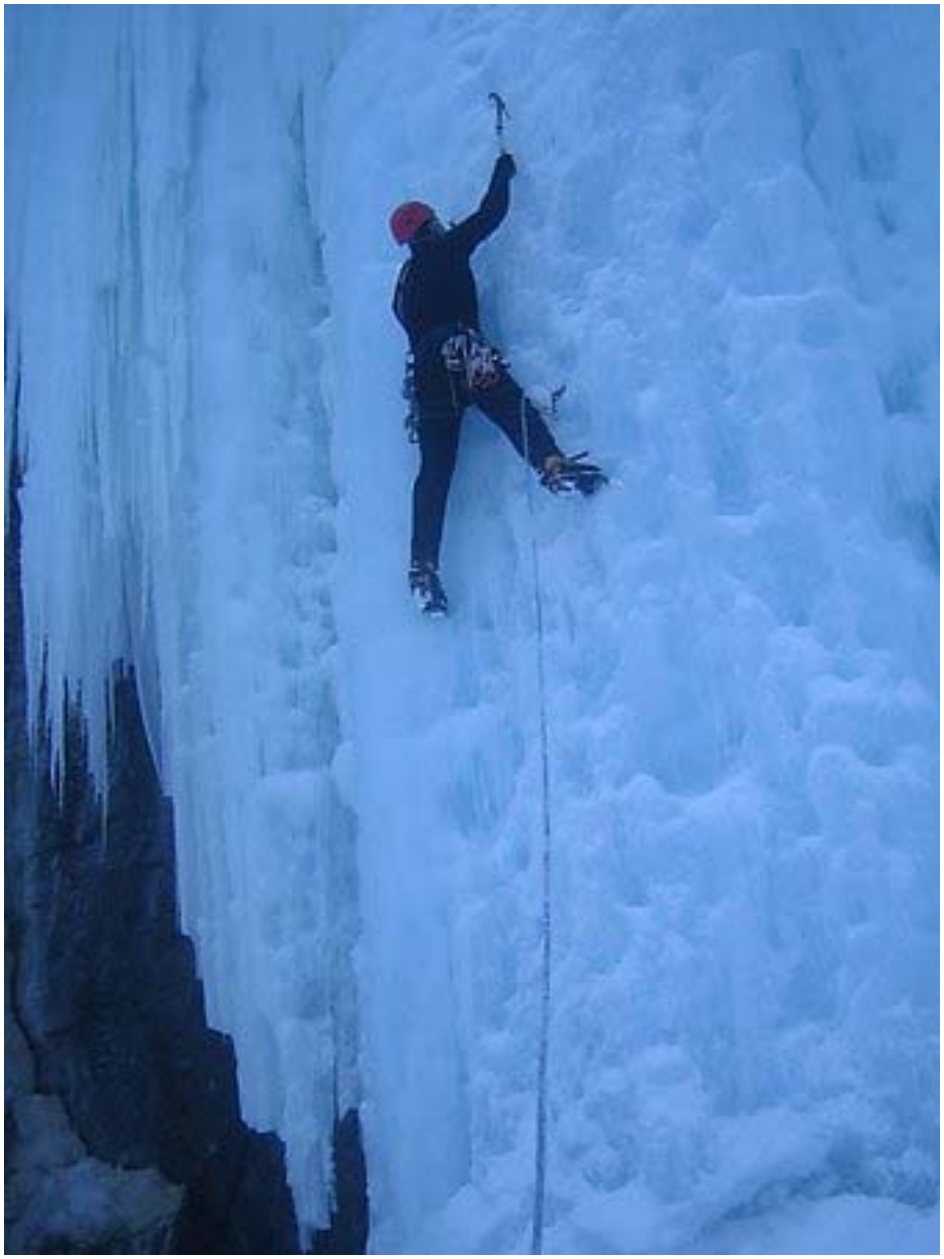
# Winter Recreation in the Canadian Rocky Mountain Parks: Pilot Study



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# Abstract

According to Canadian Tourism Commission study, Alberta and British Columbia have the highest rates of participation in winter outdoor activities. Rocky Mountains, strategically located along the border of the two provinces, are considered to be the hub of winter recreation. While more than 3 million adult Canadians participate in the winter outdoor activities, the numbers are very likely to decline due to changes in population structure (CTC, 2003). Yet despite all these concerns and the fact that Canadian Rocky Mountain Parks are world renowned as the winter playground, there haven't been any studies done in over thirty years on winter recreation in the Canadian Rocky Mountain Parks.

The aim of this research was to explore the current state of winter recreation in the Canadian Rocky Mountain Parks by taking a closer look at the LLYK field unit. Both qualitative and quantitative approaches were taken to better understand visitor demographic information, visitor experience and management perceptions, trip planning habits and motivations for participating in the selected winter activities. Activities selected for this study included: cross-country skiing, backcountry skiing, ice climbing and snowshoeing.

The study found a distinct difference in demographic characteristics and preferences between the three main user groups (cross-country skiers, backcountry skiers and ice climbers) examined. Cross-country skiers were in general older than backcountry skiers and ice climbers, and spent less time outside on average. They also preferred to stay closer to town sites and enjoy the comforts of services offered. Back country skiers and ice climbers prefer to get away from the crowds, and had a mixed reaction to facility expansion. However, all three groups would like to see signage improved, as well as better maintenance of already existing facilities.

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# Introduction

## Background

Canada's Rocky Mountain Parks offer a wide range of recreational opportunities to its visitors. While there have been many studies done over the years on summer recreation in the parks, very little is known about winter outdoor activities and its participants. Although summers attract more visitors to the area, Rocky Mountain Parks are potentially a Canadian hot spot for winter recreation. Alberta and British Columbia attract some of the largest numbers of winter activity participants according to the study done by the Canadian Tourism Commission.

> Some regions have particularly high "attraction rates" compared to others because they lure high levels of Winter Outdoor Activity Participants relative to their resident populations. Regions that are especially successful in attracting Winter Outdoor Activity Participants over a two year period relative to their share of the Canadian adult population – that is, those with a particularly high "attraction rate" – include Alberta (3.0) followed by Atlantic Canada (2.5), Manitoba/Saskatchewan (2.4) and British Columbia (2.4). (CTC, 2003)

As Rocky Mountains are located in the middle of the region with the high winter recreation activity, it is important to get a better understanding of the numbers and profile of the visitors who come to this region. It is therefore the purpose of this study to provide a better understanding of winter outdoor recreation that goes on in the Rocky Mountain Parks, including visitor experience, visitor profiling and visitor motivation for participating in the winter activities.

Since no recent winter recreation research has been done in this area, this study has been designed as a pilot study in order to collect preliminary data, develop specific research questions and long term research plan, test adequacy of research methods, assess feasibility of full scale study, and identify any logistical problems. This study focused on three winter activities, which were identified as important activities by park's staff: cross-country skiing, back-country skiing or ski-touring, and ice climbing. Nodes, locations where these activities take place and where the study was to be conducted, were identified in a similar manner by park's staff based on their personal experience of high use areas and locations in need of winter recreation management.

## Statement of the Research Problem

A lot of people come to National Parks to enjoy their leisure time and appreciate Parks' natural beauty. Winter recreation is one of the avenues for visitors to parks to do this. However, winter recreation also has different impacts within a park. As Parks Canada Mandate states:

> **On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations. (The Parks Canada Charter)**

It is a responsibility of Parks Canada to provide both enjoyment to its visitors through winter recreation opportunities and also understand its impacts, so that they can be managed in a way that would ensure ecological and commemorative integrity of the Parks.

In order for Parks Canada to do this, a better understanding is needed of who the winter visitors are, what their experiences are like, and what their impacts might be.

## Research Objectives

As the purpose of this research is to better understand winter recreation in Rocky Mountains National Parks and provide baseline for future winter studies, the following objectives were set:

- Create a profile of winter recreation users.
- Identify their motivations and trip planning habits.
- Provide a basic understanding of visitor experience in the winter and visitor's management perceptions.
- Evaluate visitors' awareness of impacts on wildlife.
- Create a baseline for the future winter recreation studies.
- Test adequacy of different research methods.
- Develop specific research questions and long term research plan.

## Definitions

| | |
|---|---|
| CTC - | Canadian Tourism Commission |
| LLYK - | Lake Louise Yoho Kootenay |
| Nodes - | Locations at which winter recreation takes place. |
| Hard Outdoor Activity - | Canadian Tourism Commission defines following activities as Hard Outdoor Activities: white water rafting, ice and rock climbing, mountain biking, dog sledding, hang-gliding, bungee jumping, heli-skiing, scuba diving. |
| Soft Outdoor Activity - | Canadian Tourism Commission defines following activities as Soft Outdoor Activities: recreational biking, bike touring, motorcycling, kayaking and canoeing, motor boating, sailing, wind surfing, hiking/backpacking, horseback riding, hot air ballooning, cross-country skiing, snowshoeing, downhill skiing and snowboarding, snowmobiling. |
| Murphy's Law - | Murphy's Law says that anything that can go wrong will go wrong. |

## Study Limitations and Delimitations

Although this study talks about Rocky Mountain National Parks, the scope of the study is limited to LLYK Field Unit. Some exceptions were made to include three cross-country ski sites in the Banff Field Unit. Since there were no recent winter recreation studies done for the area, nodes were identified using local Parks Canada staff expert opinion. This means that certain high use areas might have been omitted and some historically high use areas, which are now less used, included. Also, as there was only one full time researcher assigned for this study, further reduction in the number of nodes was necessary. Ideally surveys would be taken at all locations at the same time in order to produce consistent data, but this was not possible as there were 22 locations studied and only one researcher conducting surveys and interviews.

Study was conducted from early January until late April. This means that the early season (November and December) was omitted from the study. As most surveys and interviews were done in February and March, it might appear that most of the visitors choose to participate in winter recreation during the mid season. As trail counters were not set-up until January, it will be impossible to know for certain the distribution of winter recreation participants as a function of different winter seasons (early, mid, late). Trail counters impose further limitations, as they do not work with 100% accuracy. Besides potential hardware problems, trail counters also do not differentiate between humans and animals, and certainly not between different types of users in those locations that offer different winter recreation activities (e.g. snowshoeing and skiing).

Qualitative interviews that were conducted vary greatly in length. There were a few factors that influenced this, including the weather conditions in which the interviews were performed and time availability of the participants. These factors might account for the difference in the quality of data collected between interviews. In those situations where participants felt rushed, because of weather conditions or time constraints, it is more likely that their answers were less truthful and followed a path of less resistance. Further variability in the interview and survey data might be due to changes made to the survey and interview questions. As this was a pilot study, survey and interview questions were modified in an iterative fashion in order to make sure that information collected would cover all objectives.

## Significance

Winter Recreation study for the Rocky Mountains National Parks has been long overdue. The most recent published studies on winter recreation in the area date back to 1974 (*Parks Canada winter recreation* by W.T. Weizenbach) and 1965 (*Winter recreation and the national parks: a proposed management policy and a development program for the national parks of the Rocky Mountains* by Canadian National Parks Branch), which are over four decades old. Since winter recreation hasn't been closely monitored, many things could have changed in these four decades. Technological improvements have certainly had an impact in trail maintenance and recreational equipment. Grooming of cross-country ski trails has improved both in quality and the time it takes. Skiing and climbing equipment has also improved making it more enjoyable and safer to participate in these activities. These improvements in equipment, especially when it comes to safety, have opened up the sport to greater masses. Due to the lack of monitoring and the big gap that exists in winter recreation research, it is not clear how many people participate in winter recreation activities and who they are.

Also due to the big gap in winter recreation data, it would not be sufficient to just collect quantitative data, as numbers without deeper understanding of what they represent would not have great significance. Qualitative data is known to be richer in meaning than quantitative data (Babbie, 2004, p.27), and as such could add some meaning to the numbers. Exploratory study seems to be the most appropriate in this case, as "exploratory studies are essential whenever a researcher is breaking new ground, and they almost always yield new insight into a topic for research" (Babbie, 2004, p.89). This winter recreation study would certainly be breaking new ground due to the lack of information available, and as such it would be the best if it combined qualitative and quantitative techniques to gain better understanding of the topic (Babbie, 2004, p.28)

Another reason for conducting exploratory study is that unlike in the case of deductive studies where key variables are laid out in advance, one of the first tasks of this study would be to identify some of the possibly relevant variables (Babbie, 2004, p.88). Through exploration, this

study would also test the feasibility of undertaking more extensive study and also through iterative process develop methods that can be repeated and employed in any subsequent study.

## Researcher's Perspective

In order to predict future trends this study tries to examine motivational changes among winter recreation participants. Ideally motivational changes which are a function of time would be examined using longitudinal research. However, as this study is first of its kind in quite some time, the researcher assumed that some motivational changes could be detected in a single interview using different recollection methods.

It's also been assumed that back-country skiing and ice climbing, which are considered Hard Outdoor Activities, play a more important role in defining one's identity than do Soft Outdoor Activities, such as cross-country skiing. Because of this assumption qualitative interview for back-country skiers and ice climbers has two extra questions which try to determine contribution of the activity to one's self-identity.

Some assumptions were made during data analyses stage when it comes to interpreting answers from the qualitative data. For example, participants used different names to identify the same area in which they recreate. Some used more general terms such as Banff, which could also mean the entire National Park, to identify area around Banff town site. Others were more specific and provided names of the trails, such as Cascade Fire Road. In this example, unless otherwise specified in the field notes (i.e. on the interview sheet), when respondents identified Banff as the area where they recreate, it was assumed that it's the area around the town of Banff and not the Icefields Parkway or any other area in Banff National Park.

# Methodology

## Research Design and Rationale

This study is of exploratory nature as it attempts to develop an initial rough understanding of winter recreation in the Canadian Rockies Mountain Parks. This research has been designed as a pilot study for two main reasons: to obtain data necessary to help plan the full study and to identify all the places where "Murphy's Law" may strike.

As a pilot study this study will help everyone on the research team to get familiar with the procedures in the protocol used. Both qualitative and quantitative methods of data collection and analysis have been used for this study. Evaluation of these methods could help when deciding between two competing approaches for the future study (e.g., collecting data in an interview versus using a self-administered survey). The use of several different research methods to test the same finding, which is also called triangulation, is a valuable research strategy (Babbie, 2004, p.113).

Triangulation can be especially useful for data truthing where one method is known to be more reliable than the other, but maybe more expensive. For example, having a person count the number of skiers that go on a trail is more reliable than a trail counter, but having a person out all day, every day, for the duration of the ski season is more expensive and unrealistic. However, by using both methods a few times we can estimate the accuracy of the trail counters and determine what adjustments are necessary to trail counter data in order to make it more accurate.

This study can be subdivided into three smaller studies: cross-country ski study, back-country ski study, and ice climbing study. Although these smaller studies can be analyzed independently, same type of data was collected across all three studies, so that studies can also be compared to each other. For example, use levels were collected in the same way, using trail counters. Unit of analysis is also the same across all three studies - a person participating in the activity. Same demographic data was collected in each of the three smaller studies so that information can be compared across these studies. Similarly, same interview questions were used to collect qualitative data, so that motivations and profile of the users can be compared across the studies.

Reason for using different qualitative and quantitative methods in this study was not only to detect which method is more appropriate, but it was also intended to see how different methods complement each other. "Usually, the best study design uses more than one research method, taking advantage of their different strengths" (Babbie, 2004, p. 110). In this study, for example, quantitative methods were used to determine use levels and do demographic profiling. Qualitative methods were then used to collect richer data on user's motivations and experience. In this way different strengths of qualitative and quantitative methods were used to contribute to better understanding of winter recreation in the Canadian Rocky Mountain Parks, which is the purpose of this study.

This study was also designed in such a way that each smaller study (cross-country ski, back-country ski and ice climbing) can be repeated independently. Furthermore, quantitative survey and qualitative interview were also designed in such a way that they can be repeated independently of each other.

## Participants and Site

There were 22 sites selected for the counters to be placed. Out of these 22 sites, 11 were cross-country ski sites (Emerald Lake trail, Emerald Lake Loop, Pipestone, Fairview, Great Divide, Moraine Lake, Lake Louise Campground, Boom Lake, Cascade fire road, and two on Spray trails), 7 were back-country ski sites (Sherbrooke Lake, Skoki x3, Mosquito Creek, Bow Summit, and Bow Lake), 1 was ice climbing site (Haffner Creek) and 3 were mixed sites used for cross-country skiing and back-country skiing (Yoho Valley Road, Lake O'Hara, and Paint Pots).

Most surveying and interviewing took place at the busier sites, in order to utilize researcher's time and maximize the number of surveys and interviews conducted. Busier sites were determined based on counter information from the first week of counting, as well as past experiences of local Parks Canada staff. Main locations for cross-country surveys included Moraine Lake (37) and Emerald Lake (14), for back-country surveys Bow Summit (14) and Scott-Duncan Hut (6) and for ice-climbing surveys Haffner Creek (38) and Weeping Wall (11).

Participants for the survey were chosen using convenience or haphazard sampling technique.

> Convenience sampling is nothing more than grabbing whoever will stand still long enough to answer your questions. It is useful for exploratory research, to get a feel for 'what's going on out there', and for pre-testing questionnaires to make sure that the items are unambiguous and not too threatening... Convenience samples are useful in many situations. Pilot studies are often done with convenience samples. (Bernard, 2000, p.178)

Main reason for using convenience sampling was due to harsh winter conditions. So, anyone who was willing to stop for long enough in the cold and fill-out the survey was included in the study. Having said that, response rate was fairly high (99%) with 180 out 182 people approached deciding to participate in the study. Convenience sampling was also useful in this pilot study, as the researcher could only be in one spot at the time. For that reason it was convenient for the researcher to conduct surveys at the busiest place, as the probability of collecting the most surveys would be the greatest in those sites. However, these participants might not be representative of the overall population, as there could be people in the overall population who prefer to avoid busy places. Convenience sampling also came in handy when the researcher was collecting counter data, as he could survey any people he ran into during that time.

Purposive sampling technique was used to select participant for the interviews.

> In purposive sampling, you decide the purpose you want informants to serve, and you go out to find some… *Purposive sampling is* used wider in pilot studies before testing a hypothesis with a representative sample… Purposive samples are also used in the selection of a few cases for intensive study… Researchers don's usually pull research sites – communities, hospitals, school systems – out of a hat. They rely on their judgment to find one that reflects the things they are interested in. (Bernard, 2000, p.176)

As the purpose of the interviews was to create a better profile of the cross-country skiers, back-country-skiers, and ice climbers through their motivations and experience, informants were selected to cover a wide range of abilities and backgrounds. Three main criteria were used when selecting participants (skill level, nationality and sociability) and they were based on the

researcher's judgment. Participants were selected to cover a wide range of skills, from beginners to professionals like guides. They were also selected to maximize coverage of different markets (locals, US, European and Australian). Through observation participants were also selected based on their sociability, from quieter solo participants to louder bigger groups participants.

As interviews were more time consuming than surveys, and provided richer data, fewer interviews were performed (42 in total), which meant that participants had to be carefully selected to cover all the groups described above. In some cases site selection was a crucial factor in obtaining a good sample. For example, Haffner Creek was the site that closely reflected ice climbing population as described by the above criteria. It was suitable for beginners with easier climbs that could be top-roped, but it also has more challenging mixed climbs that attract guides and other high level climbers. Similarly, it has a main busy area, but the back of the canyon can provide more solitude.

