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**A SURVEY OF OVERNIGHT BACKCOUNTRY VISITORS TO
DENALI NATIONAL PARK AND PRESERVE**

JANE E. SWANSON
MARK E. VANDE KAMP
DARRYLL R. JOHNSON
ROBERT E. MANNING
STEVEN R. LAWSON

Technical Report NPS/CCSOUW/NRTR-2002-04
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CASCADIA FIELD STATION
USGS/BRD/FRESC
COLLEGE OF FOREST RESOURCES
BOX 352100
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PREFACE

This document reports the results from a survey of visitors camped overnight in the backcountry of Denali National Park and Preserve in the summer of 2000. The pre-trip interview, diaries, post-trip interview, and the mail questionnaire used in this study are included in Appendices A through E. The questions used in the survey are included in the text of this report. However, readers may benefit by reviewing the survey materials in order to familiarize themselves with the survey items and the format in which they were originally presented. It is anticipated that this report will be used primarily as a reference document and, therefore, depending on each reader's objective, this report may be used in very different ways. However, any reader not familiar with statistical analysis of survey data is encouraged to refer to Appendix F, "How To Use This Report."

I. Introduction

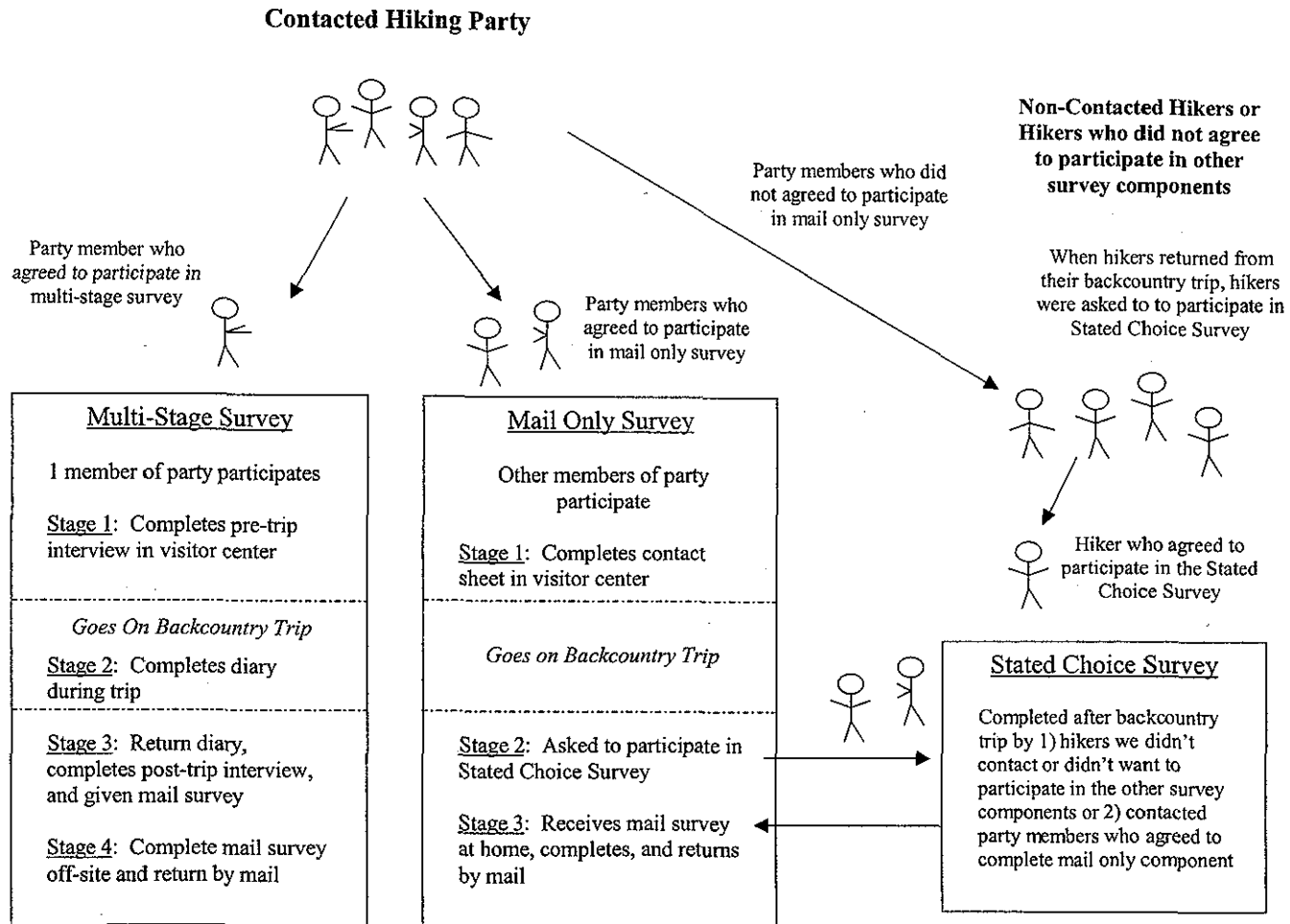
Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

The Denali 2000 Backpacker Survey (DBS) was administered by the USGS, Biological Resources Division, Forest and Rangeland Ecosystem Science Center, Cascadia Field Station. The study was proposed and funded by Denali National Park and Preserve.

The overall objective of the DBS was to collect social information beneficial to wilderness planning and management in Denali National Park and Preserve (DNA). Specific objectives were 1) to assess the characteristics of visitors who take overnight backpacking trips in DNA, including their motivations for these trips; 2) to assess backpackers' encounters with other hikers and park rangers and the impact of these encounters on the quality of recreation experiences; 3) to determine any changes over time in the types of visitors who backpack overnight, their motivations, and their encounters with other hikers by comparing these data with those collected by Womble in 1978; 4) to assess backpackers' awareness of and support for selected management policies and regulations; 5) to assess the importance of various aspects of the backpacking experience, including the relative importance of selected factors through stated choice analysis ; 6) to assess backpackers' encounters with aircraft and the impact of these encounters; and 7) to conduct a field experiment to examine whether providing information about aircraft changes the impact of aircraft on backpackers' trip experiences.

To achieve these objectives, three different components were employed: a multi-stage survey, a mail-only survey, and a stated-choice survey (see Figure 1.1). This introduction describes the methods for the survey portions of the project that includes the field experiment. The methods for the stated-choice survey portion are described in Chapter X. The comparison of the 2000 data with Womble's 1978 data will be presented in a separate companion report.

Figure 1.1. Overview of Study Design



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Survey Design and Questionnaire Development

The multi-stage survey component used four different surveys. The use of a pre-trip interview was partly motivated by an interest in how hikers' knowledge of, expectations, and preferences about aircraft in DENA compared with hikers' actual experiences. Additionally, use of a pre-trip interview allowed us to examine the effect of information about aircraft on trip experiences by providing half of the hikers with information about aircraft in DENA (the experimental condition) while the remaining half were given no aircraft information (the control condition).

The use of a diary was motivated by the desire to gather information about hikers encounters with aircraft, other hikers, and park rangers. Given the detailed level of information desired concerning encounters, daily recording of experiences was expected to provide more accurate information than asking hikers to recollect their experiences at the end of the trip.

The use of a post-hike interview was motivated by an interest in assessing the impacts of aircraft on hikers' trip experiences before these experiences were forgotten. The timeliness of assessment was particularly important given that we sought to measure the effects of pre-trip information with these measures.

The use of a mail questionnaire for the final set of questions (rather than including them in the on-site post-trip interview) was motivated primarily by the undue burden that would be placed on hikers during the trip if they were asked to answer the necessary number of questions on-site. Many of these questions were taken directly from the Womble 1978 mail survey in order to allow direct comparison.

In early August, the *mail only survey* component was added to the original survey plan in an effort to increase sample size for the mail questionnaire (respondents received the same mail questionnaire as the multi-stage survey respondents) and to make the target population for the mail questionnaire more directly comparable to Womble's 1978 target population. An increase in sample size was necessary because the original plan was based on DENA visitor use data that overestimated wilderness overnight visitation. When reports from the field suggested problems meeting sampling goals, adjustments in

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procedures were made to increase sample sizes based on more realistic estimates of the number of hiking parties.

The survey procedures as well as the questionnaires (see Appendices A through E) were produced by the Cascadia Field Station in cooperation with staff at Denali National Park and Preserve and the School of Natural Resources at the University of Vermont. Initial meetings were held in the Fall of 1999 to establish general project objectives. Input from park staff was essential in ensuring that the questionnaires addressed management needs. The draft questionnaires were sent to the Office of Management and Budget for review and approval in May of 2000.

Sampling and Visitor Contact Procedures

There are three populations that are represented by responses to the different questions in the survey. 1) The population for questions asked in the mail survey is *all hikers* over the age of 17 who camped overnight in the backcountry¹, and is limited to hikers entering between July 24, 2000 and September 4, 2000. 2) In the diaries, some questions asked respondents to describe their encounters with other people and aircraft (e.g., how many aircraft did you see?). These reported experiences are believed to be representative of what the hiking party as a whole experienced. The population for these questions is that of *all hiking parties* who camped overnight in the backcountry, and is limited to parties entering between July 24, 2000 and September 4, 2000. 3) The other questions in the diaries were evaluative in nature (e.g., how did you feel about the number of aircraft you saw?), and the questions in the pre-trip and post-trip interviews asked about an individual's knowledge or experiences. Because respondents selected to represent their hiking party were not randomly selected, their responses to these questions cannot a priori be assumed to be representative of all hiking parties nor all hikers. The population for these questions is *respondents selected to represent their hiking party* who are over the age of 17 and camped overnight in the backcountry, and is limited to hiking

¹ All the backcountry in DENA was legally designated as wilderness in 1980, we are using backcountry to refer to wilderness areas in DENA in an effort to have the language of the report be consistent with the language used in the survey instruments (see Conventions Followed in this Report, page 18, for more detail).

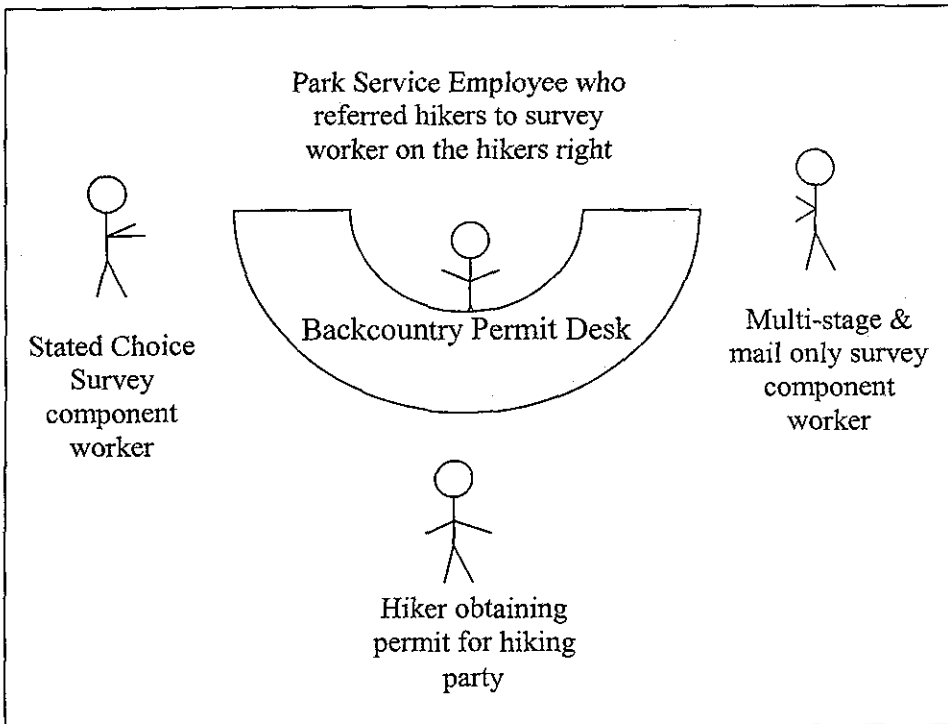
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parties entering between July 24, 2000 and September 4, 2000 (see Accuracy of the Sample, pages 13-14).

Visitor Contacts

Park personnel at the backcountry desk in Denali visitor center asked each hiking party who sought a backcountry permit to speak with the survey workers located to the right of the backcountry desk. Survey workers were set up on both sides of the permit desk. To the right of the permit desk were the interviewers for the multi-stage survey, and to the left of the desk were the interviewers for the stated choice survey (see Figure 1.2). People were contacted for the stated choice survey upon their return from the backcountry, which is described below.

Figure 1.2. Layout of Survey Workers in DENA Visitor Center



The survey worker asked one person over the age of 17 from each party to participate in a multi-stage survey of backpackers. People agreeing to participate then completed the pre-trip interview and were given the diary for them to complete during

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their trip². The remaining members of the hiking party were asked to participate in a mail only survey. People agreeing to participate in the mail only survey completed a paper and pencil on-site questionnaire that asked for their names, addresses, age, and sex. Within a few weeks, hikers in the mail-only survey component were sent the same mail questionnaire that was used in the multi-stage survey component.

When the hiking party came to the backcountry desk at the conclusion of their trip to return their food canister, park personnel again asked them to speak with the survey workers. At this time, the party member who was participating in the multi-stage survey returned the diary, completed the post-trip interview, and was given the mail questionnaire. The other party members (who had not agreed to participate in any other portion of the study) were asked to participate in the stated-choice experiment. Respondents who returned from the backcountry when the visitor center was closed returned their bear canisters outside in two designated plywood boxes. A drop box for returning diaries was attached to the top of each box with a sign indicating to return diaries here.

Survey contacts were made between approximately 7:00 a.m. and 8:00 p.m., seven days a week. This time period corresponded to the hours that the backcountry desk was open. The goal was to have a near-census of backpacking parties who obtained a backcountry permit participate in the survey. A total of 1026 backcountry permits were issued from July 4, 2001 to September 4, 2001 (see Table 1.1). Of those 1026 backpacking parties, 98 parties (9.5%) were ineligible to participate because they were visitors who lived locally and had already participated ($n = 39$) or parties who had faxed permits from Kantishna ($n = 59$). Of the remaining 928 parties, 605 parties were contacted and asked to participate in the multi-stage survey component. This constitutes 59.0 percent of all hiking parties and 65.2 percent of eligible hiking parties.

² The task of obtaining a permit was often left to one member of a party and other members were not readily available for survey participation. This resulted in some self-selection of survey respondents. The degree of deviation from a random sample and the resulting potential for survey bias are unknown.

