that is important to them. If they arrive on multi-use weekends, they will do so expecting to encounter snowmobiles.

Table 23. Mean Effect of Encounters with Other Visitors, By Activity and Location

Encounters with:	Mean Response[1]			Sig. Diff.
	All Users	Motorised	Non-motorised	
Non-motorised groups per day at:				
Log Cabin parking lot	4.47	4.03	4.66	✓
Access/use corridors	4.45	3.85	4.72	✓
Lindeman, Bennett City area	4.22	3.93	4.49	✓
Motorised groups per day at:				
Log Cabin parking lot	3.61	4.49	3.16	✓
Access/use corridors	3.52	4.51	2.98	✓
Lindeman, Bennett City area	3.99	4.56	3.35	✓

[1] Based on a scale ranging from 1 = greatly detracted, 4 = neutral and 7 = greatly enhanced.

The effect of the "non-motorised weekend" strategy on increasing satisfaction among non-motorised users, and reducing the negative effect of inter-group encounters, is evidenced by the results shown in Table 24. In all locations, encounters with motorised users detracted more from non-motorised users experiences on multi-use weekends than on restricted (non-motorised only) weekends. In particular, encounters with motorised users in the parking area were significantly better on non-motorised weekends.

Table 24. Mean Effect of Encounters for Non-Motorised Users, By Weekend Type

Encounters with:	Mean Response[1] - Weekend Type		Sig. Diff.[2]
	Multi-use	Non-motorised	
Motorised groups per day at:			
Log Cabin parking lot	3.01	3.47	✓
Access/use corridors	2.93	3.12	x
Lindeman, Bennett City area	3.31	3.43	x
Non-motorised groups per day at:			
Log Cabin parking lot	4.68	4.59	x
Access/use corridors	4.78	4.65	x
Lindeman, Bennett City area	4.56	4.41	x

[1] Based on a scale ranging from 1 = greatly detracted, 4 = neutral and 7 = greatly enhanced.

[2] Non-motorised users mean effect of encounters is compared between those surveyed on multi-use weekends and those surveyed on non-motorised only weekends.

5.5 Support for Winter Recreational Use Strategy

Visitors were asked about the extent to which they supported or opposed specific components of the new WRUS. Generally respondents were neutral toward or supportive of each of the existing components of the strategy. In particular, respondents were most

supportive (mean score 3.5 to 5) of: encouraging YTG[4] to plow the parking lots, winter users responsible for their own safety, signing and mapping of trails, separate designated trails for motorised and non-motorised users, and the winter use schedule. Respondents were generally less supportive of closures for ensuring privacy and protection of the trapper's areas, construction of a new parking area designed for motorised users, and permanent area closures to motorised access to protect cultural resources.

Table 25. Visitor Support for Winter Recreational Use Strategy Elements

Strategy Component	Mean Support[1]	Percent Level of Support				
		Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Support	Strongly Support
Encourage YTG to continue plowing Log Cabin prkg lots	4.66	2.8	.4	6.5	8.9	81.5
Winter users continue to be responsible for their own safety	4.35	.4	2.2	13.5	29.6	54.3
Signage, maps, temporary trail markers to mark access/use trail corridors	3.94	3.5	3.5	26.4	28.6	37.9
Separate access/use trail corridors for motorised & non-motorised users	3.72	8.4	6.2	23.6	28.0	33.8
Winter use schedule: set aside every third weekend for non-motorised use only; multi use at all other times	3.55	15.0	9.7	19.0	18.2	38.1
Temporary area closures to all users to protect natural/cultural resources	3.52	13.8	6.7	20.0	32.4	27.1
Set aside Upper Log Cabin prkg lot for non-motorised users	3.51	14.4	6.6	28.0	15.6	35.4
Stakeholder group rep patrols inform about WRUS & enhance compliance	3.49	6.2	4.0	44.4	25.3	20.0
Permanent area motor. access closures to protect cultural resources/ features	3.21	20.9	14.7	16.0	19.1	29.3
New prkg lot near Log Cabin especially designed for motorised users	3.08	17.8	10.3	39.3	11.6	21.1
Permanent area closures all users for privacy/protection of trapper's areas	2.56	31.0	15.5	29.6	14.2	9.7

[1] Based on a scale ranging from 1 = strongly oppose to 5 = strongly support.

Respondents were asked the extent to which they opposed or supported each component of the WRUS. There were no statistically significant differences between motorised and non-motorised users with respect to winter users responsible for their own safety, and the construction of a new lot for motorised users (Table 26). Motorised users were significantly more opposed than non-motorised users to all components of the strategy.

[4] Yukon Territory Government

Table 26. Support for the Winter Recreational Use Strategy, By Activity

Strategy Component	Mean Response[1]			Sig. Diff.
	All Users	Motorised	Non-motorised	
Encourage YTG to continue plowing Log Cabin prkg lots	4.66	4.42	4.76	✓
Winter users continue to be responsible for their own safety	4.35	4.29	4.37	*
Signage, maps, and temporary trail markers to mark locations of access/use trail corridors	3.94	3.41	4.16	✓
Separate designated access/use trail corridors for motorised and non-motorised users	3.72	2.93	4.10	✓
Winter use schedule: set aside every third weekend for non-motorised use only; multi use at all other times	3.55	2.88	3.83	✓
Temporary area closures to all rec. users as required to protect natural/cultural resources	3.52	2.82	3.84	✓
Set aside Upper Log Cabin prkg lot for non-motorised users	3.51	2.60	3.92	✓
Joint patrols with stakeholder group reps. to inform users about the WRUS and enhance compliance	3.49	3.04	3.69	✓
Permanent area closures to motorised access to protect cultural resources/historic features	3.21	1.90	3.79	✓
Construct new prkg lot near Log Cabin especially designed for motorised users	3.08	3.33	2.98	*
Permanent area closures to all rec. users to ensure privacy and protection of the trapper's cabin and trapline areas	2.56	1.99	2.83	✓

[1] Based on a scale ranging from 1 = strongly oppose to 5 = strongly support.