## Data Collection

Three different methods were used for data collection: surveys, semi-structured interviews and participant observation. Surveys were used to collect quantitative information such as demographic data (age, employment, hometown, sex, etc.), trip planning information (length of stay, location, activities, etc.) and management perceptions (overall satisfaction, necessary improvements, etc.) Semi-structured interviews were used to collect qualitative data on informant's motivation for participation in the activity, their perceptions of impacts on wildlife and also their management perceptions. Participant observation was used to select participants for semi-structured interviews, for truthing of information obtained from the semi-structured interviews and also to enrich the data from semi-structured interviews.

A total of 180 questionnaires were filled out. Out of those 50 were with ice climbers, 43 with back-country skiers, 74 with cross-country skiers and 13 with snow-shoers. Questionnaires were designed to be self-administered. However, during cold weather spells some respondents preferred to have questions read out to them and answers noted down by the researcher, so that they would not have to expose their hands while writing. In those cases the researcher read out the questions exactly as they were written in the questionnaire and wrote down answers using the same words respondent used to reply. For most surveys, participants would be intercepted at the trail-head upon completion of their activity, as some questions (length of that particular trip) were dependent on that day's activity. In other cases, where participants were surveyed in the middle of their activity, participants would be asked to estimate their activity duration and use their current experience to answer the questions in the questionnaire.

## Measures

Questionnaire (see Appendix A – Questionnaire) consisted mainly of closed-ended questions in order to ensure uniformity of the demographic data and make them easier to analyze.

> Closed-ended questions are survey questions in which the respondent is asked to select an answer from among a list provided by the researcher. Popular in survey research because they provide a greater uniformity of responses and are more easily processed than open-ended questions. (Babbie, 2004, p.245)

Using closed-ended questions also meant that there was very little difference in the way in which questionnaire was filled out (self-administered vs. interview), as respondents had a list to choose from and ultimately made the same choices. Some open-ended questions were used in the questionnaire in order to allow respondent freedom of expression that was important on issues such as management perception.

In total 42 semi-structured interviews were conducted. Out of those 15 were done with cross-country skiers, 14 with ice climbers and 13 with back-country skiers. Purpose of these interviews was to enrich survey data. Although the sample size used for interviews is not big enough to be representative of overall population of cross-country skiers, back-country skiers and ice climbers, saturation was achieved in respondent's answers to some questions. This means that similar answers were being given to the same question, which is an indication of a trend which could be examined by future studies.

Interview questions were designed to be conducive of inductive research (see Appendix B – Qualitative Interview). "Inductive research is what you do when you're in the exploratory or discovery phase of any research project, no matter what kind of data you have" (Bernard, 2000, p.444). Whereas researchers working from deductive theories have the key variables laid out in advance (Babbie, 2004, p. 88), one of the tasks of this study was to identify the relevant variables. Measuring people's perceptions and motivations is not an easy task, as the fundamental problem always remains: What actually constitutes people's perception? Is it the conclusion of the researcher or the explanation of the subject? According to Bernard (2000), the only way to understand social reality is through meanings that people give to that reality. This means that a researcher should seek to see the reality through the eyes of the respondent (Olson, 1995).

> As each respondent might perceive reality differently, it is important that data gathering technique be flexible and accommodates different subjective realities. Open-ended questions, where the respondent is asked to provide his or her own answers to the questions, are more suitable for this study, as they provide necessary freedom for the respondents to express their opinions. The chief shortcoming of a closed-ended questions lies in the researcher's structuring of the responses. However, open-ended questions also come with a danger that some respondents will give answers that are essentially irrelevant to the researcher's intent (Babbie, 2004, p. 245).

Unstructured interviews utilise open-ended questions and are based on a clear plan that you keep constantly in mind, but are also characterized by a minimum control over the respondent's responses (Bernard, 2000, p. 191). During the interview, if the respondent provides an answer irrelevant to the researcher's intent, the researcher can rephrase the question and try to obtain a more relevant answer. Similarly, if the researcher thinks that answers evoked by the initial question might be worth pursuing, he or she has the flexibility to do so (Babbie, 2004, p.300). However, semi-structured interviews are better suited for this study, as they have much of the freewheeling quality of the unstructured interviewing, but are also based on the interview guide which can ensure that all of the objectives are sufficiently covered.

It is also important to note "there is nothing at all informal about unstructured (or semi-structured) interviewing, and nothing deceptive, either. You sit down with another person and hold an interview. Both of you know what you're doing, and there is no shared feeling that you are just engaged in pleasant chit-chat." (Bernard, 2000, p.190) There is a danger with semi-structured interviews that respondent's awareness of what's going on might affect his/her responses. Moreover, the danger of the informal interviewing is that data collected might be inconsistent

and hard to compare between interviewees. While semi-structured interviews are based on a clear plan and achieving research objectives, they still allow respondents to open up and express themselves.

Besides questionnaires and semi-structured interviews, researcher observations were recorded. "The greatest advantage of the field research method is the presence of an observing, thinking researcher on the scene of the action" (Babbie, 2004, p.303). Observation notes include both empirical observations and researcher's interpretation of them. "In field research, observers can play any of several roles, including participating in what they want to observe" (Babbie, 2004, p.285). The roles can vary anywhere from full participant, in which case the researcher fully participates in the activity without respondents' awareness of his role as a researcher, to complete observer, who doesn't engage in social interaction/activity and makes observations from a distance. In the case of this study, researcher assumed the role of participant-observer, which lies somewhere in between the two extremes described above.

Researcher was participant in the activities, but respondents were also aware of his role as a researcher. Most observations were made about informants who participated in the interviews. As they were interviewed by the researcher, they were full aware of his research role. The main difference between information collected in an interview and through participant-observation was in the comfort level of the informants. During the interview some informants might not feel as comfortable and because of that try to answer in a way that they believe is desirable. Observations were made in a more comfortable environment for the informant, as the informant and the research were on the same level, participating in the activity, rather than assuming roles of interviewer and interviewee.

## Data Analysis

Questionnaire data will be analyzed using quantitative analyses, "the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect" (Babbie, 2004, p.396). For open-ended questions in the survey code categories will be created, so that data can be quantified. For example, all winter recreation locations specified by the participants will be coded so that frequency of most commonly mentioned locations can be measured. Univariate analysis will be performed on demographic data for the purpose of description of the population surveyed. Bivariate analysis will be performed to make comparisons between different groups (cross-country skiers, back-country skiers and ice climbers). Some multi-variate analyses will be performed to examine relationships among several variables. For example, the effects of age, education, and gender on one's attitude towards parks management might be examined.

Qualitative analysis has been defined as "the non-numerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships" (Babbie, 2004, p. 370) and will be performed on the interview data. Qualitative analysis can help in discovering patterns (Bernard, 2000; Babbie, 2004), which is one of the objectives of this study. Furthermore, performing statistical/quantitative analysis on a small data sample, which is not representative of any greater population, will not be of much significance.

All the interviews will be transcribed first, which will make data available in a text format. Data will be coded next.

> The key process in the analysis of qualitative social research data is coding – classifying or categorizing individual pieces of data – coupled with some kind of retrieval system.

> Together, these procedures allow you to receive materials you may later be interested in. (Babbie, 2004, p. 376)

This study will utilize open coding, which implies that the researcher suggests the codes (Babbie, 2004, p. 377). Therefore, one of the first tasks will be careful analysis of the data to help determine appropriate codes in order to explore all the research objectives. Once the codes are established retrieval of the appropriate data will be made easier by utilizing NUD*IST software. Memoing, writing memos that become part of the data for analysis (Babbie, 2004, p. 379), will be another source of data analyzed with NUD*IST.

As the important variables emerge, concept mapping will be used to determine their interrelations. Using concept mapping by graphically displaying concepts and their relations can be useful in the formulation of a theory (Babbie, 2004, p. 381). Concept mapping will also help in uncovering patterns, as relationships between variables become clearer (Bernard, 2000). The questionnaire data will also be used in concept mapping stage.

# Results

## Demographic Information

### Age

As it was expected, people participating in the Hard Outdoor Activities, ice climbing and back country skiing, were a lot younger on average than people participating in the Soft Outdoor Activities, x-country skiing and snowshoeing. As it can be seen from the graphs below, blue slice of the pie, which represents age range from 20-29, is significantly bigger for the Hard Outdoor Activities and represents approximately half of all participants in those activities. In fact more than 75% of the people participating in the Hard Outdoor Activities are below the age of 40. On the other hand majority of Soft Outdoor Activities participants are between the age of 40 and 69, with nearly 70% being over the age of 40 for x-country skiing and nearly 50% for snowshoeing.

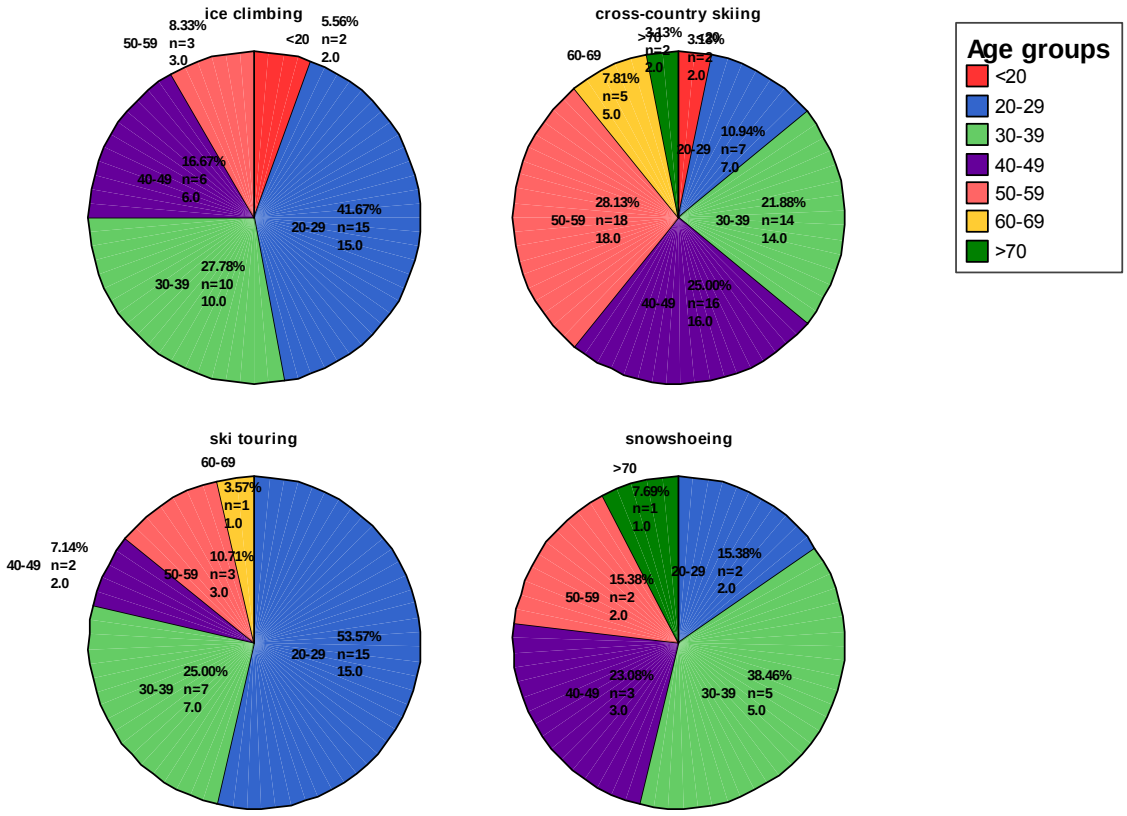


**Figure 1 - Age distribution per activity**

## Gender

When it comes to gender distribution, cross country skiing had an almost even split between males and females participating in the activity. Ski touring was slightly male dominant with a 60/40 split. A significant difference was noted with ice climbing, where 80 percent of the participants in the study were male. This number is probably not entirely representative of the overall population of ice climbing participants, as the researcher purposefully looked for female participants in order to get their perspective as well. This means that ice climbing is probably even more male dominant than the graph below shows. Snowshoeing was a bit more female dominant with approximately 70 percent of participants being female.

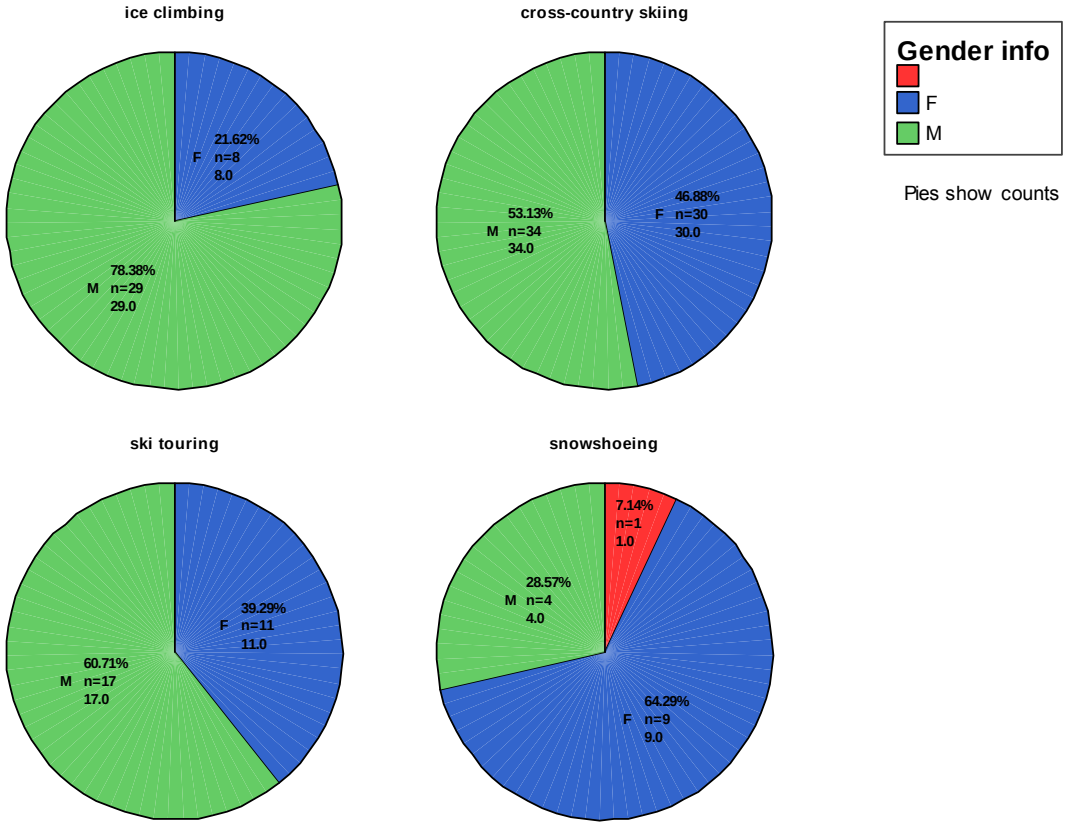


**Figure 2 - Gender distribution per activity**

## Employment status

Overall more than 80 percent of the people were either employed or self employed, with another 9 percent being retired. Less than 4 percent of the participants were unemployed, and all of them were either stay at home parents, or recent graduates taking the time off to travel. Slightly over 4 percent of the participants were students.

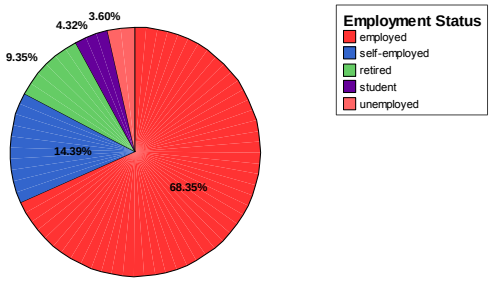


**Figure 3 - Overall employment status**

It's interesting to note that ski touring had the highest percent of students, while cross-country skiing had the highest percent of retired people. This is somewhat representative of age distribution. However, while ice climbing also had a fairly young population, it also had the highest employment rate (~90%). This can possibly be attributed to the high cost of climbing equipment. Snowshoeing seemed to be more popular with stay at home parents, hence the higher unemployment rate

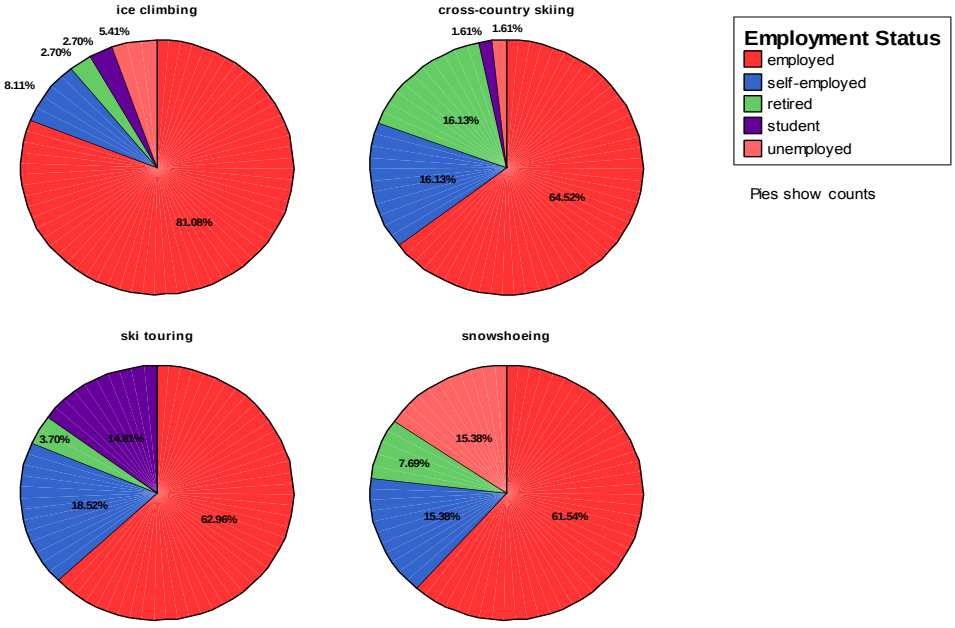


**Figure 4 - Employment status per activity**

**Where are our visitors from?**

As it can be seen on the map below, majority of the visitors are from North America. The only other visitors participating in the activities studied include Europeans and Australians. Most of the European visitors are from the Western Europe, with particularly high numbers from Belgium and Switzerland. It is interesting to note the lack of Asian visitors. This is not to say that they don't come to the Parks during winter months, but rather that they do not participate at the activities that were studied.

