

UNIVERSITY OF CALGARY

A User Study In Peter Lougheed Provincial Park:

A Look At Recreational Use And Perceptions

By

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ABSTRACT

Backcountry recreational users are increasingly aware of the environment and the impact of their activities upon it. Recreational users' perception of the backcountry and what they consider acceptable or appropriate use will vary, depending upon the activity in which they engage and their individual philosophy. By definition, the backcountry consists of areas not accessible by vehicle, where primitive recreation is the major land use (AEP, 1994). This thesis will study the activities and perceptions of recreational users in a backcountry area of Alberta.

Located southwest of Calgary, Kananaskis Country which was established in 1977, appeared to be a suitable location as it is large in size (over 4,000 km²) and contains both protected and multiple use areas (AEP, 1995).

This study examined the activities and opinions of primarily backcountry summer users in Peter Lougheed Provincial Park, an area of Kananaskis Country.

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1 INTRODUCTION

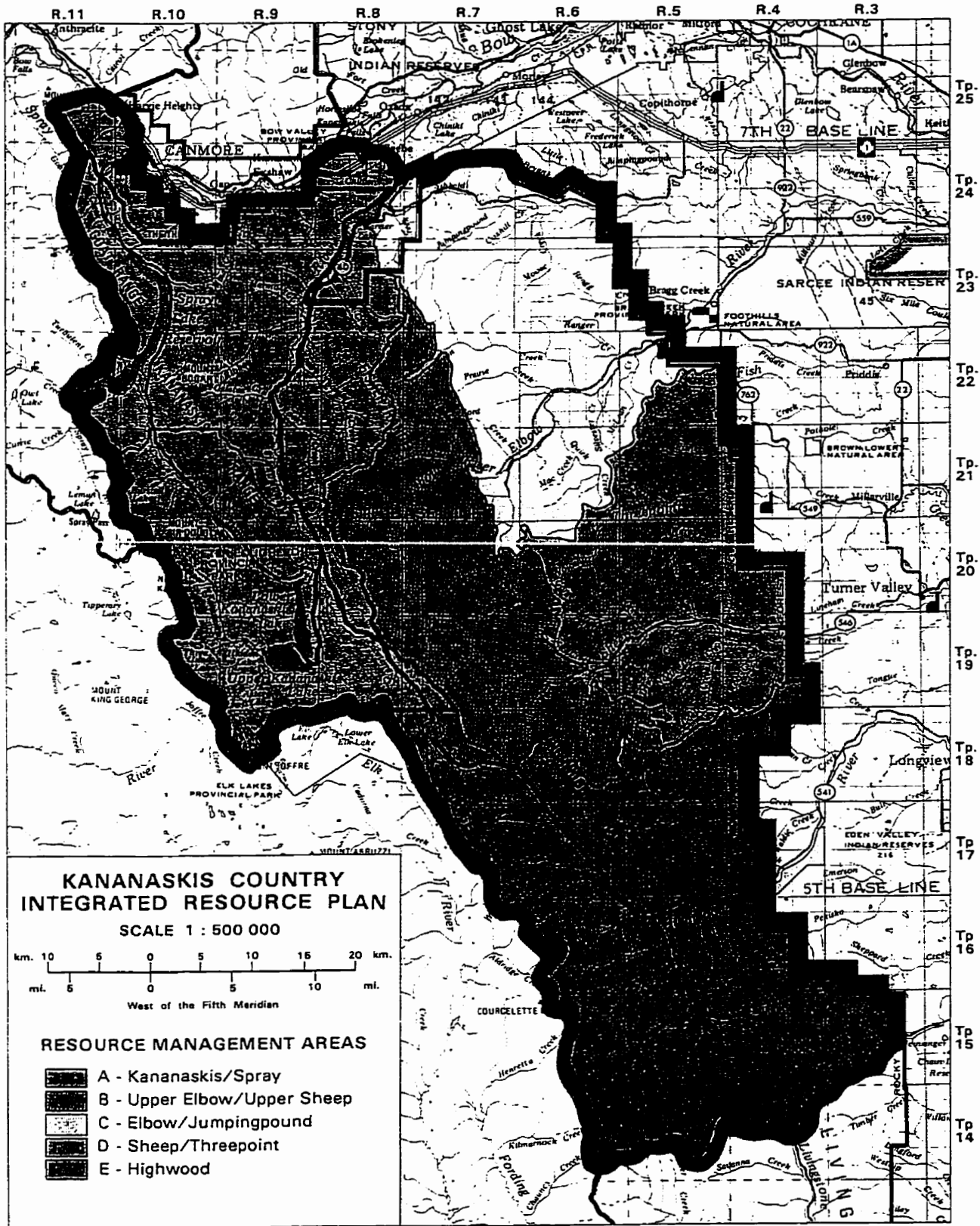
Backcountry recreational users are increasingly aware of the environment and the impact of their activities upon it. Recreational users perception of the backcountry and what they consider acceptable or appropriate use will vary, depending upon the activity in which they engage and their individual philosophy. By definition, the backcountry consists of areas not accessible by vehicle where primitive recreation is the major land use (AEP, 1994). This thesis will study the activities and perceptions of recreational users in a backcountry area of Alberta, using a questionnaire.

For the purpose of studying backcountry visitor numbers and perceptions, an area with backcountry trails was needed. By definition,

Backcountry comprises all parts of the park that are not accessible by private or public vehicle. Resource protection and primitive recreation (any recreational activity which does not require motorized access or mechanical equipment) are the major land use (AEP, 1994, p. 8).

Located southwest of Calgary, Kananaskis Country (Figure 1) which was established in 1977, appeared to be a suitable location as it is large in size (over 4000 km²) and contains both protected and multiple use areas (AEP, 1995). The area is also a Heritage Fund Site. A multiple use area allows a broad range of activities, including recreation and industrial. Protected areas allow only recreation and include the backcountry (Donelon, 1999).

Figure 1: Map of Kananaskis Country (Alberta Forestry, 1986, p.6)



The project, which is the subject for this thesis was developed to examine the activities and opinions of summer users, primarily backcountry users, in Peter Lougheed Provincial Park, an area within Kananaskis Country. The focus will be a comparison of three main user types. Perceptions were expected to vary according to the category of user and their personal philosophy. After describing the users and their perceptions, management suggestions will be made.

Importance of this study

There are several reasons why this study is important. First, there has been a rise over the past three decades in the number of people involved in outdoor recreation (Banff Bow Valley Task Force, 1996). Second, there is greater knowledge regarding the effects of human activity upon wildlife. A third reason is the recognition that recreationists visiting an area can in some aspects be considered as customers, and that their opinions and perceptions should be included in management plans.

Kananaskis Country is a part of the Central Rockies Ecosystem and has the potential to be influenced by this increase in numbers. According to the Banff Bow Valley Task Force's Summary Report (1996), regional growth and the accompanying demand for outdoor recreation,

will isolate the Central Rockies Ecosystem and consume the natural areas that now serve as 'safety valves' for Banff National Park" (p. 28).

An increase in use numbers can lead to three problems: an increase in ecological damage; an increase in wildlife-human encounters and user conflicts (Payne and Graham, 1993) as well as other potential impacts upon wildlife. By learning more about the nature of visitor use, as well as about visitor opinions, managers of Peter Lougheed Provincial Park will have knowledge that is more thorough when developing the management plans for the Park.

2 BACKGROUND

There are four important points to examine as a background for this study. The first is the concept of Kananaskis Country and how it is managed. The next point to understand is Peter Lougheed Provincial Park and its place as part of Kananaskis Country, as well as its role as a Provincial Park. The third part of this background is issues in outdoor recreation as well as trends and themes that must be examined to give context to this study. Finally, previous studies related to the present study will be documented to show what has been researched in Kananaskis Country previous to this study.

2.1 Kananaskis Country

A historical background of Kananaskis Country:

- ◆ Historic and prehistoric First Nations use (pre-1840)
 - ◆ Early exploration and surveying (1840-1860)
 - ◆ Railway and resource extraction (1860-1900)
 - ◆ Mining, outfitting, ranching and recreation (1900-1930)
 - ◆ Rocky Mountain Forest Reserve (1930-1977)
 - ◆ Kananaskis Country formation to present
- (Milne, 1995, p. 6)

In 1902, due to a rapid increase of visitors to the area (Sadler, 1973), the Kananaskis Valley was included in the Rocky Mountains Park (now called Banff National Park), which had been in existence since 1887 (Sadler, 1973). The park boundaries changed in 1911 but by 1917

Kananaskis was again within Rocky Mountains Park boundaries (Oltman, 1976; Sadler, 1973).

Packhorse trips taking tourists to the Spray Lakes area from the Banff area began in the early 1900's (Oltman, 1976), signaling the beginning of recreation in the area now known as Kananaskis Country. By 1911, the Kananaskis Lakes area had become a popular holiday resort (Oltman, 1976). During the 1930's, the area now known as Kananaskis Country became part of the provincial Rocky Mountain Forest Reserve to be managed by the Dominion Forestry Service. Under the forestry service, the area was called the Kananaskis Game Reserve until the year 1956 (Oltman, 1976; Sadler, 1973). The addition of a road to the Kananaskis Lakes area in 1936 led to further increases in use of the area for recreational purposes (Byrne, 1968 IN Milne, 1995).

Other activities in the Kananaskis area include scientific research. Research in the Kananaskis Valley began in the 1930's, with the Kananaskis Forest Experiment Station opening in 1934 and expanded with the University of Alberta's (Calgary Campus) Environmental Sciences Centre in 1963 (Oltman, 1976).

With an increase of Calgary's population in the 1960's, there was an increase in visitors to Banff National Park and Kananaskis Valley (Oltman, 1976). This increase in visitors resulted in development in the form of campgrounds, cottages, a youth hostel and a ski resort at

Fortress Mountain, (initially called Snowridge) (Oltman, 1976, Sadler, 1973).

The Eastern Rockies Forest Conservation Board was established in 1947, which was to become the Eastern Slopes Committee in 1973, and oversaw the area now called Kananaskis Country (Sadler, 1973). The year 1977 saw the Kananaskis Country concept established, with the purpose of alleviating congestion in National Parks (Alberta Recreation and Parks, 1977) and providing Albertans with a broad range of easily available and affordable recreation opportunities (Alberta Forestry, 1986). This was done through a series of policies, including A Policy for Resource Management of the Eastern Slopes and the Policy for Recreation Development of Kananaskis Country (Alberta Forestry, 1986). It was designed as a multi-use area in which both consumptive and non-consumptive human-wildlife interactions were encouraged. Over the next several years, both government and the private sector invested \$250 million to develop extensive trail systems and other recreational developments (Alberta Forestry, 1986). In 1978, Premier Peter Lougheed created Kananaskis Provincial Park, which is now known as Peter Lougheed Provincial Park. This park was later included in Kananaskis Country when it was created.

Kananaskis Country is over 4000 square kilometers in size and encompasses three provincial parks, named Bow Valley, Elbow-Sheep

Wildland and Peter Lougheed. It has been organized into eight separate zones of land set aside with different management goals. These zones include an off-highway vehicle zone, wildlife sanctuary and ecological reserve, and Alberta's largest provincial park. Kananaskis Country also features two downhill ski areas, a golf course and a RV Park. Outdoor recreation is considered the primary activity in Kananaskis Country, while there are also logging, grazing and oil activities (Alberta Forestry, 1986).

One of the main documents used to manage Kananaskis Country is the Sub-Regional Integrated Resource Plan (IRP) which presents the Government of Alberta's resource management policy for the public lands and resources within the area (Alberta Forestry, 1986). The plan confirms the priorities for watershed protection and recreation development as established in A Policy for Resource Management of the Eastern Slopes and the Policy for Recreation Development of Kananaskis Country, while providing a guide for the management of such natural resources as timber, forage and natural gas (Alberta Forestry, 1986).

As a recreation area, it is managed to allow recreation development in such a manner as to allow the integration of the widest possible range of recreation opportunities while ensuring the preservation of valuable scenic resources and allowing for the development of the natural resources (Alberta Forestry, 1986, p. 1).

2.2 Peter Lougheed Provincial Park

Peter Lougheed Provincial Park (Figure 2) is Alberta's second largest provincial park, encompassing 514 km² (Alberta Environmental Protection, 1995). With a service and facility node around the Kananaskis Lakes, it receives a large number of both front country (short trails, interpretive trails, picnic sites, etc) and backcountry visitors. The Park's most stunning features are its mountains, valleys and lakes, it has been developed for a wide range of activities, including vehicle access camping, interpretive trails, fishing, backcountry camping and mountain climbing.

The Park was created for the conservation and management of flora and fauna, the preservation of specified areas and objects therein that are of geological, cultural, ecological or other scientific interest, and to facilitate their use and enjoyment for outdoor recreation. (Alberta Provincial Parks Act, Section 3, 1994)

Management decisions of Kananaskis Country have an effect upon Peter Lougheed Provincial Park, as shown by its inclusion in the management area Kananaskis/Spray in the IRP. The management intent, as stated in the IRP:

Most of the Kananaskis/Spray Resource Management Area will be oriented to the preservation of environmentally-sensitive terrain, watershed protection, the preservation of rare, fragile or representative landscapes, the maintenance of aesthetically pleasing landscapes and the protection of critical wildlife ranges. Non-motorized extensive recreation can be compatible with this intent. As well, intensive commercial and public recreation development will take high priority in the Kananaskis and Spray Corridors (Alberta Forestry. 1986).

As a Provincial Park (but not a Wildland Park), Peter Lougheed Provincial Park has its own set of additional rules. The following regulations apply to all provincial parks: no firearms are allowed; dogs must be on leash; horseback riding is allowed only on designated trails (in this case, only one); camping in designated areas only and no removal of flora /fauna/ historical resources (Provincial Parks Act, 1994). In addition, a management guideline from the backcountry management plan requires that mountain bikes are restricted to machine constructed trails and not more primitive or natural trails (AEP, 1994).

For the purpose of management, the backcountry areas are divided into four zones, and include (AEP, 1994):

Facility – is characterized by high facility development and services

Outdoor Recreation – is characterized by highly developed recreational opportunities, such as high standard cross-country ski trails, hiking trail systems and campgrounds with firepits. This zone provides a basic wilderness experience.

Primitive – is characterized by lower standard facilities, campgrounds with no fires, and in general allowing a primitive wilderness experience.

Recreation opportunities include lower standard of hiking trails and rustic cross-country ski trails.

Natural/Preservation – is characterized by having no constructed facilities and providing a true wilderness experience with emphasis on maintaining natural ecosystems and wildlife, and habitat protection. Campgrounds and trails should not be promoted within these areas. (AEP, p27, 28)

Within these zones, there are a variety of recreational opportunities. As approximately 90% of the park is considered backcountry (AEP, 1994) the recreational opportunities are managed accordingly.