5.6 Perception of Problems in the CTNHS

Respondents were asked to indicate the extent to which a variety of potential issues were felt to be problems in the CTNHS. Specifically, respondents found that there were slight problems in the areas of noise from motorised users, activities of motorised users, poorly groomed/marked trails, and disturbance to wildlife (Table 27). There were no problems associated with lack of clearly visible information about the CTNHS's WRUS, damage to trees/vegetation, too many rules and regulations, insufficient information about park, unskilled, unprepared users, litter, parking lot snow removal, campfire remnants, damage to historic artefacts/ features, activities of non-motorised users, noise from non-motorised users, not enough law enforcement, and availability of park staff.

Some respondents considered several of these issues to be serious, or very serious problems. These included noise from motorised users (15%), activities of motorised users (11%), and poorly groomed/marked trails (9.4%).

Table 27. Extent of Problems in CTNHS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Noise from motorised users	1.95	54.9	17.2	12.9	7.7	7.3
Activities of motorised users	1.79	60.5	16.2	12.3	5.3	5.7
Poorly groomed/marked trails	1.62	69.7	12.0	9.0	6.0	3.4
Disturbance to wildlife	1.49	72.1	13.0	10.2	3.3	1.4
Lack of clearly visible info. about CTNHS's WRUS	1.44	76.5	8.6	10.9	2.3	1.8
Damage to trees/vegetation	1.43	72.4	16.3	8.6	1.8	0.9
Too many rules and regulations	1.41	76.8	10.7	9.4	1.3	1.8
Insufficient information about park	1.39	76.4	11.6	8.9	2.7	0.4
Unskilled, unprepared users	1.30	84.4	5.8	6.3	2.7	0.9
Litter	1.28	80.0	14.3	3.9	0.9	0.9
Parking lot snow removal	1.24	88.9	4.3	3.0	1.7	2.1
Campfire remnants	1.19	88.8	5.8	3.6	1.3	0.4
Damage to historic artifacts/ features	1.18	88.4	7.5	2.5	1.0	0.5
Activities of non-motorised users	1.17	88.4	8.2	2.2	0.4	0.9
Noise from non-motorised users	1.13	91.3	5.2	3.1	0.4	0.0
Not enough law enforcement	1.11	93.9	2.6	3.1	0.0	0.4
Availability of park staff	1.09	95.0	2.3	2.3	0.0	0.5

[1] Based on a scale ranging from 1 = not a problem to 5 = very serious problem.

Respondents were asked to indicate the extent to which a variety of potential issues were a problem during their winter visit to the CTNHS (Table 28). Overall, few issues were identified as problems in the CTNHS. Motorised users reported statistically significantly fewer problems than did non-motorised users associated with noise from motorised users, disturbance to wildlife, and activities of motorised users. Non-motorised users reported statistically significantly fewer problems with: too many rules/regulations and parking lot snow removal.

Table 28. Extent of Problems in CTNHS, By Activity

Problem Area	Mean Response[1]			Sig. Diff.
	All Users	Motorised	Non-motorised	
Noise from motorised users	1.95	1.13	2.34	✓
Activities of motorised users	1.79	1.16	2.10	✓
Poorly groomed/marked trails	1.62	1.65	1.61	✗
Disturbance to wildlife	1.49	1.25	1.61	✓
Lack of clearly visible information about CTNHS's WRUS	1.44	1.51	1.41	✗
Damage to trees/vegetation	1.43	1.36	1.47	✗
Too many rules and regulations	1.41	1.76	1.25	✓
Insufficient information about park	1.39	1.41	1.37	✗
Unskilled, unprepared users	1.30	1.36	1.28	✗
Litter	1.28	1.18	1.33	✗
Parking lot snow removal	1.24	1.40	1.17	✓
Campfire remnants	1.19	1.14	1.21	✗
Damage to historic artifacts/ features	1.18	1.17	1.18	✗
Activities of non-motorised users	1.17	1.24	1.14	✗
Noise from non-motorised users	1.13	1.06	1.16	✗
Not enough law enforcement	1.11	1.13	1.09	✗
Availability of park staff	1.09	1.09	1.09	✗

[1] Based on a scale ranging from 1 = not a problem to 5 = very serious problem.

Figure 6 particularly highlights the perception of problems associated with the noise and activities of motorised users. Motorised users did not have any serious problems with either issue, whereas about 22% and 16% of non-motorised users found, respectively, the noise and activities of motorised users were a serious or very serious problem.

This result is in keeping with other survey elements where non-motorised users indicated some level of dissatisfaction or interference due to the presence of snowmobiles during their recreation visit.