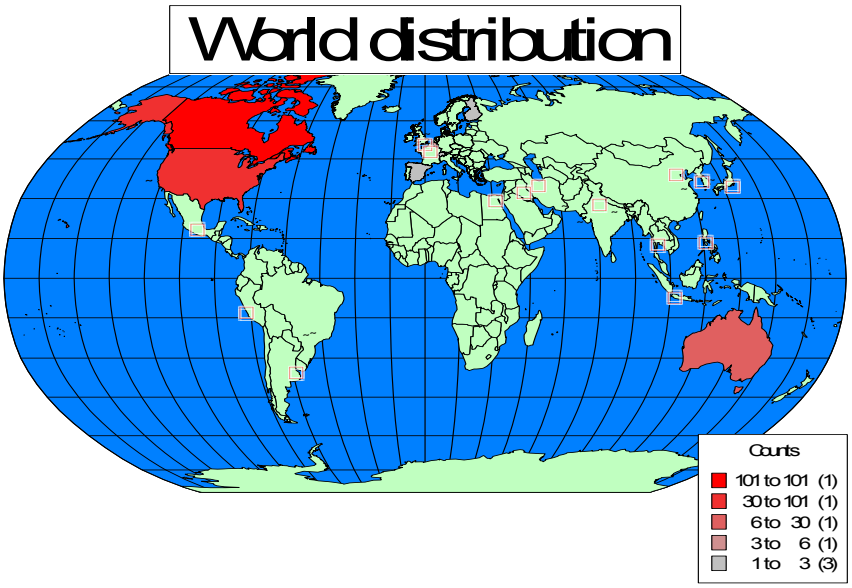


**Figure 5 - Overall World Distribution**

Most of the Canadian visitors are locals living between Golden and Calgary, which explains high numbers for Alberta and British Columbia. Other than that it is interesting to note high number of visitors from Quebec, and the lack of visitor from the Northern Territories, Manitoba and Maritime Provinces, with the exception of Nova Scotia.

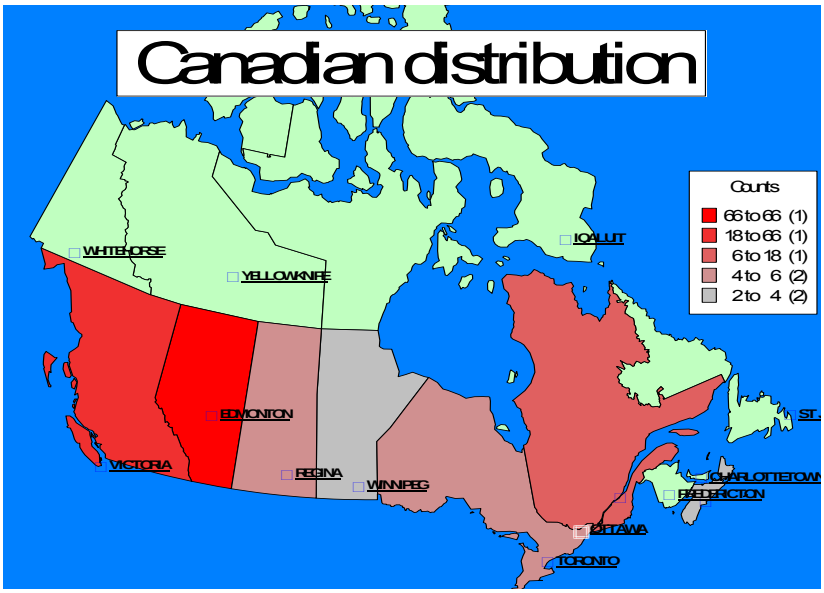


**Figure 6 - Overall Canadian Distribution**

Most of American visitors come from the Western United States (California, Washington, Oregon and Utah). It is also interesting to note particularly high number of visitors from Massachusetts.

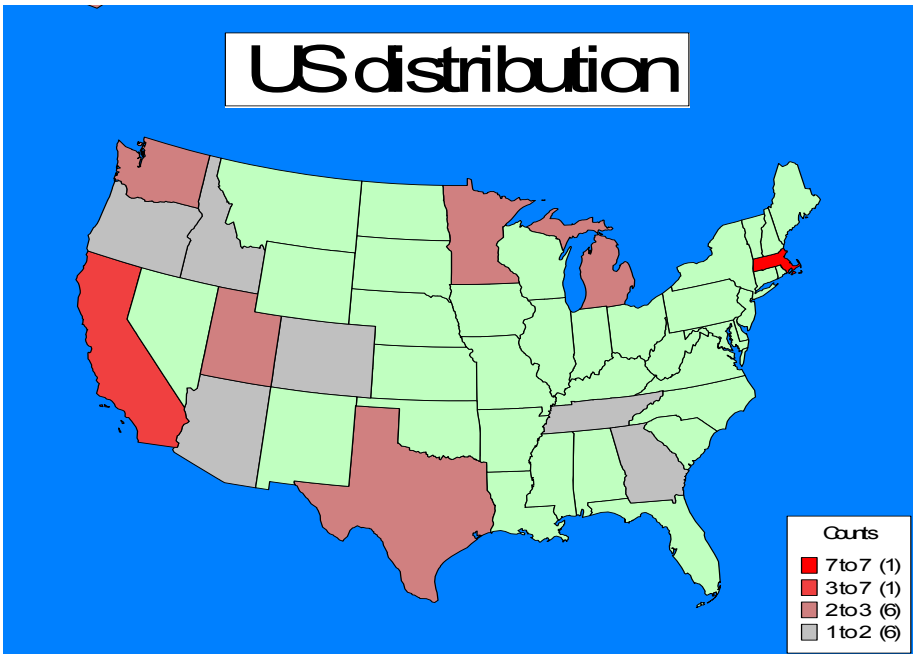


**Figure 7 - Overall US Distribution**

## Winter Day Use Counter Summary

There were a total of 22 infrared counters set up on various day use trails. Out of those 22 counters 11 counters were set up on cross country ski trails at the following locations: Emerald Lake, Emerald Lake Loop, Moraine Lake, Lake Louise Campground, two on Spray Loop, Great Divide, Pipestone, Fairview, Cascade Fire Road, and Boom Lake.
Seven counters were set up on back country ski trails: Halfway hut (Skoki), Hidden Lake (Skoki), Boulder Pass (Skoki), Mosquito Creek, Bow Summit, Lake O'hara, and Sherbrooke Lake.
One counter was set up at Haffner Creek to measure ice climbing traffic in the canyon.
Three of the counters were set up on multi-purpose trail: Yoho Valley Road, Paint Pots and Bow Lake.

Busiest cross-country ski trails were close to town sites. Around Banff, both Spray Loop and Cascade Fire Road were busy trails with an average of over 1000 people using the trails per month. Around Lake Louise, Pipestone, Fairview, and Great Divide were particularly busy trails also averaging around 1000 people per month. High number in the Lake Louise campground is deceiving, as most of the counts occurred late in the season (April - 4253 counts) after the snow was gone. Most of those counts in April are walkers, as that's one of the more popular areas with locals to walk their dogs. Furthermore, Moraine Lake trail, or at least part of that trail, was used more than the counter indicated. Counter was strategically set up past all the loop junctions in order to count traffic going straight up and down Moraine Lake Road. However, a lot of people would start Fairview Loop at Moraine Lake parking lot and turn off before they reached the counter.

When it comes to back country skiing, Lake O'hara received a lot of traffic, with over 500 people per month. Although majority of people skiing into Lake O'hara did dome some sort of back-country touring (mostly light touring), there was also a portion of cross-country skiers captured in that count. High number of visitors to this area might be due to the convenience of the hut, which stays open all year round. Bow Summit was the highest used back country ski area that doesn't have the convenience of a hut. Due to its high elevation (above 2000m) high levels of precipitation, and relatively low avalanche risk, Bow Summit was a popular choice with people wanting to tour for a day. On average more than 300 people would explore the area per month. Most of the people here would come on the weekend from nearby major centres, like Calgary and Edmonton. Bow Summit numbers are probably even higher, as it is hard to capture everyone due to multiple paths. For most of the season, there was an established way up, which made it a convenient place for the counter. However, with heavy snow fall in April, network of trails increased and so did the number of users (from participant observation), but the number of counts decreased as the way up was in a different place after each snowfall.

Appendix C – Winter Day Use Summary provides a more detailed summary of all the counters.

## Cross-country skiing

### Survey locations

As already indicated in the methods section, convenience or haphazard sampling technique was used to select participants for surveying. Moraine Lake was the main surveying place for the Lake Louise area, Cascade was the main surveying place for the Banff area and Emerald Lake was the main surveying place for the Yoho National Park. Surveys at other locations were done opportunistically, whenever the researcher happen to be in the area checking the counters. Figure below show all the survey locations and their numbers.

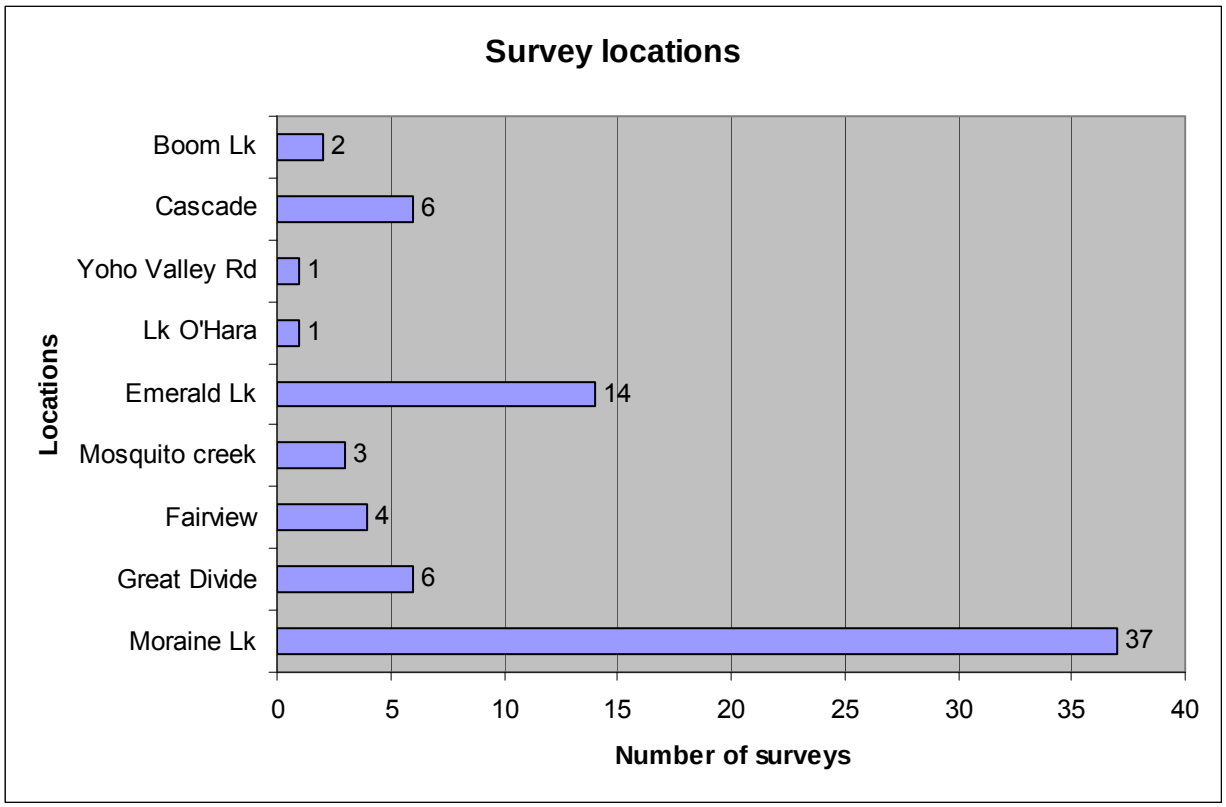


**Figure 8 - x-country survey locations**

**What other places do cross country skiers go to and what other activities do they do?**

Figure below shows all the different places within National Parks that cross-country skiers go to. Town sites, like Jasper, Banff and Lake Louise are the most frequently visited places by cross-country skiers. They seem to prefer convenience of a town site. Yoho, is the only other category that stands out significantly. It's interesting to note that to most of them Yoho as a whole is seen as destination. This could be due to the smaller size of Yoho National Park.

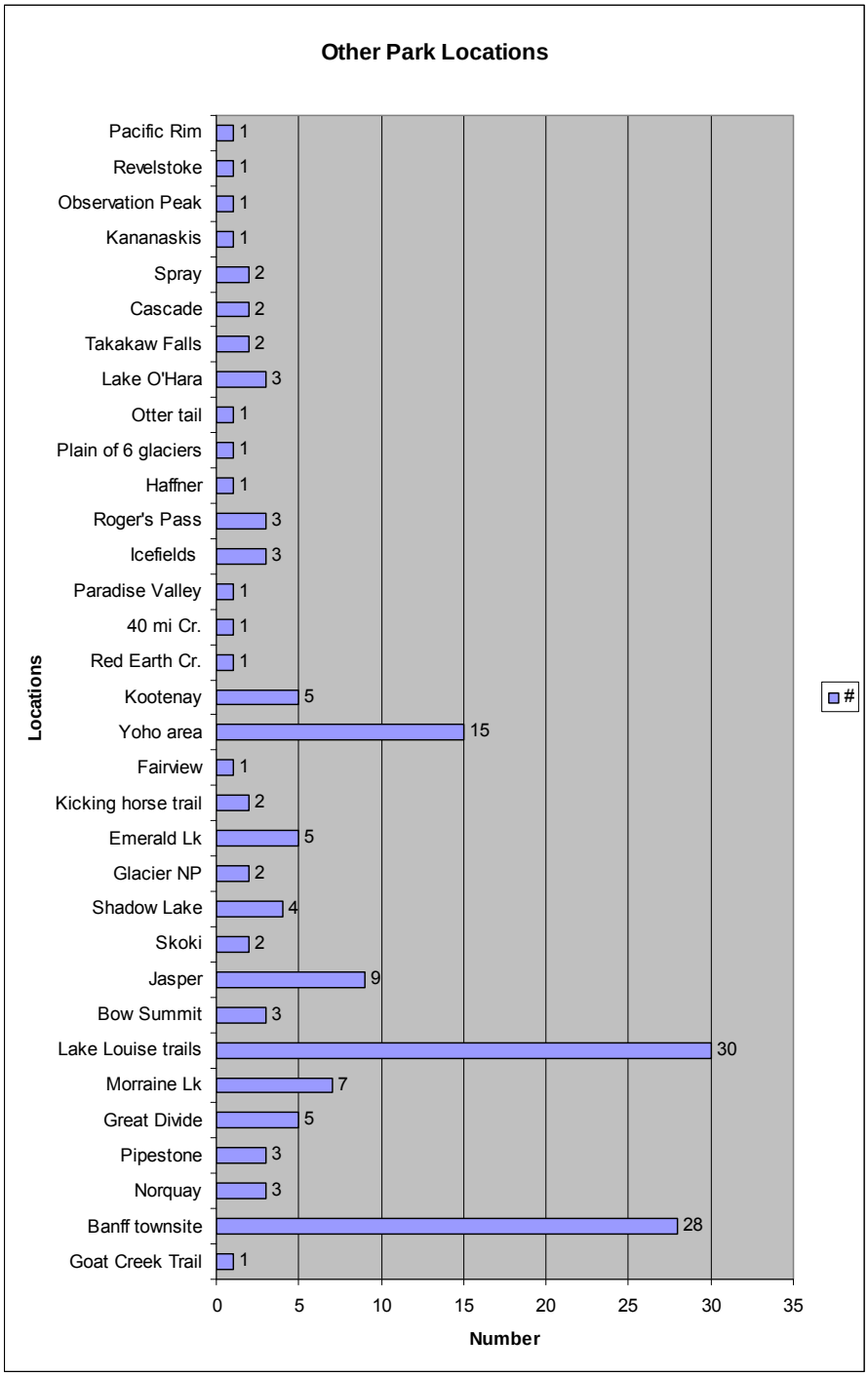


**Figure 9 - x-country skiers other locations**

When it comes to other activities enjoyed by cross-country skiers, it is a mix of other soft outdoor activities, such as snowshoeing and other ski related activities, such as downhill skiing and ski touring – they constitute more than 90% of all other activities. See figure below for a more detailed breakdown.

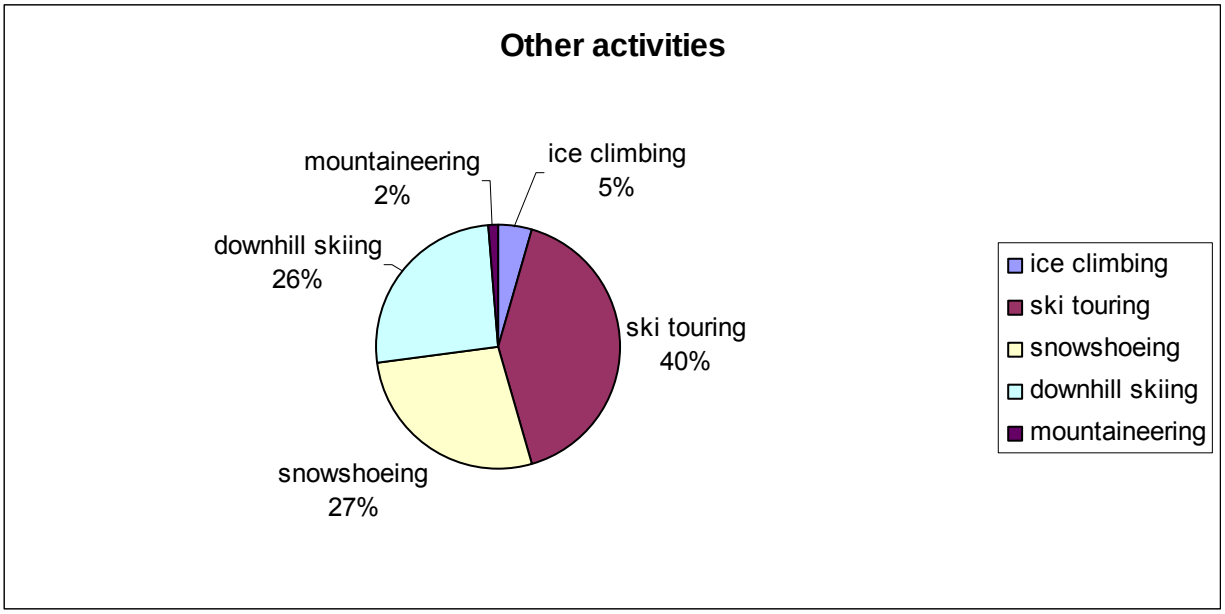


**Figure 10 - x-country skiers other activities**

## Trip Planning

Where people come from and whether they decide to spend the night in the National Park can be an indicator of the type of experience that people are looking for. Do they just see Parks as recreational playground, or are they looking for a more fulfilling experience?

Albertans living outside of Calgary don't seem to spend any time within the Parks. However, almost half of Calgarians, which is also the greatest chunk of visitors, decide to overnight in Parks. Also, while only 16 percent of cross-country skiers live within the Parks' boundaries, nearly 60 percent overnight within Parks. Most of these visitors come from far away places, like Eastern Canada, US, and Australia and Europe. It's also interesting to note relatively small percentage of Europeans that come to Parks to participate in cross-country skiing.