The management of Peter Lougheed Provincial Park has two mandates. These are to protect areas of natural or cultural significance for the recreation and educational use of present and future generations and to provide a broad spectrum of outdoor recreation opportunities (Alberta Recreation and Parks, 1984).

Managing the backcountry is a complex task as not all user demands can be accommodated (AEP, 1994). In order to provide the highest quality outdoor experience for as many people as possible, visitors must be given a choice (AEP, 1994). Keeping this in mind, along with the mandate of protecting the ecological integrity of the Park, management guidelines have been established to allow a variety of experiences, such as hiking, mountain biking, fishing and mountaineering (AEP, 1994).

Figure 2: Map of Peter Lougheed Provincial Park (Alberta Forestry, 1986).

2.3 Change in Visitation Numbers

Government visitation studies have shown that over the past ten years, various factors have led to an increase in visitation to Kananaskis Country. These include, but are not exclusive of: an increase in crowding in nearby Banff National Park (Banff Bow Valley Task Force, 1996); a rise in National Park user fees; lack of user fees in Kananaskis Country; fewer restrictions; proximity to Calgary; and an increase in the population of Calgary (BBVTF, 1996). Results from a survey done by the Angus Reid Group, published in the Banff Bow Valley Task Force (1996), show that 24% of respondents in Calgary felt that the crowds in Banff National Park were a deterrent. There are visitor figures available but these should not be used for direct numerical comparison, rather, to show a general trend. For example, visitation numbers from 1986-95 for Banff National Park increased by 4.3% (BBVTF, 1996). In Kananaskis Country, day use has been increasing by approximately 5% per year (AEP, 1998). The visitor use numbers in Peter Lougheed Provincial Park's backcountry campgrounds have grown from 2222 persons in 1987-88 to 7218 persons in 1991-92 (AEP, 1994). It is likely that an increase in visitors to Kananaskis Country, including Peter Lougheed Provincial Park, will continue for the foreseeable future, given the expected increase in Calgary's population. Coopers and Lybrand forecast a 20% annual increase in the number of visitors to Banff

(BBVTF, 1996), and recent trends indicate that this number could be even higher.

Literature from the United States supports the assumption that visitor use is on the increase. Cordell et al (1990) forecast expected growth in the following recreational activities to the year 2040 (given certain conditions):

- Sightseeing will rise by 112%;
- Day hiking will rise by 193%;
- Wildlife observation and photography will rise by %74; and
- Camping in developed campgrounds will rise by %86.

3 OUTDOOR RECREATION ISSUES and LITERATURE REVIEW

There are numerous issues related to outdoor recreation. For the purpose of this study, a literature review was completed of previous visitor studies in Kananaskis Country. In addition, a literature review was conducted of five outdoor recreation issues, including the benefits of leisure, social carrying capacity and crowding, satisfaction and expectancy. These issues have a direct effect upon visitors to Peter Lougheed Provincial Park, and can be examined through the questionnaire used in this study. They are important to understand before attempting a study such as this as well as during the analysis of the data. This material helped form a basis for the questionnaire.

3.1 Past Visitor Studies in Kananaskis Country

Past visitor studies in Kananaskis Country by Alberta Environmental Protection have focused mainly on counting vehicle numbers, that is, either the number of cars entering Kananaskis Country or the number of cars entering a specific area of it. This has been achieved through the use of traffic counters and the counts of vehicles at parking lots. Other number counts come from campground use, either front country or backcountry. Some surveys, such as Milne (1995), have been conducted in recent years in an attempt to determine visitor activity and preferences, but much of this work was different in

scope and location from this study. Four visitor studies will be examined. They will be arranged by increasing relevancy to this project.

Erdman (1978) studied Recreational Activities and Perceptions in the Kananaskis Region. Findings from Erdman's study include the following: two-thirds of respondents were between the ages of 17 and 34; 69% were from Calgary; 68% hiked in Kananaskis Country throughout the year; the most important activity to respondents that they participated in was downhill skiing. In addition, the majority of respondents came to Kananaskis Country because it was closer than other regions; 68% felt that the needs of wildlife should be planned for before those of man; 70% were very satisfied with their trip; 64% did not feel that the area was overused and 46% did not want to see further development in Kananaskis Country.

Alberta Recreation and Parks undertook a Recreation Survey in 1980. Its purpose was to generate information on a variety of subjects by surveying visitors throughout Kananaskis Country. Data gathered included demographic information, type of visit and activity type. In addition, a large space was included for comments, which ranged from the need for more drinking water to a request to "don't let it get spoiled" (Alberta Recreation and Parks, 1980).

Milne (1995) with his thesis "Mountain Bicyclists and Traditional Trail User Groups in Kananaskis Country, Alberta: Management Issues

and Solutions”, studied mountain bike use in Kananaskis Country from within the North American context. This study determined user numbers and growth data, conflicts and impacts. His results show that hikers and mountain bikers find members of their group the most pleasant to encounter, while horseback riders find hikers more pleasant than any other group. In addition, he found that mountain bikers were perceived more negatively than hikers and horseback riders. Other findings include the goal “to enjoy nature” as the most popular goal among all users. He then made management recommendations regarding the permissibility of mountain bicycling as well as management of multiple use trails in Kananaskis Country. In these recommendations, he suggested continuing the current multiple use (i.e. recreation and resource extraction) policy while implementing a widespread user education program to help mitigate risks, impact and conflict.

3.2 The Benefits of Leisure

People visit areas such as Peter Lougheed Provincial Park for various reasons, and perceive various benefits from their visit. To make decisions about the area, managers should understand what benefits visitors wish to receive from their visit. One way of looking at the relationship is as that of customer satisfaction, with the visitor being the

customer and the managers providing the product. This way of looking at the situation is contentious, as it puts the environment as a commodity. However, looking at the relationship in this way may help with management decisions. Table 1 provides a list of possible benefits that may be sought by visitors to Peter Lougheed Provincial Park.

Table 1

Recreation experience preference scales making up the recreation experience preference domains (Preference domains shown in bold) (Schreyer & Driver, 1989).

1. Enjoy Nature	7. Family
a. scenery	
b. general nature experience	8. Introspection
c. undeveloped natural area	a. spiritual
	b. personal values
2. Physical Fitness	
a. reduce tension	9. Be With Considerate People
b. tension release	
c. slow down mentally	10. Achievement/Stimulation
d. escape role overloads	a. reinforcing self confidence and self image
e. escape daily routine	b. social recognition
	c. skill development
3. Escape Noise and Crowds	d. competence testing
a. tranquility /solitude	e. seeking excitement/stimulation
b. privacy	f. self-reliance
c. escape crowds	
d. escape noise	11. Physical Rest
e. isolation	
	12. Teach/Lead Others
4. Outdoor Learning	a. teaching/sharing skills
a. general learning	b. leading others
b. exploration	
c. learn geography of area	13. Risk Taking
d. learn about nature	

	14. Risk Reduction
5. Share Similar Values	a. risk moderation
a. be with friends	b. risk prevention
b. be with people having similar values	
	15. Meet New People
6. Independence	a. meet new people
a. independence	b. observe new people
b. autonomy	
c. being in control	16. Nostalgia

While there are a variety of reasons for visiting areas like Peter Lougheed Provincial Park, there are also a variety of benefits that a person may seek and/or may take away with them. Formulated for US Wilderness areas, Table 2 shows additional benefits that may apply to visitors to Peter Lougheed Provincial Park.

Table 2

Taxonomy of Wilderness Benefits

1. Developmental (desired changes in self-concepts and skills)
2. Therapeutic/healing
3. Physical health
4. Self-sufficiency
5. Social identity (development/maintenance of desired social relations with family and others)
6. Educational
7. Spiritual
8. Esthetic/creativity
9. Symbolic (benefits from options to realize that actions are being taken in Support of preservation-related beliefs)
10. Resource stewardship
11. Anti-anthropocentrism/moralistic
12. Option demands
13. Other
14. Other personal wilderness recreation-related benefits

15. Commodity-related (benefits to individuals from goods purchased from wilderness such as those related to water and to grazing by domestic animals)
16. Nurturance

(Schreyer & Driver, 1989).

3.3 Social Carrying Capacity and Crowding

One issue in areas such as Peter Lougheed Provincial Park, is that of social carrying capacity. The issue arises from the social process involved in outdoor recreation. Frissell and Stankey (1972) define social carrying capacity as an establishment of limits in the change that may occur in the ecological and social qualities of a recreational opportunity. The Banff Bow Valley Task Force (1996) defined social carrying capacity as “the level and types of visitor use that can be accommodated while still maintaining visitor satisfaction” (p. 233). The roots of this concept come from wildlife biology and range management where managers determined how many animals an area can support. Ecological carrying capacity was defined in the Banff Bow Valley Task Force (1996) as the level and types of visitor use that can be accommodated without damage to the Park’s integrity. According to Stankey and McCool (1989), Wagner expanded the idea to a social or perceptual component.

Stankey and McCool (1989) define three components necessary to determining social carrying capacity. These include management objectives, visitor attitudes and the recreational impact on resources.

They note that the management objectives provide a top-down framework approach, which will determine the type of recreation setting for an area. This means that in Peter Lougheed Provincial Park, for example, management decides which areas will allow multiple-type uses such as hiking and mountain biking and which will have only hiking. These decisions are based on such factors as the sensitivity of the area to use.

According to the U.S. Department of the Interior (1992), carrying capacity is the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the park units and their management objectives (p. 169). Thus, there must be the development of management objectives specifying the appropriate resource and social conditions.

A specific example of social carrying capacity is the concept of recreational carrying capacity. This concept has been defined as the level of recreation[al use] which an area can sustain without an unacceptable degree of deterioration in the character and quality of the resource or the experience (Grittins, 1971). Stated more simply, how much development and how many people can the users of an area tolerate before their experience is diminished?

Once the type of recreational use has been established, there must be a method established for measuring recreational carrying capacity. At this point, there is the question of whose recreational experience is being considered. There is discussion in recreation literature concerning this dilemma. For an example, at a multi-use trailhead in Peter Lougheed Provincial Park: among the activity types, there may be fishermen, backpackers, mountain bikers as well as families out for a short stroll. Each user group may have a different idea as to what should occur in the area. Adding further complexity is the fact that visitors' views may be radically different from those of the managers. For example, the majority of visitors may want a different level of protection for the ecology of the area than what management feels is desirable.

In addition to studies of social and recreation carrying capacity, there must be an understanding of the environmental impact that results from the recreational use. In the past, this relationship was not well understood by scientists. At present, while there are still gaps in our understanding, there is increasing knowledge today on human-wildlife impacts. Once the impact has been determined, it must be decided what level of impact is acceptable or unacceptable for the particular area.

According to the U.S. Department of the Interior (1992), carrying capacity is a highly effective concept for safeguarding the quality, not only of park resources, but also of people's park experiences. By helping visitors participate in the kinds and levels of use compatible with the long-term preservation of the qualities that make parks special places, we can ensure that people will find the parks to be inspirational, educational and recreational places for many generations to come.

Related to the issue of social carrying capacity is the issue of crowding. Crowding, or the perception of crowding by other recreation users, can greatly affect a visitor's experience. Studies of crowding, according to Stankey and McCool (1989) should examine the level of use and user satisfaction. Crowding, however, is not simply a measure of user numbers. It is an evaluative concept in which a given density is perceived as undesirable, or crowded (Stokols, 1972).

Other factors are involved in creating a feeling of being crowded. Often, a sense of "being different" (Stankey & McCool, 1989) may cause a perception of being crowded. For example, a hiker may feel more crowded with mountain bikers on the trail than if there were only other hikers. Adelman, Heberlein and Bonnicksen (1982) have labelled this feeling of sensitivity to other types of groups as "asymmetric antipathy". Part of the sensitivity towards other groups comes from stereotyping. This situation can occur based on age, physical ability, gender,

residence, income, occupation, education or even conservation organization membership (Stankey & McCool, 1989). Other readily apparent stereotypes include the activity type, such as mountain biking.

The location of visitor encounters can make a difference in a visitor's reaction as well. For instance, encounters along a trail may be more acceptable than at a campsite or secluded area (Cole et al., 1987).

When studying backcountry backpackers, Patterson and Hammit (1990) found that while 83% of those who responded to a survey reported encountering more parties than their acceptable norms, only 34% of these reported that the number detracted from their solitude experience. This apparent contradiction in findings shows that there may be a very complex relationship between fellow visitors that cannot simply be explained in terms of numbers. It would be expected, perhaps, that if 83% of respondents encountered more parties than desired that approximately 83% would also report that this detracted from their solitude. Patterson and Hammit's findings show that when studying use numbers and social conditions, many questions must be asked to obtain enough data to provide a valid finding.

Emphasizing the complexity of social carrying capacity, Shelby and Heberlein (1986) state that there are three conditions that are necessary to establish social carrying capacity:

- ◆ There must be a known relationship between use level or other management parameters and social impacts;
- ◆ There must be agreement among relevant groups about the type of recreation experience to be provided;
- ◆ There must be agreement among relevant groups about appropriate levels of social impact.

There have been many studies concerning carrying capacity and crowding, but Stankey & Lucas (n.d.) discuss the difficulty in attempting to solve the carrying capacity problem. This comes from a failure to recognize the perceptual nature of the crowding phenomenon. Because crowding is situational, it is difficult to define a given density condition as crowded in absolute terms. However, research is beginning to identify certain regularities in how contacts are evaluated, and, particularly, in terms of what kinds of contact levels are preferred in certain settings.

3.4 Visitor Satisfaction

The term satisfaction is usually used in conjunction with a ratings scale such as that developed by Likert to determine the visitors' feelings toward their visit (Mannell, 1989). For example, visitors may rate their visit on a scale of one to five, with one equaling very good, two equaling good, three equaling fair, four equaling not good and five equaling no opinion. Many researchers doubt that it is possible to accurately measure how satisfied people are with their experience. Campbell (1980), found that people change their ratings of satisfaction very little

over time, suggesting perhaps, that they adapt their level of expectation to prevailing circumstances and therefore experience little change in levels of satisfaction. According to Manning (1986), the link between motives, settings and activities is tenuous because it exists in the mind of the participant, and participants differ in attitudes, values and personalities. However, visitor satisfaction is an issue that continues to be measured in an attempt to provide what is in reality better customer service. In the fall of 1998, Alberta Environmental Protection was in the process of conducting a customer satisfaction survey mostly in the frontcountry areas, or those areas accessible by car, of Peter Lougheed Provincial Park (Doneion, 1998).

Visitor satisfaction is affected by some of the following factors, including social concerns such as crowding, conflict and littering, with conflict given first priority (Stankey & McCool, 1989). Large party size, type of visitor and visitor behavior were seen as sources of problems, while few visitors were aware of campsite impacts. However, managers tend to consider human impacts on campsite vegetation and the local bear populations to be the most serious problems. Therefore, they tend to see ecological impacts as the primary concern, rather than the effects on other visitors.