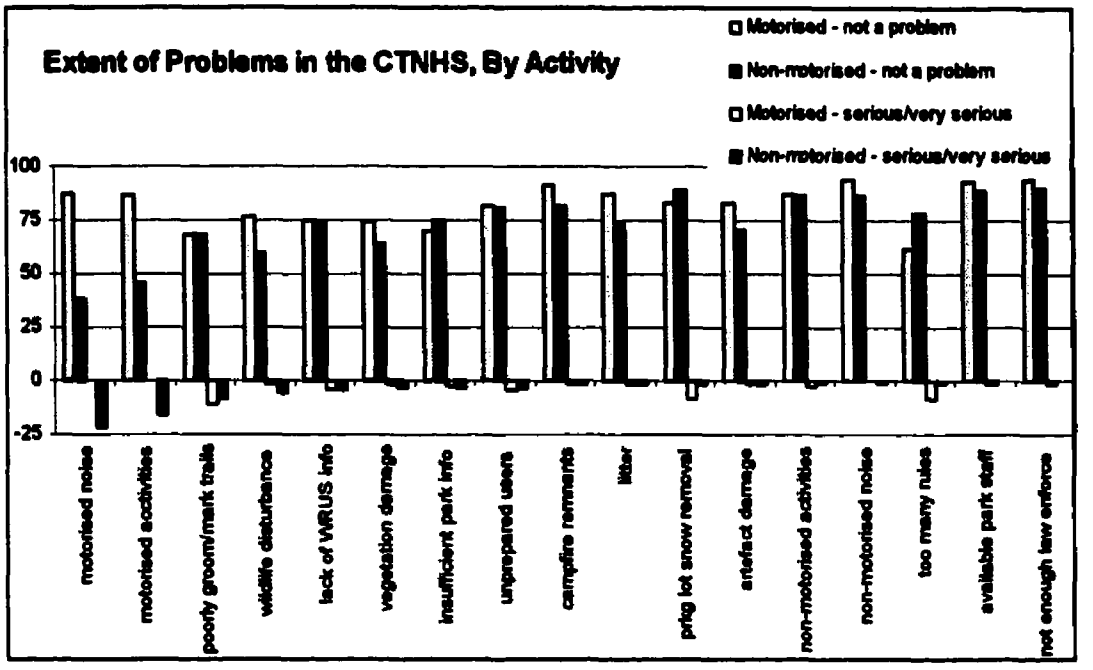

Figure 6. Extent of Problems in CTNHS, By Activity

Respondent indications of serious or very serious problem areas are denoted in this figure as negative values for visual effect. The actual values are all positive frequencies.

5.6.1 Overall Satisfaction

Respondents were asked how satisfied they were with their trip to the CTNHS. The mean satisfaction was an "A" (1.47). Fully 93.3% of respondents rated their experience an "A" or a "B" (Table 29). Of motorised users, 88% rated their trip and "A" or a "B", while 96% of non-motorised users gave their trip an "A" or a "B". There was no statistically significant difference between the mean responses.

The extremely high satisfaction rate for non-motorised users seems to contrast with earlier findings, specifically the existence of goal-interference and the negative effect of encounters with snowmobiles. Clearly, despite the existence of snowmobiles in the area, skiers are pleased with the area overall for a winter recreation experience.

Table 29. Overall Satisfaction with CTNHS Winter Trip, By Activity

Grade	Percentage of Respondents		
	All Users	Motorised	Non-motorised
A - Very good	61.3	52.7	64.4
B - Good	32.0	35.1	31.1
C - Fair	5.1	10.8	2.8
D - Poor	1.2		1.7
F - Very poor	.4	1.4	
Mean Response[1]	1.47	1.62	1.42

[1] Based on a scale of 1 = "A" very good to 5 = F "very poor"

When asked whether they would recommend the CTNHS to others seeking a quality winter recreational experience, over 96% of respondents indicated that they would refer the area to other recreationists (Table 30). All of the motorised users and 95% of non-motorised users indicated that they would recommend the area to others (Table 30). Comments on survey forms and to me while on site by some non-motorised users qualified their recommendation to non-motorised use periods only.

Table 30. Recommendation of CTNHS, By Activity

Would Recommend	Percentage of Respondents		
	All Users	Motorised	Non-motorised
Yes	96.4	100	94.9
No	3.6	-	5.1

Respondents were asked how they expected their personal winter use pattern at the CTNHS would change as a result of the WRUS. Non-motorised users expected that the WRUS would enhance the quality of their winter recreational experience more than did motorise users (Table 31). Similarly, non-motorised respondents thought the amount they would use the CTNHS would increase, more so than did motorised users (Table 31).

These results suggest that skiers, as the group that experiences the most negative impact on-site due to multi-use, are optimistic that their access to and enjoyment of the area will be improved by the WRUS. In keeping with other research however, the conflict may move from being asymmetrical to symmetrical as snowmobilers react negatively to increased restrictions on their activities (Borrie *et al* 1999; Jackson and Wong 1982).

Table 31. Expected Effect of WRUS, By Activity

Expected effect on:	Mean Response[1]			Sig. Diff.
	All Users	Motorised	Non-motorised	
Winter recreation experience	3.57	3.00	3.83	✓
Winter recreation use level	3.18	2.70	3.41	✓

[1] Based on a scale ranging from 1 = greatly detract to 5 = greatly enhance.

The results above illustrate that there are a number of similarities and disparities between motorised and non-motorised users. Areas of congruency are often tempered by a scalar difference. For example, motorised and non-motorised users levels of support for the WRUS elements are similar, however non-motorised users are, overall, more supportive of each item.

Consistent areas of disparity between the groups focused on sources of conflict, such as the effect of the noise and activities of motorised users, tolerance for encounters between groups and options for segregating by activity, either temporally or spatially.

6 CONCLUSIONS

6.1 Key Findings

In the introductory chapter I posed a number of objectives:

- Examine the demographic and trip characteristics of motorised and non-motorised users.
- Explore how motorised and non-motorised winter recreationists vary in their motivations for their CTNHS visit.
- Examine the symmetry of goal achievement, or performance, between motorised and non-motorised winter recreationists.
- Determine the effect of non-motorised weekends on the goal-achievement of skiers.
- Explore the components of inter-group conflicts and preferences, including spatial or temporal conflict and differences in attitudes toward park management and perception of problems in the CTNHS.
- Explore the constituents' support for a conflict resolution strategy developed through a stakeholder based participation process, and thereby the success of the stakeholder process in representing their publics.