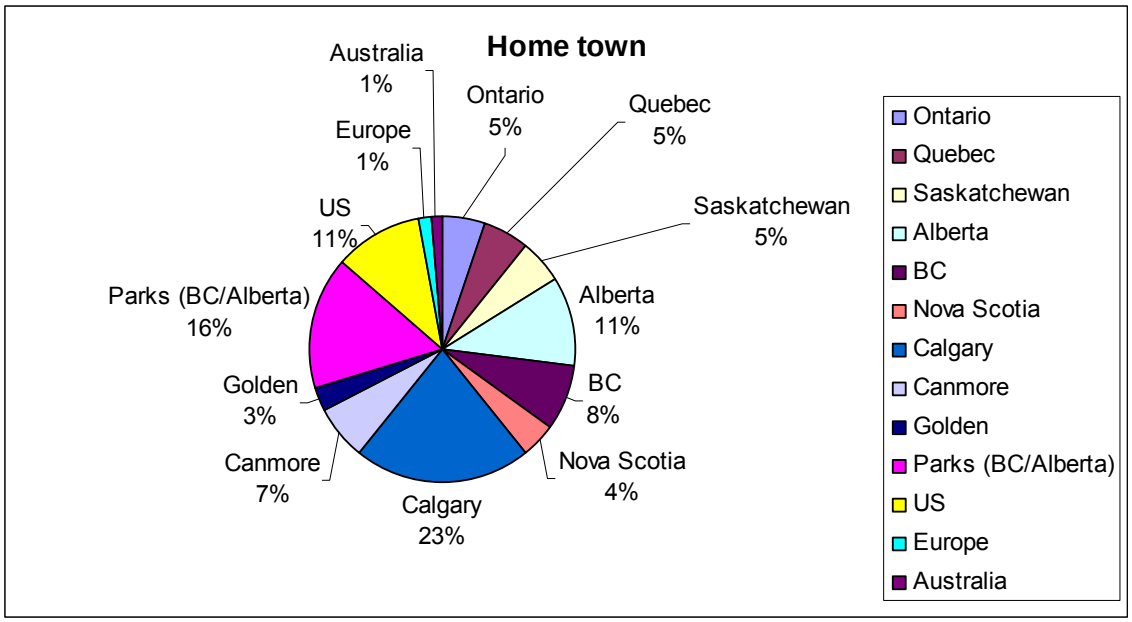


**Figure 11 - x-country skiers home towns**

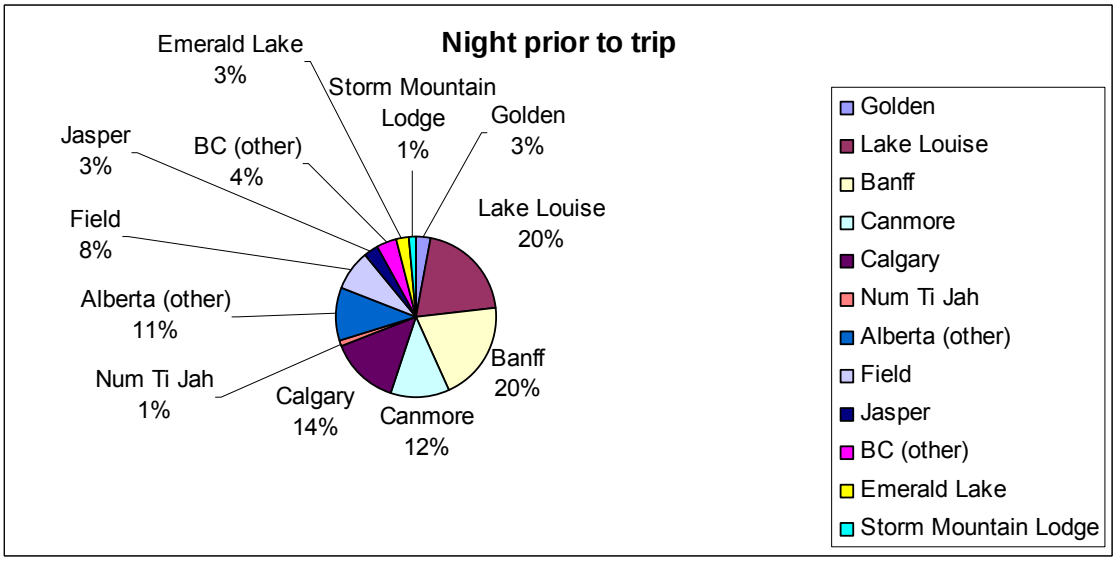


**Figure 12 - x-country skiers prior night stay**

Most of the visitors that were participating in cross-country skiing prefer to come during the mid season. Most people stated that that's when the best snow conditions were, and if they were coming from further away, mid season is the time of the year when the conditions are "guaranteed". Late season numbers are probably slightly higher than realistic numbers. The reason for this is that most of the surveys were conducted in the Lake Louise area, which is known to have a longer season than Banff and other areas. A lot of the Banff and Canmore locals would come to Lake Louise late in the season for this reason.

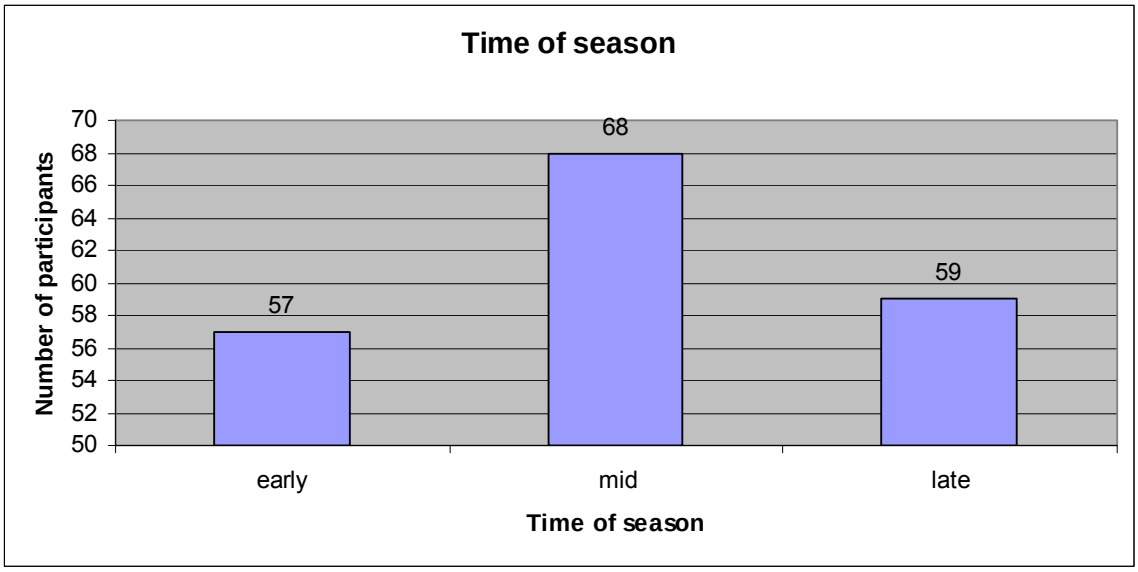


**Figure 13 - x-country ski time of season**

While out on the trail most of the people would spend between one and three hours, although significant number would spend even longer. Quite a few people mentioned that they would stay out longer if there were better facilities, like warming huts or loop trails, rather than up and down kind of trails.

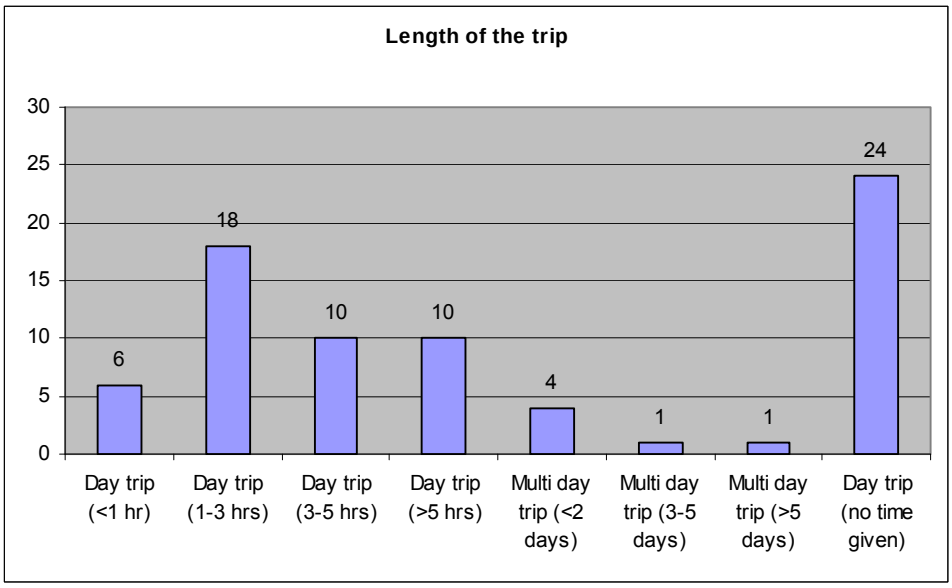


**Figure 14 - x-country ski length of trip**

Figure below represents total number of participant days spent in the area. Participants were asked to place themselves within the range, hence the low and high estimate for the number of days. Once again, it is noticeable that cross country skiers prefer to stay closer to major centres.

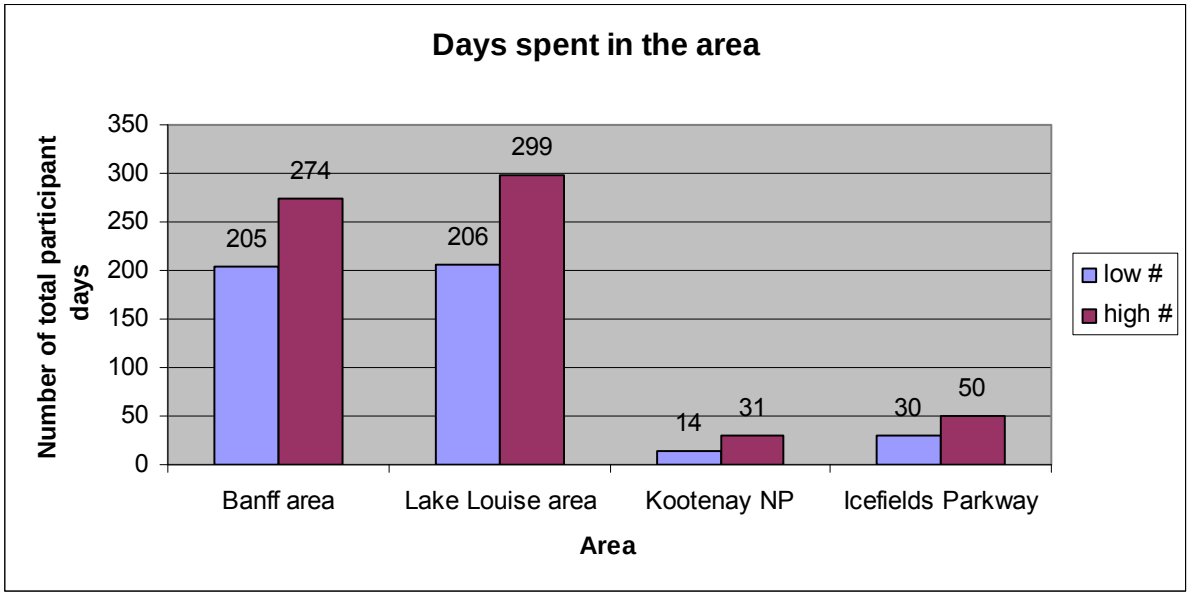


**Figure 15 - x-country skiers days spent in the area**

Most cross-country skiers are spontaneous planners. A lot of the locals would decide whether to go skiing based on that night's snowfall, or grooming information the morning of the activity. However, those that come from further away would plan well in advance and will usually come during the mid-season.

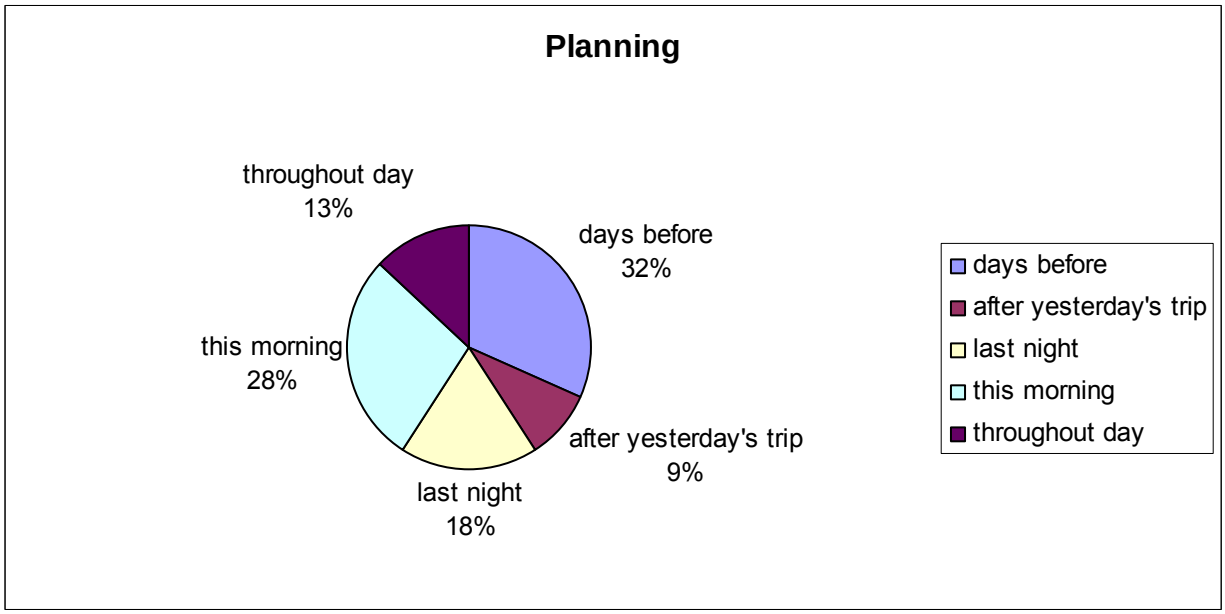


**Figure 16 - x-country skiers planning**

Unlike ice climbing and back country skiing, cross-country skiing has a high number of solo participants (19%). In general, most people (85%) cross-country ski in a group smaller than 3.

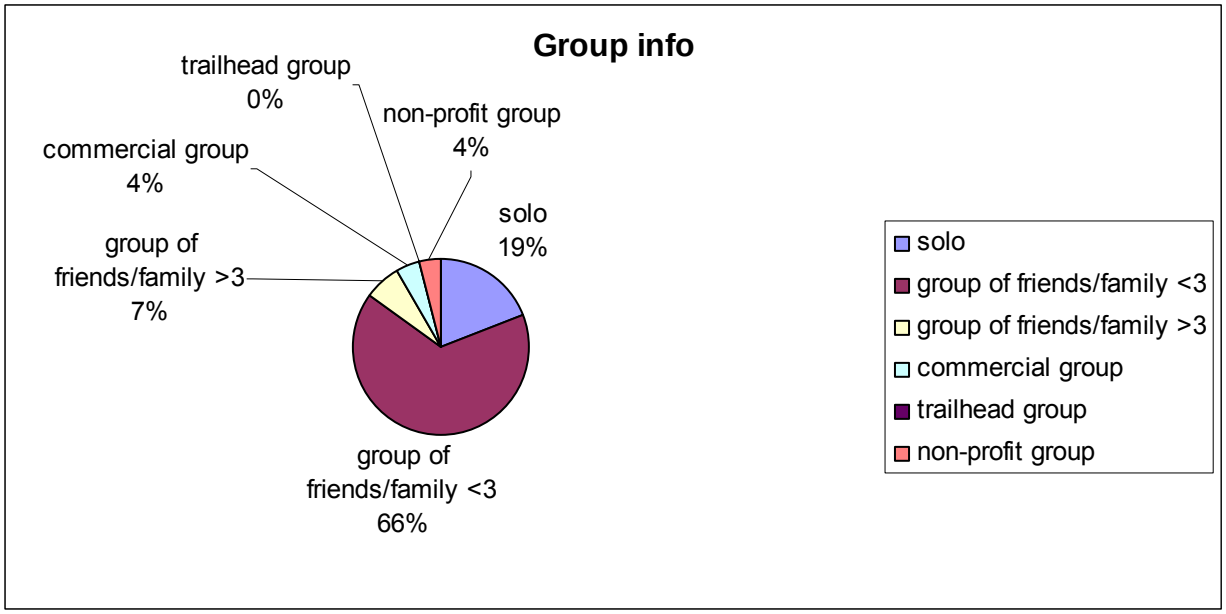


**Figure 17 - x-country skiers group information**

**Management Perceptions**

Overall cross-country skiers were very satisfied with the management of National Parks (88%). However, there were some common concerns and areas they thought could be improved when it comes to management of cross-country ski trails. In particular, trail maintenance and maps and signage for the trails were the biggest concern. Figure below shows some of the comments sorted according to different categories over which concern was expressed.

| Amenities | Services | Trails | Cost | Maps & Signage | Miscellaneous |
|---|---|---|---|---|---|
| Bench at the end of the trai (Moraine Lk) | Rentals/Instruction. | Track set too narrow. | Cheaper rooms for family in Lake Louise | Perhaps more available maps to take. | Girls in bikinis. |
| The Emerald Lake washrooms. | Access to x-country trails - Minewanka has no shuttle service. Trail signs on Whitehorn loops. It's more car oriented than I would like to see. | No walkers on trail. | Reduce cost of Park fees. Want park to be used by as many people. | Distance on signs would help, not just name. | |
| Better washrooms. | | Good job track setting. Groom more often. | No Park fee. | More maps at trailhead. | |
| Better washrooms. (Emerald) | | Groomed trails (Cascade), hot chocolate & baileys. | | Better x-country ski maps. | |
| Improved outhouse (Mosquito Creek) | | More trail grooming. | | Signs should have distance markers. | |
| Washrooms (Emerald Lake) | | More frequent track setting. No walking on trails | | Signs should have distance markers. | |
| | | New skidoos for track setting (warden). | | Signage that gives distance. Snow condition report at hotels in the area. | |
| | | Improve ski trail grooming. | | Signage on trails with distances. | |
| | | More trails groomed. | | | |
| | | Groom trails (Boom Lk) | | | |
| | | Good job track setting. Groom more often. | | | |
| | | Some trails not tracked (1A) | | | |
| | | Track set more often. | | | |
| | | Better track set at Emerald Lake | | | |

**Figure 18 - x-country skiers management perceptions**

**Motivation for participation in the activity**

Staying fit over winter is the most common motivating factor for most of the cross-country skiers. Some of them even use cross-country skiing as cross training for other sports. However, cross-country skiing can not simply be narrowed down to fitness training. As some of the participants pointed out, "you can go to the gym and stay fit". Cross-country skiing is about the holistic experience – it's fitness in combination with being outside in the nature, enjoying social aspects (whether it's racing partners, or family outings) or peace and quiet.

| Fitness | Being out | Pleasure | Cost | Race |
|---|---|---|---|---|
| Used to run a lot. Skiing easier on the body. | Happy when here. | Like social aspect | Downhill too expensive. | Like to race. |
| To get exercise. Have a bad leg, so biking and hking are almost impossible. | Like getting of the path. Like coming to mountains. | For pleasure. | | Slowly getting more ambitious. Doing 50km races. |
| Did it with some friends for extra training for mountain biking. | Avenue to get into back country. | Looking for activity with a downhill part without the hussle and bustle of it. | | Skied across Finland – international event.. |
| To get in shape, cycle in the summer and x-country ski in the winter. | To get out. | Love peace and quiet. | | Like Moving fast on snow, but races not as thrilling any more. |
| Nice to get exercise. | Love the scenery. | Never understood it. Had terrific first experience and I've come to like it more. | | |
| To get fit. | Just love the mountains, love this area. | Don't like too many people around that downhill attracts. | | |
| To keep fit. | | | | |
| Good way to be active. | | | | |
| See it as form of alternative exercise. | | | | |

**Figure 19 - x-country skiers motivations**

# Ice climbing

## Survey locations

Haffner Creek was the primary survey area for ice climbing, as you could guarantee to find ice climbers there. Haffner Creek is considered by many to be an equivalent of a climbing gym for ice climbers, hence the high survey number for that area. Photo below testifies to that. Weeping Wall is another very popular ice climbing area that is easily accessible with a good likelihood of finding ice climbers.