3.5 Expectancy Theory

Schreyer and Roggenbuck (1978) felt that another part of the social aspect of recreation is that use objectives for areas are usually couched in the broadest possible language, leaving them open for a wide range of interpretation. While this is a way to allow for a wide range of recreational activities, it can lead to conflicts in expectation.

The concept of expectancy theory has evolved through the field of social psychology. The expectancy theory is the momentary belief that a particular act will be followed by a particular outcome. People can have different expectations for the same desired outcome, and an individual can have different expectations for a given outcome through time (Schreyer & Roggenbuck, 1978).

Shelby et al. (1983), suggest that perceived crowding can be reduced by providing information that makes expectations realistic and allows visitors to select the degree of crowding they prefer. Thus, for example, if a new visitor to an area is told to expect large numbers of people along a trail, he or she will adjust their expectations for solitude accordingly. Later, if surveyed, these visitors will likely have a higher level of satisfaction if they went in with lower expectations.

It is important to understand that expectancy plays a role in the satisfaction and preferences of visitors to areas such as Peter Lougheed Provincial Park. Management of the area should be aware of the effects

of this issue and perhaps follow the suggestions in the previous paragraph in an effort to better inform visitors about what to expect on the trail or area they have chosen to visit.

There are examples of specific and useful statements of objectives, such as the US Wilderness Act, which declares that the wilderness should “ provide outstanding opportunities for solitude or a primitive and unconfined type of recreation” (Schreyer & Roggenbuck, 1978).

3.6 Seven Studies of Outdoor Recreation Issues

There have been numerous studies in the United States and Canada that have looked at the issues mentioned in this chapter. A brief description of seven such studies will be presented in this section.

3.6.1 Lucas - The Recreational Capacity of the Quetico-Superior Area, 1964

In 1964, Lucas performed a study which surveyed recreational users (mostly canoeists and boaters) in the Quetico-Superior area in the United States. There were three parts to the study (Lucas, 1964, P. 1-2):

- a. Factors limiting capacity of the area – visitors' perception of recreation resources of the area;
- b. Estimation of wilderness capacity – characteristics of wilderness, what people think about the amount and kind of use encountered; and
- c. Management implications.

There were several findings in this study, but four were most important for the purposes of this review:

- a. When asked what classified wilderness qualities, answers included wild, uncivilized, primitive, uncommercialized, remote, uncrowded, quiet and peaceful;
- b. The area that was viewed as wilderness varied from one type of recreationist to another;
- c. The most important variable affecting wilderness perception seemed to be the amount and kind of recreational use, with differences divided along similar lines as the areal concept of wilderness; and
- d. Capacity seemed to be more a function of attitudes than of physical factors.

(Lucas, 1964)

3.6.2 Stankey, Visitor perception of wilderness recreation carrying capacity, 1973

In 1973, Stankey performed a study in four wilderness areas in the United States. Each used the same questionnaire, designed to obtain information on four parameters of use that could potentially affect capacity standards. These include the level of use encountered, type of use encountered, location of encounters and effects of depreciative behaviour (Stankey, 1973, p. i). Other information Stankey wished to obtain included (Stankey, 1973, p. 10):

- a. A measure of the extent which the respondents' personal concept of wilderness coincided with that given by the Wilderness Act;
- b. Description of the party;
- c. Information regarding previous outdoor recreation and wilderness recreation use;
- d. Attitudes toward possible management alternatives regarding wilderness carrying capacity; and
- e. Socioeconomic description of the respondent.

The results from this study are listed below:

- a. Most wilderness users consider low intensities of use, involving only a few encounters, as an important dimension of the wilderness experience;

- b. Perceptions of crowding varied among groups, with canoeists complaining more than any other group. This is similar to what is seen with hikers vs. other groups;
- c. Canoeists were the most sensitive to use again, similar to hikers vs. others;
- d. There is not a universal rejection of people, rather most visitors indicated that particular characteristics of the groups they encountered such as size, method of travel or behaviour were more important determinants of social impact than their mere presence;
- e. *Definite norms exist regarding appropriate methods of wilderness travel;*
- f. Conflicts are often enhanced by the lack of a shared value system;
- g. There is an inverse relationship between the degree of exposure to other methods and the extent to which these adversely affect visitor satisfaction;
- h. The perceived impact (ecological and social) is a major determinant in how visitors define the appropriateness of a group;
- i. A changing clientele might be responsible for apparent changes in attitudes about capacity;
- j. Most visitors say quality diminishes beyond two encounters per day;

- k. Solitude and freedom from contacts is an important dimension of the wilderness experience;
- l. Campsites appear to offer an opportunity to strengthen intra-group bonds; and
- m. Evidence of misuse such as litter represents a major source of visitor dissatisfaction. Certain well established norms exist and violation of these have an especially severe impact on the quality of experience.

(Stankey, 1973)

3.6.3 Hendee, J.C., Stankey, G.H. and R.C. Lucas, Wilderness and users: Trends and Projections, 1978

In 1978, Hendee and others sought to compile the findings from various researchers across the United States. These findings are listed below:

- a. The average party size of groups visiting the wilderness were two to four individuals;
- b. The most common method of travel was hiking;
- c. Most wilderness visits were multi-purpose;
- d. Summer was the big use season;
- e. A large majority of visitors were family groups;

- f. A pattern of short trips, both spatially and temporally, were characteristic for most wildernesses;
- g. Wilderness users tended to be younger than the general population, yet all age groups were well represented;
- h. One fourth of visitors were female;
- i. Most visitors were from urban areas;
- j. Wilderness visitors were above average in income; and
- k. Between 20 and 30 percent of visitors belonged to a conservation group or outdoor activity club.

(Hendee et al, 1978)

3.6.4 Lucas, Influence of visitor experience on wilderness recreation trends, 1986

Lucas performed a visitor study in the Bob Marshall, Great Bear and Scapegoat wildernesses in Montana over two time periods, once in 1970 and again in 1982. The findings of changes between survey years include:

- a. A majority of users in 1970 had been there before, not so in 1982;
- b. There was a change from horse use in 1970 to hiking in 1982;
- c. Two problems intensified from 1970 to 1982: horse/hiker conflicts and trail conditions;

- d. There was a reduced per-party potential for adverse impacts on resources and visitor experiences, due to several factors. These include reduced party size, reduction in campfire impacts, fewer horses, improved visitor knowledge on minimum impact techniques, less consumptive use, timing of use was evened out and more evenly distributed among trails;
- e. Visitor education levels increased between surveys;
- f. There were more visitors from outside Montana in 1982;
- g. More women were participating in activities;
- h. Visitors in 1982 were less supportive of facilities;
- i. Visitors travelling with outfitters declined in number; and
- j. Membership in wilderness-oriented clubs dropped but experience types varied little in club affiliation.

(Lucas, 1982)

There were also similarities in results between the two studies.

These similarities include:

- a. Overall satisfaction remained high;
- b. Solitude was still an important motive for visitors;
- c. Two-thirds of visitors were from urban areas; and
- d. The personal importance visitors assigned to wilderness was high in both years, with only a slight decline.

(Lucas, 1982)

3.6.5 Anderson & Manfreda, Visitor preferences for management actions, 1986

Anderson and Manfreda (1986) analyzed data from previous studies to determine what management actions visitors prefer. Findings show that visitors support both direct and indirect management actions. When overuse is a problem, direct actions are preferred; otherwise, indirect actions are preferred (p. 314). Specific findings are listed below:

a. Direct actions:

i) Use restrictions: campsite restrictions, campfire restrictions, party size and type restrictions, access restrictions and anti-litter regulations.

Three-fourths [of respondents] would support restricting the number of campsites near heavily used lakes. Half [of respondents] supported tight fire restrictions and half opposed. River users supported carryout regulations for trash. 80% of wilderness users and 46% of river floaters supported party size limits. Two-thirds of wilderness visitors supported actions to limit access to heavily used trails and camp areas

ii) Protection and enforcement: such as fines, increase number of rangers, enforce safety rules and regulations, provide more patrols on the river.

Wilderness visitors supported management actions that would result in more protection and enforcement. More than half of river floaters oppose more patrols and regulations.

- iii) Visitor information : support for potential management actions related to information depended on how the visitor could gain that information. Support was high for brochures, maps, etc. available before entering the resource area but not high for information located in the area.
- iv) Facility development and improvement : Fewer than half of each activity type supported actions for facility development or improvement. The only exception was that 90% of wilderness visitors supported efforts to revegetate areas made bare by campers.

(Anderson & Manfredi, 1986)

3.6.6 Manning, Density and crowding in wilderness: search and research for satisfaction, 1986

When examining crowding and outdoor recreation research, Manning (1986) found that "the increasing density of recreation use causes increasing contacts between parties, but other variables mediate this effect...Contacts between parties affect perceived crowding, but so do the ways in which these contacts are interpreted" (p.440).

Using a normative approach to the issue of crowding, Manning (1986) found:

- a. The personal characteristics of visitors found to influence crowding norms are motivations for outdoor recreation, preferences and expectations for contacts, experience level and attitudes towards management.
 - i) Motivations, preferences and expectations: there is a wide diversity in perceived crowding. Those who felt crowded were more likely to report having seen more people than expected, with similar results for preferred contacts.
 - ii) Experience: Two studies, Stankey (1973) and Schreyer & Roggenbuck (1978) found that a wilderness purism scale distinguishes among respondents with respect to perceptions of crowding.
- b. Characteristics of those encountered – such characteristics include type and size of group, behaviour and perceptions of likeness
 - i) Type and size of group: several studies support the idea that tolerance for meeting another group depends upon its characteristics.
 - ii) Behaviour: Studies found that types of behaviour such as noise, yelling and loud behaviour; litter and polluting; and non compliance with rules bothered respondents.

iii) Perception of alikeness: The degree to which groups are perceived as being alike. To the extent that groups are perceived as alike and require little conscious attention, encounters have limited disruptive effects.

c. Situational variables – these include type of area, location within an area, environmental factors.

(Manning, 1986)

3.6.7 Watson, A.E., M.J. Niccolucci & D.R. Williams, Hikers and recreational stock users: predicting and managing recreation conflicts in three wildernesses, 1993

A study was carried out by Watson and others in three wilderness areas in the United States to look at the interaction between stock users (horse users) and hikers. The areas were the John Muir Wilderness, Sequoia-Kings Canyon National Parks Wilderness and the Charles C. Dean Wilderness. There were the following findings:

- a. Hiker groups were smaller than stock user groups;
- b. Hikers tended to evaluate problems as more severe than stock users, and problems were mostly related to horses;
- c. Most groups supported group size limits, hikers more so than stock users;
- d. Stock users were more satisfied with their trips than hikers, although all averages were high (good to very good);

- e. Less than 4% of stock users disliked their encounters with hikers, while up to 44% of hikers disliked encounters with stock users;
- f. Both stock users and hikers were nearly as likely to dislike encounters with dogs;
- g. Significantly more hikers than stock users indicated that the behaviour of others had interfered with their enjoyment of the wilderness;
- h. Hikers were more likely to think that the wilderness they were visiting had too many people;
- i. Stock users viewed regulations more negatively than hikers; and
- j. Hikers placed more importance than stock users on solitude.

(Watson et al, 1993)

3.7 Issues Conclusion

There are many social factors that make up a visitor's experience in the backcountry. No longer can managers of these areas ignore the fact that people are sometimes the least understood mammal in the ecosystem. In order to manage the backcountry more effectively and to provide a better backcountry experience for users, ideas such as benefits of leisure, social carrying capacity, crowding and satisfaction should be understood and studied.

Outdoor recreation has changed over the past decades to include a wide spectrum of participants and activities. This has lead to an

increase in the number of different values and perspectives brought to areas where outdoor recreation occurs. This complexity leads to problems when attempting to determine the mindset of recreational users of a particular area. In addition to this complexity comes the problem of determining what factors affect a recreationist's perceptions and values. There is a wide body of literature on subjects such as satisfaction, crowding and others, but there is no clear method of determining what factors affect these subjects. Therefore, any study which attempts to determine visitor perceptions must not make claims to know precisely what recreationists are feeling and why. Rather, findings must be interpreted with caution and used along with other information to make decisions.

4 PRESENT STUDY

4.1 Objectives

The objectives of this study are:

- ◆ Define who is using the backcountry of Peter Lougheed Provincial Park, where they are going, how they travel in the backcountry and what they do when they are there;
- ◆ Determine what these users are looking for in their backcountry experience, what factors will add to/detract from their enjoyment and whether they were satisfied with their experience;
- ◆ Obtain user information which can be used by Alberta Environmental Protection for the purpose of management of Peter Lougheed Provincial Park;
- ◆ Based upon the findings, make recommendations for the management plans for Peter Lougheed Provincial Park.

4.2 Study Design

The overall study design was to obtain information from visitors in Peter Lougheed Provincial Park. There were two initial methodological options suitable to provide information to satisfy the objectives for this study: the use of focus groups and/or a questionnaire.

Focus groups were not used, as it was decided that it was more important to gain the opinion of as many recreational users in Peter

Lougheed Provincial Park as possible. While focus groups can be valuable in gaining information, by their very nature they are not random. Focus groups also do not include the average user who seldom belongs to an organised group such as those used in focus groups. It is easier to include organised groups than it is to locate those users who aren't a member of a group.

Questionnaires have been used extensively in recreational studies all over North America and they range in length and format, according to the goals of the study. For the purpose of this study, it seemed that a questionnaire would provide the best method for obtaining the most information possible, from the greatest number of people. It would provide data that could be treated statistically, offer the opportunity for collecting qualitative data and it could be used to provide information on a variety of topics. A questionnaire could take a modest amount of time to be completed and be administered in almost any setting. After looking at previous questionnaires from other places in both Canada and the United States and talking with Alberta Environmental Protection, I decided that a questionnaire would provide the best vehicle for obtaining the data required to meet the study objectives.

A questionnaire was designed to obtain the information outlined in the objectives section. A majority of questions on the survey were

quantitative in nature, that is, data which can be expressed in numbers (Neuman, 1997). In addition, qualitative questions, or those which supply data expressed as words (Neuman, 1997), such as those requesting comments, were provided to ensure the fullest opportunity to gain information.

When designing the questionnaire, care was taken to ensure the wording was understandable by a wide range of people; the instructions and explanations were provided and the questions were not leading. Such measures are critical to ensure reliability and validity.

5 METHODOLOGY

5.1 The study area

The study area was chosen in consultation with staff from Alberta Environmental Protection. When choosing a suitable area, it was decided that the information gathered in this project would be helpful for the upcoming management plan process slated for Peter Lougheed Provincial Park. In particular, the backcountry management planning process was scheduled to take place shortly after the survey period was finished. Peter Lougheed Provincial Park has a large number of backcountry trails, making it a suitable location for the survey.