In this chapter I return to these questions, summarising the project, drawing conclusions and developing future management directions based on the results.

Perhaps the most significant finding of this research is the empirical evidence that separating use, by location and by time of use, does reduce inter-group conflict. In this case study the motorised use was restricted (as motorised users were identified as causing, not experiencing, conflict), not prohibited, at certain times enabling unfettered access. During restricted times, non-motorised users were able to visit the site without the presence of snowmobiles. This increased visitor satisfaction during those periods, particularly by reducing the negative effects of inter-group encounters experienced by non-motorised users.

Furthermore, the WRUS strategy was generally supported by all respondents, although it was developed through a stakeholder based participation process. This result demonstrates that enabling stakeholder representatives to speak, act and make decisions on behalf of their "constituents" is an efficient yet publicly inclusive method of resolving inter-group conflict.

While the strength of support for different winter management strategies differed between activity groups, the general rank preference was similar between the groups. For example, both motorised and non-motorised respondents agreed with improved parking lot maintenance and trail signage, and generally disagreed with any permanent trail closures. Overall however, motorised respondents were less supportive of restrictions and closures than of improved facilities. Non-motorised respondents preferences were less black and white; they supported some forms of restrictions but tended not to highly support new facilities or infrastructure, unless it served to separate the two activity groups.

In understanding the basic motivators for each group, this study determined that not all goals differ, although there are key differences between motorised and non-motorised visitors. Both groups were motivated by social interactions, whereas motorised visitors also sought challenge and adventure while non-motorised visitors focused on nature and solitude.

6.2 Management Implications

Recreation research, and recreation conflict research in particular, has previously focused in areas without conflict resolution measures in place. This study allowed an opportunity to explore not only the foundations of conflict, but also the willingness to accept the measures being enacted to reduce conflict between the groups.

6.2.1 Motivations, Goal Achievement and Goal-Interference

Winter recreation in the CTNHS is subject to both asymmetrical conflict and goal-interference. The root cause appears to be that the underlying recreation motivations of motorised and non-motorised differ. Motorised recreationists were motivated by challenge, adventure and social interaction. Scenery, nature and peace, physical fitness and social interaction motivated non-motorised recreationists. These differences point to many potential sources of inter-group conflict.

The outcome at the CTNHS was that the activities and behaviour of motorised users interfered with the goal achievement of non-motorised users, as evidences by non-

motorised users indicating problems with the activities and noise of motorised users, and dissatisfaction with encountering motorised users. Further, the opposite was not true: non-motorised users' activities and behaviour had little affect on the achievement of social interaction or challenge / adventure for motorised users.

As CTNHS managers had recognised the conflict and had been working toward solutions, this study provided a unique opportunity to examine the relationship between goal-achievement during non-motorised only and multi-use weekends. Key setting-related elements were significantly more achieved by non-motorised users on non-motorised weekends (than on multi-use weekends), including observe its scenic beauty, enjoy the sights/smells of nature, escape noise, experience solitude, experience the peace and tranquillity, get away from crowds. This analysis reinforces previous findings in the literature suggesting that motorised users negatively impair the enjoyment of non-motorised visitors. Further, it suggests that temporal segregation is an effective remedy for the goal-interference that non-motorised users experience *due to* the activities and behaviour of motorised users.

6.2.2 Inter-Group Conflict and the Winter Recreation Use Strategy

Because the conflict reduction strategy was in place, this study was not asking respondents about hypothetical management options, but about newly introduced management strategies. The questionnaire also asked respondents to cite the effect these new strategies had on their recreation enjoyment and use patterns.

Non-motorised users experienced goal-interference, under-achievement of motivations and negative effects of encounters with motorised users. They also indicated serious problems associated with the noise and activities of motorised users and wildlife disturbance. It holds then that non-motorised users were supportive of the WRUS components that directly address their main concerns, such as segregating use areas and designating exclusive non-motorised use periods.

Elements of the strategy relating to facilities and site maintenance (parking lot plowing, signage and trail markers) were strongly supported by both groups. The exception,

however, was for construction of a new "motorised" parking area near Log Cabin. The apparent lukewarm support may be because motorised users did not see a problem with existing parking, whereas non-motorised users may not place a high value on new facilities for motorised users.

Elements of the strategy that increased regulations were uniformly more supported by non-motorised users than motorised users (separated trails for motorised / non-motorised use, non-motorised use only weekends, area closures for protection of natural / cultural resources or trap line). This study revealed, as many others have, that motorised users dislike rules and regulations - and the lack of support for regulatory elements reinforces this finding. Managers will likely find the greatest amount of co-operation from motorised users if they can use "soft-management" techniques, such as information, education and the "opening" of alternate areas for snowmobile use. However, in areas like the Chilkoot Trail with a history of motorised use that goes back many decades, co-operation is likely to only go so far without rules and regulations to back them up.

Spatially, the parking area was a focal point of conflict. A small number of snowmobilers used the areas proximate to the parking area and outhouses. Activities other than trail access and staging near the parking lot were considered to be dangerous by many respondents. The cross-country ski trails are also near the parking area, so reducing motorised activity in the parking area will minimise the aspects of shared use that concern non-motorised users and motorised users alike (noise, exhaust and safety risks). Both skiers and snowmobilers generally preferred separated trail corridors, and mutual respect for designated trails can go a long way to solving inter-group conflict.

Given that participation in all winter recreation activities is on the rise, attaining workable solutions to sharing recreation resources and minimising inter-group conflict will continue to be important for the attainment of individual recreation goals.