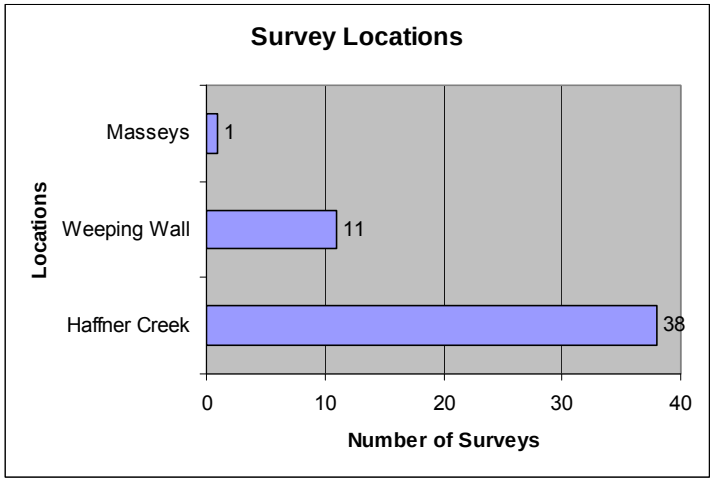


**Figure 20 - ice climbing survey locations**

**What other places do ice climbers go to and what other activities do they do?**

Figure below shows all the different places within National Parks that ice climbers go to. Unlike with cross-country skiing, ice climbers were a lot more specific with the locations that they like going to. Furthermore, it is noticeable that a lot of the more popular ice climbing areas, such as Icefields, Haffner Creek, and Weeping Wall are further away from the major centres. This is also very different in comparison to cross-country skiers who prefer to stay closer to town sites.

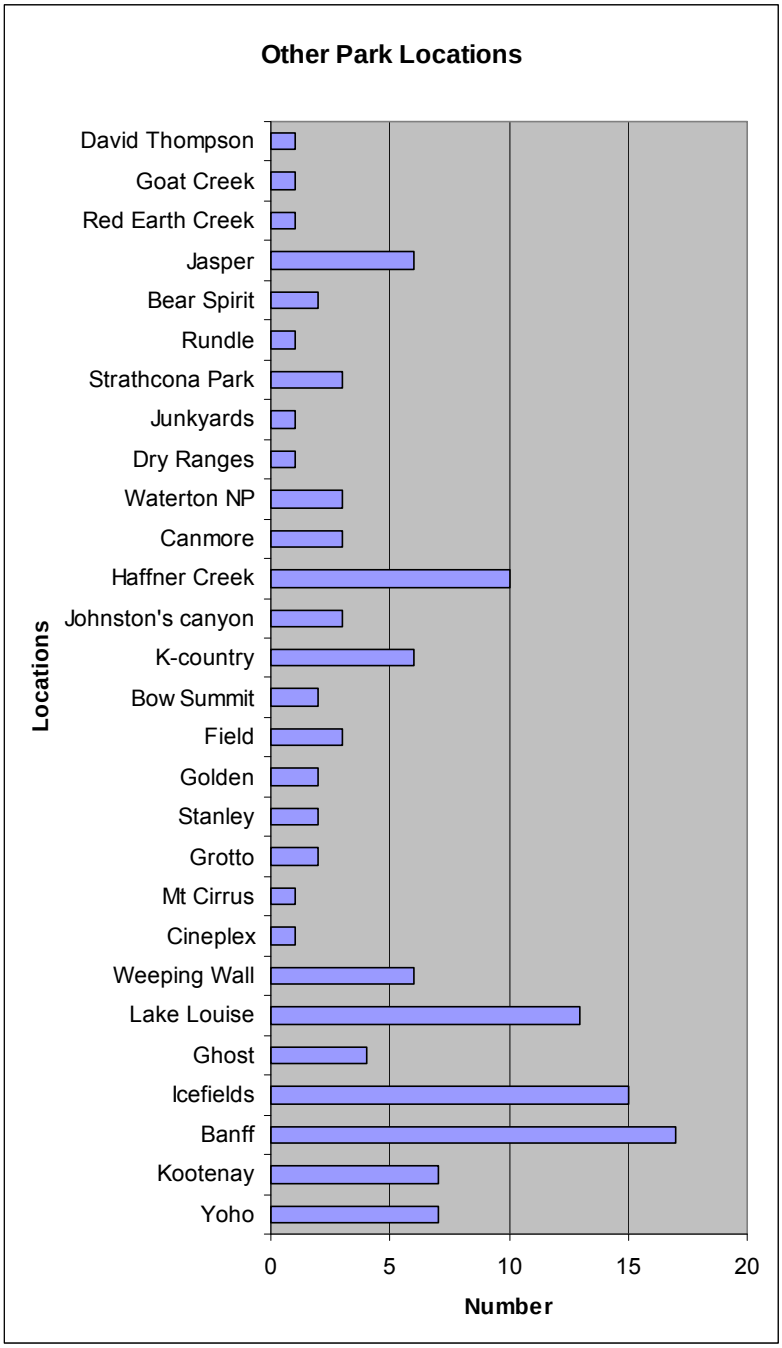


**Figure 21 - ice climbers other locations**

When it comes to other activities enjoyed by ice climbers, there is no clear pattern. Ski touring is the most popular second activity, but it is not enjoyed significantly more by ice climbers than it is by cross-country skiers. However, approximately 1 in every 4 ice climbers enjoy cross-country skiing, while only 1 in 30 cross-country skiers enjoy ice climbing.

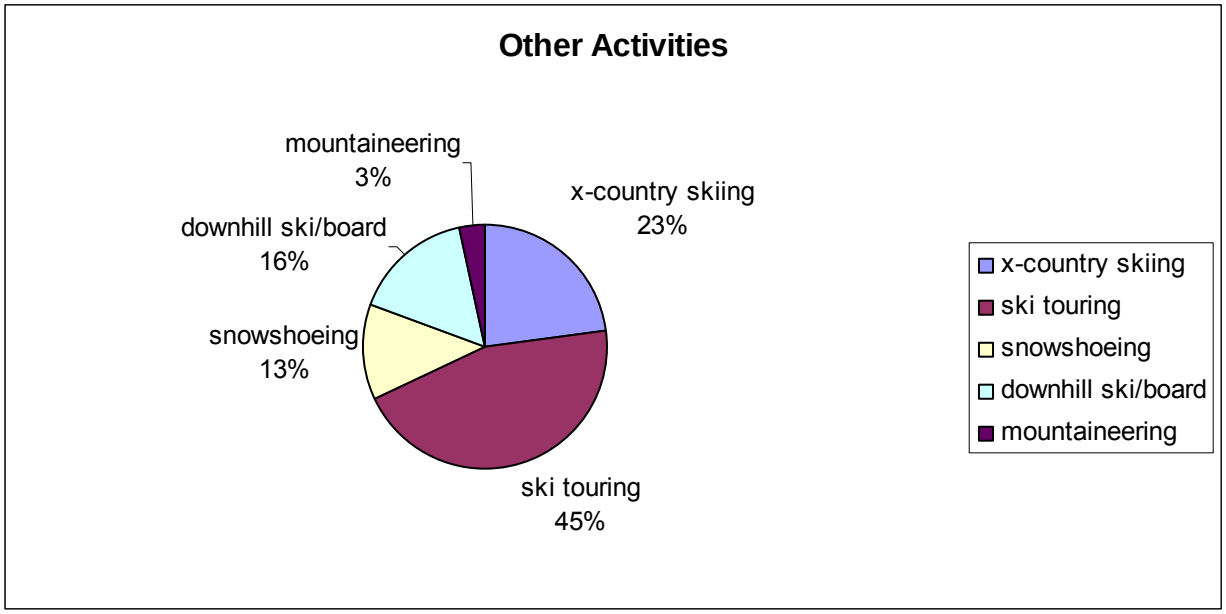


**Figure 22 - ice climbers other activities**

## Trip Planning

Where people come from and whether they decide to spend the night in the National Park can be an indicator of the type of experience that people are looking for. Do they just see Parks as recreational playground, or are they looking for a more fulfilling experience?

While most of the cross-country skiers were Canadians, over half of ice climbers were from outside of Canada. One reason for this might be due to the fact that Canadian Rockies are considered to be ice climbing Mecca. Most of the ice climbers were visitors from the United States (30%). There was also a strong European presence when it came to ice climbing (12%). It was also a bit of a surprise to see a low percentage of locals living within Parks boundaries (6%). Canmore and Lake Louise seemed to be a bit of hub for ice climbers. Most of them would use Canmore and Lake Louise as their base from where day would make day trips.

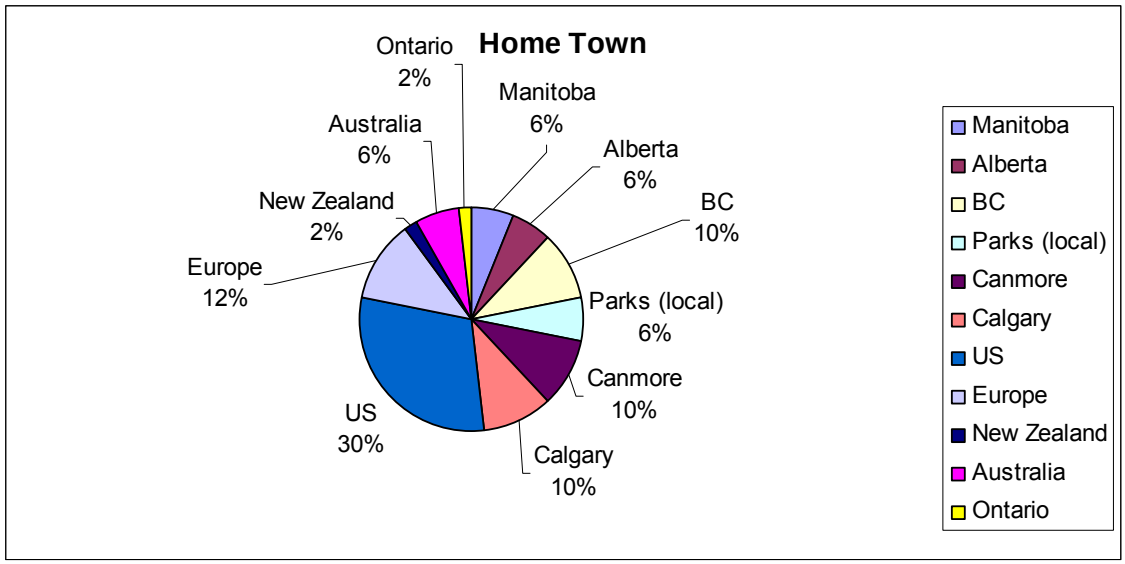


**Figure 23 - ice climbers home town**

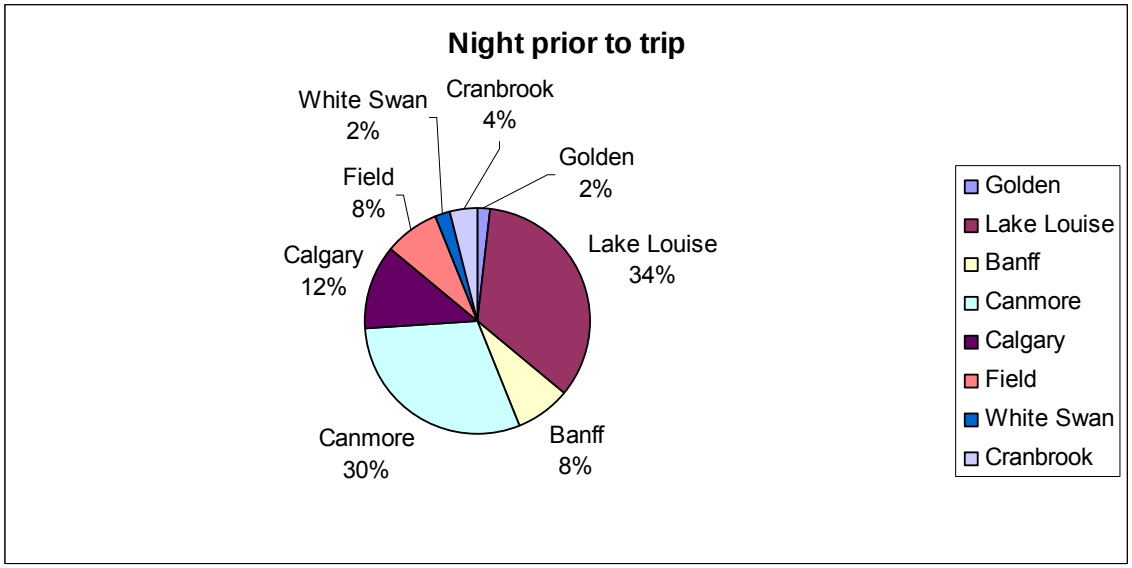


**Figure 24 - ice climbers prior night stay**

Once again most of the foreign visitors prefer to come during the mid season in order to guarantee good conditions for climbing. High number of all year round climbers is due to “local” population of ice climbers. Even though they might not be local in a sense that they live in Canada year round, a lot of people come to Canada specifically for the winter season in order to ice climb and back country ski.

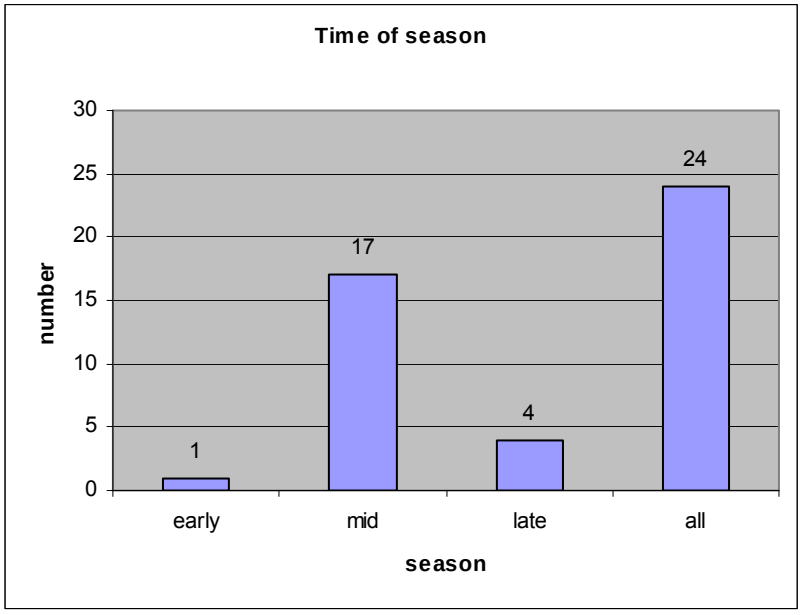


**Figure 25 - ice climbers time of the season**

Ice climbing can be a very time consuming activity, which is why it is not surprising that most people spend over five hours when they go out. All the shorter trips were in Haffner Creek, where it’s easy to drop in, set up a top rope, do a couple of climbs and leave.

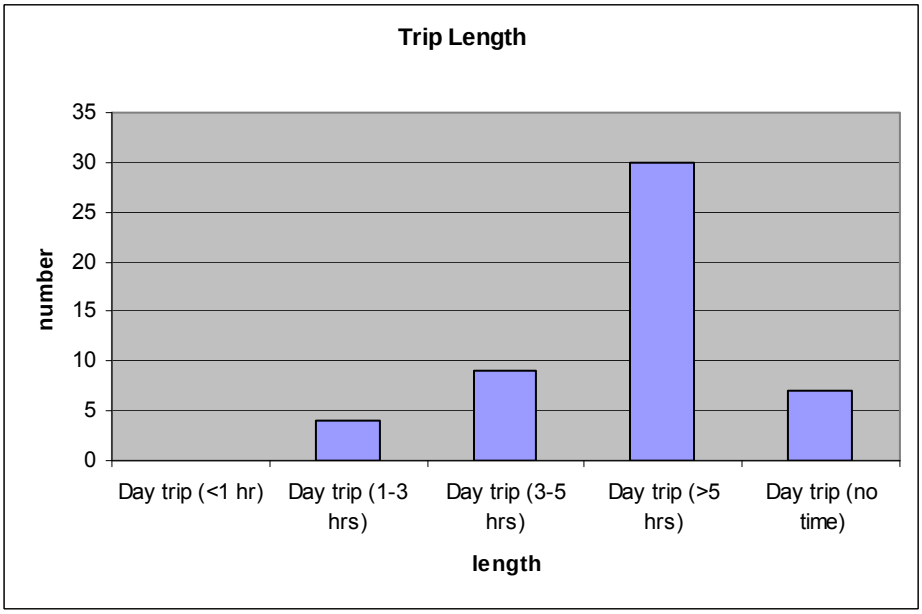


**Figure 26 - ice climbers trip length**

Figure below represents total number of participant days spent in the area. Participants were asked to place themselves within the range, hence the low and high estimate for the number of days. It is interesting to note that even though 50% more cross-country skiers were surveyed, ice climbers spend more total participant days in the National Parks.

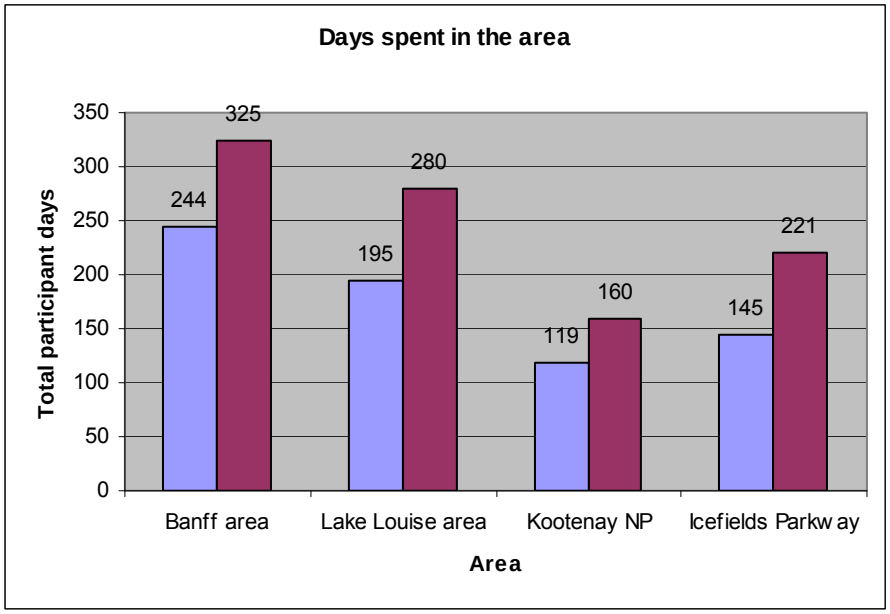


**Figure 27 - ice climbers days spent in the area**

Unlike cross-country skiers, ice climbers tend to plan a bit further in advance. This could also be due to the fact that ice climbers in general come from further away. However, a lot of them will plan based on the weather conditions as well as ice conditions.