5.1.1 Trailheads

Surveying of visitors took place at trailheads throughout Peter Lougheed Provincial Park. Trailheads were chosen on the likelihood that they would provide a wide variety of backcountry recreational use-types. A surveyor was located at the trailhead to ensure the maximum chance of capturing the largest number of visitors although it was recognised that not all users of that trailhead would be backcountry users. The alternative approach would have been to locate the survey areas entirely in the backcountry, but this was not considered a viable or necessary option as the trailhead location suited the objectives and resources available. Thus, some respondents would be frontcountry

users who simply went a short way down the trail and then returned to the parking lot. This problem was partially addressed by individual surveyors who were able to watch those using the trails and avoid surveying those who went along the trail for a short period of time. This amount of time was subjective and left up to the surveyor; however, the cut-off time was approximately twenty minutes.

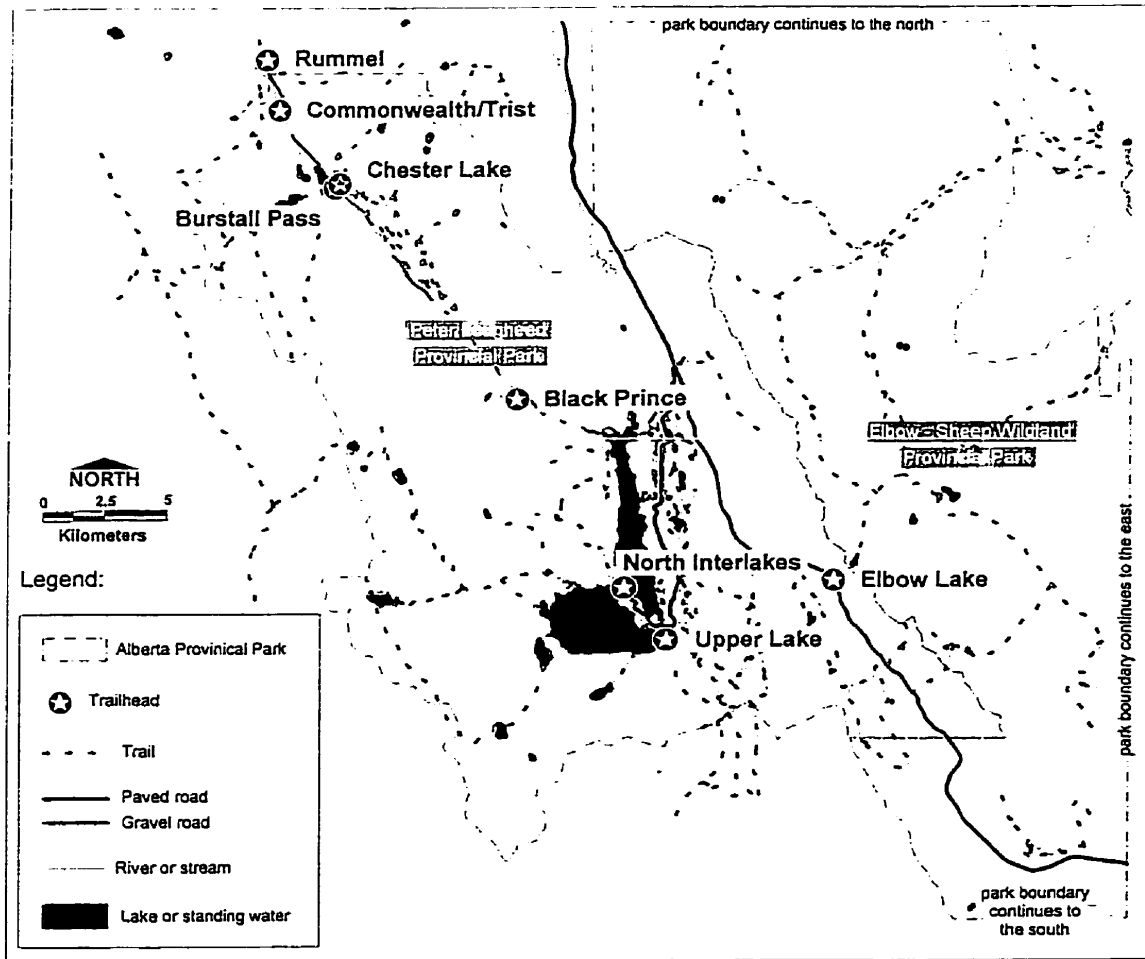
Trailheads surveyed

Burstall Pass	Chester Lake
Black Prince	Elbow Lake
Upper Lake	North Interlakes
Rummel Lake*	
Commonwealth *	

**Undesignated Trails¹*

¹ There are many trails used in areas like Peter Lougheed Provincial Park that are not official or designated trails. Undesignated trails, by definition are not official, and do not appear on any official map. However, many unofficial trails are used sufficiently to merit a desire for information on their use. The use of undesignated trails provides a challenge for management, in that such trails have the potential to become quite popular which in turn can lead to the necessity for management to "manage" them to avoid negative environmental impacts.

Figure 3: Map of Trailheads (Alberta Environmental Protection, 1999)



Map produced by: Alberta Environmental Protection, Bow Region, Protected Areas Management

5.2 Sample Day Selection

In order to ensure consistency with other park data being collected, the survey period and survey days were harmonised with the methodology established by Alberta Environmental Protection (Lapointe, 1997). The survey period began once snow was clear from the trails and visitors were observed to be using them. This coincided with the long-weekend of June/July and went until the end of September in order to capture post-high-season visitors. It also included all long or holiday weekends during the survey period. The surveying was conducted in a series of seven-day on/off periods in order to ensure a proper sampling of all users. That is, the sample would include both weekend and weekday users. This was to capture any potential differences between user-types during these two periods. Other methods to ensure a representative sample included conducting surveys during all types of weather and timing the survey day to coincide with the busiest time of the day.

As shown in Table 3, trails were surveyed during different times of the survey period, such as early summer, mid summer and late season. Due to staff constraints, it was impossible to survey each trail during each survey period. The most used trails were surveyed more frequently, while the less frequented trails were surveyed fewer times.

Thus, the sampling method ensured a fair representation of visitors throughout the survey period.

Table 3

Sample Distribution by trailhead

TRAILHEAD	SAMPLE PERIOD
North Interlake	July long-weekend
	August long-weekend
	Early September
Upper Lake	July long-weekend
	August long-weekend
Burstall	Late July
	Late August
	Mid September
Chester	Late July
	Late August
Black Prince	Late July
Elbow Lake	Late June
	Mid August
Rummel	Mid July
	Mid August
Trist/Commonwealth	Mid July
	Mid August

5.3 Development of Assessment Tool (see appendix for full questionnaire)

The assessment tool or method of gathering data was a questionnaire. For ideas on how to incorporate this study's objectives into a questionnaire, several examples of questionnaires from Canada and the U.S.A. (Williams, 1996; Tucker, 1996; BC Parks, 1996; BC Ministry of Forests, 1996; Milne, 1994; AEP, 1980; Manitoba Natural

Resources, 1995; AEP, 1987; Parks Canada, 1997; Northern Arizona University, 1992).

The questionnaire was designed to obtain information regarding aspects of respondents' visits and his or her opinions on subjects such as conditions and crowding. The wording attempted to provide clear instructions and numbered scales were used to provide a range of possible answers for several of the questions. Much of the data gathered was quantitative to facilitate statistical analysis, although opportunity was provided for the respondent to add qualitative narrative.

The questionnaire contained a number of sections: Visitation information, Present and Past Activities, Reasons for Visitation, Trails Used, Off-Trail Use, Groups Encountered Along the Trail, Trail Conditions, Camping, Camping and Crowding, Campfire Use, Facility Use, Commercially Guided Trips, Management Goals, Demographic Information, Dog Use, Satisfaction and Comments. Each question and the reason for asking it will be detailed below.

In addition to the questionnaire, there was a short form for surveyors to use should a visitor be unwilling to fill out the main questionnaire. It contained seven main questions, including the date, how many people were in the respondent's group, what was their main

activity, what trails were used, whether they stayed overnight, the respondent's age and hometown.

5.4 The Questionnaire

Visitation Information

1. Was this your first visit to ...

a. This trail?

yes
 no

If no, during the last 12 months, approximately how many times have you visited this trail?

less than 5
 6 - 10
 more than 10

b. Peter Lougheed Provincial Park (PLPP)?

yes
 no

If no, during the last 12 months, approximately how many times have you visited PLPP?

less than 5
 6 - 10
 more than 10

2. How many people are in your group, including yourself?

Respondents were asked whether they were first time or repeat users of both Peter Lougheed Provincial Park and of the specific trail at which they were surveyed. This information provides managers with a profile of the area's users and whether management actions are aimed toward visitors who visit only once, or whether the majority of those coming to Peter Lougheed Provincial Park have been there in the past and would likely come again.

The second visitor information question concerned group size. Group size is an important statistic to know when managing the trail

system in Peter Lougheed. It is necessary for management to know the average group size of visitors along the trails, so that if there are problems, managers may look at the group size statistic to determine if that is part of the cause.

Present Activities

3. We would like to know your primary (main) and secondary (other) activities you were engaged in during this visit and past visits. (please check appropriate space)

PRIMARY ACTIVITY

(please check one only)

- mountain biking
- horseback riding
- hiking
- bird or wildlife watching
- fishing
- photography
- overnight backpacking
- view scenery
- mountain climbing
- picnicking
- cross country skiing
- other (please specify)

SECONDARY ACTIVITIES

(check all that apply)

- mountain biking
- horseback riding
- hiking
- bird or wildlife watching
- fishing
- photography
- overnight backpacking
- view scenery
- mountain climbing
- picnicking
- cross country skiing
- other (please specify)

The present activity section of question 3 contained two subsections: assessment of primary and secondary activities. This information was important as the respondent's activities provide insight into what visitors are doing along Peter Lougheed Provincial Park trails. The respondent's main activity type provided a basis for comparison among user types.

Secondary activities include all other activities in which they were involved. Secondary activity information was sought in order to attain a

clear picture of what people are doing on their visit. To characterise users simply by their primary activity would exclude other valuable information. For example, they may say their primary activity was hiking, but that they also fished.

Past Activities

PRIMARY ACTIVITY (check all that apply)

- mountain bike
- horseback riding
- hiking
- bird or wildlife watching
- fishing
- photography
- overnight backpacking
- view scenery
- mountain climbing
- picnicking
- cross country skiing
- other (please specify)

SECONDARY ACTIVITIES (check all that apply)

- mountain bike
- horseback riding
- hiking
- bird or wildlife watching
- fishing
- photography
- overnight backpacking
- view scenery
- mountain climbing
- picnicking
- cross country skiing
- other (please specify)

The past activities question of question 3 assessed the past activities of the respondent, in order to obtain more information about repeat user patterns. For example, the respondent may have been a hiker this visit, but on past visits may have mountain biked, climbed or fished. These answers can change how we characterize people and bring more insight into their answers on later questions, as well as providing a more rounded picture of visitor characteristics for Alberta Environmental Protection.

Reasons for visiting:

4. We would like to know your reasons for visiting this area. How important to you are EACH of these reasons? (please circle the appropriate number for EACH reason)

<u>Reasons</u>	not important	somewhat important	important	very important	no opinion
A. Meet new people	1	2	3	4	5
B. Be with friends	1	2	3	4	5
C. Be with family	1	2	3	4	5
D. Get away from daily concerns	1	2	3	4	5
E. Explore new places	1	2	3	4	5
F. Experience nature	1	2	3	4	5
G. Be alone (experience solitude)	1	2	3	4	5
H. Learn about nature	1	2	3	4	5
I. Exercise	1	2	3	4	5
I. Other (please specify)	1	2	3	4	5

To answer the question regarding reasons for visiting, respondents were able to choose from nine supplied choices, as well as an 'other' category. The goal of this question was to provide information not obtained in the activities questions. For example, a respondent may have come to view wildlife, but hiked in to get to that view. Therefore, their activity was hiking but the reason for visiting was to view wildlife. The question provided data on the more individual reasons people have for visiting the backcountry.

Trail Used

- 5. a. Which trail(s) did you use on this trip?**

_____.

This question assessed which trails were used.

Off-trail use

- b. A designated trail is one that is maintained and marked with signs. Did you go off the trail(s) while on your visit?**

yes --- go to c

no --- go to question 6

- c. When going off designated trails, where did you go? If possible, in the space below, please describe where you went and how far.**

_____.

This question assessed whether the respondents went off-trail during their visit, and where. The main reason for asking this question was for the benefit of managers of the area, as it gives insight into user behavior. If off-trail usage becomes a problem, and causes the creation of new trails, the managers have an idea of the number of users involved in such activity.

Groups Encountered Along The Trail:

- 6. Approximately how many groups did you see along the trail?**

less than 5

6 - 10

more than 10

This question was the beginning of the questions that dealt with crowding. The question assessed how many groups the respondent

encountered along the trail. It was decided to ask about the number of groups seen along the trail, as it would be easier to quantify groups as opposed to number of people.

- 7. On an overall basis, did you feel crowded by the number of other groups you saw or encountered per day along the trail(s) you used this trip? (Please circle the number which best describes how you felt about EACH group, including the total number of groups seen)**

<u>Groups</u>	not crowded	slightly crowded	moderately crowded	extreme crowded	not applicable
Total # of groups	1	2	3	4	5
Backpack/hiking groups	1	2	3	4	5
Horse groups	1	2	3	4	5
Mtn biking groups	1	2	3	4	5

- 8. Do you have any comments about the number or type of groups/visitors which you encountered along the trail(s) ?**

These two questions assessed whether the respondent felt crowded by the groups encountered along the trail. As stated earlier, one object of this study was to determine differences in attitudes both concerning and among the three main activity types, that is, hikers, mountain bikers and backpackers. The first question was asked to determine how respondents felt about the number of other user groups along the trail. The second question was asked to provide respondents an opportunity to enlarge upon their answers.