6.3 Areas of Further Research

Once conflict resolution strategies are in place, further research should focus on monitoring the efficacy and effect of those strategies. Do the management actions achieve

the desired result of reducing conflict and increasing visitor satisfaction? Are there sufficient alternative areas for all visitors to pursue their activities in the region? Are there satisfactory ways for traditionally conflicting activity groups to equitably share a recreation area? Focusing on monitoring and adapting solutions to conflict enables recreation managers to continue to provide or create high quality recreation experiences.

The nature of a northern Canadian population raises the possibility that the "non-motorised" visitors in this study could in fact be snowmobilers on another day, or in another place. This study did not ask visitors to identify any crossover of activity participation between motorised and non-motorised activities. The nature of the inter-group conflict may in fact be more dramatic if it were possible to filter out the "cross-over" participants during analysis.

Finally, further exploration of the conditions under which asymmetrical conflict in winter recreation can become symmetrical. It is possible that the source group of conflict, in this case motorised users, might also experience conflict when the affected group becomes politically active in their efforts to ban or limit the activities of the "causal" group. In this case, it is possible that if skiers become more active and more successful in having limits placed on the activities of snowmobilers, then snowmobilers will develop a negative effect caused by skiers (Horn *et al* 1994).

7 FUTURE MANAGEMENT DIRECTIONS

Managers have one more tool available to attain insights about the CTNHS winter visitors. Using the information within this report, managers and stakeholders can continue to work in an informed manner toward the shared use of winter recreation areas within the CTNHS. Specifically, CTNHS managers should continue to recognise that the two distinct activity groups that use the area have different attitudes toward CTNHS management strategies and inter-group encounters, and different reasons for visiting. Clearly, social setting is highly important to motorised respondents, while natural setting attributes are primary motivators for non-motorised respondents to visit the CTNHS. The following recommendations were made to CTNHS managers in order to continue their conflict mediation approach (Jackson 1999).

7.1 Encounters With and Conflict Between Visitors

- As outlined in the WRUS, separate trails for motorised and non-motorised use should be permanently designated and marked for each winter season.

- The railroad tracks to Bennett should remain a multi-use trail, on designated multi-use days, as this is an important access route for all types of CTNHS users.

- The slopes above Log Cabin parking lot, and the Father Mouchez ski trail, should be designated and marked as non-motorised use areas only.

- The lower Log Cabin parking lot should be designated as a staging and access point only, to reduce noise and increase safety in proximate parking and recreation areas.

- After implementing alternative conflict management strategies, monitor visitor satisfaction and visitor behaviour for two more seasons (1998/99 and 1999/00) before committing to building a second parking lot for motorised users in the Log Cabin area. Support for this component of the WRUS is not high enough at this point to warrant going ahead with this option.

7.2 Visitor Satisfaction

- Monitor visitor satisfaction on an on-going, bi-annual basis. If satisfaction drops below a mean of *good*, identify specific areas of complaint using on-site monitoring, another visitor survey and contact with user group representatives.

7.3 Visitor Motivation and Achievement Levels

- Designating and marking motorised and non-motorised areas of the CTNHS will help visitors to plan their day to avoid encounters with other types of users.

- Many non-motorised respondents who came to the CTNHS did not achieve their desire for peace, tranquillity and quiet. As most of these people were on front-country trails near Log Cabin parking lot (see Table 7), efforts to reduce noise conflicts, and increase cultural interpretation should be focused at access points.

- An interpretive display at Log Cabin that includes information on the CTNHS's winter wildlife may help visitors to identify wildlife signs within the CTNHS. It may also help visitors to develop realistic expectations about the types of wildlife that they might see during the winter.

7.4 Winter Recreational Use Strategy

- Continue to work through the WRUS representatives to communicate up-to-date information on the WRUS components, using several methods targeted at different user groups.

- Members of the working group should develop a strategy for on-site communication of the WRUS process, components and outcomes. The goal is to extend the inter-group understanding from the working group table to the affected recreationists. Numerous studies have demonstrated that both social structure and communication effectiveness changes according to user type (McCool and Curtis 1980). Approaching groups directly and providing poster board and brochure information will reach the broadest number of people across all user types and times.

7.5 Recreation Area and Trail Maintenance

- As laid out in the WRUS, a basic level of signage could be provided at the parking area information board about the area trails. Information on each trail could include a route name, designated users, destinations and distances. A map showing some specific routes would also be helpful to recreationists.

- Parks Canada should continue to work with its user group representatives to co-ordinate marking and grooming of trails and routes outside of the CTNHS boundaries.

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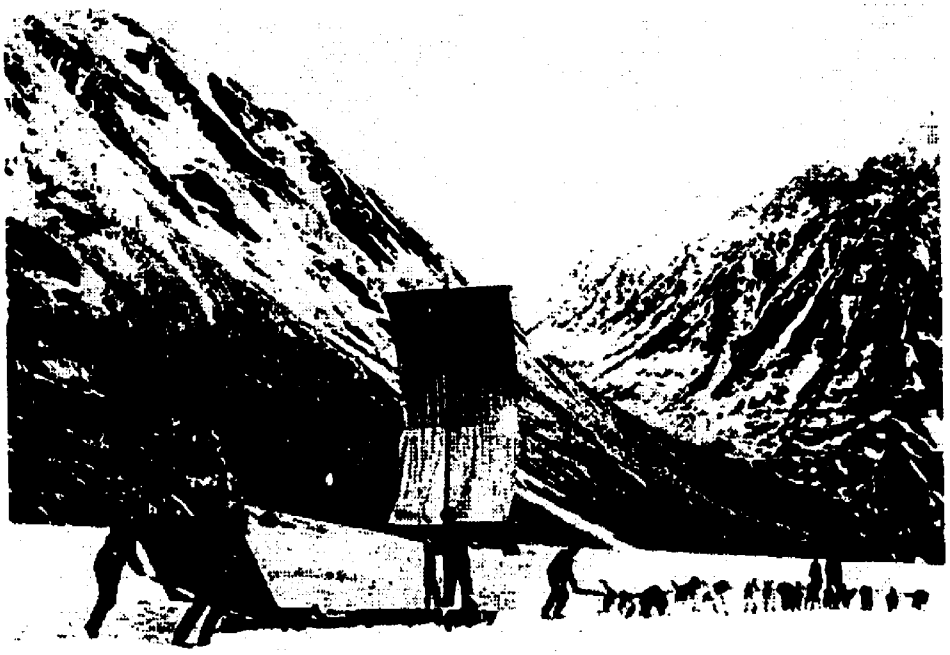
APPENDIX 1. SURVEY INSTRUMENT