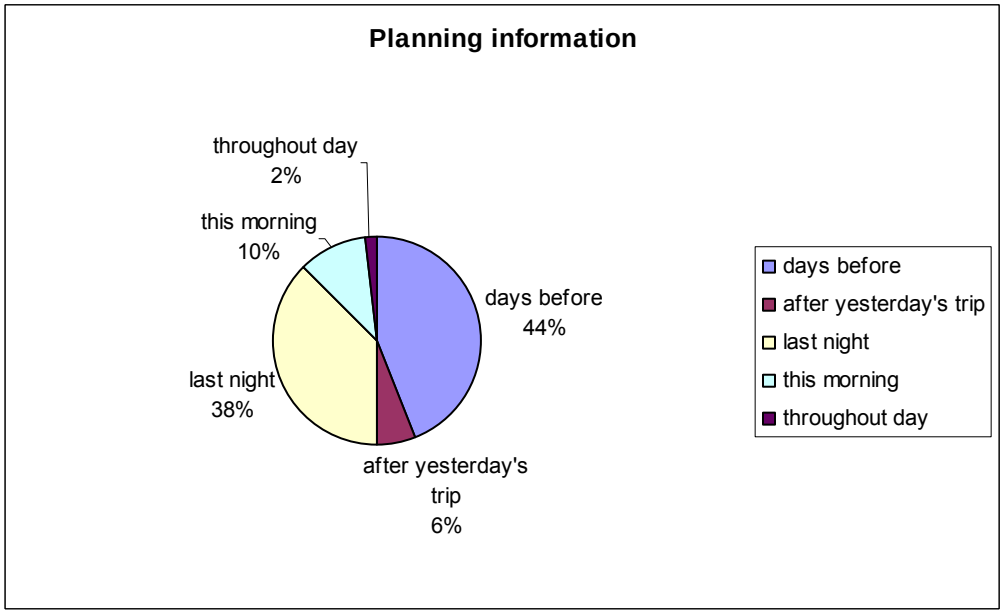


**Figure 28 - ice climbers planning information**

Ice climbing is usually done in pairs. However, due to the single pitch gym-like atmosphere at Haffner Creek, where most surveys were done, larger than typical groups can be observed.

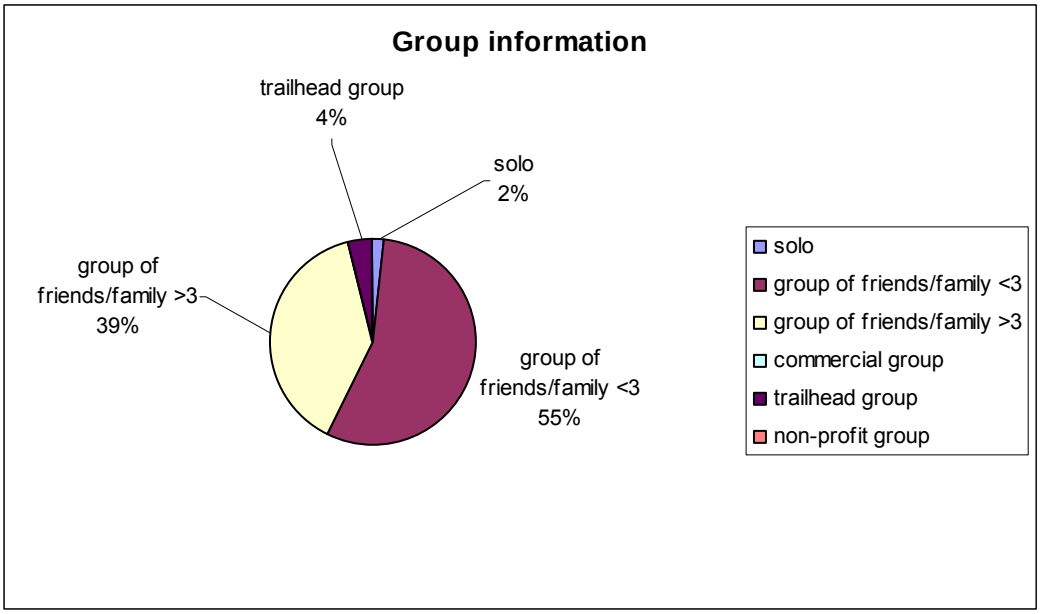


**Figure 29 - Ice climbers group information**

**Management Perceptions**

Ice climbers came across as very environmentally friendly and expressed concern with outhouses. They were very appreciative of the toilets put at Haffner Creek and suggested that more toilets be installed in other popular climbing areas. As most ice climbing areas are not very well known destinations they are lacking good parking spots or even pullouts. More pullouts along the Icefields Parkway and better road maintenance has also been suggested.

| Amenities | Services | Cost | Maps & Signage | Miscellaneous |
|---|---|---|---|---|
| Outhouses | Plow parking lot. | Less cost. | Signs to the Canyon. | Good services here. Good washroom to keep crap out of creek. |
| Outhouse cleanliness. | More modern comfortable hostel. | | Road signage. | Less ski resorts or at least don't make them bigger. This is beautiful. |
| Empty the outhouses. | Better road maintenance. | | Info about site | Easy to get information. Good rec. facilities. |
| Outhouses. | Several more pull out parking lots on Icefields. | | | Best park in the world. (been to French Alps & Japanese Alps and nothing compares) Keep pristine. Alpine club of Canada is benificiary. |
| Toilet. | | | | I'll be back. Best ice climbing ever. |
| Washroom. | | | | All the parks around here are very well maintained and beautiful. |
| No coat hanger in the bathroom. (Weeping Wall) | | | | Beautiful parks. Always fun to visit. |
| Men don't go to outhouse. | | | | Thanks. |
| | | | | Canada is great! (Alaska) |
| | | | | Cooler temperatures. |

**Figure 30 - ice climbers management perceptions**

**Motivation for participation in the activity**

A lot of the ice climbers are very goal oriented. They are looking for both mental and physical challenges. In their own words, they are looking to "do bigger things".

> "Motivation stays the same, but objectives change. They get bigger"

> "I like the difficulty of ice climbing and the mastery it requires. I need to fully apply myself."

Risk seems to be another motivating factor for some of the ice climbers, although they are divided on the issue. While some of the ice climbers find risk as necessary ingredient,

> "I get stimulated with the sense of adventure, and there has to be risk involved to have adventure."

> "It's fulfilling to experience risk and be able to manage it."

others find it to have the opposite effect.

> "I tend to avoid risk."

> "I like managing risk, but I don't like objective risk."

Being away from the crowds, enjoying the scenery and aesthetic climbing are some of the other motivational factors mentioned.

Another interesting observation was that more experienced climbers' motivations shifted from extrinsic towards intrinsic over the course of their career.

> "I tend to climb more for myself now."

## Backcountry skiing

### Survey locations

Bow summit was the primary and only regularly frequented survey area for back country skiers, as it is probably one of the most popular day use areas. The rest of the surveys were done opportunistically while the researcher skied in his own time, or while checking the counter in a particular area. In order to get some of the overnight traffic, surveys were conducted at different huts on Wapta Traverse route.

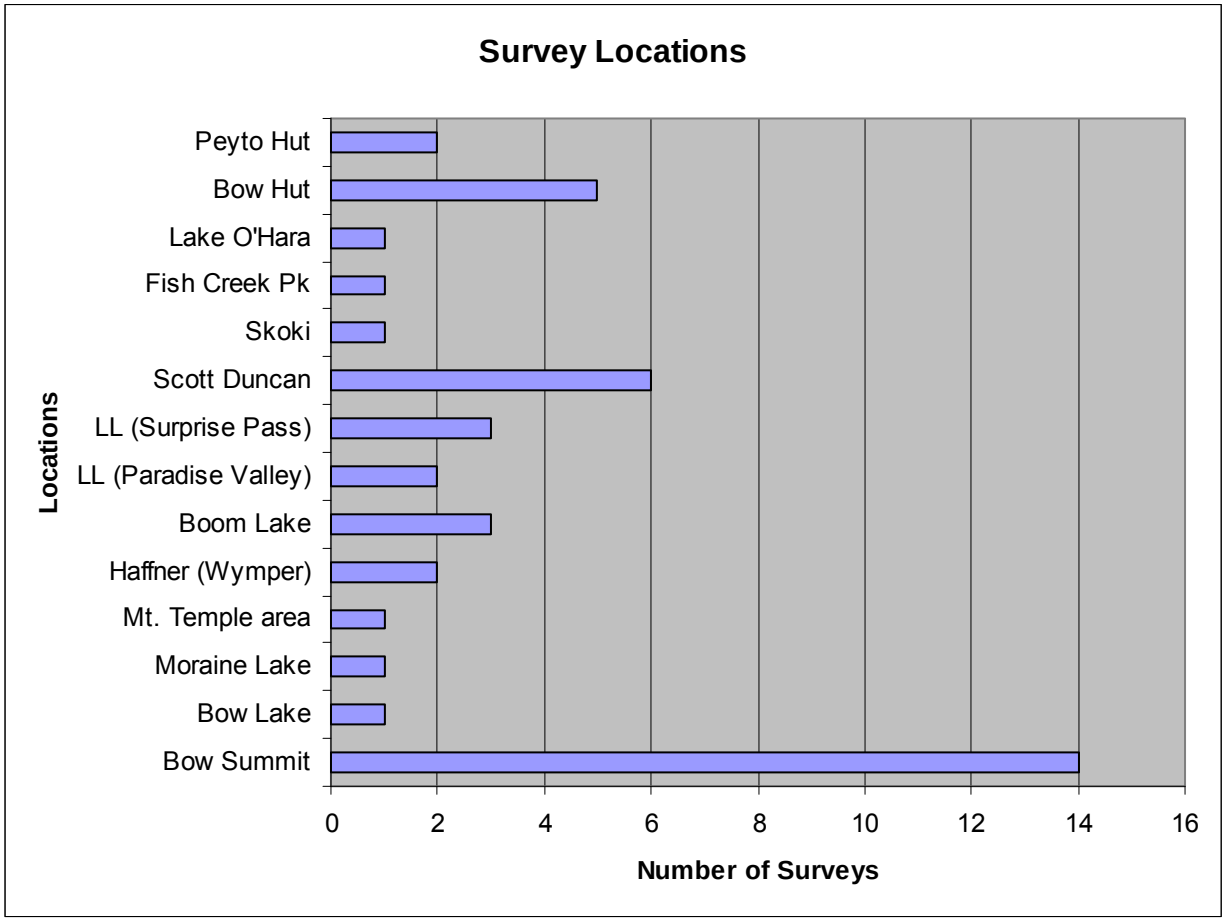


**Figure 31 - Back country skiers survey locations**

**What other places do back country skiers go to and what other activities do they do?**

Figure below shows all the different places within National Parks that back country skierss go to. Unlike cross-country skiers, and more similar to ice climbers, back country skiers were a lot more specific with the locations that they like going to. While they explore back country opportunities near town sites, they were also more likely to venture further in the back country to areas like Icefields Parkway.

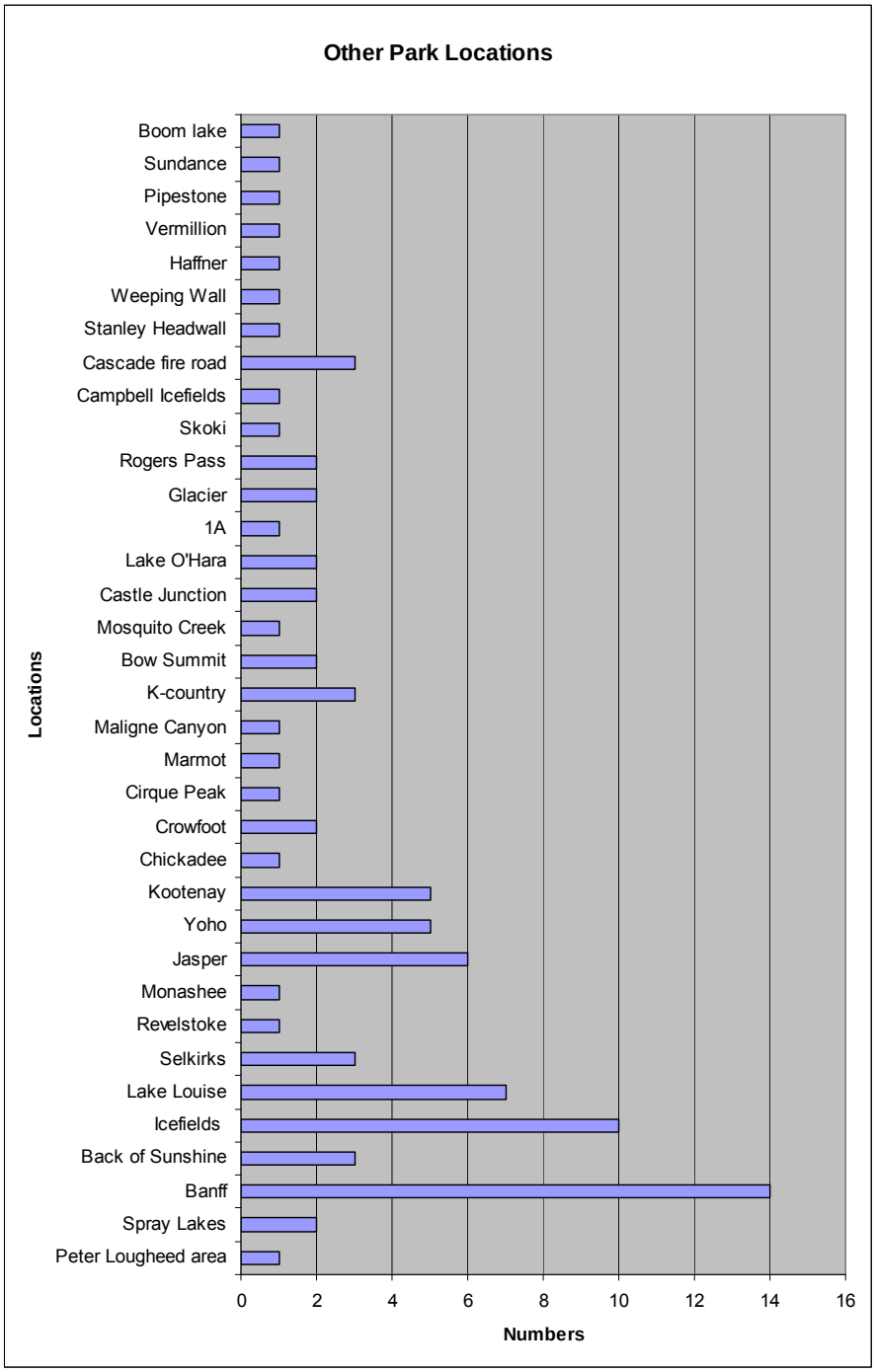


**Figure 32 - Back country skiers other parks locations**

Relatively high percentage of back country skiers participates in ice climbing. However, while downhill skiing is more similar to back country skiing than ice climbing or cross-country skiing, both ice climbers and cross-country skiers have higher rates of participation in downhill skiing. High cost of the back country equipment, as well as ski passes, could be one of the reasons why backcountry skiers don't participate in downhill skiing – it might the matter of choosing to invest the money in one activity or the other. Back country ski group also had the highest percentage of students, which can further justify the cost theory. Another explanation could simply be the preference in style of skiing.

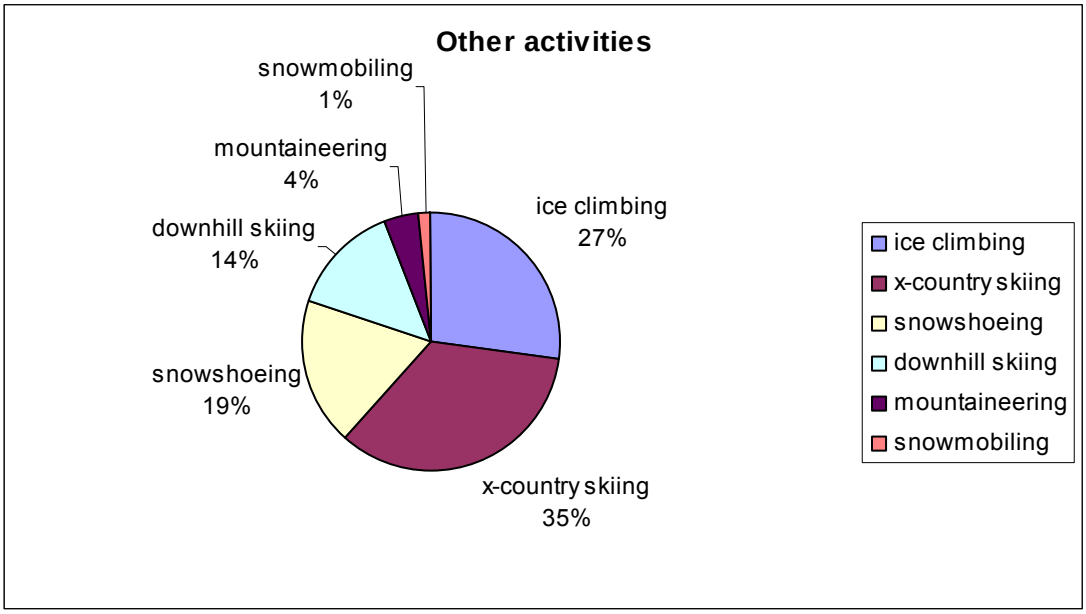


**Figure 33 - Back country skiers other activities**

## Trip Planning

Where people come from and whether they decide to spend the night in the National Park can be an indicator of the type of experience that people are looking for. Do they just see Parks as recreational playground, or are they looking for a more fulfilling experience?

Locals are very much involved in back country skiing (19%). In fact most (~80%) of the back country skiers come from within the few hundred kilometre radius. For back country skiing, Canmore and Banff seem to be a bit of a hub.