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Table 1.1. Summary of Total Hiking Permits Issued

<i>1026 total permits issued</i>		
98 parties ineligible for survey	39 local repeat visitors	
	59 faxed permits from Kantishna	
<i>928 permits issued to eligible hiking parties</i>		
323 parties not contacted	207 non-local visitors	
	116 local visitors	
605 parties contacted	554 agreed to participate	507 Stayed in BC as planned
		47 Did not stay in BC as planned
	51 refused to participate	

Of the 605 hiking parties contacted, 554 parties (91.6%) agreed to participate in the multi-stage survey component. A total of 47 parties did not end up camping in the backcountry as originally planned and thus, were excluded from the study. A total of 507 backpackers completed the pre-trip interview. An additional 197 names and addresses were collected on-site for the mail-only survey.

Possible Reasons for Not Contacting Hiking Parties

Many non-contacted parties might more accurately be classified as refusals because the park staff at the permit desk asked hikers to talk with the survey worker. There was no easy way, however, to record how many hikers simply avoided the survey worker at that time. It should also be noted that the number of permits doesn't map perfectly onto the number of hiking parties. Survey workers found that what occasionally appeared to be a cohesive hiking party was actually two hiking parties with two permits as the people were traveling together for a couple of days and then splitting up. Once this possibility came to our attention, each party obtaining a permit was a separate participant in the multi-stage survey. Other possible reasons for not contacting these parties include: 1) hikers often came in batches and the survey workers were unable to contact all the hiking parties in a batch; 2) hikers who came through when the survey worker was on a short break; 3) it took some time initially for the park staff and the survey workers to become familiar with the routine for contacting hiking parties (more parties were missed

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early on than later in the survey period); and 4) the visitors were foreign and did not have a strong enough command of the English language to complete the survey (our sample contained 13.3 percent foreign hiking parties compared to the 21.7 percent of foreign hiking parties issued permits—see page 13 for more detail). There are no known theoretical reasons why the people that we missed for these reasons would differ systematically from those we were able to contact.

Visitors who live locally (i.e., local parties) often take multiple backcountry trips, and therefore, there may be additional reasons why they were not contacted. Local parties (36.0% of non-contacted parties) may not have been contacted because 1) the park's streamlined process of obtaining a permit allows locals to obtain a permit in a couple of minutes, and thus when survey workers took a short break, some local parties may have been missed; 2) local parties may have participated in the conjoint analysis component of the survey during a prior trip, and therefore, when they said they had already participated, survey workers did not pursue them for the multi-stage survey component; and 3) some locals were consistently in too much of a hurry to stop and speak with the survey workers when they came in to get their permit.

It is also likely that we are considerably overestimating the number of non-contacted local parties. When local parties took more than one trip, the subsequent trips (and permits) were considered ineligible rather than non-contacted. We assessed the number of ineligible local parties due to repeat visitation by comparing our data with the park's database, and when the same person obtained a permit on more than one occasion the subsequent visit was considered ineligible. Although many local groups consisted of the same group of people, different people would obtain the permit on each trip making it appear to be a first time visit when actually it was a repeat visit.

Administration of Mailings

Multi-stage survey component. All multi-stage survey participants received a thank-you/reminder letter about 10 days after they completed the post-trip interview. In an effort to increase response to all parts of the multi-stage survey component, all participants who did not return any stage of this component were sent follow-up mailings. The specific content and timing of the mailings depended on which stages were

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outstanding and are outlined in Table 1.2 below. Table 1.3 below summarizes the final number of people who completed each stage of this component. Response rates for each stage were calculated using the number of people who were eligible and agreed to participate in the pre-trip interview (507 participants) as the base.

Table 1.2. Summary of Mailings for Multistage Survey Component

Stages that Participant completed prior to initial mailing:	Timing and Content of Mailings			
	Send Q's not responded to	Send thank you/reminder	Send 2 nd set of Q's with reminder	Send 3 rd set of Q's with reminder
Returned diary, did post-trip interview, and received mail Q		10 days after post-hike interview	↑	↑
Returned diary, but did <u>not</u> do post-trip or receive mail Q	As soon as noted	↑	14 days after thank-you/reminder	14 days after 2 nd set
Only did pre-trip	5 days after expected return date	7 days after 1 st set was mailed		
Mail-only	As soon as information received in Seattle	↓	↓	↓

Table 1.3. Summary of Returned Instruments in Multi-Stage Survey Component

	Survey Stage			
	Pre-trip	Diary	Post-trip	Mail
Pre-trip Only	92			
Pre-trip & Diary	26	26		
Pre-trip & Post-test	4		4	
Pre-trip & Mail	2			2
Pre-trip, Diary, & Post-test	87	87	87	
Pre-trip, Diary, & Mail	4	4		4
Pre-trip, Post-trip, & Mail	10		10	10
All Four stages ¹	282	282	282	282
Totals by Stage	507	399	383	298
Response Rate	--	78.7%	75.5%	58.8%

¹55.6% of respondents completed all four stages of this component

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Mail-only survey component. The names from the contact sheets were compiled into a database that served as the basis for administering the mailings for the mail only component. All people who provided a name and address were mailed a questionnaire accompanied by a cover letter from the Cascadia Field Station. Respondents were instructed to complete the questionnaire and return it by mail in the postage-paid envelopes. As a follow-up, all respondents were sent a thank you/reminder letter about one week after they received the questionnaire. Non-respondents received a second reminder letter and an additional copy of the questionnaire about 14 days after the first reminder. For those who did not respond to the second reminder, a third letter and yet another copy of the questionnaire were sent about 14 days after the second reminder. Of the 197 questionnaires mailed, eight were returned due to incorrect or out-of-date addresses and two were returned by people who participated in the multi-survey component (these were excluded from this component). The final response rate was 59.4 percent, with 111 of 187 questionnaires completed and entered in the data file. This response rate is lower than expected or desired, but is comparable to the return rate of the mail questionnaire in the multi-survey component.

Possible Explanations for Lower than Expected Response Rates

Response rates for all instruments were lower than what was expected based on previous experience with NPS backcountry users. Our monitoring of response rates brought the lower response rates to our attention when there was time to examine and modify our procedures. The following procedures were adopted to increase the return of diaries: 1) stronger verbal appeals emphasizing the importance of returning the diaries were made during the pre-trip interview, 2) labels were placed on the front of the diary emphasizing the importance of its return, 3) the backcountry desk staff were enlisted to ask every returning hiker if they had a diary to return, and 4) follow-up mailings of individuals not returning a diary asked them to either return their original or to complete the enclosed one from memory.

When the low response rates to the mail questionnaire were first detected, a limited number of respondents were called to ascertain whether the materials had been received timely, if the respondent lived at the address, if the packet was complete

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including return postage, and whether the instructions were confusing. These calls along with review of returned questionnaires indicated that many respondents were difficult to contact by mail either because they were on extended trips or they provided a mailing address at which they were not currently living (e.g., college-age students who provided their parents address). As noted earlier, local Alaskan employees were disproportionately responsible for the low response rates. Many of these people are summer concession employees, and they may have provided a permanent address rather than their local address. Although the mailings were delivered to the address provided, it may be that the respondent did not receive the follow-up mailings until after considerable delay, if at all. No other indications of problems with the mailing procedures were noted.

Two other minor procedural problems may have limited response slightly. First, it was possible that respondents who changed their plans and did not stay in the overnight in the backcountry did not respond as they knew they were no longer eligible to participate. This possibility came to our attention when some respondents returned their survey with a note indicating that they never stayed overnight in the backcountry as they originally planned, often due to bad weather or more rugged than expected conditions. A minor change to the cover letters/reminders asked people to return the materials with a "did not go" message if they had decided not to use their backcountry permit. Second, it may have been unwise to use the same cover art and booklet shape for both the diary and mail questionnaire. Although different color paper was used and cover titles differed, some hikers who were sent the mail questionnaire may have mistaken it for a second copy of the diary and assumed they had already completed it. This mistake was probably uncommon because it could only occur when a) respondents did not read the title and/or notice the different color paper, b) the respondents did not open the mail questionnaire, and c) they forgot that the interviewer had told them about the mail questionnaire and that they consented to complete it.

One other reason may explain the low response for the mail-only component. The contact sheet asked for everyone in the party's name and address (excluding the person competing the multi-stage survey component). It may be that when some hikers weren't physically present to give their information, another hiker in their party supplied it. As

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there was no way to identify these people, we may be overstating our non-response rate and understating our initial refusal rate.

Administration of Aircraft Information Experiment

Upon consenting to participate in the multi-survey component, individuals were assigned to either the experimental (information) or control (no information) condition for the aircraft information field experiment. During any one half-day segment, all individuals agreeing to participate were assigned to one condition. The assignment of information and control conditions to half-day segments was such that an equal number of morning and afternoon segments were assigned to each condition. This procedure resulted in 47.5 percent of individuals being assigned to the experimental condition and 52.5 percent of individuals being assigned to the control condition.

People in the information condition answered some pre-trip questions about aircraft and were told of the presence of aircraft in DENA. These people were then given a trip diary that asked them to record information about their encounters with aircraft and with other hikers (see Appendix C). People in the control condition did not complete the pre-trip questions nor were they told about aircraft in DENA. The trip diary they were given asked them to record information about encounters with other hikers and park rangers (see Appendix D). Upon the completion of their backcountry trip, people in both conditions completed the same post-trip interview and were given the same mail questionnaire.

Statistical Considerations

Readers not familiar with statistical analyses of survey data are encouraged to refer to Appendix F, "How to Use this Report". *Consistent with convention, statistical significance was set at the .05 level for analyses included in this report.* Statistical tests with p -values equal to or less than .05 are interpreted as indicating effects that are reliable or real (observed effects have a 5 percent or less probability of being due to chance alone). Although the analyses highlight statistically significant effects, they are unable to reveal whether effects have important practical implications. Some effects that fall just short of the .05 significance level may have large practical implications while other

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effects with high statistical significance may have no practical implications. Thus, it is important to consider both the statistical significance and the practical implications of these data.

Accuracy of the Sample

As noted earlier, there are three populations that are represented by responses to the different questions in the survey (see page 4 for more detail). 1) Responses to questions in the mail questionnaire represent all hikers who obtained a permit to camp overnight in the backcountry. 2) Responses to questions in the diary that are descriptive in nature represent all hiking parties. 3) Responses to the questions in the pre-trip and post-trip interviews and to questions in the diaries that are evaluative in nature represent respondents selected to represent their hiking party.

The park's database of permit information was used to assess how well our sample of 65.2 percent of eligible hiking parties represented the population of all hiking parties who obtained a permit. Information about residence was provided in the park database for the person who obtained the permit, and was used as a basis for assessing our sample. Local Alaskan hiking parties obtained 28.6 percent of permits issued during the sample period, but were only 14.3 percent of our sample. This difference was because hiking parties could only participate once in the study, and local Alaska hiking parties were the most likely to take multiple backcountry trips.

After eliminating local Alaska hiking parties from the analysis, it was found that a greater proportion of permits were issued to foreign hiking parties than was represented in our sample (21.7% vs. 13.3%, respectively). This difference reflects that only foreign hiking parties with a strong enough command of the English language to complete the survey instruments were contacted and asked to participate.

When both foreign hiking parties and local Alaskan hiking parties were eliminated from the analysis, the percentage of non-local Alaskan hiking parties contacted was 13.0 percent compared to 16.9 percent who had obtained permits (the percentage of non-Alaskan US hiking parties contacted vs. obtained permits was 87.0% vs. 83.1%). These findings suggest that our sample of hiking parties does not differ in unexpected ways on these variables from the population of all hiking parties obtaining permits. If we

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make the assumption that party members included in the park database are representative of all backpackers in terms of where they live (i.e., residence), then it is possible to extend this analysis of the sample of all hiking parties to all hikers. We can therefore conclude that our sample of all hikers also does not differ in unexpected ways on these variables from the intended population.

Respondents selected to represent their hiking party were not randomly selected from the party and therefore, it is possible that this sample does not represent all hikers. However, we compared the responses to the mail survey questions for respondents selected to represent their hiking party in the multi-survey component with those of the remaining party members who participate in the mail only survey and found no differences. Therefore, it is unlikely that our respondents selected to represent their hiking party differ from all hikers on the remaining survey questions.

Local Alaska hiking parties are under-represented in the sample of hiking parties contacted as well as they are less likely to respond to the various survey components (i.e., potential non-response bias). For these reasons, respondents' residence was examined for all research findings, and when local Alaska residents differed from other respondents, the data are presented separately for each group. Subject to the limitations stated previously, we generally believe that the data excluding local Alaska residents are representative of non-local hiking parties and non-local hikers who camped overnight in DENA during the time of the survey. Because of the small number of local Alaska hiking parties included in the sample and the high non-response rates for this group, it is unclear whether our sample accurately represents all local Alaska hiking parties or all local Alaska hikers. Therefore, caution should be used when interpreting data for local Alaskans.

Assuming a random sample and questions of the yes/no type in which the true occurrences of these values in the population are 50%/50%, the data from the smallest sample in this survey (the 383 respondents completing the post-trip interview) can be generalized to the population of backpackers who camped overnight in DENA with a 95 percent assurance that the obtained or observed percentages to any item will vary no more

II. Introduction

than ± 5.0 percent. For the largest sample (the 507 respondents to the pre-trip interview) the same confidence interval is ± 4.4 percent.

Limitations

The DBS has several general limitations that should be kept in mind when interpreting the data. 1) In all surveys, it is assumed that respondents provide accurate and honest answers to the questions asked. 2) The data represent visitor attitudes and opinions at a particular point in time (i.e., the time of the survey) and changes can occur at any time. 3) Statistical inferences can only be made for a subset of DENA visitors who camped overnight in the backcountry. For data obtained in the mail questionnaire, that subset is all hikers who camped overnight in the backcountry during the survey period. For descriptive data obtained in the diaries, that subset is all hiking parties. For evaluative data obtained in the diaries and for data obtained in the pre-trip and post-trip interviews, that subset is respondents selected to represent their hiking party. 4) Because hiking parties rarely completed the permit process as a group (either before or after their trip), the data for the pre-trip and post-trip interviews and the diary most likely over-represent trip planners and under-represent large parties.³ In addition, there are other limitations noted in the body of the report that are due to the manner in which individual questions were interpreted or that are specific to a particular aspect of the survey (i.e., aircraft information experiment, conjoint analyses). Finally, there are limitations that revolve around the issue of non-response (i.e., possible bias in the sample due to differences between the visitors who completed the questionnaires and those who didn't). Potential limitations associated with non-response are discussed below.

Non-response—Multi-stage survey component. It is mathematically possible that the people who responded to a stage of the survey differed sufficiently from the people who did not respond that the sample data do not accurately represent the population. A variety of data from the pre-trip interview provide an opportunity for the use of statistical tests to search for possible differences between respondents and non-

³ The addition of the mail-only component (in order to get a near-census of all backpackers) not only made the target population for the mail survey comparable to Womble's 1978 target population, it addressed concerns about the representativeness of the sample for the mail questionnaire.