Trail Conditions

9. Below are some conditions that may or may not currently exist at this area. Which ones are you likely to consider would be a problem if they did exist. Please indicate your opinion on EACH issue. (Please circle appropriate number for EACH)

<u>Condition</u>	not a problem	slight problem	mod problem	serious problem	not aplic
a. trail condition (fallen trees, mud, braided trail, etc)	1	2	3	4	5
b. trees damaged	1	2	3	4	5
c. trampling of meadows	1	2	3	4	5
d. stream erosion	1	2	3	4	5
e. trail damaged by other users	1	2	3	4	5
f. garbage left behind by other users	1	2	3	4	5
g. campfire rings along the trail	1	2	3	4	5
h. area rules and regulations not adequately posted	1	2	3	4	5
i. conflicts with other users	1	2	3	4	5

CAMPING SECTION

j. finding an unoccupied place to camp	1	2	3	4	5
k. too much bare ground at camping areas (due to loss of vegetation)	1	2	3	4	5
l. not enough trees around camp site	1	2	3	4	5
m. burning of tree limbs	1	2	3	4	5
n. people camping too close to me (lack of privacy)	1	2	3	4	5
o. too many large groups	1	2	3	4	5
p. too much noise	1	2	3	4	5
q. not enough firewood	1	2	3	4	5
r. other (please specify) _____	1	2	3	4	5

This question assessed the respondent's opinion of potential trail conditions. Answers to this question will aid management in determining what visitors' expectations are and what standards should be set.

Camping

10. Did you stay overnight on this trip on this/these trails?

- no if no, please go to question # 15
- yes how many nights? _____

if yes, please answer questions 11 to 13

11. Did you stay overnight in a backcountry campground or off the trail (in a non-designated campground)?

- campground - which one? _____
- off the trail - approximately what location? _____

This section assessed whether the respondent stayed overnight in the backcountry, for how many nights and where.

Camping and Crowding

12. a. Was the backcountry camping area which you stayed in

- empty
- half-full
- full
- over-flowing

b. Did you feel that it was.... (please circle the appropriate number)

not crowded	slightly crowded	moderately crowded	extremely crowded	no opinion
1	2	3	4	5

c. Was that acceptable or unacceptable to you?

- acceptable
- unacceptable

While the wording of all three questions may seem similar, they provide different information. The level of use and feeling of crowding can vary from person to person. For example, a campground that is more than

half full may feel extremely crowded to one person, while another may feel that it was only slightly crowded. The third question, "Was this acceptable?" was important to determine the respondent's feelings toward the level of crowding experienced at the camping area. Some may feel that being moderately crowded is acceptable, while others may disagree.

Use of Campfires

- 13. a. While you were camping, did you have a fire?**
 yes
 no
- b. Did you use a fire pit for this fire?**
 yes
 no
- c. Did you require this fire (i.e. for cooking)**
 yes
 no
- d. Is it essential for your backcountry experience to have a fire?**
 yes
 no

This section assessed the level of campfire use in the backcountry of Peter Lougheed Provincial Park, important knowledge for management of backcountry areas such as Peter Lougheed Provincial Park for several reasons. Fires can cause ecological damage, but may be considered by users to be necessary. In addition, upkeep of backcountry fire pits is expensive and time consuming. Alberta Environmental Protection needs

to know the level of importance users place on having a campfire in the backcountry.

Facility Use

- 15. Below is a list of facilities which may or may not exist at the trailhead you used today. Which ones would you likely use? (Please circle the appropriate number for EACH)**

<u>facilities</u>	definitely would not	may use	would use	definitely would use	no opinion
toilets	1	2	3	4	5
bicycle rack	1	2	3	4	5
telephone	1	2	3	4	5
trail signs/kiosk/info	1	2	3	4	5
parking area	1	2	3	4	5
garbage bins	1	2	3	4	5
drinking water	1	2	3	4	5
other (please specify)	1	2	3	4	5

The purpose of this section was to assess which facilities were required at trailheads. The term facility does not denote hotels, restaurants, etc.

Commercially Guided Trips

- 16. Was this trip a commercially guided trip (by this we mean did you pay money for someone to take you on the trip)?**

no
 yes

This question assessed the level of commercial use along trails in Peter Lougheed Provincial Park. When combined with the group size information, it would provide valuable information on the size of commercial use.

Management Goals

- 17. Here are some possible goals for the management of Peter Lougheed Provincial Park. Which of these goals do you think Alberta Environmental Protection should give the highest priority in the next five years? (please put a letter in EACH appropriate box)**

<input type="checkbox"/>	Highest Priority	<p>A. Protect vegetation from misuse or overuse</p> <p>B. Improve trail maintenance</p> <p>C. Ensure total number of users is not too high</p> <p>D. Rehabilitate overused camping areas</p>
<input type="checkbox"/>	Second Priority	<p>E. Provide user groups with more information about wilderness resources and backcountry ethics</p> <p>F. Ensure rules for minimum human use impact</p> <p>G. Introduce a method of limiting the amount of use on backcountry trails</p>
<input type="checkbox"/>	Third Priority	<p>H. Build more facilities</p> <p>I. Restrictions on the type of use for individual trails</p> <p>J. Other (please specify)</p>

This question assessed the opinions of respondents of potential management goals and provided an opportunity to suggest their own ideas.

Demographic Information

- 18. Where are you from?**
 _____city/town/nearest community
 _____ province/state _____ country
- 19. What is your age? _____ years**
- 20. Are you (check one)**
 _____ male
 _____ female

This section provided general information on the respondents.

21. Do you belong to a formal organisation such as an equestrian, hiking or mountain biking group?

no

yes **If yes, which one(s)?**

This question assessed the participation of respondents in groups such as hiking, climbing and other organisations.

Dog Use

22. Did you bring a dog with you on this trip?

no

yes

This section assessed the presence of dogs along the trails in the backcountry of Peter Lougheed Provincial Park.

Satisfaction

23. Overall, how satisfied are you with your backcountry experience? (please circle appropriate number)

Not satisfied	Slightly satisfied	Satisfied	Very satisfied	No opinion
1	2	3	4	5

This section assessed the satisfaction level of the respondent.

Comments

Comments?

This question provided an opportunity for the respondent to provide comments on any matter that he or she felt important.

5.5 Pre-testing and Editing of Questionnaire

After the questionnaire had been developed, it was pre-tested for a period of approximately one month on hikers in the Ribbon Creek area of Kananaskis Country. It was not practical to perform testing in Peter Lougheed Provincial Park, as at that time there were few visitors due to the early spring conditions. Such conditions include trails covered with snow and mud, flooding in low-lying areas and snow-filled backcountry campgrounds. As a result of the pre-testing, wording of the questionnaire was modified to make it easier to read and understand.

5.6 Surveyors

In addition to the primary researcher, there were three additional surveyors. One was a university student from Quebec who was working for Alberta Environmental Protection through a Quebec-Alberta exchange program. The other two surveyors worked half-time surveying and spent the other half-time collecting traffic data for Alberta Environmental Protection.

The surveyors were familiarized with Kananaskis Country, Peter Lougheed Provincial Park and the objectives of the surveying before

beginning work. They were given one training day, spent with the primary researcher.

5.7 Participants and Recruitment

The questionnaire was administered at trailheads to visitors as they exited the trail. If there was a person alone on the trail, he or she was given a questionnaire, whereas if there were a group of people, one person per group was asked to fill out the questionnaire. This was not always possible for example in cases where there were groups numbering over twenty people (such as hiking clubs), when often the members of these groups came off the trail at different times. In many cases, the completion of the questionnaire became a group effort. After handing the questionnaire to the participant, the surveyor talked to the participant about the survey only if approached. This was to avoid the possibility of influencing the respondents (interviewer bias) (Neuman, 1997). Interviewer bias can also be due to the interviewer's expectations or bias towards the respondent (Neuman, 1997). There was another source of interview bias, in that their vehicles identified the surveyors as working for the government. However, this potential bias was addressed by stating that the questionnaire was part of a Master's thesis project.

Once the questionnaire was distributed, the respondent had the choice of completing it in the parking lot or taking it home and mailing it with a supplied envelope to the researcher's office. Included in the questionnaire was a consent form, identifying the purpose of the study, the researcher and provided contact information.

5.8 Surveys completed

A total of 767 questionnaires were completed and recorded. Seven of these were a short form of the main questionnaire. The response rate for questionnaires completed at the trailhead was approximately 99%. The exact response rate for those surveys taken home with a promise of mail-in is not known and will be discussed later in this thesis.

This high response rate may be attributed to the fact that only one person per group was asked to complete the questionnaire, as it is likely that not all group members would be willing to fill out a questionnaire if asked. This perception was justified during the surveying by the actions of group members, many of whom were unwilling to fill out the survey and wished another group member to do it. This number does not include those who declined as they had filled out a questionnaire on a previous visit. Table 4 shows the response rate by trailhead.

Table 4

Total Responses by Trailhead

Trailhead	Number of Surveys
Black Prince	28
Burstall Pass	161
Chester Lake	227
Commonwealth/Trist	4
Elbow Lake	64
North Interlakes	189
Rummel	6
Upper Lake	92

5.9 Data coding

Using the Microsoft Access software, the data were assigned a code when entered, by the program. For example, yes = 1, no = 2. For questions with a Likert scale (i.e. rating something on a scale of 1-5), the data were coded with the number used on the questionnaire, except for no opinion/no answer, which was changed from 5 to 0 for statistical purposes.

5.10 Data Analysis

Preliminary analysis of the data was done using the Access software. When it was time to statistically analyze the data, they were put into Microsoft Excel and then into SPSS, a statistical package.

The data were analyzed in two ways. In Microsoft Access, the analysis was organized by question type and analyzed using averages, counts, etc. This was to provide preliminary and background information. Then, it was analyzed by SPSS for frequencies and cross-tabulations. The cross-tabulations were to provide information regarding a comparison of answers provided by users of different activity types.

6 RESULTS

The results section of this thesis will be presented according to sections of the questionnaire. The results of the cross-tabulations will be included in those sections where the test was performed. There will be a brief summary following each section. The reader is referred to the questionnaire for details of the question.

6.1 Visitation Information

The first question asked in this section was whether this was the respondent's first visit to this trail, and if not, approximately how many times had they visited it. Of respondents, 49.3% answered no and 50.7% answered yes. Of those who answered no, the majority (42.5%) had been to that specific trail less than five times previously.

The second question in this section asked respondents if this visit was their first to Peter Lougheed Park, and if not, approximately how many times had they visited it. Of respondents, 84.7% answered no, 15.3% answered yes. A majority (45.9%) of those who had been to Peter Lougheed Provincial Park previously had been there less than five times.

The final question of the visitor information section concerned group size. The most common answer to this question, by 38.2% of

respondents, was two people. As shown in Table 5, responses ranged from no answer to 39 people. The groups of large numbers were generally tour groups, either commercial or non-commercial in nature. For example, there was a group from England at Chester Lake and a Rocky Mountain Ramblers Hiking Group at Burstall Pass.

Table 5

Number of people in group

Number of people in group	Valid Percent (% of those who responded)
No answer	7.0
1	6.4
2	38.2
3	14.8
4	13.5
5	4.9
6	4.2
7	2.3
8	2.5
9	1.7
10	0.5
11	0.5
12	0.3
13	0.8
14	0.4
15	0.3
16	0.3
17	0.3
18	0.3
19	0.1
20	0.1
21	0.3
25	0.1
31	0.1
39	0.1

6.2 Present Activities

This section asked respondents to indicate their primary and secondary activities, using a supplied list of possible activities with an “other” category available.

When asked what was their primary activity this visit, 75.8% of respondents answered hiking; 9.2%, overnight backpacking; 3.6%, mountain climbing and 2.9% mountain biking. Table 6 shows a summary of the results from this question.

Table 6

Respondents’ Primary Activities

Primary activity this visit	% respondents
Mountain biking	2.9
Horseback riding	0
Hiking	75.8
Bird or wildlife watching	0.3
Fishing	2.7
Photography	0.7
Overnight backpacking	9.2
View scenery	1.6
Mountain climbing	3.6
Picnicking	0
Cross country skiing	0.4
Other	1.8

6.3 Past Activities

This section asked respondents to indicate their primary and secondary activities on past trips to the area.

Of respondents, the majority, 61.1%, responded that their primary activity in the past was hiking. Other common past primary activities included cross-country skiing and viewing scenery. Secondary activities included viewing scenery (37.8%), photography (25.1%), bird/wildlife watching (22%) and picnicking (21.6%).

6.4 Reasons for Visiting

This section asked respondents to rank certain reasons for visiting the survey area.

Table 7

Respondents' Reasons for Visiting

Reasons for visiting this area and their importance	Very important	Important	Somewhat important	Not important
Experience nature	84.1%	13.6%	1.7%	0.6%
Other	71.1	22.2	4.4	2.2
Explore new places	69.2	25.3	4.7	0.8
Get away from daily concerns	69.0	22.8	5.3	3.0
Exercise	58.3	32.4	7.6	1.7
Be with family	44.7	22	12.3	21.1
Be with friends	39.6	26.4	18.2	15.8
Learn about nature	26.1	44.4	24.2	5.3
Be alone (experience solitude)	24.8	29.4	25.2	20.6
Meet new people	0.7	4.2	18.6	76.5

Of respondents, 84.1% chose experiencing nature as a very important reason for visiting the area. Of second most importance was exploring new places, with 69.2% of respondents choosing it as a very important reason for visiting. In contrast, meeting new people was rated very important by only 0.7% of respondents, and 76.5% rated it not important. Therefore, it would seem that most people do not come to areas such as Peter Lougheed to meet people, but rather to experience nature and to explore new places. For the 53 respondents who picked other reasons for coming, those other reasons were rated very important 71.1% of the time. These "other" reasons include the following sample:

- Rest and relaxation
- Challenge
- Training Scouts for backpacking
- Sex
- Spiritual renewal
- Bringing visitors to Canada to see our beautiful country
- Writing
- Personal goals
- Adventure training, British Army

6.5 Trails Used

Table 8 shows the trails and trail combinations that were used by respondents while in the backcountry of Peter Lougheed Provincial Park. Those who did not go off- trail are indicated as "On" and those who went off for at least part of their visit are indicated as "Off".

Table 8

Trails Used by Respondents

Trail combinations	On	Off
Non designated trail	8	0
Unspecified trail	2	0
Black Prince	1	7
Burstall Pass	6	5
Burstall Pass, Maude Lawson, Three Isle Lake	0	1
Chester Lake	1	7
Chester Lake and Burstall Pass	0	1
Chester Lake, Smith-Dorien Mtn Biking System	1	0
Commonwealth	0	1
Elbow	3	2
Elbow Lake, Piper Creek, Big and Little Elbow, Sheep	0	1
Elbow, Elbow Loop	0	1
Elbow, Sheep	1	0
Elk Pass, Canadian Mt. Everest Trail, Upper Lake	0	1
Elk Pass, Upper Lake	1	0
Headwall lakes	0	4
Headwall Lakes, Fortress Mtn	0	1
Mt. Indefatigable	4	2
Mt. Indefatigable, Upper Lake, Rawson Lake	1	0
Rummel	0	7
Smith-Dorien Mtn Biking System	1	1
Three Isle Lake	1	8
Three Isle Lake and Maude-Lawson	2	5
Upper Lake and Rawson Lake	3	1
Upper Lake	4	2
Upper Lake, Lyautey, Three Isle Lake	1	2
Upper Lake, Lyautey	1	0
Upper Lake, Mt. Indefatigable	2	0
Upper Lake, Mt. Indefatigable, Rawson Lake	1	0
Upper Lake, Pocatera, Whiskey jack	1	0
Upper Lake, Rawson Lake, Three Isle Lake	1	0
Upper lake, Three Isle Lake	1	8
Upper Lake, Three Isle Lake, Maude-Lawson	6	5
Wheeler, Mt. Sarrail, Cdn Mt Everest, Upper Lake	1	0

6.6 Off -Trail Use

Respondents were asked if they went off trail during their visit and if so, to describe where they went. Of respondents, 37.9% said that they went off trail. When asked to describe where they went off trail, answers ranged from just off to the side of the trail to those who went off trail for several kilometers.