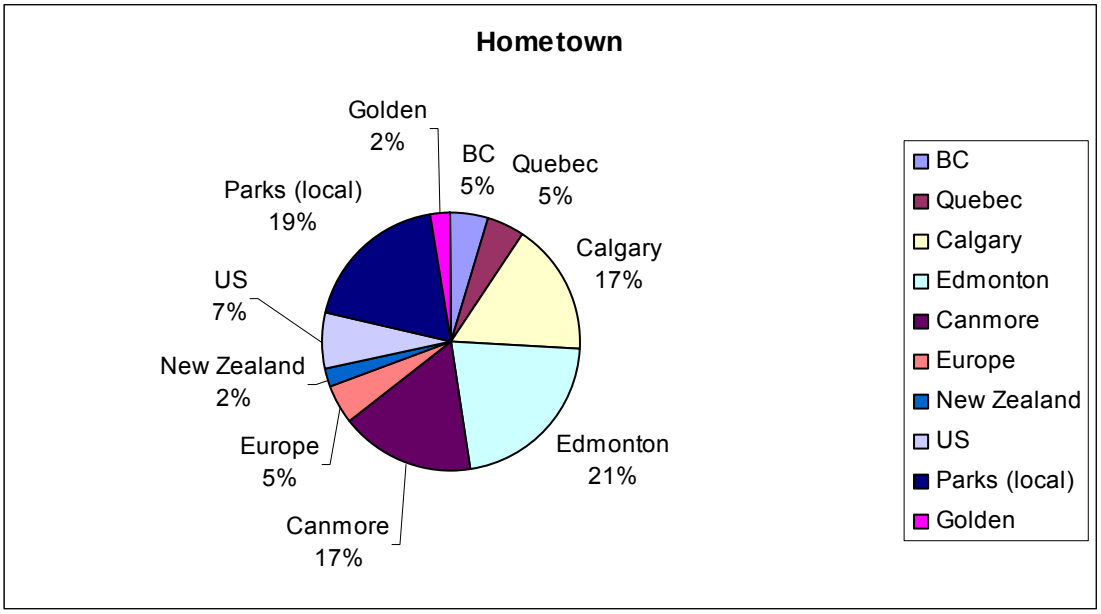


**Figure 34 - Back country skiers home town**

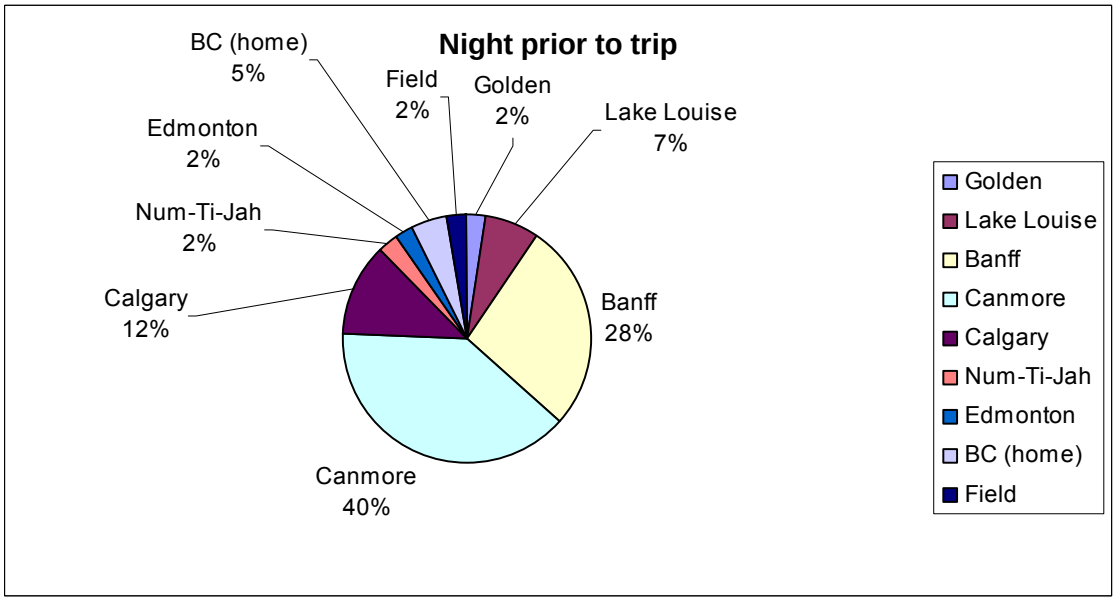


**Figure 35 - Back country skiers night prior to trip**

Predominantly local back country skiing populations is also reflected in the time of the season figure below, as locals tend to ski all year round.

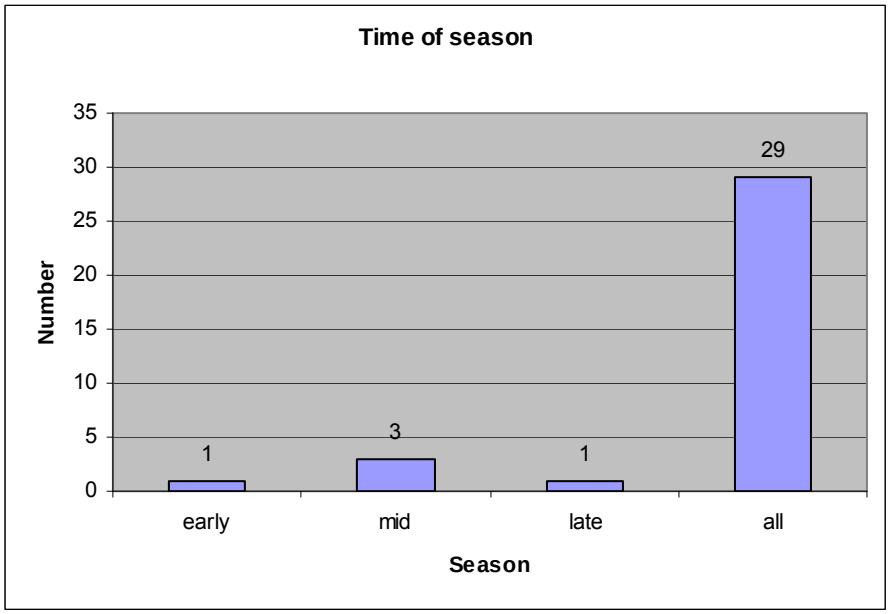


**Figure 36 - Back country skiers season**

Unlike with ice climbing and cross-country skiing, back country skiing is more conducive to multi-day trips. Most multi day trips are anywhere between three and five days. Those doing day trips will usually stay for longer than five hours.

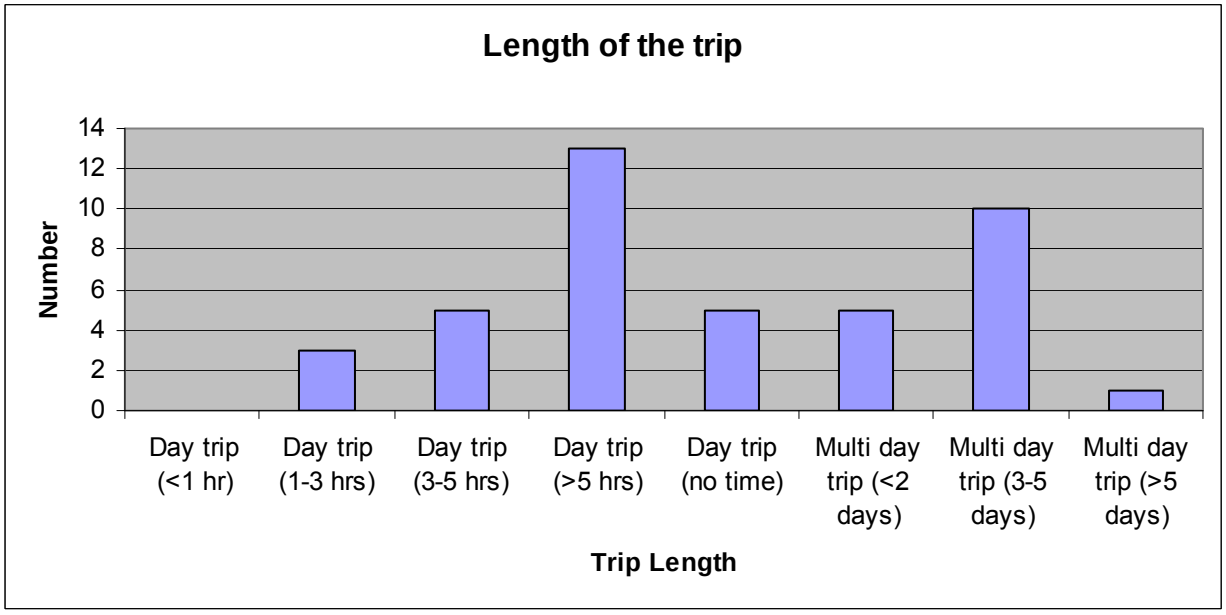


**Figure 37 - Back country skiers length of trip**

Figure below represents total number of participant days spent in the area. Participants were asked to place themselves within the range, hence the low and high estimate for the number of days. With the exception of Kootenay National Park, back country skiers divide their time pretty evenly between Banff, Lake Louise and Icefields Parkway areas. Low numbers in the Kootenay National Park could be due to fewer surveys conducted in that area.

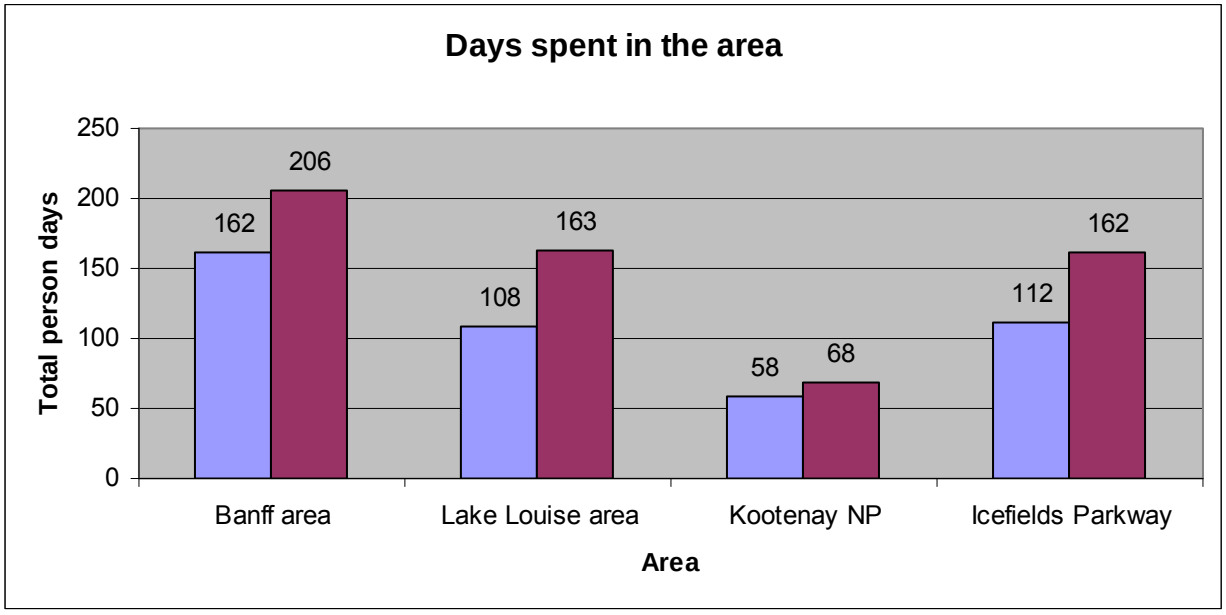


**Figure 38 - Back country skiers days spent in the area**

Back country skiers plan more in advance than both cross-country skiers and ice climbers. Over 60 percent of them plan days in advance. They also use more resources to make their plans. Some of the resources they use is Parks Web Page, Avalanche Bulletins, Internet Weather sites and other skiers.

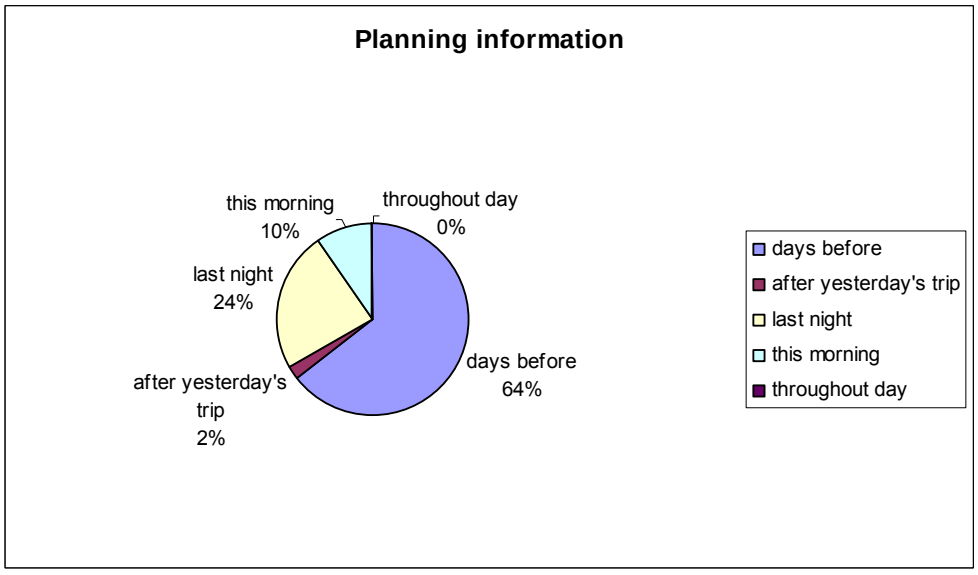


**Figure 39 - Back country skiers planning information**

Back country skiing is also more likely to be done in groups larger than 3, unlike ice climbing or cross-country skiing. This makes sense at least from the avalanche safety perspective. Back country skiers also have more commercial groups (10%) than cross-country skiers or ice climbers.

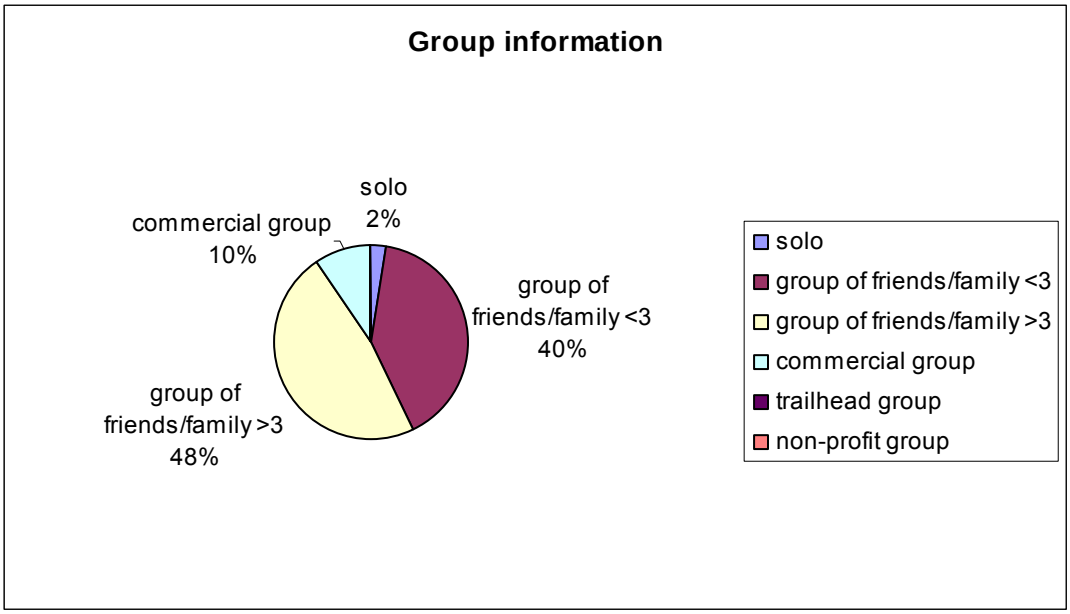


**Figure 40- Back country skiers group information**

**Management Perceptions**

Back country skiers were somewhat divided on the issue of huts. Some would like to see more huts that would make more ski circuits possible in relative comfort. Others saw huts as potential for attracting more people, which was not desirable. In general, back country skiers prefer less traffic, but some of them don't believe that more and better facilities would necessarily increase traffic.

Signage and information at the trailhead was something that most back country skiers would like to see improved.

| Amenities | Services | Cost | Maps & Signage | Miscellaneous |
|---|---|---|---|---|
| Garbage bin (Haffner Creek) | Plowed roads, parking lot. | Can't think of anything, cheaper accommodation. | Sign indicating turn to Paradise Valley of Moraine Lk Rd. | I work too much. |
| Fewer facilities is better. | | none - keep park fees down. | Keep Skoki going, improve signage. | Good trip, but a little tracked out. I'm a powder whore and I like it untouched. (Surprise Pass) |
| Open toilets year round. | | | More info at trailheads. I.e. avi danger. | |
| more huts. | | | Signage to Paradise Valley - seen from road. | |
| Get rid of Bow Hut. | | | It would also be nice to have a large board map in this parking lot showing the trails connecting to LL Chalet and town site. | |
| Scott Duncan Hut could use a boot/gear entrance room. | | | | |

**Figure 41 - Back country skiers management perceptions**

**Motivation for participation in the activity**

Social aspect of back country skiing was the main motivating factor among back country skiers interviewed. Camaraderie was high on their list of things that make back country skiing enjoyable. Most of those people also enjoyed hut atmosphere.

> *"I like lodges. Skoki Lodge is very nice and I hope they keep it going."*

Escaping busy everyday life was another important motivation factor.

> *"I was looking for an activity with the downhill part, but without hassle and bustle of people."*

> *"I love the peace and quiet."*

Experiencing nature and enjoying physical aspect of back country skiing were some other motivational factors mentioned.

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Appendix A – Questionnaire

## Winter Recreation Survey

Date: _____ Location: _____

1. What activity are you participating in today?
   **O** ice climbing **O** cross-country skiing
   **O** ski touring **O** snowshoeing
   **O** other_____

2. Which of these other winter activities do you participate in?
   **O** ice climbing **O** cross-country skiing
   **O** ski touring **O** snowshoeing
   **O** other_____

3. Where in the National Parks do you participate in these other activities (be as specific as possible)?
_____

4. Were you on a day trip or a mulit-day trip?
   **O** day trip ➲ How long were you out today? left parking lot @ ___:___ returned @___:__
   **O** multi-day ➲ How many nights? _____
   ➲ Where did you stay in the backcountry? _____

5. How many days will you spend in this area?

| | | | | | |
|---|---|---|---|---|---|
| Banff area | **O** 0 | **O** 1 | **O** 2-5 | **O** 5-10 | **O** 10+ days |
| Lake Louise area | **O** 0 | **O** 1 | **O** 2-5 | **O** 5-10 | **O** 10+ days |
| Kootenay NP | **O** 0 | **O** 1 | **O** 2-5 | **O** 5-10 | **O** 10+ days |
| Icefields Parkway | **O** 0 | **O** 1 | **O** 2-5 | **O** 5-10 | **O** 10+ days |

6. I tend to come here **O** early season **O** mid-season **O** late season **O** all season

7. Where did you travel today? (be as specific as possible) _____

8. When (what time of day) did you decide to travel in the area that you chose today?
   **O** Days before **O** after yesterday's trip **O** last night
   **O** this morning **O** throughout the day (choices changed throughout the day)

9. Recreational services offered at this locations were **O** poor **O** adequate **O** good

10. If there was one thing you can improve about services offered, what would it be? _____

11. Where is your home? City/Town _____ Prov/State _____ Country _____

12. Where did you stay on the night prior to your trip?
   **O** Revelstoke **O** Glacier (Rogers Pass) **O** Golden **O** Lake Louise
   **O** Banff **O** Canmore **O** Calgary **O** other _____

13. Are you a: **O** solo
   **O** group of friends and/or family _____# **O** a group who met at the trailhead _____#
   **O** a part of a commercial group _____# **O** a part of non-profit group specify _____#

14. Are you a (please check one per line):

| | |
|---|---|
| **Sex:** | O male O female |
| **Age:** | O <20 O 20-29 O 30-39 O 40-49 O 50-59 O 60-70 O >70 |
| **Employment status:** | O employed O self-employed O retired O student O unemployed |

Comments: _____

**Thank you for assisting in the better winter management of National Parks**

## Avalanche Awareness Questions

1. Did you check the avalanche rating for this area prior to your trip?
   **O NO If no,** please go to the next question.
   **O YES If yes,** ➲ what is the rating for today?

| | | | | | |
|---|---|---|---|---|---|
| ***Alpine*** | **O** low | **O** moderate | **O** considerable | **O** high | **O** extreme |
| ***Treeline*** | **O** low | **O** moderate | **O** considerable | **O** high | **O** extreme |
| ***Below treeline*** | **O** low | **O** moderate | **O** considerable | **O** high | **O** extreme |

   ➲ where did you check the rating?
   **O** Pass centre **O** web **O** phone other _____
   ➲ how frequently do you check the ratings?
   **O** only the day prior to my trips **O** Everyday **O** once / week.