II. Introduction

respondents. Specifically, possible differences were assessed using Chi-square tests for independence that determined whether response rates were independent of a particular visitor characteristic (using a .05 significance level). The visitor characteristics that were used in assessing possible non-response bias were gender, whether the respondent was a local summer employee, and whether respondents were in the experimental or control condition (which version of the pre-trip interview and diary they received).

Given that people may have responded to some but not other of the instruments, non-response bias was assessed for each survey instrument: 1) diary, 2) post-trip interview, and 3) mail survey. Additionally, non-response bias was assessed for people who completed all four components of the multi-stage survey component and those who did not.

For the visitor characteristics listed above, statistically significant differences in response rates were found for whether or not respondents were local summer employees. Local summer employees (compared to the other respondents) were less likely to 1) return the diary (54.7% vs. 82.8% response rate), $\chi^2(1, n = 504) = 29.91, p < .001$; 2) complete the post-trip interview (53.3% vs. 79.3% response rate), $\chi^2(1, n = 504) = 23.12, p < .001$; and 3) return the mail questionnaire (41.3% vs. 61.8% response rate), $\chi^2(1, n = 504) = 11.00, p = .001$. Consistent with the findings for the individual instruments, local summer employees (compared to other respondents) were also less likely to complete all four instruments (33.3% vs. 59.4% response rate), $\chi^2(1, n = 504) = 17.62, p < .001$.

The results of the non-response analysis clearly showed local summer employees were less likely to respond to the subsequent instruments of the multi-stage survey than were other respondents. Because it was also probable that local summer employees would differ from other respondents in their experiences and knowledge of DENA, the impact of visitors' residence was examined for each research finding in this report. Specifically, respondents were divided into three residence categories that correspond to decreasing experience and knowledge of DENA: 1) Local Alaska residents (86.2% were the local summer employees), 2) Non-local Alaska residents, and 3) Non-Alaskan residents (included foreign respondents as well). Whenever significant effects of

II. Introduction

residence were observed, they are reported. When residence is not discussed, readers can assume that analyses found no significant effect of residence.

Non-response—Mail only component. Non-response bias was also examined for the mail only component. Three visitor characteristics collected as part of the contact sheet were used to search for statistical differences between respondents and non-respondents. Specifically, possible differences were assessed using Chi-square tests for independence that determined whether response rates were independent of a particular visitor characteristic (using a .05 significance level). These characteristics were age, gender, and residence (local Alaska resident, non-local Alaska resident, and non-Alaskan resident).

For the visitor characteristics listed above, no statistically significant differences in response rate were found. The small number of local Alaska residents (3 out of 197) in this sample did not provide a sufficient base for which to statistically test if they differed from the other two groups. Anecdotally, none of the three local Alaska residents returned their mail questionnaire. The results of the non-response analysis provided no indication of possible biases (based on assessed variables) between respondents and non-respondents.

Conventions Followed in This Report

As mentioned previously, there were 4 instruments in the multi-stage survey component (pre-trip interview, diary, post-trip interview, and mail questionnaire). These questionnaires are included in this report (see Appendices A through E), and it is recommended that they be reviewed before reading the body of this report. In the body of this report, each question is presented as it appeared on the questionnaire, and it is followed by corresponding graphs, tables, or analyses. The specific questionnaire and question used to collect the data reported in each chart are noted in the chart titles. The number of respondents (n) whose data are represented in each chart is also reported, generally at the bottom of the chart. The maximum number of respondents for each stage of the survey are: 1) 507 respondents for the pre-trip, 2) 399 respondents for the diary, 3) 383 respondents for the post-trip interview, and 4) 409 (298 + 111 mail only) respondents for the mail questionnaire. When a chart reports data for a subset of respondents (*c.f.*

II. Introduction

Figure 4.3: Behaviors Engaged in to Avoid Other Parties), a note describes the sub-sample included in the chart.

Because of the likelihood of non-response bias due to low response rates among local Alaska residents, we looked for differences due to respondents' residence (local Alaskan residents, non-local Alaskan residents, and non-Alaskan residents). When significant effects of respondents' residence were found, they are reported. Additionally, more complex analyses were done both with and without local Alaskan residents and the impact of local Alaskan residents reported. When residence is not discussed, readers can assume that analyses found no significant effects of this variable. When residence differences exist, they are always reported because the overall sample data may misrepresent both the visitors who are local Alaskan residents and those who are not.

Although all backcountry areas in DENA were legally designated as wilderness in 1980, we are using the term backcountry to refer to wilderness areas in DENA in an effort to have the language of the report be consistent with the language used in the survey instruments. The use of backcountry in the survey instruments occurred because we replicated the Womble, 1978 study (where backcountry was the technically correct term). Because most park users use backcountry and wilderness interchangeably in everyday language, the use of the term backcountry to refer to wilderness should not have affected respondent's ability to complete the survey instruments nor lead to any bias in the findings of this study.

Highlights are presented at the beginning of each chapter. A bulleted list is used when the chapter reports primarily descriptive data. When the chapter reports more detailed analyses, each highlight will contain a summary statement followed by additional explanations and/or implications. Readers are encouraged to review the supporting figures or analyses referenced in the highlights.

Missing data for up to 10 percent of respondents to a particular question are generally not considered likely to alter the interpretation of that question. Throughout this report, few questions had more than 10 percent missing data. Exceptions are noted in the text and charts.

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It is neither possible nor desirable that this report describes all possible analyses of the data collected by the survey, or even all analyses that are potentially of interest to MORA managers. However, some analyses that may be of interest are briefly noted throughout this report, and described as potential future analyses. Park managers and planners are encouraged to think creatively about potential analyses of the data.

II. Visitor Profile

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey hikers were asked a variety of demographic questions that are used here to describe, or provide a profile of, Denali backpackers who camped overnight in the backcountry. With the exception of two questions, these questions were asked in the mail survey component, and therefore, represent all hikers who camped overnight in the Denali wilderness. Hikers were asked in the pre-trip interview whether they were a summer concession employee and therefore, these data represent respondents selected to represent their hiking party who camped overnight in the Denali wilderness. Residence information was collected in the mail questionnaire and the pre-trip interview as well as included in the park's database. All of these pieces of information were used to determine hikers' residence as described later in this chapter.

II. Visitor Profile

II. Visitor Profile

Highlights

- Local Alaskan residents are under-represented in our sample (see Introduction for reasons & limitations). The percentage of local Alaskan *hiking parties* obtaining permits per the Park's data was 28.6 percent while the percentage of local Alaskan *hiking parties* participating in our study was 14.3 percent. The percentage of local Alaskan *hikers* participating in our study was 12.0 percent.
- Two-thirds of backpackers to DENA were non-Alaskan US residents (see Figure 2.1).
- Hikers' age depended on hikers' residence (see Figure 2.4). Local Alaskan hikers were on average the youngest group with an average age of 25.4 years, while non-local Alaskans (M = 31.1) and non-Alaskans (M = 29.8) were about five years older.
- Two-thirds (66.3%) of overnight backcountry hikers in DENA are male (see Figure 2.2), and 82.7 percent of hikers reported that they were Caucasian (see Figure 2.5).
- Over three-quarters (76.2%) of overnight backcountry hikers have at least a college degree (see Figure 2.7). Local-Alaskans however have completed on average fewer years of school (M = 15.3) than non-local Alaskans (M = 16.2) or non-Alaskans (M = 16.7). Figure 2.4 and Figure 2.8 are consistent with the knowledge that local-Alaskans are more likely to be college-aged students working at DENA for the summer.
- Most overnight backcountry hikers to DENA are employed (60.0%) or students (26.7%; see Figure 2.9). Few hikers are retired (1.0%).
- Alaskans are more likely to make multiple trips to DENA in the past three years than are non-Alaskans (see Figure 2.12). Although almost three-fourths of overnight hikers to DENA reported that this trip was their only trip to DENA in the past three

II. Visitor Profile

years, hikers from Alaska (local and non-local) had made significantly more trips to DENA in the past three years ($M = 11.4$ and $M = 15.4$, respectively) than non-Alaskan hikers ($M = 1.5$). Moreover, review of Figure 2.12 indicates that for 81.4 percent of non-Alaskans this trip was their only trip to DENA in the past three years and that there is a subset of Alaskans who made a relatively large number of visits in the past three years.

- Although 77.0 percent of backpackers have been issued only one backcountry permit in their lifetime (see Figure 2.13), the number of permits issued to a hiker varied by hiker's residence. Non-Alaskans have been issued fewer backcountry permits in their lifetime than local and non-local Alaskan hikers ($M = 7.8$ and $M = 5.4$, respectively) with 83.2 percent of non-Alaskans having been issued only one permit in their lifetime(see Figure 2.14).

II. Visitor Profile

Place of Residence

Mail Survey

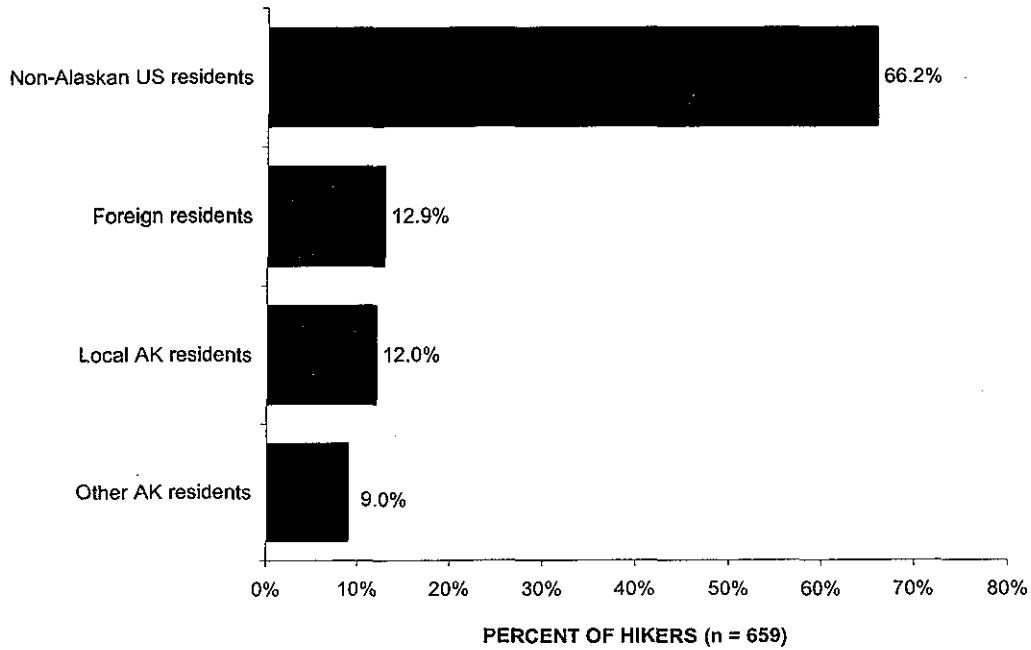
35. What is your home Zip code? (Enter country if you reside outside the United States.)

Hikers were classified into four residence categories based on the following rules. People were assigned to “local Alaskan resident” if 1) they indicated that they were a summer employee, or 2) if they provided a zip code during the contact interview that corresponded to the neighboring towns of Denali Park, Healy, or Cantwell. People who provided an Alaskan zip code during the contact interview other than those above were designated to be “non-local Alaskan residents”. The remaining people were designated as “non-Alaskan US residents” or “foreign residents” depending on their response during the contact interview. If people did not provide zip code information during the contact interview, people were classified based on the zip code they provided in the mail questionnaire using the same rules as stated above. If zip code information was missing from both the contact interview and the mail survey (n=77), then zip codes provided in the park permit database were used in conjunction with the rules stated above.

In the analyses examining the effect of respondent’s residence, “non-Alaskan US residents” and “foreign residents” were combined into the group “non-Alaskan hikers”.

II. Visitor Profile

FIGURE 2.1: Pre-trip Interview, Mail Survey, & Park Database
RESIDENCE LOCATION OF DENALI BACKPACKER SURVEY HIKERS



Note: Local Alaskan residents are under-represented in our sample. The percentage of local Alaskan *hiking parties* obtaining permits per the Park's data was 28.6 percent. The percentage of local Alaskan *hiking parties* participating in our study was 14.3 percent and the percentage of local Alaskan *hikers* participating in our study was 12.0 percent.