CHILKOOT TRAIL
NATIONAL HISTORIC SITE
WINTER RECREATIONAL USE STUDY

Visitor Survey



School of Resource and Environmental Management
Simon Fraser University
&
Chilkoot Trail National Historic Site
Parks Canada

Dear Winter Recreational User:

We hope you have enjoyed your visit to Chilkoot Trail National Historic Site (CTNHS). The CTNHS Winter Recreational Use Study is being conducted co-operatively by Simon Fraser University and Parks Canada. We are interested in learning about your recreational experience in the CTNHS parklands this winter, and your opinions about CTNHS's new Winter Recreational Use Strategy. You do not need any special knowledge to answer this questionnaire.

The information obtained from this survey will contribute to protecting CTNHS's cultural and natural resources, and help to maintain a quality winter recreational use experience. Completing the survey is voluntary and you are free to stop participating at any time. You are not required to provide us with your name, and all answers will be treated confidentially, in accordance with the Access to Information and Privacy Acts.

As an added incentive, upon completing the survey you may enter your name in a draw to win 1 of 5 "Chilkoot Trail: Heritage Route to the Klondike" books.

We hope that you will participate in this study. If you are completing the survey off-site, please return it before April 30 using the enclosed stamped, self-addressed envelope. If you have any additional comments or questions, or would like a copy of the results of this study, please contact Parks Canada's Whitehorse office (867-667-3910) or the Director of REM (604-945-7757). Thank you for your co-operation.

Sincerely,

Siobhan Jackson, BA, MRM (candidate)

Researcher

School of Resource and Environmental Management (REM)

Simon Fraser University

If you are under 19 years of age the signature of a parent of guardian is required prior to completing the survey.

Signature of parent or guardian _____

(Aussi disponible en français)

Cover: "Dog team pulling scow on ice of Lake Bennett, 1898" - Yukon Archives, University of Washington Collection

This first section asks you about your trip to Chilkoot Trail National Historic Site, and the recreational activities you participated in.

1. WAS CHILKOOT TRAIL NATIONAL HISTORIC SITE... *(Check only one)*

- ❑ The main destination of your trip?
- ❑ A planned stop on a trip to the White Pass or Skagway areas?
- ❑ A side trip taken due to bad weather and/or poor snow conditions at your preferred location?

2. PLEASE INDICATE WHICH OF THE FOLLOWING RECREATIONAL ACTIVITIES YOU CONSIDER TO BE YOUR MAIN ACTIVITY ON THIS TRIP TO CTNHS. *(Please check only <u>one</u> box)*

- ❑ Cross-country Skiing
- ❑ Telemark Skiing
- ❑ Downhill Skiing
- ❑ Snowmobile-assisted Skiing
- ❑ Snowboarding
- ❑ Snowmobile-assisted Snowboarding
- ❑ Snowshoeing
- ❑ High Mark Snowmobiling
- ❑ Snowmobile Touring
- ❑ Dog Mushing
- ❑ Ski Jöring
- ❑ Other _____

3. DID YOU PARTICIPATE IN YOUR MAIN ACTIVITY WITH AN ORGANIZED GROUP (E.G. COMMERCIALLY GUIDED, SCHOOL, TRAINING, ETC.) OR CLUB, WHILE ON THIS TRIP TO CTNHS?

- ❑ Yes IF YES, WHAT TYPE OF GROUP? _____
- ❑ No

4. HOW WOULD YOU BEST DESCRIBE THE TYPE OF <u>PERSONAL</u> PARTY YOU TRAVELLED WITH? *(Check one)*

- ❑ Alone
- ❑ Spouse or family
- ❑ Friends
- ❑ Family and friends

5. INCLUDING YOURSELF, HOW MANY PEOPLE WERE IN YOUR <u>PERSONAL</u> PARTY?
Number of Adults _____ Number of Youth under 16 _____

6. HOW MUCH TIME DID YOU SPEND IN THE CTNHS PARKLANDS WHILE ON THIS TRIP? _____ Hours, over _____ Day(s)

7. PLEASE INDICATE WHICH OF THE FOLLOWING AREAS YOUR PARTY STAYED OVERNIGHT AT WHILE ON THIS TRIP TO CTNHS? *(check all that apply)*

- ❑ Upper Log Cabin parking lot
- ❑ Lower Log Cabin parking lot
- ❑ Lindeman City shelter
- ❑ None
- ❑ Other *(please specify)*_____

8. PLEASE INDICATE WHICH OF THE FOLLOWING ACCESS/USE CORRIDOR(S) YOUR PARTY TRAVELLED WHILE ON THIS TRIP TO CTNHS. *(Check all that apply)*

- ❑ Slopes above Log Cabin parking lots
- ❑ Railroad tracks to Bennett and return
- ❑ Lindeman Lake via railroad tracks
- ❑ Across Highway to Fan Tail Trail
- ❑ Dyea to Log Cabin via Chilkoot Trail
- ❑ Above treeline slopes below Fraser Repeater
- ❑ Crater Lake via notch
- ❑ Father Mouchez Trail
- ❑ Other *(please specify)* _____

9. HOW IMPORTANT WERE EACH OF THE FOLLOWING FEATURES OF CTNHS AS REASONS FOR MAKING THIS TRIP?

	Very Important	Moderately Important	Slightly Important	Not at all Important
Snow conditions	❑	❑	❑	❑
Proximity to home	❑	❑	❑	❑
A familiar winter setting	❑	❑	❑	❑

The following section relates to your motivations.