6.7 Groups Encountered Along The Trail:.

The first question in this section asked respondents about the number of groups that they encountered along the trail. Of the total respondents, 3.8% did not answer this question, 29.9% saw less than five groups, 33.2% saw more than five and less than 10 and 33.2% saw more than 10 groups along the trail.

The next question in this section asked if the respondent felt crowded by the number of groups along the trail, with the option of answering whether specific groups made them feel crowded. As shown in Table 9, a majority of respondents did not feel crowded at all, either by the total number of groups or by specific groups.

Table 9

Did you feel crowded by the number of groups encountered?

Did you feel crowded by the number of groups	Not at all crowded	Slightly crowded	Moderately crowded	Extremely crowded
Total number of groups	47.10%	24.40%	22.20%	6.30%
Backpacking/Hiking groups	52.1	22.9	20.6	4.4
Horse groups	97.7	1.5	0.8	0
Mountain biking groups	88.1	6.9	2.9	2.1

Table 10

Crowding by Weekday, Weekend, Long-Weekend/Holiday

Survey Period	Not at all Crowded	Slightly Crowded	Moderately Crowded	Extremely Crowded
Weekday	69.29%	15.14%	11.01%	4.59%
Weekend	37.42	28.06	26.95	7.57
Long-Weekend	39.39	30.30	27.27	3.04

As shown in Table 10, the perception of crowding varied from weekday to weekends and long-weekend holidays. For example, 69.29% of weekday visitors felt not at all crowded, as compared to only 37.42% on weekends. What is surprising in the results is that more weekend visitors felt extremely crowded than long-weekend visitors, who would be expected to feel more crowded as these weekends tend to have more people visiting the park.

Respondents also had the option of providing additional comments to explain their feelings toward this subject.

6.8 Trail Conditions

Respondents were asked to rate whether certain conditions would be considered a problem if they were present along the trail. The respondent's answers are arranged in Table 11, according to the number of responses.

Table 11

Conditions along the trail

Conditions which may exist	Serious problem %	Moderate problem %	Slight problem %	Not a problem %	Number of responses
Trail condition (fallen trees, mud, poor drainage, etc)	8.5	22.2	24.2	45.1	715
Trail damaged by other users	37.8	15.3	16.1	30.8	711
Garbage left behind by other users	47.6	5.8	13.8	32.8	708
Trees damaged	17.1	14.7	19.5	48.7	702
Trampling of meadows	33.7	15.7	16.1	34.5	701
Area rules and regulations not adequately posted	10.7	23.8	15.9	49.6	698
Conflicts with other users	19.5	15.9	11.0	53.7	693
Stream erosion	17.9	17.4	19.4	45.3	691
Campfire rings along the trail	26.7	15.5	9.7	48.1	682
People camping too close to me	38.1	27.5	11.2	23.2	375
Too much bare ground at camping areas	28.0	32.0	14.4	25.6	375
Not enough trees around camp site	22.2	28.5	14.9	34.4	375
Too much noise	52.4	12.3	11.8	23.5	374
Too many large groups	41.0	22.1	11.6	25.3	371

Burning of tree limbs	51.6	11.6	6.3	30.5	370
Finding an unoccupied place to camp	28.8	30.8	16.9	23.5	361
Not enough firewood	18.0	27.0	17.7	37.3	355
Other	72.0	12.0	0	16.0	25

Of the respondents who chose "other", 72% felt that the problem was serious. Of the fifteen respondents who indicated 'other' problems, these conditions included the following: Trails not adequately marked, dog excrement, litter, lack of bear education among fellow visitors and the cost of wood. The next potential condition considered most serious by over fifty percent of respondents was that of too much noise, while the burning of tree limbs was considered serious by almost the same number. Conversely, potential conditions such as poor trail condition and damaged trees ranked very low on the list of serious problems.

6.9 Camping

This section assessed whether the respondent stayed overnight in the backcountry, for how many nights and where. Of the 769 respondents, 11.5% stayed overnight along the trail.

Of the respondents who stayed overnight in the backcountry, approximately 43% stayed one night, 46% stayed for two and 11% stayed for three or more nights. Approximately 76% of respondents who camped in the backcountry stayed in a backcountry campground, while

approximately 18% random camped in an area not designated as a campground.

6.10 Camping & Crowding

Respondents who camped in the backcountry were asked to indicate the level of use in the backcountry campground they used on their trip. Table 12 shows the results of this question.

Table 12

Use level in the backcountry camping area

Was the backcountry camping area	% of backcountry campers	% of weekday campers	% of weekend campers	% of long-weekend campers
Empty	29.56	58.82	23.40	20.83
Half-full	25.22	5.88	27.66	33.33
Full	33.04	23.53	38.4	29.16
Over-flowing	12.17	11.76	10.64	16.66

The results shown in Table 12 vary according to the date on which the respondent was surveyed. For example, backcountry campgrounds are usually overflowing on long-weekends. Supporting this assumption, 58% of respondents on weekdays felt that the backcountry camping area was empty, compared with only 20.83% of long-weekend/holiday campers. Long-weekend campers (16.66%) also were more inclined to feel that the camping area was over-flowing, compared to 11.76% of weekday campers.

The next question in this section asked respondents to indicate whether the level of use in their backcountry camping area made them feel crowded or not. Table 13 shows that half of respondents who stayed overnight felt that their camping area was not crowded.

Table 13

Crowding in the backcountry camping area

Was the backcountry camping area	% of backcountry campers	% of weekday campers	% of weekend campers	% of long-weekend campers
Not Crowded	50.5	58.82	23.40	20.83
Slightly Crowded	20.9	5.88	27.66	33.33
Moderately Crowded	19.8	23.53	38.4	29.16
Extremely Crowded	8.8	11.76	10.64	16.66

Variance in responses occurred according to whether the respondent was camping on a weekday, weekend or during a long-weekend/holiday. For example, 58.82% of weekday respondents felt that the campground was not crowded, compared to 20.83% of long-weekend/holiday campers.

The final question in this section asked whether respondents felt that the level of crowding they encountered backcountry camping was acceptable or not. Overwhelmingly, 89.3% of respondents answered that the level of crowding was acceptable.

6.11 Use of Campfires

The first question that was asked in this section was to determine how many of the backcountry campers had a campfire. Approximately half of those who stayed over night, or 5.1% of respondents, answered that they did have a fire. The second question assessed whether the campfire was contained in a fire pit. All of those who had a campfire used a fire pit.

The third question asked respondents whether they felt that they required this campfire. Approximately one quarter or 23.48% of backcountry campers responded yes, they required their campfire.

The final and fourth question in this section asked whether having a fire is an essential part of the respondent's backcountry experience. Approximately one quarter or 26.1% of backcountry campers felt that campfires were essential to their backcountry experience.

Campers were also given an opportunity to provide additional comments at the end of this section. Comments included:

- Fire where permitted, essential depending upon weather
- People should be required to have a license to backpack - a weekend course every year costing approx. \$10/person.
- Stop fires in park - unnecessary. Had a great time.
- Not until above tree line did the wildlife behave what I would consider normally.

- Deterioration in quality since we were here last, i.e. litter left on site, no park presence, picnic tables deteriorating.
- Great!
- Campground well maintained - almost too well. Tent pads annoying.
- Although I have mixed feelings about this, a part of me would appreciate some sort of rudimentary cooking shelter for foul weather. (not a problem this time but.....)
- Need bear poles and outhouses at Aster Lake.

6.12 Facilities

The facilities section assessed which facilities respondents were likely to use, given seven typical facilities to from which to choose as well as an "other" option. Table 14 shows the results of the question regarding facility use, organized according to the facility most respondents were likely to use.

Table 14

Facilities respondents would use

Facilities which you would likely use	Definitely would use	Would use	May use	Would not use
Parking area	64%	27.7%	5.8%	2.5%
Garbage bins	55.9	29.2	11.4	3.5
Other	52.4	19	14.3	14.3
Toilets	52.3	24.7	20.0	3.0
Trail signs/kiosk/information	42.2	33.3	19.8	4.7
Drinking water	32.6	28.6	29.3	9.5
Telephone	5.1	9.0	52.8	33.1
Bicycle rack	4.0	11.8	39.2	45

The most important facilities for respondents include garbage bins, toilets and signage. Additional facilities such as bicycle racks and phones were not seen as facilities that would be definitely used. Several suggestions were made in the 'other' category, many seemingly joking in nature, for instance, a "7-11 store".

6.13 Commercially Guided Trips

This question assessed the level of commercially guided trips in the backcountry of Peter Lougheed. When answering the questionnaire, 1.4% of respondents replied that they were customers on a commercially guided trip. This does not mean that only 1.4% of the people on the trail were on a commercially guided trip because only one person per group completed the questionnaire. This number is much higher when the size of the groups on commercially guided trips is taken into consideration. Group size for those on commercial trips ranged from 1 person to 21 persons. For group size distribution, see Table 15.

Table 15

Commercial Group Size

Group size	----	2	3	6	8	15	20	21
Count	1	2	1	1	2	1	1	2

6.14 Management Goals

This section assessed the opinions of the users of Peter Lougheed Provincial Park towards the management goals they felt were important. Table 16 provides the breakdown of respondents' answers to this question, ranked according to the goal ranked highest the most number of times.

Table 16

Possible Management Goals

Ranking of possible management goals	Highest	Second Highest	Third Highest
Protect vegetation from misuse or overuse	34.3%	15.2%	11.5%
Ensure rules for minimum human use impact	14.8	16.6	14.4
Provide user groups with more info about wilderness, ethics	14.5	16.2	14.8
Ensure total number of users is not too high	7.0	7.9	5.7
Improve trail maintenance	4.9	6.8	5.7
Other	3.3	0.8	3.3
Restrictions on the type of use for individual trails	2.7	5.9	10.7
Rehabilitate overused camping areas	2.5	11.0	10.0
Introduce a method of limiting the amount of use on backcountry trails	1.8	3.3	4.9
Build more facilities	1.8	2.3	3.0

The majority of respondents felt that the most important management goal was the protection of vegetation from misuse or overuse. The second highest-ranking goal was to ensure rules for minimum human use impact. It is likely that not all respondents understand what these

rules might be. The third highest-ranking goal was to provide user groups with more information about wilderness, backcountry ethics. These last two goals are more goal oriented and less action oriented.

6.15 Demographic Information

A majority of respondents (65%) were residents of Calgary, while 0.4% were from Banff, 5.1% from Canmore and 5.7% from Edmonton. The other 23.8% of respondents were from cities as far away as Moscow and Miami. When asked what province they were from, 84.9% were from Alberta, 2% were from Ontario and 1.7% were from British Columbia. The other 11.4% were from outside of these provinces.

An overwhelming majority of respondents (92.5%) were from Canada, while 2.9% were from the U.S.A. Other countries represented by the final 4.6% of respondents included England, Germany, New Zealand, Russia, Scotland, Switzerland and The Netherlands.

The second question asked the age of respondents. The most commonly reported age among respondents was that of 40 years old, with a total response of 4.9%. The average age was 37.9 years of age. Respondents' answers ranged from 12 to 80, with the majority of respondents ranging in age from 20 to 52.

The third question that was asked in this section assessed the gender of respondents. Answers show that more males than females

answered the questionnaire, for a total of 53.8% of respondents, with approximately 42% female respondents. These answers do not truly reflect the composition of groups in the backcountry of Peter Lougheed Provincial Park. It was observed that many times, a female in a group was chosen by the rest to fill out the questionnaire. Therefore, the data concerning gender was not obtained randomly, and cannot be used to make a generalization about the gender composition of groups surveyed.

The fourth question posed in this section determined the membership of respondents in organizations such as hiking or outdoor groups. Membership in such groups was reported by 11.8% of respondents. These organizations included the Alpine Club of Canada, the British Army, University of Calgary Outdoor program, Scouts Canada, Rocky Mountain Ramblers and Junior Foresters. Respondents were not asked whether they were on an outing with such a group, only about their membership in them.

6.16 Dog Use

This section assessed the number of visitors who bring dogs with them on their trip to the backcountry of Peter Lougheed Provincial Park. Of respondents, 15.1% brought a dog with them on their visit.

6.17 Satisfaction

This section assessed the level of satisfaction respondents felt for their visit to the backcountry of Peter Lougheed Provincial Park. As shown in Table 16, a majority of respondents (82.9%) were very satisfied with their backcountry experience.

Table 16

Respondent satisfaction with their visit

Overall, how satisfied are you with your backcountry experience	% Not satisfied	% Slightly satisfied	% Satisfied	% Very satisfied
	2.8	0.5	13.8	82.9

There are many ways to interpret satisfaction, as shown in the literature review of the satisfaction issue earlier in this thesis. For the purpose of this study, it will be assumed that this answer is a true reflection of respondents' feelings.

6.18 Other Comments

There were several opportunities for respondents to provide comments to supplement their answers to questions. Such qualitative data was helpful in providing further detail to respondents' opinions. Listed below is a sampling of respondents' comments:

- Given a number of bear sightings and tracks in the area, is the combination of bears, dogs and humans safe?
- Are the toilets located a safe distance away from the drinking water/river?
- Stop fires in park - unnecessary. Had a great time.
- We bring visitors to Canada here to see our beautiful country.
- There were lots of kids going snowboarding and they were somewhat annoying.
- I was very pleasantly surprised by the low number I encountered but it could have been because I was on the trail early and left the mountain to come back to the lake as it was such a beautiful day.
- Although there were people camping around me, I was able to enjoy solitude.
- Fire pits should be available, especially when hiking in cool weather.
- Fires are nice if allowed; we come to avoid the cost of Banff and because you are dog friendly.
- Support of Management Goals G and J - Nominal fees and permits for use - money to be used for trail maintenance, signs, etc.
- Being a mountain biker, I think everyone should have trail access with no closed trails.
- Garbage and food left behind at backcountry sites is a problem. People are somewhat ignorant of etiquette and common sense.