Age and Gender

Mail Survey

31. Are you: (Circle one number.)

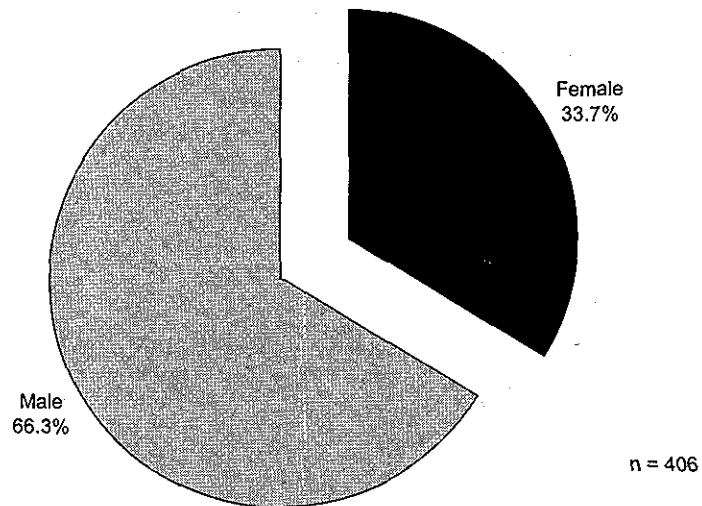
- 1 FEMALE
- 2 MALE

32. What year were you born?

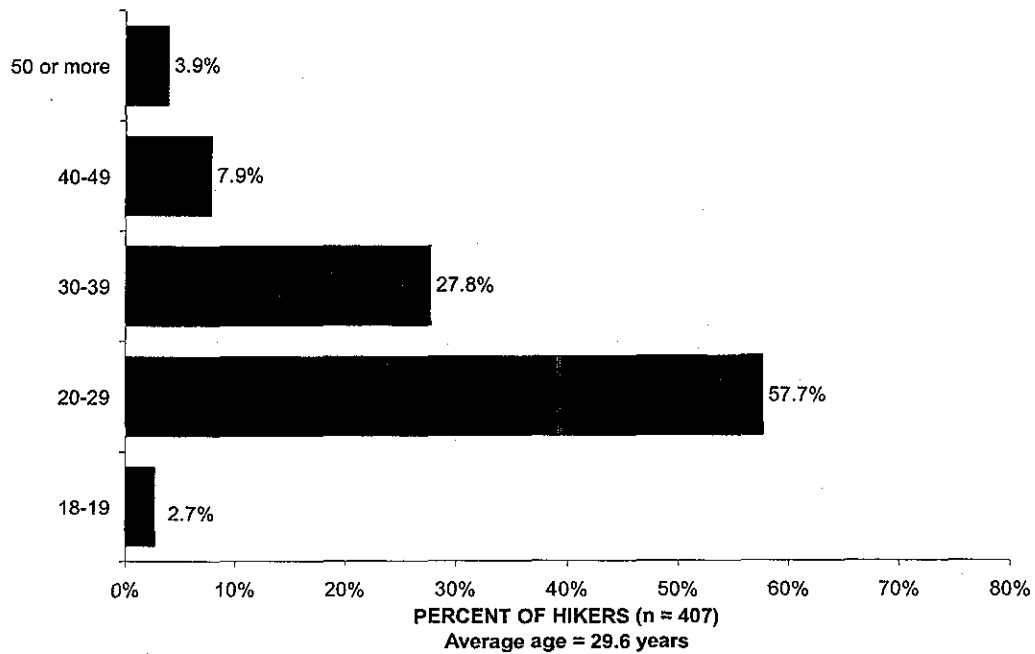
19 ____

II. Visitor Profile

**FIGURE 2.2: Mail Survey, Q-31
GENDER OF DENA OVERNIGHT BACKCOUNTRY HIKERS**



**FIGURE 2.3: Mail Survey, Q-32
AGE OF DENA OVERNIGHT BACKCOUNTRY HIKERS**

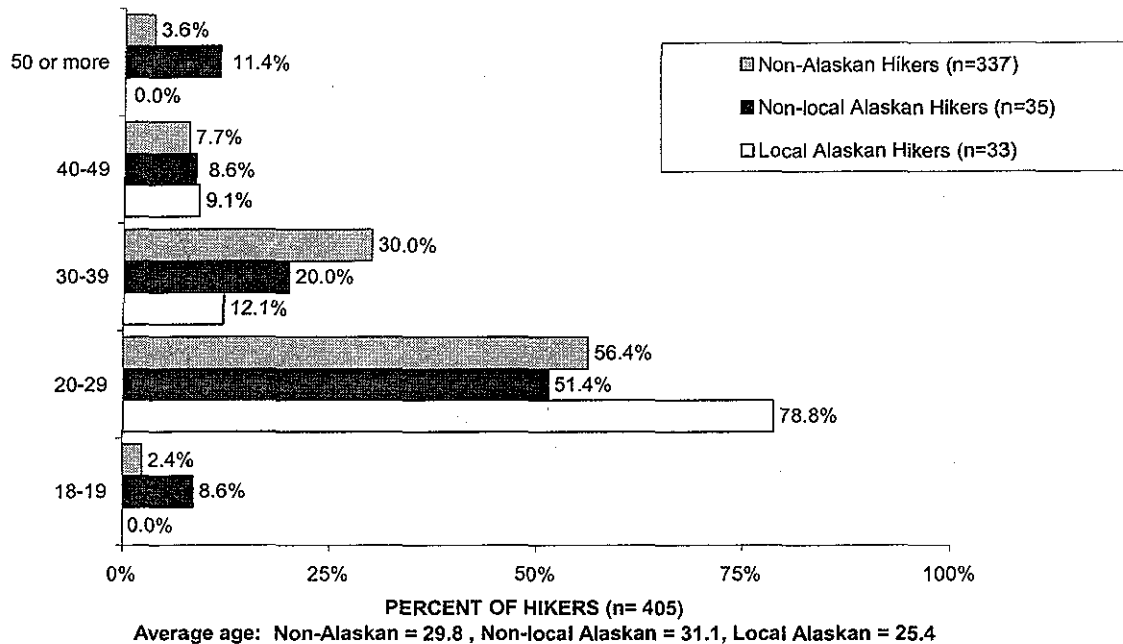


II. Visitor Profile

Hikers' age varied significantly by residence, $F(2, 402) = 4.97, p = .007$. Post hoc Tukey tests revealed that local Alaskan hikers were, on average, younger ($M = 25.4$) than non-local Alaskan hikers ($M = 31.1$), $p = .013$, or non-Alaskan hikers ($M = 29.8$), $p = .009$. The difference in age of non-local Alaskan hikers and non-Alaskan hikers, however did not differ significantly, $p = .669$. As can be seen in Figure 2.4, 78.8 percent of local Alaskan hikers were between age 20 and 29 compared to approximately half of the other hikers. These findings are consistent with many of the local Alaskan hikers being summer employees—most of which are college students.

These findings exemplify how our sample is biased when the data for all groups are aggregated together when the residence groups differ significantly. If a single average of the whole sample is desired, then the data can be weighted to correct for this bias. Because it is unclear how representative our sample of local Alaskan hikers is of all local Alaskan hikers, we have chosen instead to show the data for the different groups when the groups differ significantly.

**FIGURE 2.4: Mail Survey Q-32
AGE OF HIKERS BY RESIDENCE**



II. Visitor Profile

Race

Mail Survey

36. In what ethnicity and race would you place yourself? (Circle your answers.)

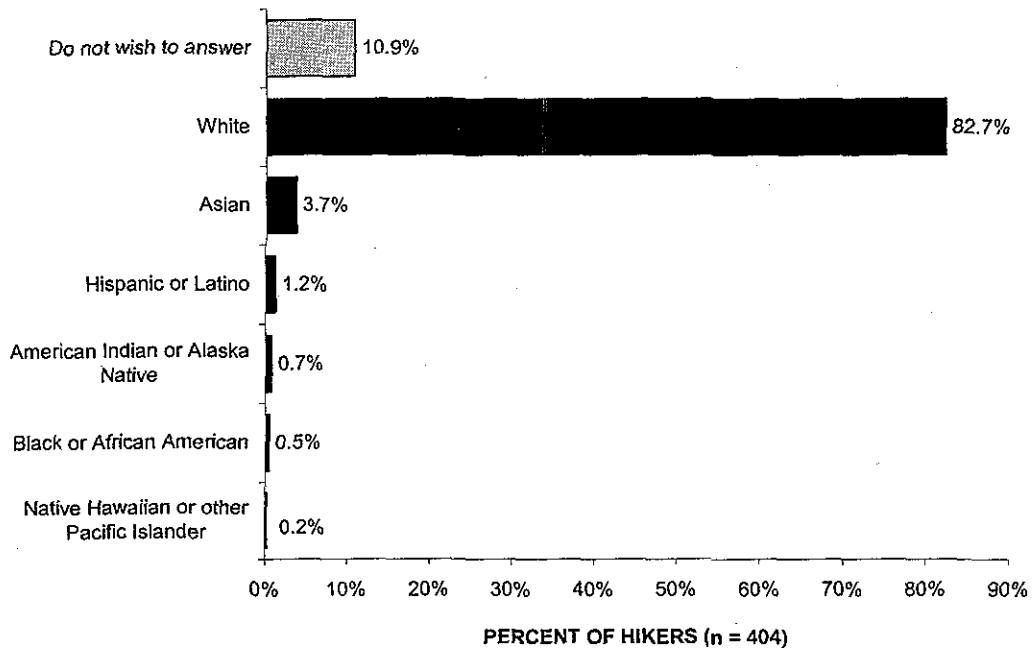
Ethnicity:

- 1 HISPANIC OR LATINO
- 2 NOT HISPANIC OR LATINO

Race:

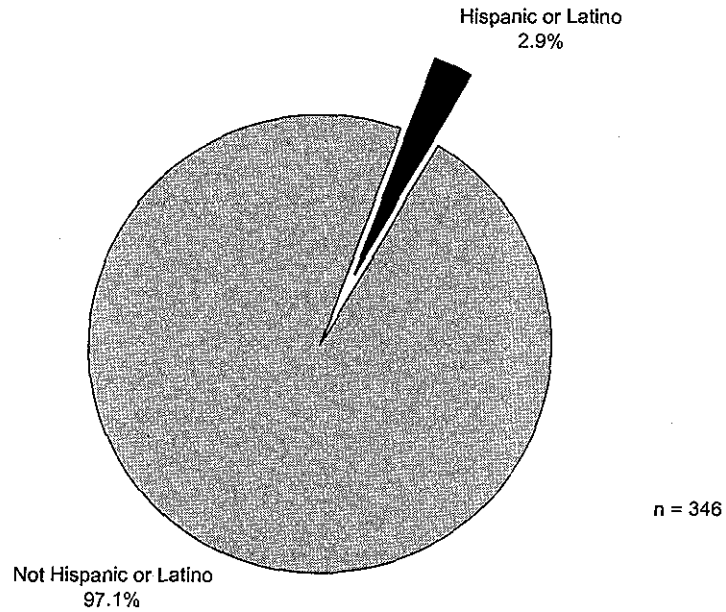
- 1 AMERICAN INDIAN OR ALASKA NATIVE
- 2 ASIAN
- 3 BLACK OR AFRICAN AMERICAN
- 4 HISPANIC OR LATINO
- 5 NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
- 6 WHITE
- 7 DO NOT WISH TO ANSWER

FIGURE 2.5: Mail Survey, Q-36
RACE OF DENA OVERNIGHT BACKCOUNTRY HIKERS



II. Visitor Profile

FIGURE 2.6: Mail Survey, Q-36
PERCENTAGE OF HIKERS INDICATING HISPANIC OR LATINO ETHNICITY



Education

Mail Survey

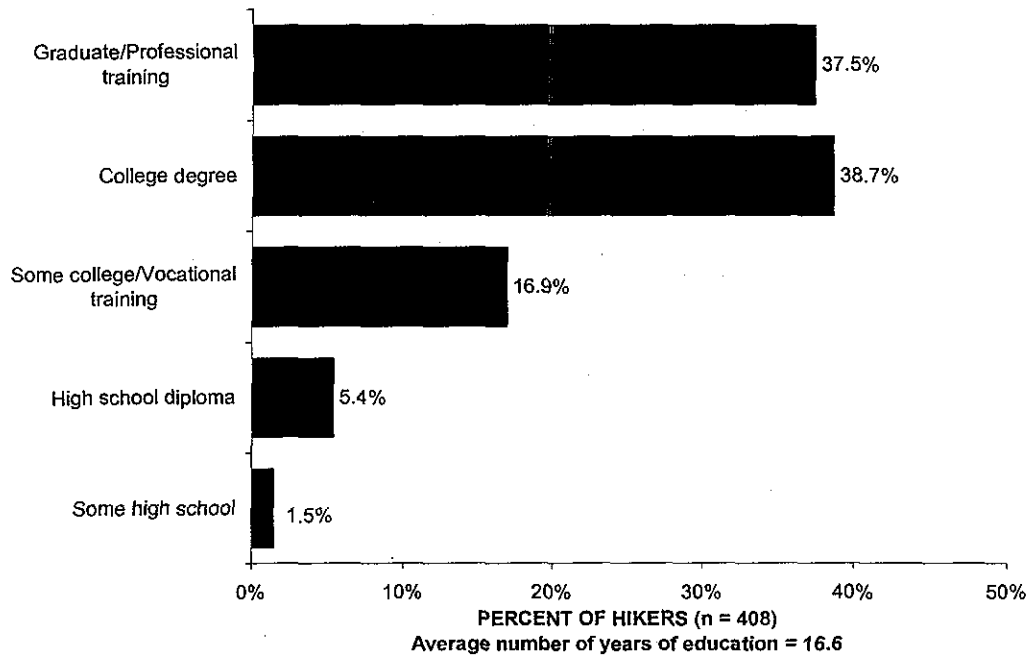
33. What is the highest level of formal schooling you have completed?
(Circle the appropriate number.)

_____ YEARS _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24+
(Elementary thru High School)												(College/Vocational)				(Graduate/Professional)							

II. Visitor Profile

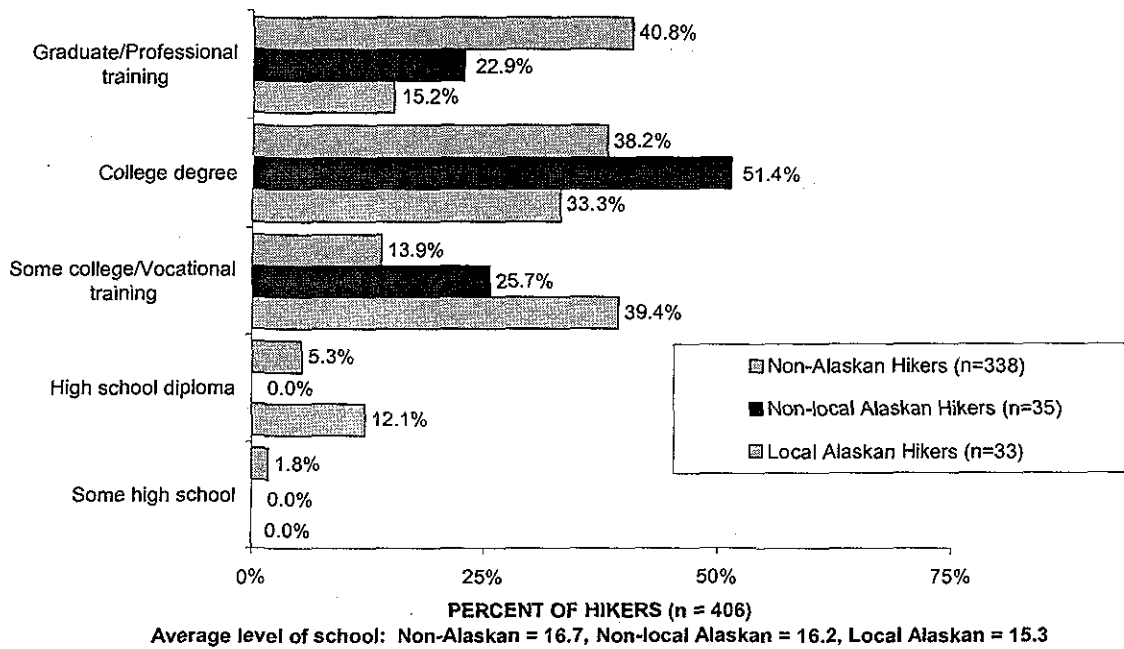
FIGURE 2.7: Mail Survey, Q-33
HIGHEST LEVEL OF FORMAL EDUCATION COMPLETED



Hikers' highest level of education differed by residence, $F(2, 403) = 4.72, p = .009$. Post hoc Tukey tests revealed that non-Alaskan hikers ($M = 16.7$) had significantly more education than local Alaskan hikers ($M = 15.3$), $p = .008$, but not significantly more education than non-local Alaskan hikers ($M = 16.2$), $p = .545$. The difference in education level for local and non-local Alaskan hikers was not significant, $p = .309$.