10. EACH VISITOR HAS MANY REASONS FOR VISITING CHILKOOT TRAIL NATIONAL HISTORIC SITE. PLEASE INDICATE HOW IMPORTANT EACH OF THE FOLLOWING REASONS WERE FOR YOUR TRIP. ***(Check one for each item)***

I visited the Chilkoot Trail to:	Very Important	Moderately Important	Slightly Important	Not at all Important
Observe its scenic beauty	❑	❑	❑	❑
Enjoy the sights/smells of nature	❑	❑	❑	❑
Observe historic features and artifacts	❑	❑	❑	❑
Be somewhere that I can make my own decisions	❑	❑	❑	❑
Be able to say "I traveled the Chilkoot Trail"	❑	❑	❑	❑
Learn about the history of the gold rush	❑	❑	❑	❑
Do something with my family	❑	❑	❑	❑
Improve my physical health	❑	❑	❑	❑
Learn more about nature	❑	❑	❑	❑
Retrace the steps of a gold rush era relative	❑	❑	❑	❑
View wildlife in its natural habitat	❑	❑	❑	❑
Experience solitude	❑	❑	❑	❑
Be unconfined by rules and regulations	❑	❑	❑	❑

11. PLEASE INDICATE TO WHAT EXTENT YOU WERE ABLE TO ACHIEVE EACH OF THE FOLLOWING FROM TODAY'S VISIT.

	Highly Achieved	Moderately Achieved	Slightly Achieved	Not at all Achieved
Observe its scenic beauty	❑	❑	❑	❑
Enjoy the sights/smells of nature	❑	❑	❑	❑
Observe historic features and artifacts	❑	❑	❑	❑
Be somewhere that I can make my own decisions	❑	❑	❑	❑
Be able to say "I traveled the Chilkoot Trail"	❑	❑	❑	❑
Learn about the history of the gold rush	❑	❑	❑	❑
Do something with my family	❑	❑	❑	❑
Improve my physical health	❑	❑	❑	❑
Learn more about nature	❑	❑	❑	❑
Retrace the steps of a gold rush era relative	❑	❑	❑	❑
View wildlife in its natural habitat	❑	❑	❑	❑
Experience solitude	❑	❑	❑	❑
Be unconfined by rules and regulations	❑	❑	❑	❑

The following section relates to your encounters with other users, both motorised and non-motorised.

12. ON AVERAGE, APPROXIMATELY HOW MANY GROUPS OF EACH MOTORISED AND NON-MOTORISED USERS DID YOU ENCOUNTER PER DAY IN EACH OF THE FOLLOWING SETTINGS, DURING YOUR TRIP?

	Number of motorised groups per day	Number of non-motorised groups per day
Log Cabin parking lots	_____	_____
Access/use corridors	_____	_____
Lindeman, Bennett City areas	_____	_____

13. PLEASE INDICATE HOW THE NON-MOTORISED USERS YOU ENCOUNTERED INFLUENCED YOUR RECREATIONAL EXPERIENCE, IN EACH OF THE FOLLOWING SETTINGS.

	Greatly Detracted			Neutral			Greatly Enhanced
Log Cabin parking lots	❑	❑	❑	❑	❑	❑	❑
Lindeman, Bennett City areas	❑	❑	❑	❑	❑	❑	❑

14. PLEASE INDICATE HOW THE MOTORISED USERS YOU ENCOUNTERED INFLUENCED YOUR RECREATIONAL EXPERIENCE, IN EACH OF THE FOLLOWING SETTINGS.

	Greatly Detracted			Neutral			Greatly Enhanced
Log Cabin parking lots	❑	❑	❑	❑	❑	❑	❑
Lindeman, Bennett City areas	❑	❑	❑	❑	❑	❑	❑

15. WINTER TRAVEL AND CAMPING CAN HAVE IMPACTS ON CULTURAL AND NATURAL RESOURCES, AND THE QUALITY OF THE RECREATIONAL EXPERIENCE. ACTIVITIES OF PARK MANAGERS CAN ALSO IMPACT THE QUALITY OF THE RECREATIONAL EXPERIENCE. DURING YOUR VISIT TO CTNHS, TO WHAT EXTENT WERE EACH OF THE FOLLOWING A PROBLEM?

	Not A Problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem	Unsure
Damage to historic artifacts/features	❑	❑	❑	❑	❑	❑
Disturbance of wildlife	❑	❑	❑	❑	❑	❑
Noise from non-motorised users	❑	❑	❑	❑	❑	❑
Activities of non-motorised users	❑	❑	❑	❑	❑	❑
Litter	❑	❑	❑	❑	❑	❑
Insufficient information about park	❑	❑	❑	❑	❑	❑
Poorly groomed/marked trails	❑	❑	❑	❑	❑	❑
Unskilled, unprepared users	❑	❑	❑	❑	❑	❑
Parking lot snow removal	❑	❑	❑	❑	❑	❑

The following section relates to your overall winter recreational experience.

16. HOW SATISFIED WERE YOU WITH YOUR TRIP TO CTNHS? GIVE US AN APPROPRIATE GRADE.

* A. Very Good * B. Good * C. Fair * D. Poor * F. Very Poor

IF "POOR" OR "VERY POOR" PLEASE EXPLAIN WHY. _____

_____

_____

17. WOULD YOU RECOMMEND CHILKOOT TRAIL NATIONAL HISTORIC SITE TO OTHERS SEEKING A QUALITY WINTER RECREATIONAL EXPERIENCE?