- Your park has a very casual approach by officials when it comes to bears, especially grizzlies. Move people out and close campgrounds if a mother and her cubs move into an area. Then you will avoid possible casualties.
- I would gladly pay a small fee for use and extra for my dog (who is backcountry trained and restrained) to ensure the highest level of backcountry experience for myself and all users of these trails, particularly the next generations.

7 DISCUSSION

7.1 Objectives

The objectives of this study are:

- ◆ Learn who is using the backcountry, where they are going, method of travel used and what they do when they are there;
- ◆ Determine what these users are looking for in their backcountry experience, what factors will add to/detract from their enjoyment and whether they were satisfied with their experience;
- ◆ Obtain user information for Alberta Environmental Protection for the purpose of management of Peter Lougheed Provincial Park; and
- ◆ Use this data as a basis for recommendations for the management plans for Peter Lougheed Provincial Park.

7.2 Results

The questionnaire contained a number of sections: Visitation Information, Present and Past Activities, Reasons for Visitation, Trails Used, Off-Trail Use, Groups Encountered Along the Trail, Trail Conditions, Camping, Camping and Crowding, Campfire Use, Facility Use, Commercially Guided Trips, Management Goals, Demographic Information, Dog Use, Satisfaction and Comments.

7.2.1 Visitation Information

The findings of this section show that approximately half of respondents were visiting that particular trailhead for the first time, but 84.7% had been to Peter Lougheed Provincial Park previously. Half of those who had been to Peter Lougheed Provincial Park in the past had been there less than five times.

These two questions show that most visitors to the backcountry of Peter Lougheed Provincial Park are repeat visitors, as opposed to first-time visitors. This says a lot about the general composition of visitors, in that they are coming back to Peter Lougheed Provincial Park, for whatever reason. This as opposed to one-time "tourist-type" visitors.

In addition to visitation pattern, this section showed that the majority of respondents were part of a group of two. However, group size ranged from one person to 39.

These results show that while there are some large groups to be found along the backcountry trails, a majority of the groups are small in size and therefore can be assumed to be more unobtrusive.

7.2.2 Present Activities

The present activities section showed that a majority of respondents reported that hiking was their primary activity, while others cited backpacking, mountain climbing and mountain biking. This section also shows the many secondary activities in which respondents engaged, such as wildlife and bird watching, picnicking and photography.

There is a reason for the large number of hikers as opposed to mountain bikers or equestrians along the backcountry trails in Peter Lougheed Provincial Park. Management of Peter Lougheed Provincial Park forbids equestrian activities in all areas of the park except for one, the Elbow Lake Trailhead east off highway 40. During the survey period at this trailhead, no equestrians were surveyed or observed. The reason for few mountain bikers responding to the survey is that there are a limited number of trails open to mountain biking in the backcountry of Peter Lougheed Provincial Park. Therefore, hiking is one of the preferred activities for visitors to the backcountry.

This section provides information on what visitors in the backcountry are doing on their visits. The varied nature of the categories from which respondents chose provided an opportunity to assess most or all activities in the backcountry.

7.2.2 Past Activities

The past activities section provided additional information to assess what visitors are doing in the backcountry. For example, 61.1% reported that their primary activity in the past was hiking, as compared with 75.8% of those who listed hiking as their present primary activity. Therefore, approximately 14% of respondents engaged in other primary activities in the past. This information is important, as it shows that not all those who were characterized as hikers for this visit were hikers on past visits. For example, they may have been mountain biking. Thus, these respondents may bring to their present experience a different perspective than those respondents who always hike.

7.2.3 Reasons for Visiting

This section showed why respondents visited Peter Lougheed Provincial Park. While respondents were there to participate in their particular activity, there is usually more to a visit than simply hiking or mountain biking. In this study, it was shown that 84% of respondents felt that a very important reason for visiting the backcountry of Peter Lougheed Provincial Park was to experience nature. Their activity-type shows their way of doing this. Other very important reasons were exploring new places and exercise.

Respondents also indicated what reasons they did not feel were very important. These include meeting new people, which 76.5% felt was not important. Surprisingly, only 24.8% felt that being alone was very important. Therefore, while respondents did not want to meet other people, they did want to experience nature and participate in their chosen activities with friends or family.

7.2.4 Trails Used

Respondents used a varied combination of trails on their visit to the backcountry of Peter Lougheed Provincial Park. The majority used the Burstall Pass, Chester Lake and Upper Lake Trails. However, there were many other trails used in combination with these.

7.2.5 Off-Trail Use

A large number of respondents (37.9%) reported that they not only used designated trails on their visit, but also went off-trail for various reasons. These reasons range from going just off to the side of a designated trail to going off trail for several kilometers on undesignated trails or traveling on no trail at all.

These findings provide valuable information on the behaviour of visitors along the backcountry trails. It appears that many visitors want to see more of Peter Lougheed than can be seen from the trail. This

section provides other information as well. For example, some of the respondents were not completely aware of where they went. Such information can help in the assessment of the education and preparation level of backcountry visitors.

It is possible that some respondents felt uncomfortable answering these questions if they felt that they had done something wrong in going off trail, however it was hoped that most would be honest in their answers.

7.2.6 Groups Encountered Along The Trail

This section assessed the number of groups encountered by respondents along the trail and whether they felt crowded by them. The results show that respondents saw any number of groups, ranging from less than five to more than ten. However, 47% did not feel at all crowded, and only 6.3% felt extremely crowded by the total number.

The data regarding crowding by visitation period provided some interesting information. For example, many more visitors during the week felt not at all crowded by groups encountered than those who visited on the weekends. This is to be expected, as there are typically fewer people visiting during the week. The interesting results come from those who felt extremely crowded. The respondents who felt the most crowded were visiting on a normal weekend and not on a long-

weekend/holiday. It would be expected that those visiting on such holiday weekends would feel more crowded than respondents during any other visitation period. Perhaps this result reflects the expectancy theory, in that these visitors may have expected many encounters with other groups and thus did not feel as crowded as expected.

7.2.7 Trail Conditions

This section assessed the respondents' feelings towards potential conditions along the trail. The results show that the condition respondents felt would be the most serious problem is that of too much noise while camping. The second most serious problem was that of the burning of tree limbs for firewood. These results are contrary to what might be expected. For example, poor trail condition and stream erosion both ranked fairly far down on the list of serious problems, and were considered by many respondents to not be a problem, whereas management may feel that these are problems. These results are a good example of when visitor and management opinions might strongly differ.

7.2.8 Camping

This section assessed whether the respondent stayed overnight in the backcountry, for how many nights and where. The results show that a small number of respondents stayed overnight in the backcountry, usually for one or two nights. Most (76%) stayed in backcountry campgrounds, while approximately 18% stayed in an area not designated as a campground. These findings show that random camping is not widely done in Peter Lougheed Provincial Park. This could be due to a variety of factors. First, random camping is against Provincial Park rules, and is allowed only in the Aster Lake area. Secondly, random camping usually requires a higher degree of preparation and hardiness than camping in a backcountry campground. These two factors have combined to result in the low number of random campers.

7.2.9 Camping & Crowding

Respondents who indicated that they were involved in backcountry camping were asked to indicate the level of use in their backcountry camping area, whether they felt crowded by this level of use and whether this was acceptable to them. The results show that weekday campers were more inclined to feel the camping area was empty than were their weekend counterparts. In addition, weekend and long-

weekend/holiday backcountry campers were more likely to feel that the campground was full or over-flowing. These results are to be expected given the difference in use levels between these visitation periods.

The question regarding crowding gave a different picture than the question regarding level of use in the campground. Half of respondents felt that the backcountry camping area was not crowded, and only 8.8% felt that it was extremely crowded. When compared to use levels, it appears that use level does not correspond to crowding.

The results to this question also showed variation among visitation periods. Those who camped during the weekday (58.82%) were much more willing to say that the backcountry camping area was not crowded, as compared to 23% and 20% of weekend and long-weekend/holiday backcountry campers. This directly corresponds to expected use levels and is an expected finding.

While some respondents felt crowded in their backcountry campground, 89.3% responded that the level of crowding was acceptable. Once again, it would seem that expectancy theory may be playing a role. If a person does not expect to be alone in a backcountry campground, then it is logical that they would not feel crowded. This would perhaps last as long as the level of use did not greatly exceed their expectations. If this were to occur, then the conditions that resulted might detract from the visitor's experience.

7.2.10 Use of Campfires

This section assessed the level of campfire use as part of backcountry camping. Of those respondents who camped overnight in the backcountry, approximately half had a campfire. All of these fires were in fire pits provided at the backcountry campground.

Approximately half of those who had campfires felt that they required these campfires and slightly more felt that campfires were essential to their backcountry experience.

These findings show that not all backcountry campers use campfires. This could be due to several factors and was not assessed by this questionnaire. However, anecdotal evidence shows that campfires are not necessary and should not be used in the backcountry.

The findings show that those who had a campfire used a fire pit. While it is possible that some backcountry users do not obey the rule requiring the use of firepits, it was not expected that respondents would report such an action.

A fairly strong contingent of those who had fires felt that they were necessary. However, this could be explained by an assumption that not all those who camped in the backcountry were experienced backcountry campers. By observing respondents, the researcher was able to make generalizations about the experience of the respondents, and it was noted that not all appeared to be well experienced and educated in

backcountry camping. For example, some respondents carried large sleeping bags in large plastic bags. An experienced backpacker would have a small, compact sleeping bag, contained in a stuff sack and put within their backpack.

7.2.11 Facilities

This section assessed which facilities respondents were likely to use. The findings show that most respondents required only the basic facilities at the trailheads, such as a parking area, garbage bins, toilets and signs. Respondents indicated that they would not use facilities such as telephones and bicycle racks. Those who indicated additional facilities were joking in nature, such as a donut shop or 7-11 store. Therefore, visitors do not require a large number of facilities to enjoy their visit to Peter Lougheed Provincial Park.

7.2.12 Commercially Guided Trips

The findings from this section show that only a small percentage of respondents were on a commercially guided tour. However, the actual number of people on a commercially guided trip was much larger due to a few large groups. As a result of these findings, it becomes clear that some of these groups might fall into a category of "large group size", which may or may not be welcomed by fellow visitors. Some of these

commercial groups exceeded the group size allowed by Alberta Environmental Protection, which has a restriction on commercial group size in the backcountry. Generally, commercially guided groups are limited to ten customers and two guides (Donelon, 1999).

7.2.13 Management Goals

The findings from this section show that the majority of respondents feel that the protection of vegetation from misuse or overuse is the most important management goal for Peter Lougheed Provincial Park. The next goals that ranked highly among respondents were to ensure rules for minimum human use impact, and to provide user groups with more information about wilderness resources and backcountry ethics.

These findings suggest that the majority of respondents feel that there should be a strong attempt to minimize the impacts of human use of the backcountry. However, while some respondents would like to ensure rules for minimum human use impact, they were not asked to indicate what kind of rules. Option G in the question asked if they would like to introduce a method of limiting the amount of use on backcountry trails, and only 1.8% of respondents felt that this would rank as highest priority. This leads to the question: *What rules would the respondents feel would be appropriate to ensure minimum human use impact? If*

they don't agree with limiting use numbers, would they agree to trail closures, limiting use type, or other possible rules? Thus, it is hard to tell from the response to this question whether the respondents who felt strongly about limiting human use impact would actually support measures in this regard.

7.2.14 Demographic Information

The findings of this section show that a majority of those who visit the backcountry of Peter Lougheed Provincial Park are Albertans. Unlike areas such as Banff, it is mostly Canadians who frequent Peter Lougheed Provincial Park; only 7.5% of respondents were from outside of Canada.

The implication of these findings, combined with visitation information, is that the majority of visitors to the backcountry of Peter Lougheed Provincial Park are Albertans and are repeat visitors. These implications will be discussed later on in this chapter.

Other questions in this section provided information on the age, gender and affiliations of the respondents. These findings enable the manager to have a fuller picture of who is visiting the backcountry of Peter Lougheed Provincial Park.

7.2.15 Dog Use

The findings of this section show that approximately 15% of respondents brought dogs with them to the backcountry of Peter Lougheed Provincial Park. Anecdotal evidence provided by respondent and other visitor comments show that many of these dogs were allowed to run off-leash while along the trail. This practice is against the rules of Peter Lougheed Provincial Park and may have management implications that will be discussed at a later point

7.2.16 Satisfaction

The findings of this section show that an overwhelming number of respondents were very satisfied with their visit to Peter Lougheed Provincial Park. As mentioned in the chapter 3, the issues such as expectancy theory and visitor satisfaction may have had some bearing on the respondents' answers to this question. However, it was not the objective of this study to probe the issue of visitor satisfaction. Therefore, the findings of this section will be taken at face value as an indicator of overall visitor satisfaction.

7.2.17 Additional Information

Additional information was gathered which was unrelated to the topics covered in the questionnaire. The specific data is presented in Appendix 2. Information concerning this data will be discussed below.

A majority of the questions on the questionnaire contained a space for additional comments. It was found when entering the data that several respondents used these opportunities to give their opinion on issues not addressed in the questionnaire.

Overwhelmingly, a majority of the comments were related to development concerns for Kananaskis Country. By the nature of many of the comments, these concerns relate to a survey done one year previous to this survey, regarding recreational development in Kananaskis Country.

At the time of this survey, Alberta Environmental Protection was in the midst of planning a second round of surveying regarding the issue of recreation development. As a result, this unsolicited information was of interest to Alberta Environmental Protection. Eventually, all comments gathered on this subject were forwarded to the independent consultant performing the second round of surveying.

This information was extensive enough to merit mention in this thesis. Many respondents felt very strongly about the subject of

development in Kananaskis Country as reflected in the number of comments and therefore, warrants mention.

Due to its non-statistical nature, and its lack of relevancy to this study, the data was not analyzed. In the database, it was given its own field so that it may be reviewed easily if desired. That is the extent to which this information was examined.

7.3 Outdoor Recreation Issues

7.3.1 Past Visitor Studies in Kananaskis Country

There are some differences when comparing the results of this study with those done in Kananaskis Country in the past. For example, Erdman (1978) found that only 68% of his respondents were hikers and on 70% were very satisfied with their trip. During this study, 75.8% of respondents were hiking and 84% were very satisfied. In contrast, Milne (1995) had a similar finding in the area of reasons or goal for coming to Kananaskis Country. He found that the most popular goal among his respondents was to enjoy nature. This study found that the most important reason for coming was to experience nature.

7.3.2 The Benefits of Leisure

Authors such as Schreyer and Driver (1989) sought to create lists of preferences and benefits that are sought by people involved in outdoor recreation in wilderness areas. A similar list can be compiled from the results of this study:

1. Experience nature
2. Explore new places
3. Get away from daily concerns
4. Exercise
5. Be with family
6. Be with friends
7. Learn about nature
8. Be alone
9. Rest and relaxation
10. Challenge
11. Intimate relations
12. Spiritual renewal
13. Showing our country to visitors
14. Personal goals

The above list does not have the range or detail provided in Schreyer and Driver's lists due to the construction of the questionnaire. However, it contains similar basic goals and benefits attributable to backcountry recreation.