II. Visitor Profile

**FIGURE 2.8: Mail Survey Q-33
HIGHEST LEVEL OF FORMAL SCHOOLING BY RESIDENCE**



Occupation

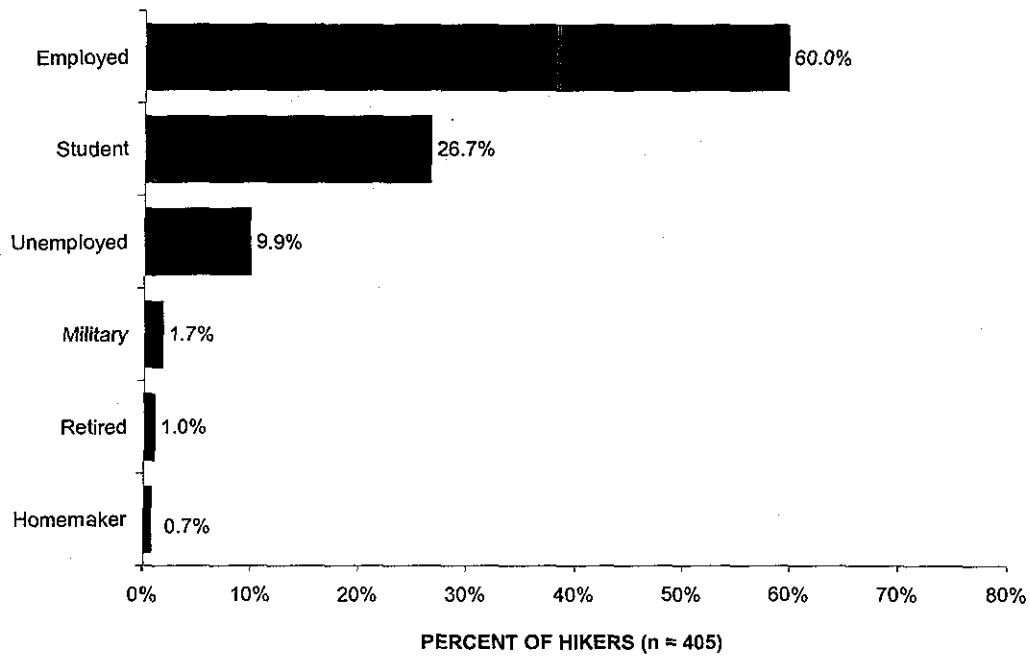
Mail Survey

34. Which of the following best describes your current employment status? (Circle the appropriate number.)

- 1 STUDENT
- 2 HOMEMAKER
- 3 RETIRED
- 4 MILITARY
- 5 EMPLOYED
- 6 UNEMPLOYED

II. Visitor Profile

FIGURE 2.9: Mail Survey, Q-34
EMPLOYMENT STATUS OF DENA OVERNIGHT BACKCOUNTRY HIKERS

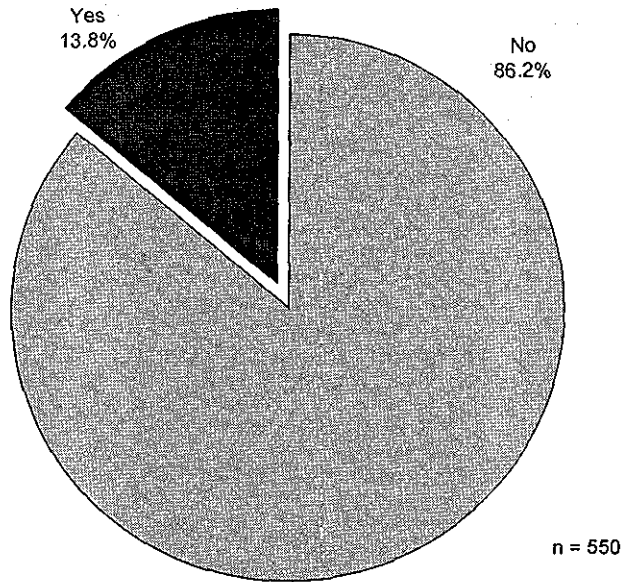


Pre-trip Interview

Are you a summer employee? 1. Yes 2. No

II. Visitor Profile

FIGURE 2.10: Pre-trip Interview
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES THAT
WERE LOCAL SUMMER EMPLOYEES



Note: All hiking parties indicating that they were local summer employees were classified as local Alaskan residents. There were however some local Alaskan hiking parties that were not local summer employees. The chart above indicates the percentage of hiking parties that were local summer employees. Figure 2.1 indicates the percentage of all hikers that were local Alaskan residents.

II. Visitor Profile

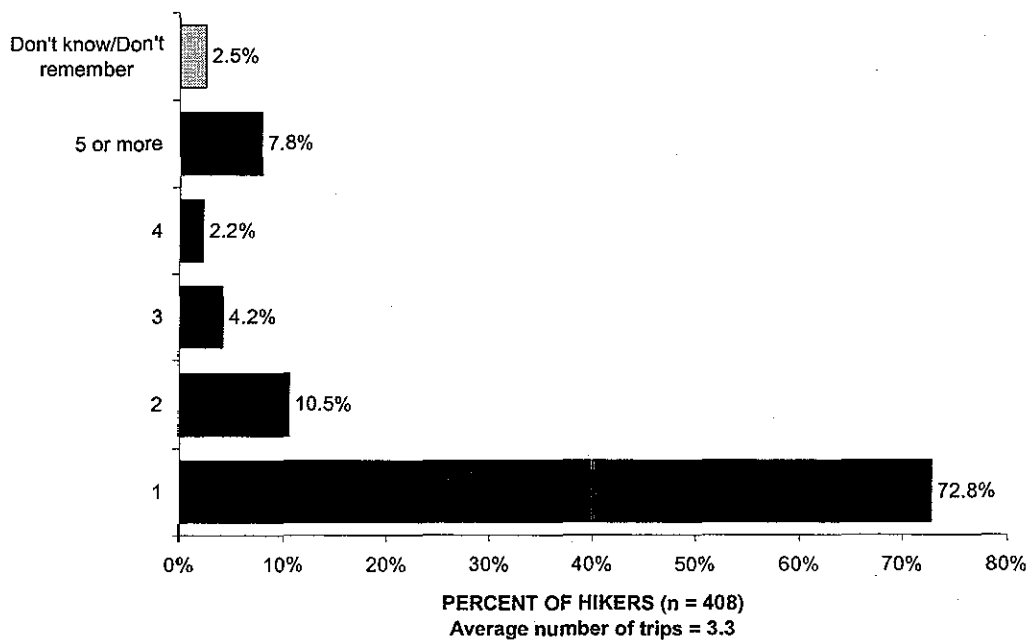
Number of Visits to DENA

Mail Survey

2. Including this visit, how many visits have you made to Denali National Park?
(Please enter a question mark "?" if you don't remember.)

NUMBER OF VISITS _____

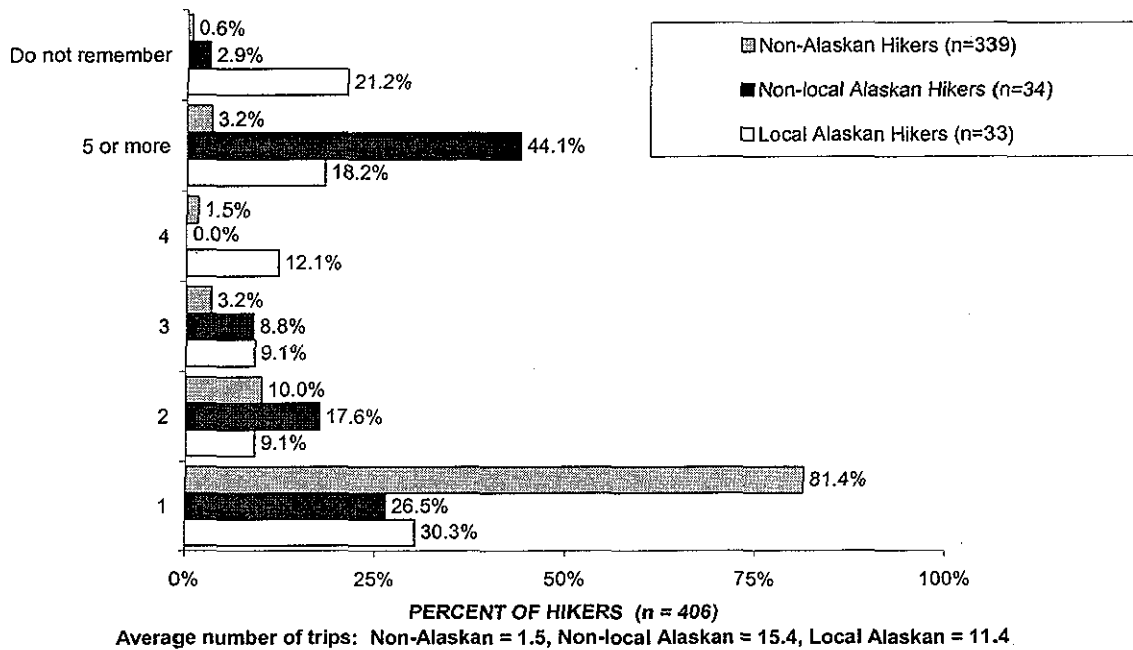
FIGURE 2.11: Mail Survey, Q-2
NUMBER OF TRIPS TO DENA IN THE PAST 3 YEARS INCLUDING CURRENT TRIP



Number of trips to DENA in the past three years differed significantly by hikers' residence, $F(2, 393) = 33.05, p < .001$. Post hoc Tukey tests revealed that non-Alaskan hikers have taken significantly fewer trips to DENA in the past three years than either local Alaskan hikers ($M = 11.4$), $p < .001$, or non-local Alaskan hikers ($M = 15.4$), $p < .001$. The number of trips to DENA in the past three years for non-local and local Alaskan residents did not differ significantly, $p = .336$. As can be seen in Figure 2.12, for 81.4 percent of non-Alaskan hikers the current trip was their first visit to DENA compared to 25 percent to 30 percent of Alaskan hikers.

II. Visitor Profile

**FIGURE 2.12: Mail Survey, Q-2
NUMBER OF TRIPS TO DENA IN THE PAST 3 YEARS INCLUDING CURRENT TRIP BY
RESIDENCE**



II. Visitor Profile

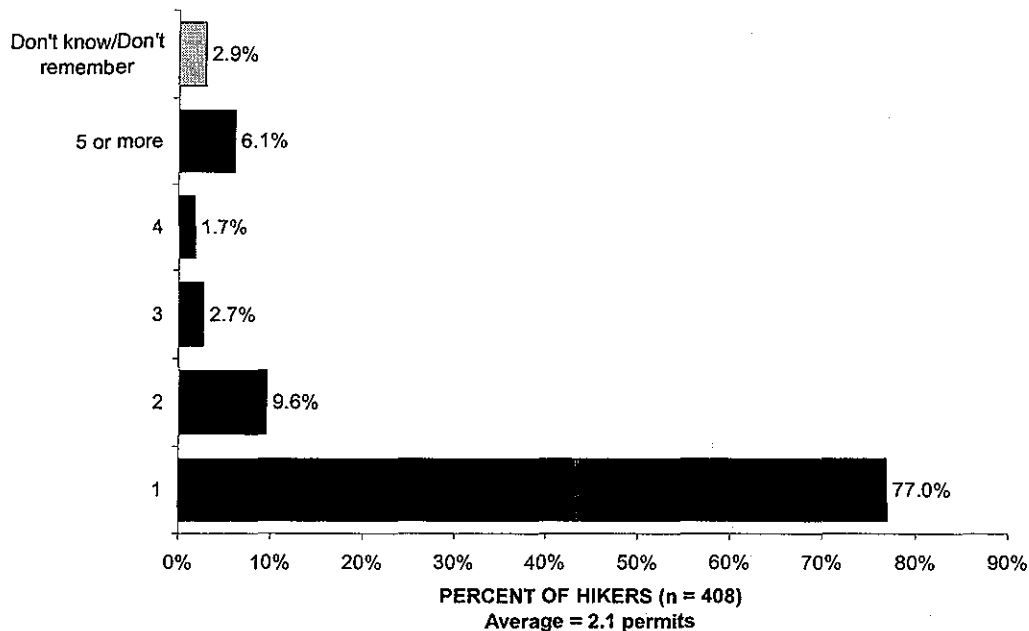
Number of DENA Backcountry Travel Permits Issued to Hikers During Their Lifetime

Mail Survey

3. **Including this visit**, how many backcountry travel permits have you been issued for backpacking trips at Denali? (Please enter a question mark "?" if you don't remember.)

NUMBER OF VISITS _____

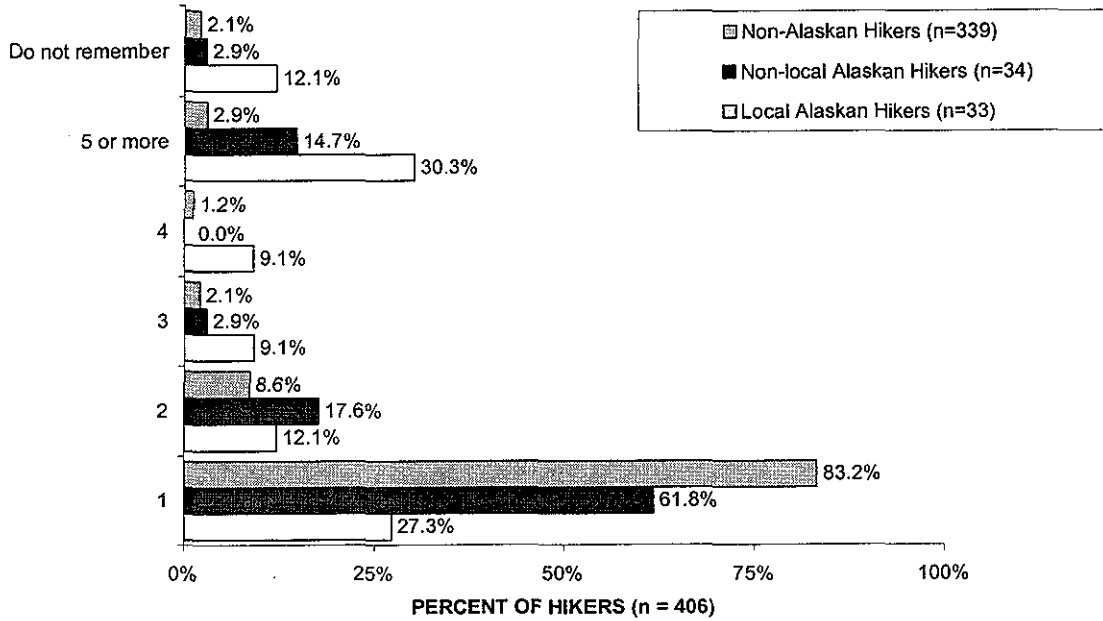
FIGURE 2.13: Mail Survey, Q-3
NUMBER OF BACKCOUNTRY PERMITS ISSUED TO HIKERS DURING THEIR LIFETIME



The number of backcountry permits issued to a respondent during their lifetime varied significantly by hikers' residence, $F(2, 391) = 25.29, p < .001$. Post hoc Tukey tests revealed that non-Alaskan hikers ($M = 1.3$) have been issued significantly fewer permits than local Alaskan hikers ($M = 7.8$), $p < .001$, or non-local Alaskan hikers ($M = 5.5$), $p < .001$. The difference in the number of permits issued for local and non-local Alaskan hikers was not significant, $p = .214$.