❑ Yes ❑ No

WHY OR WHY NOT? _____

_____

18. THE PURPOSE OF CTNHS IS TO COMMEMORATE THE STAMPEDE OF PEOPLE OVER THE CHILKOOT TRAIL DURING THE KLONDIKE GOLD RUSH. WHAT DID YOU LEARN ABOUT THIS DURING YOUR VISIT TO CTNHS? _____

_____

_____

_____

The following section relates to Chilkoot Trail National Historic Site's new "Winter Recreational Use Strategy".

DURING THE 1997/98 WINTER SEASON, PARKS CANADA IMPLEMENTED THE CTNHS'S NEW "WINTER RECREATIONAL USE STRATEGY". THIS STRATEGY WAS DEVELOPED THROUGH A CONSENSUS-BASED STAKEHOLDER PROCESS WHICH INCLUDED REPRESENTATIVES FROM BOTH MOTORISED AND NON-MOTORISED USER GROUPS.

19. PLEASE INDICATE YOUR LEVEL OF SUPPORT FOR EACH OF THE COMPONENTS OF THE WINTER RECREATIONAL USE STRATEGY.

	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Support	Strongly Support
Winter use schedule: set aside specified periods (e.g. every third weekend) for non-motorised use only; multi-use at all other times	❑	❑	❑	❑	❑
[redacted]					
Encourage Yukon Territory Government to continue ploughing Log Cabin parking lots	❑	❑	❑	❑	❑
[redacted]					

19. Continued...	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Support	Strongly Support
Separate designated access/use trail corridors for motorised and non-motorised users	❑	❑	❑	❑	❑
Joint patrols with stakeholder group reps. to inform users about the Winter Use Strategy and enhance compliance	❑	❑	❑	❑	❑
Permanent area closures, to motorised access to protect cultural resources/ historic features	❑	❑	❑	❑	❑
Winter users continue to be responsible for their own safety	❑	❑	❑	❑	❑

20. OVERALL, HOW DO YOU THINK THE WINTER RECREATIONAL USE STRATEGY WILL INFLUENCE THE QUALITY OF CTNHS'S WINTER RECREATIONAL EXPERIENCE?

Greatly Detract	Somewhat Detract	Will Not Change	Somewhat Enhance.....	Greatly Enhance
❑	❑	❑	❑	❑

21. HOW DO YOU THINK THE AMOUNT YOU USE CTNHS FOR WINTER RECREATION WILL CHANGE AS A RESULT OF THE WINTER RECREATIONAL USE STRATEGY?

Greatly Detract	Somewhat Detract	Will Not Change	Somewhat Enhance.....	Greatly Enhance
❑	❑	❑	❑	❑

The following section relates to user fees.

PARKS CANADA CURRENTLY SPENDS IN EXCESS OF $20,000 ANNUALLY FOR WINTER WARDEN PRESENCE, FACILITY MAINTENANCE, TRAIL MARKING, ETC. IN CTNHS. IN THE FUTURE, PARKS CANADA MAY BE CHARGED FOR SNOW REMOVAL IN LOG CABIN PARKING LOT. FEDERAL LEGISLATION HAS DIRECTED PARKS CANADA TO RECOVER THESE COSTS. PARKS CANADA WILL BE INTRODUCING DAY AND/OR OVERNIGHT WINTER USE FEES FOR CTNHS IN 1999.

22. PLEASE INDICATE AT WHAT DAILY, NIGHTLY, AND SEASONAL PRICES YOU WOULD DECIDE NOT TO VISIT CTNHS.

$ _____ per person for a winter day use pass (in Canadian $)

$ _____ per person for an overnight winter use pass (in Canadian $)

$ _____ per person for a season's winter use pass (in Canadian $)

$ _____ per person for a season's summer and winter use pass (in Canadian $)

The following section relates to your previous use of Chilkoot Trail National Historic Site for winter recreation.

23. ON AVERAGE,
HOW MANY DAYS DO YOU SPEND IN CTNHS PER WINTER? _____
HOW MANY NIGHTS DO YOU SPEND IN CTNHS PER WINTER? _____

This last section relates to basic information about you. All responses are confidential.

24. WHAT IS YOUR PERMANENT PLACE OF RESIDENCE?

City/Town: _____ Province/Territory/State: _____

25. WHAT IS YOUR AGE AND GENDER? Age _____ Gender _____

26. WHAT IS THE HIGHEST LEVEL OF EDUCATION YOU HAVE COMPLETED?

- ❑ Grade school
- ❑ High school
- ❑ Vocational/technical school
- ❑ Some university/college
- ❑ University/college graduate
- ❑ Graduate school

27. IF YOU HAVE ANY ADDITIONAL COMMENTS OR SUGGESTIONS ON HOW TO IMPROVE THE WINTER MANAGEMENT OF CTNHS, PLEASE WRITE THEM IN THE SPACE PROVIDED. _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date _____ Survey # _____

THANK YOU FOR ASSISTING US IN OUR STUDY

WIN A COPY OF THE BOOK
"CHILKOOT TRAIL: HERITAGE ROUTE TO THE KLONDIKE"!

You could win 1 of 5 copies of the book "Chilkoot Trail: Heritage Route to the Klondike" by entering your name in our draw. Names and addresses will only be used for the purposes of the prize draw. After the draw is completed, records of names and addresses will be destroyed in order to ensure complete anonymity of survey respondents. Winners will be notified by mail.

Name: _____
Address: _____
City: _____ Province/Territory/State: _____
Country: _____ Postal/Zip Code: _____