2. Did you register your trip plan with anyone? **O** Park Safety Registration **O** Police
   **O** Family or Friends **O** Other _____

3. How much winter travel experience do you have? I have been ski touring/climbing/etc. for _____ years
   I participate in _____ # of trips each year

4. Were you in avalanche terrain today? **O** Yes **O** No

5. Have you ever taken an avalanche course?
   **O NO If no,** please go to the next question.
   **O YES If yes,** ➲ what level of training have you completed?
   **O** Introductory Recreational Avalanche **O** Advanced Recreational Avalanche
   **O** CAA Professional Level 1 **O** CAA Professional Level 2
   Other (please specify) _____

6. Have you ever been caught in an avalanche?
   **O NO If no,** please go to the next question.
   **O YES If yes,** ➲ how long ago? O this season O within 5 years O 5+ years ago
   ➲ how big was the avalanche?
   **O** I escaped and was not buried at all **O** I was partially buried, self rescue
   **O** I was completely buried, assisted rescue Other_____

7. Do you have a:

| | | |
|---|---|---|
| Probe | **O** Yes | **O** No |
| Shovel | **O** Yes | **O** No |
| Transceiver | **O** Yes | **O** No |
| ➲ did you test your transceivers prior to your trip today? | **O** Yes | **O** No |
| Map | **O** Yes | **O** No |
| ABS (Air Bag System) | **O** Yes | **O** No |
| Survival Food/Clothing | **O** Yes | **O** No |
| AvaLung | **O** Yes | **O** No |
| Radio | **O** Yes | **O** No |
| Satellite telephone | **O** Yes | **O** No |
| Cell Phone | **O** Yes | **O** No |

8. Please rate how important the following sources of information are to your trip planning

| | **not at all important** | | | | **extremely important** |
|---|---|---|---|---|---|
| Parks Canada Mtns Phone # | **1** | **2** | **3** | **4** | **5** |
| Canadian Avalanche Association | **1** | **2** | **3** | **4** | **5** |
| Parks Canada Website | **1** | **2** | **3** | **4** | **5** |
| Park avalanche bulletin | **1** | **2** | **3** | **4** | **5** |
| Guidebooks | **1** | **2** | **3** | **4** | **5** |
| CAA 1-800 # | **1** | **2** | **3** | **4** | **5** |
| Discuss with other skiers | **1** | **2** | **3** | **4** | **5** |
| Internet Weather sites | **1** | **2** | **3** | **4** | **5** |
| Avalanche bulletins from other areas | **1** | **2** | **3** | **4** | **5** |
| Past experiences | **1** | **2** | **3** | **4** | **5** |
| Rogers Pass Centre | **1** | **2** | **3** | **4** | **5** |
| **I**nfoex | **1** | **2** | **3** | **4** | **5** |
| Other _____ | | | | | |

# Appendix B – Qualitative Interview

1. Please tell me how you first started with this activity? Tell me everything about your first experience.
    - Why? Where? When? With whom?
    - What did the whole experience feel like (prior, during and after the trip)

_____

_____

_____

2. What is your most memorable winter trip and why?
    - Where was it?
    - Who did you go with?
    - When did it happen?

_____

_____

_____

3. Please tell me a bit about your future winter adventures?
    - Do you have any trips planned? Tell me more about them.
    - What are the most important aspects you consider when planning a trip?

_____

_____

_____

4. Tell me a bit more about this trip?
    - Why did you decide to come here?
    - Have you been here before?
    - Where did you first hear about this place?

_____

_____

_____

5. Earlier you mentioned that you first started participated in this activity for _____ reasons. Have your motivations for participation changed over time and how?
    - Have they changed as you gained more experience?
    - Has risk been a factor?
    - Have there been any influential people that have affected your motivation to participate?

_____

_____

_____

**(management perceptions and suggestions)**

6. Do you think winter recreational users are well catered for by the National Parks? Why/Why not?
    - Is there enough information?
    - Are facilities and services offered sufficient enough?
    - Are trails (where applicable) well maintained?

_____

_____

_____

7. How does skiing/climbing here compare to the areas outside of National Parks?
    - Where else do you ski/climb?
    - Why come here?
    - How does the experience compare? (including services offered)

_____

_____

_____

8. Do you have any suggestions on how winter recreation can be improved in the NPs?
    - Is grooming/parking/access/huts adequate?
    - What are some things you would like to see improved? List 3.

_____

_____

_____

9. Do you think that some recreational activities affect wildlife?
    - Which activities and what wildlife?
    - How do you think they affect wildlife?

_____

_____

_____

10. Are you concerned about how different recreational activities might affect wildlife?
    - How so?
    - Do you think educational activities on recreational uses and wildlife would be useful?
    - Do you think recreation use should be managed in order to reduce effects on wildlife?
    - Would you be willing to modify your recreation use to accommodate the needs of wildlife?

_____

_____

_____

**(climbers and back country skiers only)**

11. How do you think general public perceives ice climbers/backcountry skiers, and how is that different from your own perception?

- What are some of the characteristics they would attribute to ice climbers/backcountry skiers?

_____

_____

_____

12. How important is it for you to be identified as ice climber/backcountry skier? Why/why not?

_____

_____

_____

# Appendix C – Winter Day Use Summary

## Banff and LLYK 2006/2007 Winter Day Use Summary

24-May-2007 4:19:30PM

### Banff and LLYK Field Units 2006/2007 Winter Backcountry Day Use Summary

| Trail Counter Name | Month | LMU | Est. Monthly Visitors |
|---|---|---|---|
| **Boom Lake Ski Trail** | | | |
| Trail Counter ID: 366 | 10 minute ski, before the open area at the top of the hill on the left hand side. | | |
| Easting: 568100 Northing: 5678487 | | | |
| Boom Lake Ski Trail | Jan-07 | | 363 |
| Boom Lake Ski Trail | Feb-07 | | 403 |
| Boom Lake Ski Trail | Mar-07 | | 354 |
| Boom Lake Ski Trail | Apr-07 | | 115 |
| | Monthly Average for Trail Counter ID 366 | | 309 |
| **Bow Lake Ski Trail** | | | |
| Trail Counter ID: 367 | Way across the lake, just as the trail enters woods before the canyon. On the right side of the trail - left side of the trail is open at this point. | | |
| Easting: 535602 Northing: 5723604 | | | |
| Bow Lake Ski Trail | Jan-07 | Upper Bow | 338 |
| Bow Lake Ski Trail | Feb-07 | Upper Bow | 518 |
| Bow Lake Ski Trail | Mar-07 | Upper Bow | 1,124 |
| | Monthly Average for Trail Counter ID 367 | | 660 |
| **Bow Summit Ski Trail** | | | |
| Trail Counter ID: 368 | 200m from the parking lot in the first trees on the left hand side. Right side was open. Used as an uphill trail most of the season, except for the last week or so, when I went to collect data from it for the last time. | | |
| Easting: 534604 Northing: 5729493 | | | |
| Bow Summit Ski Trail | Jan-07 | Upper Bow | 365 |
| Bow Summit Ski Trail | Feb-07 | Upper Bow | 347 |
| Bow Summit Ski Trail | Mar-07 | Upper Bow | 438 |
| Bow Summit Ski Trail | Apr-07 | Upper Bow | 149 |
| | Monthly Average for Trail Counter ID 368 | | 325 |
| **Cascade Fire Road Ski Trail** | | | |
| Trail Counter ID: 369 | Going from Lake Minnewanka it's about 0.5 km on the right side of the road just before the curve. | | |
| Easting: 604366 Northing: 5678143 | | | |
| Cascade Fire Road Ski Trail | Jan-07 | Minnewanka | 1,318 |
| Cascade Fire Road Ski Trail | Feb-07 | Minnewanka | 1,725 |
| Cascade Fire Road Ski Trail | Mar-07 | Minnewanka | 615 |
| Cascade Fire Road Ski Trail | Apr-07 | Minnewanka | 855 |
| | Monthly Average for Trail Counter ID 369 | | 1,128 |
| **Emerald Lake Loop Ski Trail** | | | |

Data Management - Human Use E-mail: tao.gui@pc.gc.ca

## Banff and LLYK Field Units 2006/2007 Winter Backcountry Day Use Summary

| Trail Counter Name | Month | LMU | Est. Monthly Visitors |
|---|---|---|---|
| **Emerald Lake Loop Ski Trail** | | | |
| Trail Counter ID: 371 | | When you get to the loop intersection, take the left branch and the counter is 200m away on the right. | |
| Easting: 532486 Northing: 5700204 | | | |
| Emerald Lake Loop Ski Trail | Feb-07 | Yoho Emerald | 595 |
| Emerald Lake Loop Ski Trail | Mar-07 | Yoho Emerald | 395 |
| Emerald Lake Loop Ski Trail | Apr-07 | Yoho Emerald | 53 |
| | Monthly Average for Trail Counter ID 371 | | 347 |
| **Emerald Lake Ski Trail** | | | |
| Trail Counter ID: 370 | | It's just past (100') from the intersection where the trail from the lake meets the lakeshore trail. It's set up on a big tree on the right, pointing away from the lake. | |
| Easting: 532043 Northing: 5699292 | | | |
| Emerald Lake Ski Trail | Jan-07 | Yoho Emerald | 285 |
| Emerald Lake Ski Trail | Feb-07 | Yoho Emerald | 494 |
| Emerald Lake Ski Trail | Mar-07 | Yoho Emerald | 284 |
| Emerald Lake Ski Trail | Apr-07 | Yoho Emerald | 55 |
| | Monthly Average for Trail Counter ID 370 | | 282 |
| **Fairview Loop Ski Trail** | | | |
| Trail Counter ID: 372 | | 2-3 minutes away on Fairview loop from Lake Louise Chateau. It's just after the hill on the left side pointing towards open area across the trail. | |
| Easting: 554940 Northing: 5696270 | | | |
| Fairview Loop Ski Trail | Jan-07 | Lake Louise | 1,034 |
| Fairview Loop Ski Trail | Feb-07 | Lake Louise | 1,187 |
| Fairview Loop Ski Trail | Mar-07 | Lake Louise | 1,320 |
| Fairview Loop Ski Trail | Apr-07 | Lake Louise | 274 |
| | Monthly Average for Trail Counter ID 372 | | 954 |
| **Great Divide (Old Hwy 1A) Ski Trail** | | | |
| Trail Counter ID: 365 | | 150-200m past where first trails intersect old highway 1A and just before the downhill curve on the right side pointing towards open road. Dog sledding track was on the far side of the road, but the counter could reach it. | |
| Easting: 554664 Northing: 5697371 | | | |
| Great Divide (Old Hwy 1A) Ski Trail | Jan-07 | Lake Louise | 784 |
| Great Divide (Old Hwy 1A) Ski Trail | Feb-07 | Lake Louise | 1,148 |
| Great Divide (Old Hwy 1A) Ski Trail | Mar-07 | Lake Louise | 1,225 |
| Great Divide (Old Hwy 1A) Ski Trail | Apr-07 | Lake Louise | 491 |
| | Monthly Average for Trail Counter ID 365 | | 912 |
| **Haffner Creek Ski Trail** | | | |

## Banff and LLYK Field Units 2006/2007 Winter Backcountry Day Use Summary

| Trail Counter Name | Month | LMU | Est. Monthly Visitors |
|---|---|---|---|
| **Haffner Creek Ski Trail** | | | |
| Trail Counter ID: 373 | 50m before the outhouse on the right hand side. | | |
| Easting: 561917 Northing: 5670298 | | | |
| Haffner Creek Ski Trail | Jan-07 | | 269 |
| Haffner Creek Ski Trail | Feb-07 | | 345 |
| Haffner Creek Ski Trail | Mar-07 | | 335 |
| Haffner Creek Ski Trail | Apr-07 | | 33 |
| | Monthly Average for Trail Counter ID 373 | | 245 |
| **Lake Louise Campground Ski Trail** | | | |
| Trail Counter ID: 374 | After crossing the first bridge, take the smaller trail going right (not the road, but a foot path). Counter is on the right pointing away from the river. This wasn't a very busy ski-trail, as it melted out first and didn't get groomed. | | |
| Easting: 557317 Northing: 5656604 | | | |
| Lake Louise Campground Ski Trail | Jan-07 | Lake Louise | 95 |
| Lake Louise Campground Ski Trail | Feb-07 | Lake Louise | 473 |
| Lake Louise Campground Ski Trail | Mar-07 | Lake Louise | 1,754 |
| Lake Louise Campground Ski Trail | Apr-07 | Lake Louise | 4,253 |
| | Monthly Average for Trail Counter ID 374 | | 1,647 |
| **Lake Ohara Road Ski Trail** | | | |
| Trail Counter ID: 377 | Just after the first hill on Lake Ohara rd., the counter was set up on the left where three trees are close together. | | |
| Easting: 546633 Northing: 5659273 | | | |
| Lake Ohara Road Ski Trail | Jan-07 | | 436 |
| Lake Ohara Road Ski Trail | Feb-07 | | 766 |
| Lake Ohara Road Ski Trail | Mar-07 | | 653 |
| Lake Ohara Road Ski Trail | Apr-07 | | 361 |
| | Monthly Average for Trail Counter ID 377 | | 556 |
| **Moraine Lake Ski Trail** | | | |
| Trail Counter ID: 375 | On Moraine Lake rd. 100m past where Fairview Loop meets it on the right side - it would get people on both sides of the road for the most part. | | |
| Easting: 557344 Northing: 5654464 | | | |
| Moraine Lake Ski Trail | Jan-07 | Lake Louise | 372 |
| Moraine Lake Ski Trail | Feb-07 | Lake Louise | 365 |
| Moraine Lake Ski Trail | Mar-07 | Lake Louise | 405 |
| Moraine Lake Ski Trail | Apr-07 | Lake Louise | 187 |
| | Monthly Average for Trail Counter ID 375 | | 332 |
| **Mosquito Creek Ski Trail** | | | |

## Banff and LLYK Field Units 2006/2007 Winter Backcountry Day Use Summary

| Trail Counter Name | Month | LMU | Est. Monthly Visitors |
|---|---|---|---|
| **Mosquito Creek Ski Trail** | | | |
| Trail Counter ID: 376 | After the first big hill on the right side, pointing towards somewhat open area. | | |
| Easting: 546501 Northing: 5720189 | | | |
| Mosquito Creek Ski Trail | Jan-07 | Upper Bow | 232 |
| Mosquito Creek Ski Trail | Feb-07 | Upper Bow | 180 |
| Mosquito Creek Ski Trail | Mar-07 | Upper Bow | 223 |
| Mosquito Creek Ski Trail | Apr-07 | Upper Bow | 93 |
| | Monthly Average for Trail Counter ID 376 | | 182 |
| **Paint Pots Ski Trail** | | | |
| Trail Counter ID: 378 | 200m from the parking lot, where the trail is very narrow on the right hand side. | | |
| Easting: 559478 Northing: 5669088 | | | |
| Paint Pots Ski Trail | Feb-07 | | 332 |
| Paint Pots Ski Trail | Mar-07 | | 390 |
| Paint Pots Ski Trail | Apr-07 | | 390 |
| | Monthly Average for Trail Counter ID 378 | | 370 |
| **Pipestone Loop Ski Trail** | | | |
| Trail Counter ID: 379 | It's after the second intersection (5-10 minutes from parking) on loop 2 in a bushy tree on the right pointing towards open area. | | |
| Easting: 556908 Northing: 5698361 | | | |
| Pipestone Loop Ski Trail | Jan-07 | | 426 |
| Pipestone Loop Ski Trail | Feb-07 | | 612 |
| Pipestone Loop Ski Trail | Mar-07 | | 471 |
| | Monthly Average for Trail Counter ID 379 | | 503 |
| **Sherbrooke Lake Ski Trail** | | | |
| Trail Counter ID: 380 | It's 5-10 minute walk from the parking lot on the right side, where the trail straightens out. | | |
| Easting: 544872 Northing: 5699142 | | | |
| Sherbrooke Lake Ski Trail | Jan-07 | | 188 |
| Sherbrooke Lake Ski Trail | Feb-07 | | 195 |
| Sherbrooke Lake Ski Trail | Mar-07 | | 166 |
| Sherbrooke Lake Ski Trail | Apr-07 | | 193 |
| | Monthly Average for Trail Counter ID 380 | | 185 |
| **Spray Loop Ski Trail 1 - east** | | | |
| Trail Counter ID: 381 | Going from Banff Springs hotel, just before the intersecection with the trail going to the first bridge on the right side of the trail after a small hump. | | |
| Easting: 601082 Northing: 5668304 | | | |
| Spray Loop Ski Trail 1 - east | Jan-07 | Banff Town | 1,511 |
| Spray Loop Ski Trail 1 - east | Feb-07 | Banff Town | 1,873 |
| Spray Loop Ski Trail 1 - east | Mar-07 | Banff Town | 795 |
| Spray Loop Ski Trail 1 - east | Apr-07 | Banff Town | 559 |
| | Monthly Average for Trail Counter ID 381 | | 1,184 |

## Banff and LLYK Field Units 2006/2007 Winter Backcountry Day Use Summary

| Trail Counter Name | Month | LMU | Est. Monthly Visitors |
|---|---|---|---|
| **Spray Loop Ski Trail 2 - west** | | | |
| Trail Counter ID: 382 | | | |
| Easting: 601254 Northing: 5668660 | | From the big messy intersection of trails, start going uphill and it's half way up that first hill on the left hand side. | |
| Spray Loop Ski Trail 2 - west | Jan-07 | Banff Town | 483 |
| Spray Loop Ski Trail 2 - west | Feb-07 | Banff Town | 944 |
| Spray Loop Ski Trail 2 - west | Mar-07 | Banff Town | 290 |
| Spray Loop Ski Trail 2 - west | Apr-07 | Banff Town | 192 |
| | Monthly Average for Trail Counter ID 382 | | 477 |
| **Yoho Valley Road Ski Trail** | | | |
| Trail Counter ID: 383 | | | |
| Easting: 540146 Northing: 5658258 | | It's 100m past the spiral tunnels look out on the left side. It was set up kind of too far away from the road on a small hill pointing down. Since the road is so wide, depending on where the tracks were set and people skied, you might not get a count. | |
| Yoho Valley Road Ski Trail | Jan-07 | Yoho Emerald | 131 |
| Yoho Valley Road Ski Trail | Feb-07 | Yoho Emerald | 77 |
| Yoho Valley Road Ski Trail | Mar-07 | Yoho Emerald | 52 |
| Yoho Valley Road Ski Trail | Apr-07 | Yoho Emerald | 135 |
| | Monthly Average for Trail Counter ID 383 | | 99 |