II. Visitor Profile

**FIGURE 2.14: Mail Survey, Q-3
NUMBER OF BACKCOUNTRY PERMITS ISSUED TO HIKERS DURING LIFETIME BY
RESIDENCE**



Average number of permits: Non-Alaskan = 1.3, Non-local Alaskan = 5.4, Local Alaskan = 7.8

III. Trip Characteristics

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions that asked respondents about their trip to Denali. All of these questions were asked in the mail questionnaire, and therefore these data represent responses for all hikers. This section reports the data that were collected with these questions. It is organized in the chronological order of most trips, moving from trip planning to a description of the trip. Each question is presented as it appeared on the questionnaire and is followed by the corresponding graphs, tables, or analyses.

III. Trip Characteristics

III. Trip Characteristics

Highlights

- For each question reported in this section local-Alaskans' responses differed from the non-local Alaskans' and non-Alaskans' responses. Examination of the findings suggests that many local-Alaskans who were spending the summer working at Denali defined their trip as their summer stay in the DENA area resulting in trips with distinctly different trip characteristics than the other two groups. For example, the average number of nights spent in DENA and the surrounding community was 49.41 nights. The findings summarized below do not address local-Alaskans' responses (although the referenced charts include the data for local-Alaskans).
- The majority of hikers (93.9% of non-local Alaskans and 81.1% of non-Alaskans) first decided to take a backcountry trip in DENA prior to leaving home for the trip during which we contacted them (see Figure 3.2).
- Non-Alaskan and non-local Alaskan hikers were most likely to spend between two and four nights in DENA and the surrounding community (see Figure 3.4). Most non-Alaskan and non-local Alaskan hikers however spent fewer nights in the backcountry with about one-third spending one night and an additional fourth spending two nights (see Figure 3.6).
- Almost half of non-Alaskan and non-local Alaskan overnight backcountry hikers did not take any day hikes in DENA that were separate from their backcountry trip (see Figure 3.8). About 30 percent of hikers took one or two day hikes in the backcountry. Slightly more than 10 percent of hikers took more than three day hikes in the backcountry.

III. Trip Characteristics

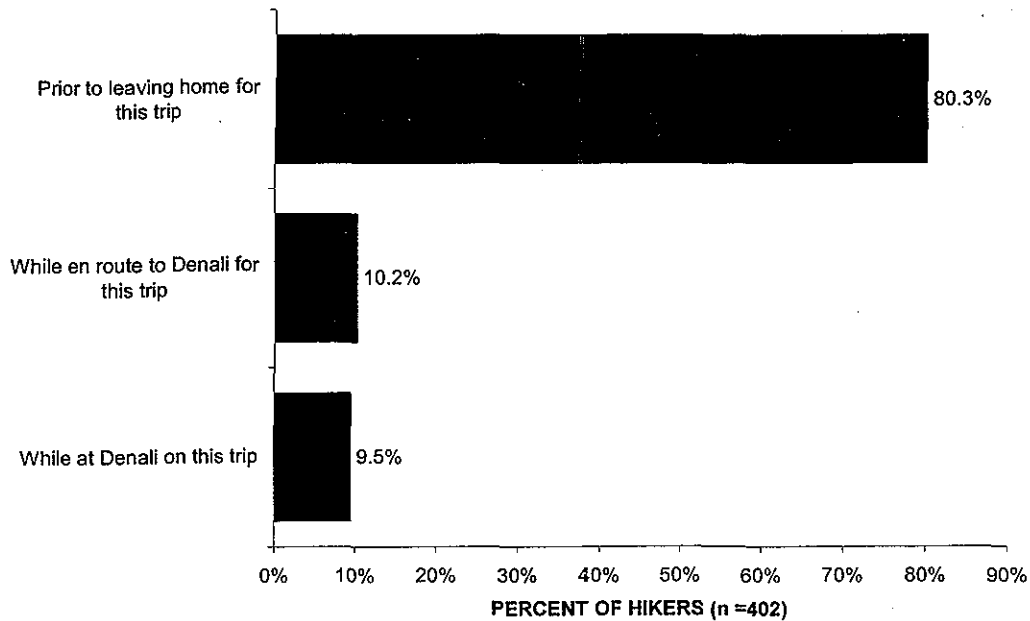
III. Trip Characteristics

When Hikers First Decided to Take a Backcountry Trip in Denali

1. When did you first decide to take an overnight backcountry trip in Denali? *(Please circle the appropriate number.)*

- 1 PRIOR TO LEAVING HOME FOR THIS TRIP
- 2 WHILE EN ROUTE TO DENALI FOR THIS TRIP
- 3 WHILE AT DENALI ON THIS TRIP

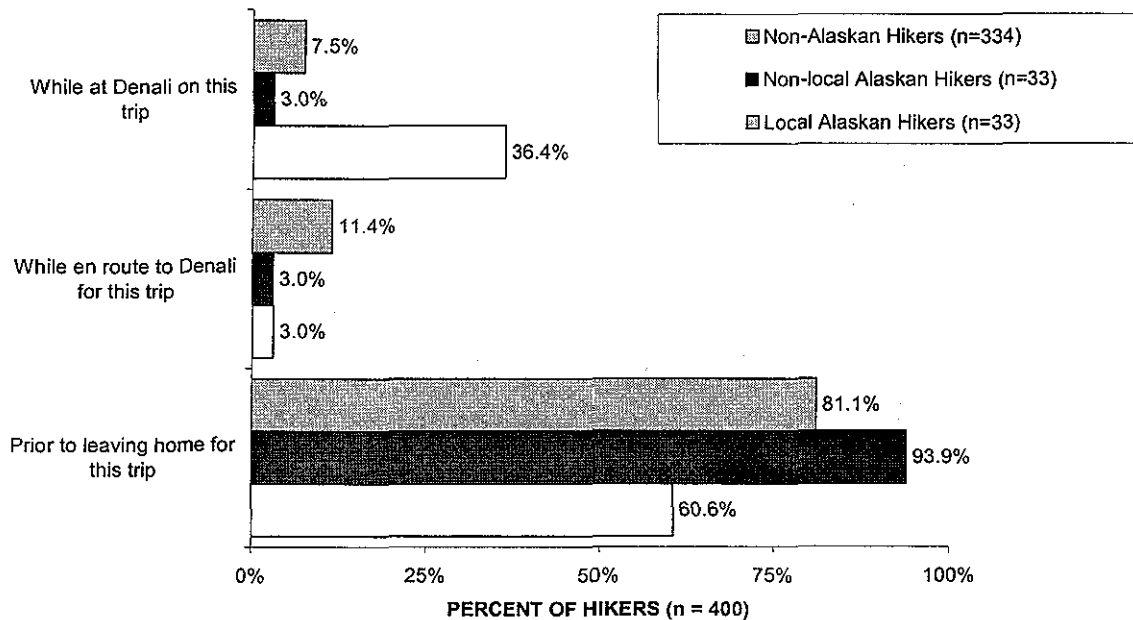
FIGURE 3.1: Mail Survey, Q-1
WHEN HIKERS FIRST DECIDED TO TAKE A BACKCOUNTRY TRIP



When hikers decided to take a backcountry trip in Denali depended on hikers' residence, $\chi^2 (2, n = 400) = 12.20, p = .002$ (prior to leaving home vs. after leaving home). As can be seen in Figure 3.2, local Alaskan hikers (compared to non-local Alaskan hikers or non-Alaskan hikers) were more likely to decide to take a backcountry trip while at Denali on this trip (36.4% vs. 7.5% or 3.0%). Non-local Alaskan and non-Alaskan hikers were more likely to decide to visit Denali prior to leaving home for this trip (93.9% and 81.1% compared to 60.6%). The greater number of non-local Alaskan hikers planning this trip prior to leaving home compared to non-Alaskan hikers may reflect that their backcountry trip to Denali was the primary purpose of their trip.

III. Trip Characteristics

FIGURE 3.2: Mail Survey, Q-1
WHEN HIKERS FIRST DECIDED TO TAKE A BACKCOUNTRY TRIP BY RESIDENCE



Total Nights Spent at DENA and Camped in the Backcountry

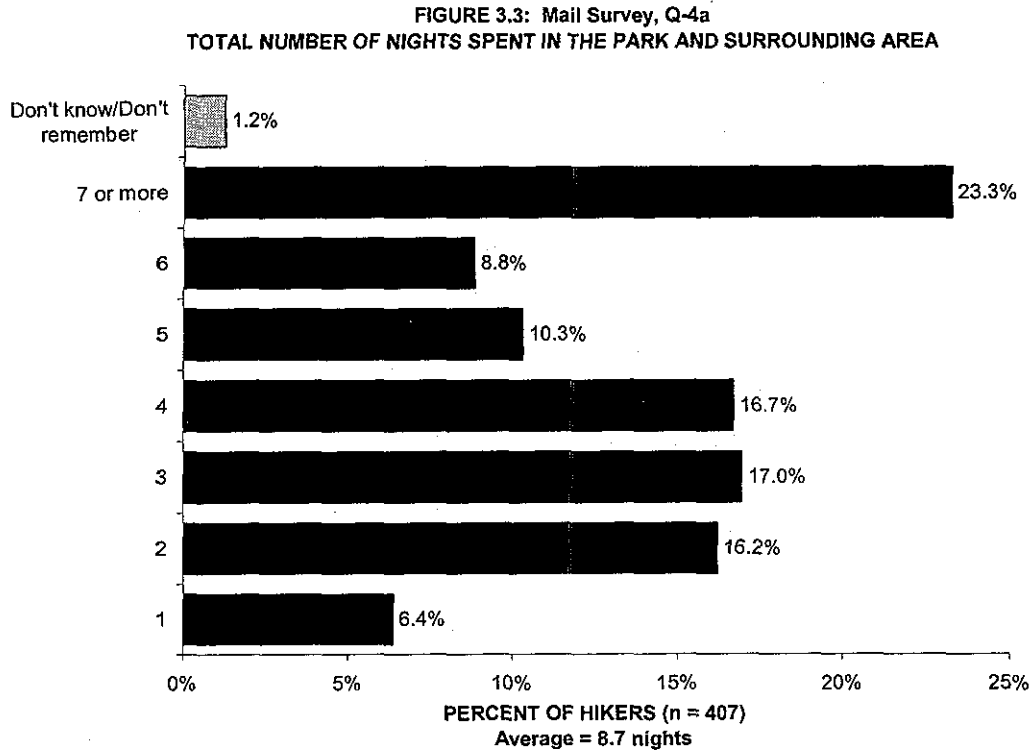
4. How many total **nights** did you (will you) spend in the Park and surrounding community (including overnight backcountry trips) during **this** visit to Denali?

NIGHTS AT DENALI: _____ →

Of this total number of nights in the area, how many were (will be) spent camped in the backcountry?