7.3.3 Social Carrying Capacity and Crowding

The questionnaire used in this study addressed the area of recreational carrying capacity in the backcountry of Peter Lougheed Provincial Park. As defined earlier in this document by Grittins (1971), recreational carrying capacity is the level of recreation[al use] which an area can sustain without an unacceptable degree of deterioration in the character and quality of the resource or the experience. By looking at respondents' answers to questions concerning crowding along the trails, conditions along the trail, camping conditions and management issues, a sense of recreational carrying capacity for the area can be gained. The answers to these questions show that respondents did not feel crowded along the trail nor in their backcountry campgrounds. They also did not feel that management goals that would limit use numbers were necessary. They did feel that certain conditions caused by other users could be a problem, but there was not an opportunity to say whether in fact it was a problem present at that time.

By looking at the results of this questionnaire, it can be assumed that the recreational carrying capacity limit for the backcountry of Peter Lougheed Provincial Park has not been reached. In general, respondents were quite satisfied with the level of use which they encountered on their visits to the backcountry.

7.3.4 Visitor Satisfaction and Expectancy Theory

The majority of respondents in this study were very satisfied with their backcountry trip. The actual percentage of 83% was much higher than expected when this study began. It is hard too put an exact reason for why respondents were so satisfied. Many respondents were on the trails during very busy times when there were many other visitors along the trails that they were using. Therefore, there does not seem to be a direct correlation with the level of use encountered and the resulting satisfaction level.

These results lead to an agreement with authors such as Campbell (1980) and Manning (1986) who suggest that it is impossible to accurately measure satisfaction levels. These results also suggest an agreement with the idea of Expectancy Theory. In the case of this study, it might be assumed that those visitors who came during weekend busy periods expected to find large numbers of people sharing the trails with them, thus adjusting their expectations for factors such as

solitude accordingly. This adjustment of expectations may account for the high level of very satisfied respondents.

7.4 Comparison with U.S. Studies

While they had dissimilar objectives, the findings of this study fit well with those findings of the seven studies outlined in chapter 3. For example, while the objectives of this study were not identical with those of Lucas (1964), it is possible to see that there are many comparable patterns when looking at the factors that affect respondents' views of wilderness or backcountry.

Stankey (1973) conducted his study with another approach, yet some of his results resemble those seen in the study completed for this thesis project. For example, there is not a universal rejection of people, rather most visitors indicated that particular characteristics of the groups they encountered were more important determinants of social impact (Stankey, 1973, p. 15).

This project's study mirrored some of the findings of Hendee and others (1978), who found that the average party size is 2 to 4 people, the common method of travel was hiking and that many visits are multi-purpose. There were some differences however, such as the percentage of women (which was much higher in this study), the average age group

seemed to be higher and there were fewer respondents who were members of conservation or outdoor groups.

Lucas (1986) focused on conflicts between horses and hikers. With few horse groups using the surveyed trails in Peter Lougheed Provincial Park, there was little opportunity to study this issue. However, there were some similarities in findings that dealt with demographic factors. For example, Lucas found that overall satisfaction was high, solitude is an important motive for visiting, most visitors were from urban centers.

Anderson and Manfredo (1986) also had a different focus for their study, however, their main issue was addressed by this backcountry study. They reviewed the findings of user studies to discover visitor's preferences for management actions. They found indirect actions were much more preferred than direct actions, unless overuse was a problem. It also found that facility development and improvement was not a popular management action among respondents. The study done for this thesis showed that the number one potential management action among respondents was the protection vegetation from misuse or overuse. The least popular management action was building more facilities. Respondents also did not favour direct management actions such as limiting the amount of use on backcountry trails.

Manning (1986) described the personal characteristics that are thought to influence crowding norms in wilderness users. While the focus was much more in depth than the study done for this thesis, the general trends are similar. Motivations, preferences, expectations and experience of visitors and the characteristics of those they encounter all appear to play a role in the perception of crowding.

The final study reviewed was that done by Watson (1993). While this study focused on conflicts between stock users and hikers, some general trends can also be seen to agree with those seen in this thesis study. For example, Watson found that hiker groups were more likely to evaluate problems as severe, were more likely to support group limits, disliked groups dissimilar to themselves and placed more importance of solitude.

The similarities between these seven studies and the study done for this thesis suggest that there is a continuity of findings in studies that deal with issues in outdoor recreation, regardless of the specific focus of the study.

7.5 Limitations of Study

There are some aspects of this study that should be improved before being duplicated elsewhere. These aspects include survey methodology and question design.

Survey Methodology

To improve the survey techniques, surveyors could have been at their stations for a longer period of time during the day. Rather than surveying during the peak eight-hour use period, surveyors could have been at the trailheads for a longer period of time, to collect more responses.

Other survey methods that could be altered would be the practice of distributing one survey per group. To gain a larger response rate, surveys could have been offered to all members of the group. The increase in response rate would lead to a possible increase in the variation of answers.

A third improvement would be the improved keeping of statistics. Accurate records were not kept of the number of surveys taken home with respondents to be filled out and mailed back. Such statistics need to be kept in order to have an accurate summary of response and non-response rates. However, through partial record keeping and anecdotal evidence, certain assumptions can be made concerning those

questionnaires that were taken home. First, the people who took these questionnaires home were from many different activity types and ages, ranging from young backpackers to middle aged hikers. Second, the number of questionnaires taken home by potential respondents was approximately ten percent of all handed out. Therefore, approximately eighty were taken home. Of those taken home, approximately seventy-four were returned by mail. With these approximate figures, it may be assumed that the response rate for those questionnaires taken home was high.

Finally, surveying in another area of Kananaskis Country would have perhaps led to a more diverse survey population, giving a wider variety of visitor activities and opinions.

Question Design

Other limitations of this study occurred in the wording of some of the questions on the questionnaire, for example, question number 7, concerning groups encountered along the trail. It is understandable that most respondents did not feel crowded by the number of horse groups along trail, as there were very few or none on the one trail where horses are allowed. Instead of using the "Not applicable" option on the questionnaire, many people used the "Not at all" option.

The most misunderstood question was number 9: "Trail conditions which may or may not exist along the trail used". This question was

intended to gauge respondents' reactions to certain conditions. It was not intended to find out their opinion of current conditions along the trail. However, when examining respondents' answers, it appeared that many chose to answer it based on current conditions. For example, many respondents entered 1 for not a problem, for most of the conditions. While it is possible that there are respondents who feel that none of the potential conditions would be a problem if they did exist, it is unlikely that all those who answered "not a problem" would feel that such conditions would not be a problem. Thus, it may be assumed that the answers to this question are not wholly correct or indicative of respondents' feelings towards potential conditions. It seems likely that if the question were explained more thoroughly, the answers might be different but this cannot be verified.

7.6 Implications of Study

7.6.1 For Users

The implication of this study for users is that their input may cause changes in the management policies/style of Peter Lougheed Provincial Park. These changes may increase or decrease visitor's satisfaction, depending upon the type of action and the visitor's preferences.

7.6.2 For Management

Visitors to areas such as Peter Lougheed Provincial Park are a factor in the management equation, much more so now in the 1990's than ever before. As shown in this study, visitor perception, needs and activities vary greatly from person to person. All of these variables make for a complex and elusive group to be managed. Regardless of this complexity, visitors and their use of areas such as Peter Lougheed Provincial Park, must be managed. As noted by Payne and Nilsen (1994):

Visitors, in their sheer numbers as well as their activities, can be expected to affect heritage (and other) resources. Managers need information about visitors, their interaction with resources and with each other if they are to protect sensitive resources while promoting their understanding, appreciation and enjoyment among visitors (Payne and Nilsen, 1994).

7.7 Management Recommendations

The results of this study show that there are a wide variety of people using the trails in Peter Lougheed Provincial Park's backcountry. These people are engaged in a variety of activities, for a variety of reasons. It is important that this variety among users is considered when implementing a management plan.

In addition, it is important to understand what the respondents said in regard to crowding, both along the trail and in the campgrounds.

While the statistics from the questionnaire are important, so too are the comments attached to them.

7.7.1 Specific Recommendations

Off-trail Use

Management of Peter Lougheed Provincial Park should determine what level and kind of damage is occurring off-trail or on non-designated trails. Approximately 40% of backcountry users in Peter Lougheed Provincial Park go off trail at some point in their visit, and this may be having a negative impact on the ecosystem.

An issue that is associated with off-trail use is that of education. While many respondents knew where they went, others went off-trail without much of an idea where they were going. This indicates that perhaps the visiting public needs to be educated on backcountry travel and safety. While there are maps at most trailheads, backcountry safety and etiquette information would be an added measure of education which would help reduce negative impacts on the backcountry and increase the safety of users.

Other opportunities

Visitors to Peter Lougheed Provincial Park come not only for activities but also for reasons such as to experience solitude, to experience nature and to get away. The most efficient and cost effective method to determine whether they are able to have these kinds of experiences would be to **locate comment cards and boxes at each trailhead**. This way, visitors can indicate whether they are able to have the type of visit that they were looking for, whether they have a complaint, etc.

Conditions

Through the use of informal questioning, ranger patrols and other methods, Alberta Environmental Protection should monitor Peter Lougheed Provincial Park for conditions which would decrease the satisfaction of backcountry users. Such conditions include: crowding along trails; negative group interactions between groups such as mountain bikers and hikers; too much noise in campgrounds; garbage left behind; too many large groups; and trail damage by other users. These are the conditions that were indicated by respondents to be the most serious of potential conditions. An adaptive management strategy should be in place to deal with concerns as they arise.

Facilities

Do not increase facilities at day use areas. The response to the facility question indicates that the majority of backcountry users in Peter Lougheed Provincial Park do not require more than basic facilities at trailheads. For example, a parking area, garbage bins and toilets are the facilities most likely to be used. Facilities such as telephones and bicycle racks are most likely to be not used.

Management Goals

Protect vegetation from misuse or over use. This goal of received the ranking for highest priority potential management goals. To achieve such a management goal, vegetative monitoring in areas where such conditions may occur should be implemented if it isn't being done already. In conjunction with this goal is the goal of ensuring rules for minimum human use impact and providing information about wilderness resources and backcountry ethics. By monitoring the conditions and providing information to the users, there should be less chance of damage to the vegetation of Peter Lougheed Provincial Park.

The three possible management goals mentioned in the above paragraph received the most responses for highest, second highest and third highest priorities. Therefore, it would seem that the visitors to Peter Lougheed feel that these goals should be implemented or maintained over all other possible ones listed in the questionnaire. That

is not to say that management should override the goals that visitors feel are important, rather, they should be taken into consideration.

Commercial Groups

Monitor commercial group size to ensure that operators are not surpassing group size limits, and for negative impacts upon other users, as commercially guided groups tended to be large in size. Of eleven commercial groups surveyed, over half numbered eight or more people and four exceeded the allowed size. These groups were surveyed along some of the most heavily used trails in Peter Lougheed Provincial Park. It is important to monitor the number and size of these groups, as there is the potential for conflict should these groups get larger in size, greater in number or if the trails become more busy.

Dogs

On-leash rules should continue to be enforced by rangers while on backcountry patrol. Approximately 15% of respondents brought dogs with them on the trails in Peter Lougheed Provincial Park. Many dogs were observed by the surveyors and respondents to be off leash, and several respondents felt uncomfortable or angry with this. It is not possible for rangers to monitor every trail all day; therefore an education campaign regarding the effects of dogs on wildlife and the increased risk of bear encounters may be a more realistic method to solving this problem.

Visitor characteristics

Important characteristics of visitors to the backcountry of Peter Lougheed Provincial Park are that they are local, and that they are repeat users. This means that they may notice changes in conditions and opportunities in Peter Lougheed Park and will judge accordingly. If conditions and opportunities continue to satisfy them, they will likely return.

Adaptive Management

Management of Peter Lougheed Provincial Park should be flexible enough to provide an adaptive management approach. That is, as monitoring for conditions proceeds, managers should be capable of adapting management techniques according to the conditions found during monitoring. For example, if there are too many large groups camping in backcountry campgrounds, management should be able to address the problem immediately.

There are several management tools and frameworks such as the Limits of Acceptable Change, Recreation Opportunity Spectrum, Visitor Impact Management and the Visitor Management Process, which could provide a basis for improved visitor management in Peter Lougheed Provincial Park. It is recommended that not only Peter Lougheed Provincial Park but also the overall Kananaskis Country Operating Committee adopt a framework such as the ones mentioned.

7.8 Further Study

Upon reflection, there may be value in considering further study of backcountry users in the area of Kananaskis Country. However, it would be more useful to do such a study on a larger scale than the one performed for this thesis project, with special attention to including standardized methods.

Authors such as Clark (1986), have documented the reason for a change in scale and adoption of standardized methods:

Because of the lack of common methods, and the site-specific orientation of most past studies, their relevance for integrated planning and management from a comprehensive systems perspective must be questioned. Relatively few studies exist that cut across many areas. And, there are very few appropriately designed longitudinal studies that examine more than one area at a time (p.251).

In addition to increasing the scale of the study, other methods may help to improve understanding and provide a worthwhile body of information. Such methods include longitudinal research, which require that people or units be examined at more than one time (Neuman, 1997, p. 28). An example of a longitudinal study is that done by Lucas in 1970 and again in 1982 in Montana, (Lucas, 1986). Another option would be to conduct a regional survey rather than a survey of a site-specific area such as Peter Lougheed Provincial Park. Using this project

as an example, a survey could be done of selected areas throughout Kananaskis Country as well as Banff National Park.

There is another issue related to further study. When conducting a user survey, there is an occurrence that may have an effect on the survey results which scientists should be aware of. That is, over time, changing conditions in an area such as Peter Lougheed Provincial Park. This may be cause for concern, as outlined by Lucas (1986):

Concern has been expressed for years that visitor attitude and preference surveys can mislead managers because new people come to a wilderness with weakly developed expectations and thus will accept whatever they encounter, while more demanding visitors may leave as conditions change and thus no longer be represented in visitor surveys. This is a reflection of the succession-displacement process.

Further research on experience as a factor in recreation use patterns, behaviour and attitude appears worthwhile.

More longitudinal research on wilderness use and users is needed.

7.9 Conclusion

Overall, according to the views of respondents, there do not seem to be any noticeable problems present in the backcountry of Peter Lougheed Provincial Park. However, as pressures increase due to increased number of users to Kananaskis Country, management will need to have information on hand to inform them of potential problem

areas. Most importantly, they will need a framework to deal with visitor management before problems occur.