NIGHTS IN BACKCOUNTRY: _____

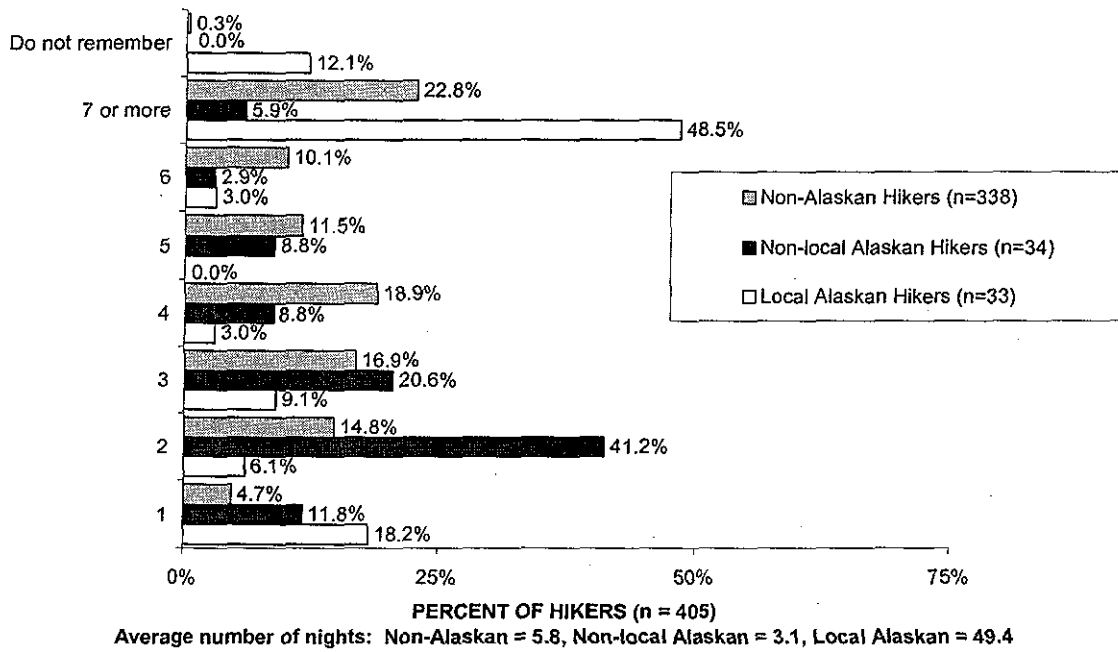
III. Trip Characteristics



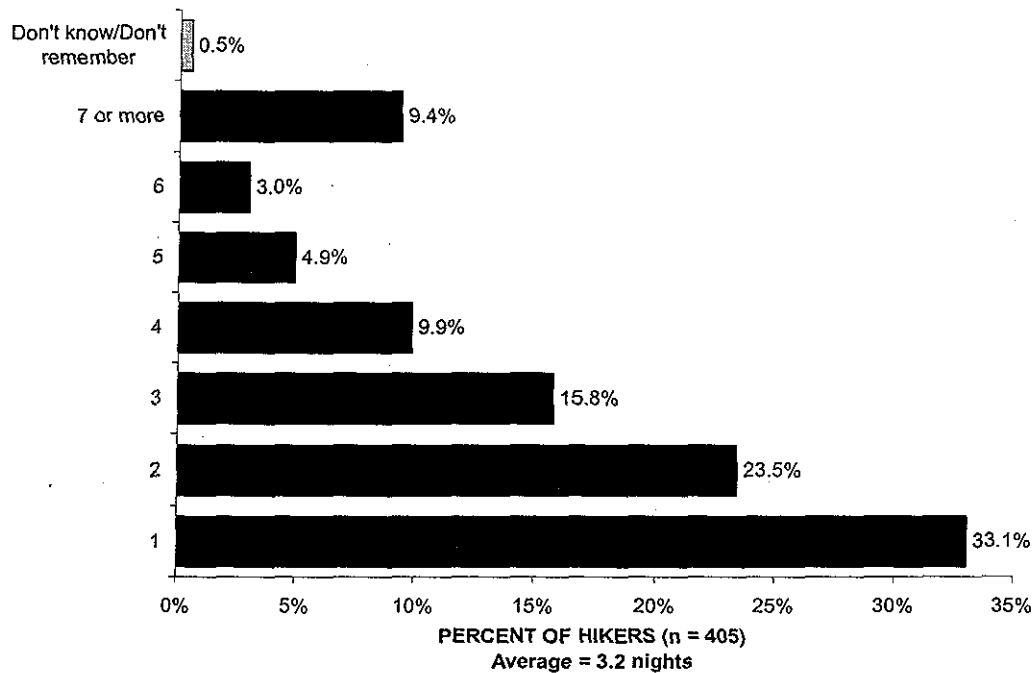
Number of nights spent at DENA and the surrounding area varied significantly by residence, $F(2, 397) = 108.09, p < .001$. Post hoc Tukey tests revealed that, on average, local Alaskan hikers spent significantly more nights at DENA and the surrounding area ($M = 49.41$) than non-local Alaskan hikers ($M = 3.06$), $p < .001$, or non-Alaskan hikers ($M = 5.81$), $p < .001$. The difference in number of nights spent at DENA and the surrounding area for non-local Alaskan hikers and non-Alaskan hikers was not significant, $p = .586$. Recall that many of the local Alaskan hikers are people who come to the area to work for the summer. Review of the data suggests that some hikers considered their entire summer stay as a single trip and therefore, responded to this question with the length of their summer stay (which was over 3 months for some individuals). These responses were primarily responsible for the high average number of days spent in DENA and surrounding area for this group. Eliminating hikers who answered 90 or more days when computing the average, resulted in an adjusted average of 5.66 nights spent in the park and surrounding area.

III. Trip Characteristics

**FIGURE 3.4: Mail Survey, Q-4
NUMBER OF NIGHTS SPENT IN PARK AND SURROUNDING COMMUNITY BY RESIDENCE**



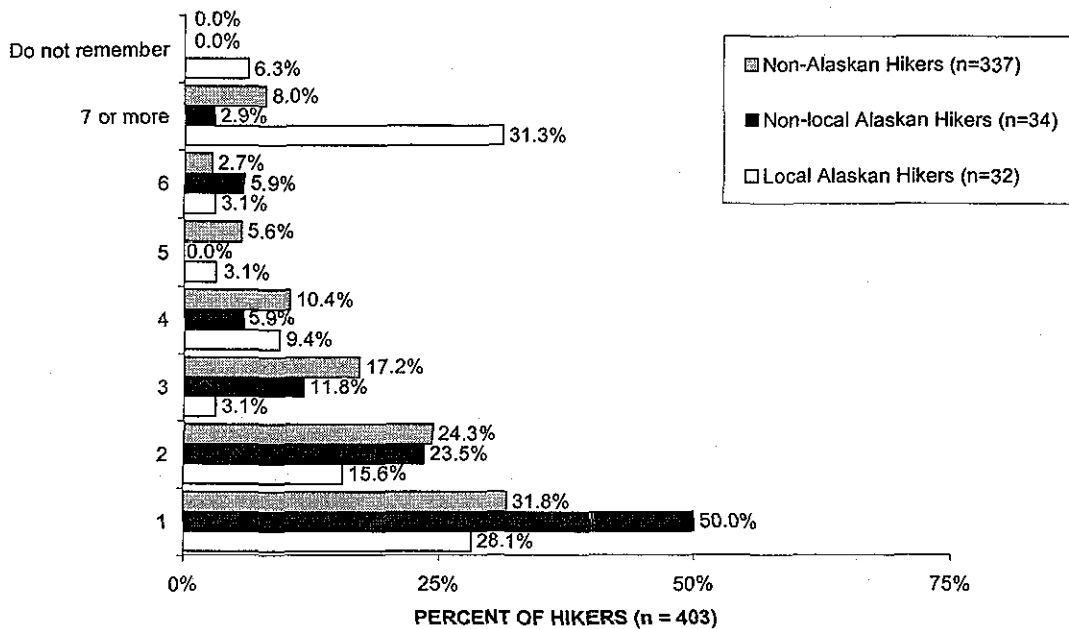
**FIGURE 3.5: Mail Survey, Q-4b
TOTAL NUMBER OF NIGHTS SPENT IN THE DENA BACKCOUNTRY**



III. Trip Characteristics

The number of nights hikers spent in the Denali backcountry varied significantly by residence, $F(2, 398) = 17.70, p < .001$. Post hoc Tukey tests revealed that, on average, local Alaskan hikers spent more nights camped in the Denali backcountry ($M = 6.60$) than non-local Alaskan hikers ($M = 2.15$), $p < .001$, or non-Alaskan hikers ($M = 3.03$), $p < .001$. The difference in the number of nights spent camped in the Denali backcountry did not differ for non-local Alaskan hikers and non-Alaskan hikers, $p = .304$. As can be seen in Figure 3.6, 31.3 percent of local Alaskan hikers spent 7 or more nights camped in the backcountry compared to less than 10 percent for non-local Alaskan or non-Alaskan hikers.

FIGURE 3.6: Mail Survey, Q-4
NUMBER OF NIGHTS CAMPED IN DENA BACKCOUNTRY BY RESIDENCE



Average number of nights: Non-Alaskan = 3.0, Non-local Alaskan = 2.2, Local Alaskan = 6.6

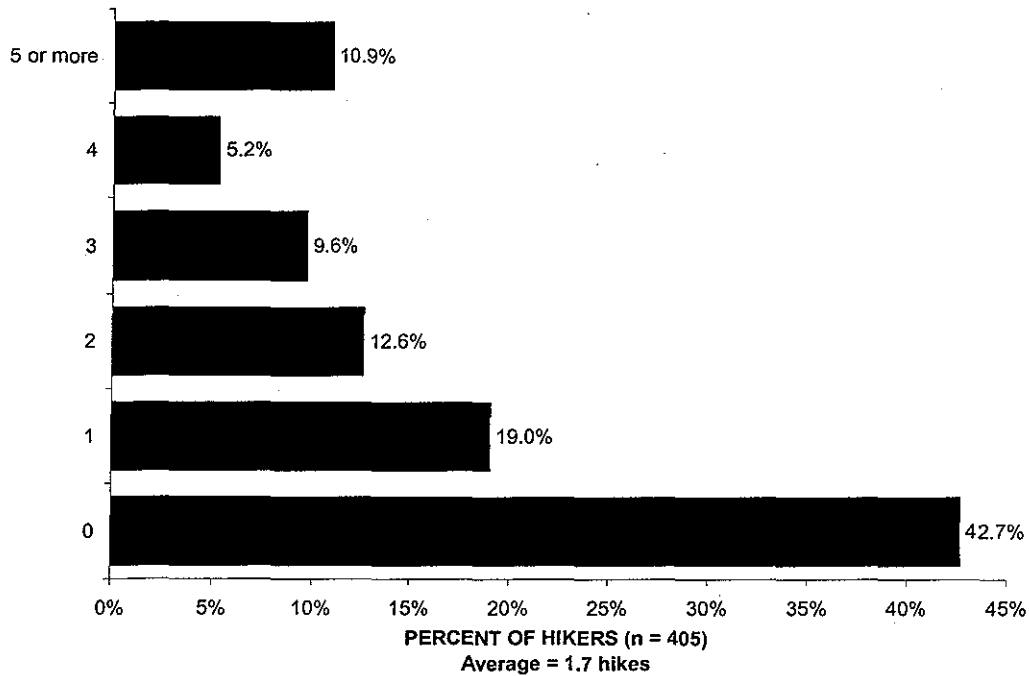
Number of Backcountry Day Hikes in DENA Taken During Trip

5. How many **backcountry day hikes** (hikes outside the immediate vicinity of developed facilities that were not on developed trails and not part of an overnight backcountry trip) did you take during **this** visit to Denali? (Please circle the appropriate number. Include future day hikes if you haven't finished your current visit.)

0 1 2 3 4 5 6 7 8 9 10+

III. Trip Characteristics

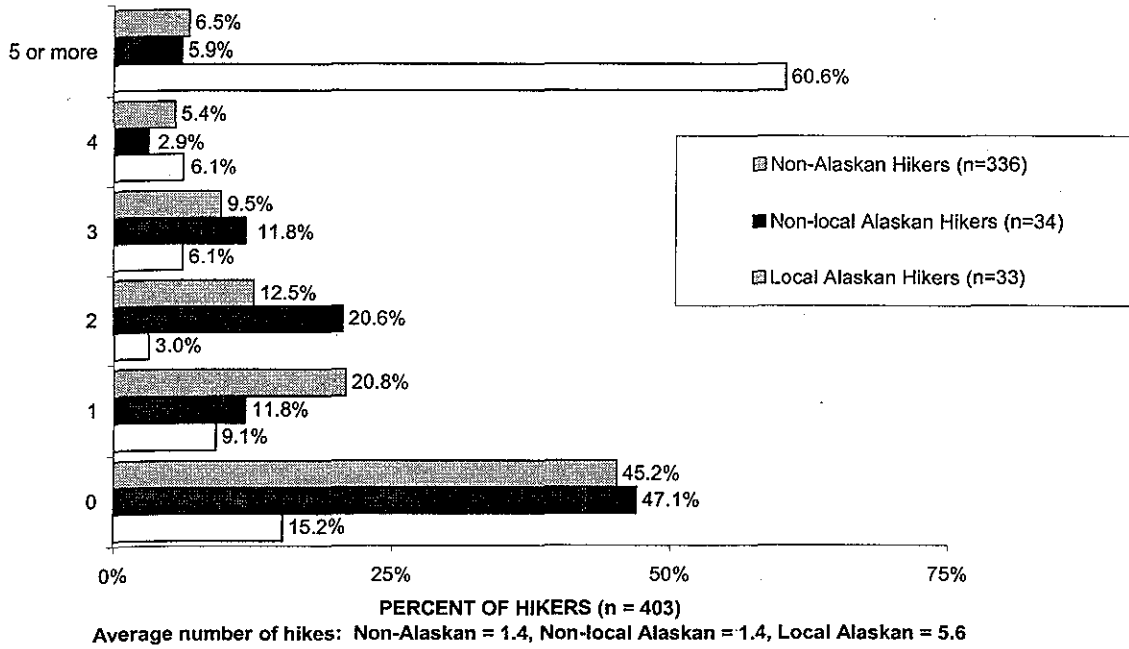
FIGURE 3.7: Mail Survey, Q-5
NUMBER OF BACKCOUNTRY HIKES IN DENA DURING THIS TRIP



Number of backcountry day hikes taken during this trip varied by residence, $F(2, 400) = 63.99, p < .001$. Post hoc Tukey tests revealed that local Alaskan hikers on average took more backcountry day hikes during their trip ($M = 5.58$) than non-local Alaskan hikers ($M = 1.41$), $p < .001$, or non-Alaskan hikers ($M = 1.36$), $p < .001$. There was no significant difference in the number of backcountry day hikes that non-local Alaskan and non-Alaskan hikers took, $p = .988$. As can be seen in Figure 3.8, approximately 45 percent of non-local Alaskan and non-Alaskan hikers took one backcountry day hike compared to 15.2 percent of local Alaskan hikers. Additionally, 60.3 percent of local Alaskan hikers took seven or more day hikes while only about 6 percent of non-local Alaskan and non-Alaskan hikers took seven or more day hikes.

III. Trip Characteristics

**FIGURE 3.8: Mail Survey, Q-5
NUMBER OF BACKCOUNTRY DAY HIKES IN DENA BY RESIDENCE**



IV. Human Presence: Experiences and Evaluation

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions to assess the impact of human's presence in the backcountry. The presence of humans may be experienced directly through encounters with other backpackers or with park rangers or indirectly through impacts humans have had on the environment such as trampled vegetation or litter. This section describes backpackers' experiences with the presence of humans during their backcountry trip and their evaluations of those experiences.

Questions assessing backpackers' experiences with the presence of humans during their trip were included in the diary and mail survey components (see Appendices B, C, and E for the complete surveys). As discussed in the Introduction (see page 4), the population to which the findings are generalizable varies for the different surveys. All data collected in the mail questionnaire are considered representative of all overnight backcountry hikers. One individual from each hiking party completed the diary. It is reasonable to assume that the descriptive observations made by these respondents (e.g., the number of aircraft they heard/saw) represent the conditions experienced by their hiking party. It is more questionable however whether these individuals' evaluations of their experience represent all members of their party's reactions. The extent (if at all) to which their reactions data might differ from hiking parties in general can not be determined from these data. Therefore, questions from the diary that are evaluative in nature (e.g., how did you feel about the number of other hikers) are considered to be representative only of the respondents selected to represent their hiking party and are labeled accordingly.

IV. Human Presence

IV. Human Presence

Highlights

- Fewer than half of hikers (40.1%) preferred to see no other hiking parties during their trip (see Figure 4.1). About one fourth of hikers (22.5%) preferred seeing more than one hiking party on a typical day with 5.4 percent of hikers preferring to see more than 2 hiking parties on a typical day. About 16 percent of hikers had no preferences.
- Most hikers encounter fewer hiking parties per day than managers' present objective of no more than two per day. Across their whole trip, one fourth of hiking parties saw no other hiking parties, over half (56.9%) of hiking parties saw an average of less than one other hiking party per day, and most hiking parties (85.2%) saw an average of less than two other hiking parties per day (see Figure 4.2). Hiking parties saw on average 1.11 hiking parties per trip day (see Figure 4.2) and interacted with .65 hiking parties per trip day (see Figure 4.4). Over the course of their whole trip, hiking parties saw on average 3.07 hiking parties (see Figure 4.5) but only interacted on average with 1.65 hiking parties per trip (see Figure 4.6).
- Averaging across trip days, most respondents selected to represent their hiking party (80.9%) felt that the number of other hiking parties they saw was about the right number (see Figure 4.3).
- About 15 percent of hikers reported seeing more hiking parties than they expected (see Figure 4.10). About 14 percent of hikers reported that the number of hiking parties detracted from their overall enjoyment (see Figure 4.11). The question of whether these are the same people can be addressed by further analyses.
- About 15 percent of hikers behaved in ways to avoid other hiking parties (see Figure 4.7). Most of them (78.7%) hiked in (or avoided) particular areas (see Figure 4.8).

IV. Human Presence

- The majority of hikers (81.6%) preferred (see Figure 4.12) and most hiking parties (81.0%) did not experience any hiking parties camped within sight or sound of their camp on any night of their stay in the backcountry of DENA (see Figure 4.15). A small percentage of hiking parties (7.6%) had an average of at least one hiking party camped within sight or sound of their camp per trip day (see Figure 4.13). The average feeling rating about the number of hiking parties camped within sight or sound per trip day for most respondents selected to represent their hiking party (84.6%) indicated that they saw about the right number (see Figure 4.14). Slightly more than 10 percent of respondents selected to represent their hiking party had more hiking parties camped nearby than they preferred.
- Although the park is not consistently meeting the current management objective that hiking parties should not encounter park rangers more than once per trip, the current level of encounters with park rangers did not detract from the vast majority of hikers' overall trip enjoyment. A total of 17.7 percent of hiking parties encountered more than one park ranger during their trips (see Figure 4.18); however, Figure 4.20 shows that only 4.2 percent of hikers felt that the number of park rangers they saw reduced their overall trip enjoyment (and some of those may have been dissatisfied because they did not see rangers). About two-thirds (69.4%) of hiking parties never saw a park ranger during their trip (see Figure 4.18) and almost three-fourths (73.6%) of hiking parties did not interact with a park ranger during their backcountry trip (see Figure 4.19).
- The most commonly reported type of evidence of human use seen by hikers was hiker trails (64.5% of hikers; see Figure 4.21), but more than half (61.2%) of hikers who saw hiker trails were not bothered by the trails (see Figure 4.22). Litter, the third most frequently seen (15.3%) evidence of human use, had the largest percentage of hikers (51.6%) reporting being very bothered by it of any of the types of evidence of human use seen (see Figures 4.22-4.28).

IV. Human Presence

- Over one-third (37.0%) of hikers reported that the amount of evidence of human use they saw was what they expected to see (see Figure 4.30). A total of 10.6 percent of hikers reported seeing more evidence than they expected. Local-Alaskan hikers were more likely to report seeing less or a lot less evidence than expected (27.3%) than non-local Alaskan hikers (2.9%) or non-Alaskan hikers (12.2%; see Figure 4.31).
- The majority (84.3%) of hikers reported feeling not at all crowded in the backcountry (see Figure 4.32). Of those hikers who reported feeling crowded to some extent, number of hiking parties (all or day hikers) and other factors were reported as contributing the most to their feeling crowded (see Figures 4.33-4.38). Review of the written in responses for other factors indicated that the two most common other factors corresponded to buses (9 of 23 hikers) and to air traffic (5 of 23 hikers).

IV. Human Presence

IV. Human Presence

Encounters with Hiking Parties

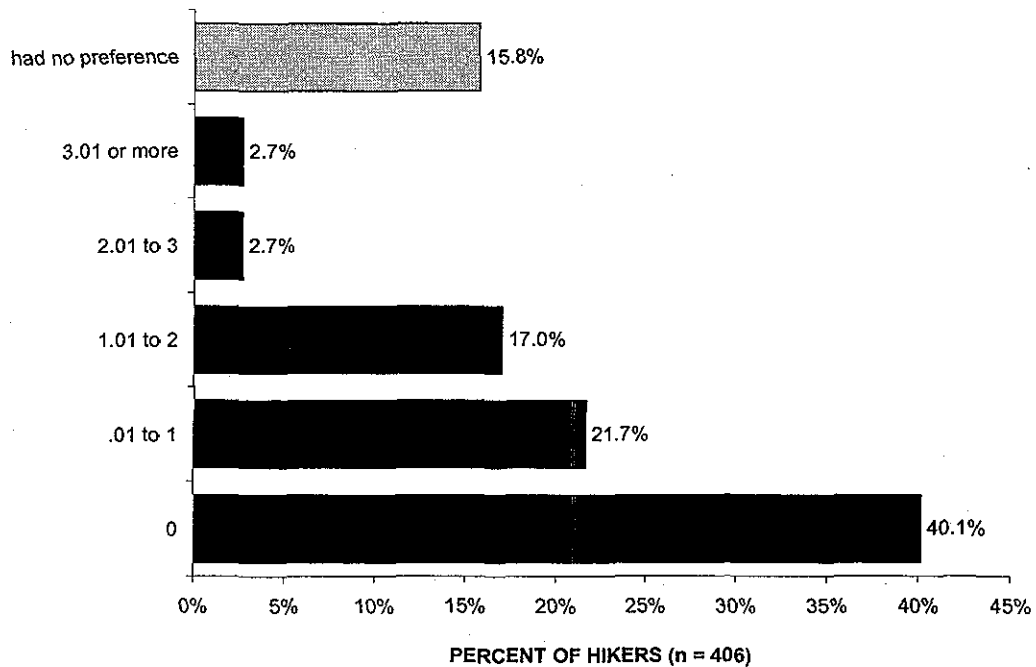
Number of Hiking Parties Prefer to See on a Typical Hiking Day

Mail Survey

12. What is the number of hiking parties (all types) that you would prefer to see on a typical hiking day during a backpacking trip in the Denali backcountry? *(Please enter a number, or circle number 2 if you have no preference.)*

- 1 NUMBER OF PARTIES _____
- 2 I HAVE NO PREFERENCE _____

FIGURE 4.1: Mail Survey, Q-12
NUMBER OF HIKING PARTIES HIKERS PREFER TO SEE ON A TYPICAL DAY



Number of Hiking Parties Seen Per Day

In both versions of the diary, respondents were asked daily to report on the number of other hiking parties they saw (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary values represent the data for this question: 1) the

IV. Human Presence

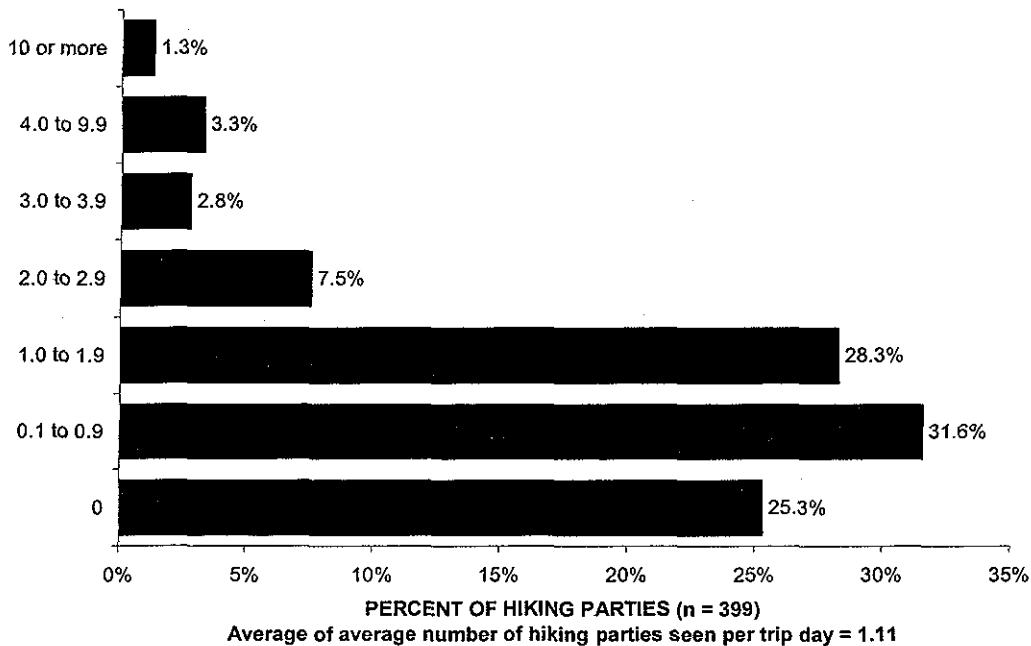
average per trip, 2) the maximum per trip, 3) the minimum per trip, 4) the standard deviation across trip days, and 5) the total number per trip. The average number of hiking parties seen per trip is reported below and the total number of hiking parties seen per trip is reported later in the chapter (see page 62). Charts of all the summary data are presented in Appendix G.

The *Average per Trip Day* represents the total number of hiking parties seen reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties seen per full hiking day.

Diary, Versions 1 & 2

5. How many different hiking parties did you see today? _____

FIGURE 4.2: Diary (aggregated), Q-5
AVERAGE NUMBER OF HIKING PARTIES SEEN PER TRIP DAY



IV. Human Presence

Feelings about the Number of Hiking Parties Seen Today

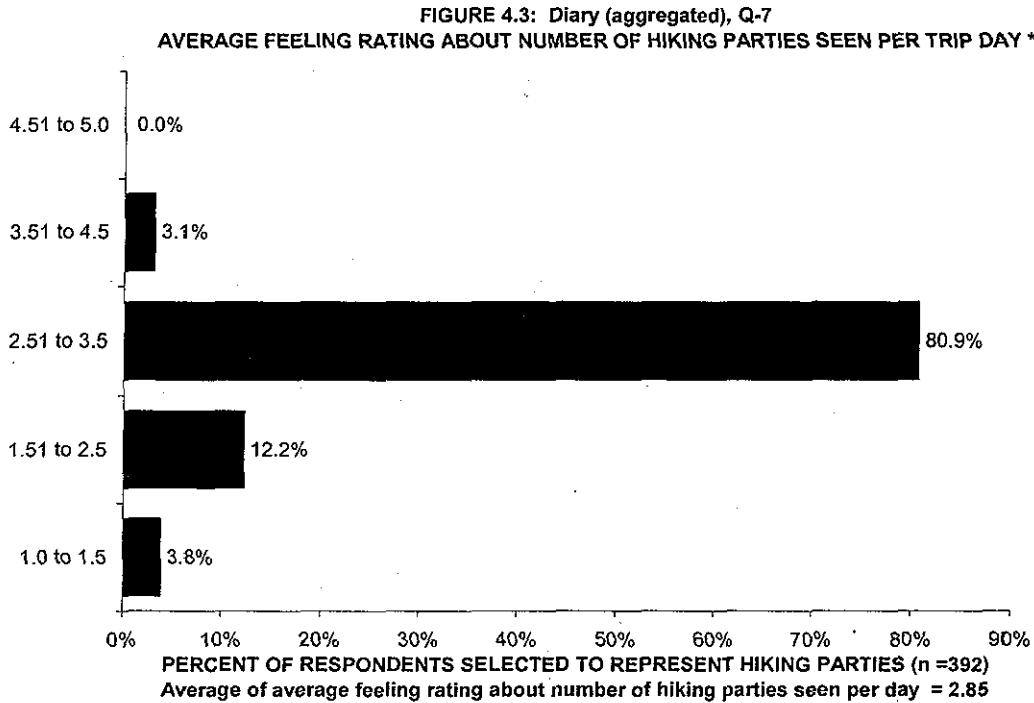
In both versions of the diary, respondents were asked daily to report on how they felt about the number of other hiking parties they saw (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each respondent's trip, four summary figures represent the data for this question: 1) the average per trip, 2) the maximum per trip, 3) the minimum per trip, and 4) the standard deviation across trip days. The average feeling rating for number of hiking parties seen per trip day is reported below, and charts of all the summary data are presented in Appendix G.

The Average Feeling Rating about Number of Hiking Parties Seen per Trip Day represents the sum of the feeling ratings of the number of hiking parties seen each day divided by the number of trip days for a respondent selected to represent a party. Days may include partial hiking days from the first and/or last day of the diary.

Diary, Versions 1 & 2

7. Which of the following best describes how you feel about the number of hiking parties you saw today?
(List number that describes your feelings)
1. Saw too many, preferred seeing none
 2. Saw too many, preferred seeing less
 3. Saw about the right number
 4. Saw too few, preferred seeing more
 5. Saw too few, preferred seeing many more

IV. Human Presence



*Taking the average results in values that fall between the response options

Number of Hiking Parties Interacted with Each Day

In both versions of the diary, respondents were asked daily to report on the number of other hiking parties they interacted with (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent the data for this question. The average number of hiking parties interacted with per trip day is reported below and the total number of hiking parties interacted with per trip is reported later in the chapter (see page 63). Charts of all the summary data are presented in Appendix G.

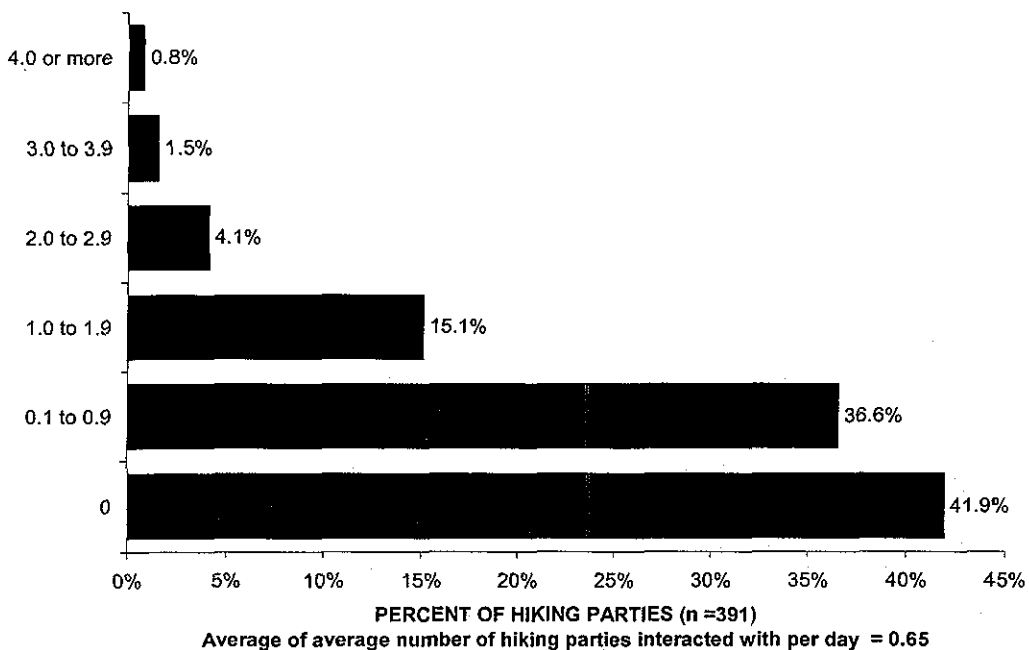
The *Average Number of Hiking Parties Interacted with per Trip Day* represents the total number of hiking parties interacted with reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties interacted with per full hiking day.

IV. Human Presence

Diary, Versions 1 & 2

6. How many times did you interact with hiking parties today? (e.g., talk to or exchange greetings, either verbal or non-verbal). _____

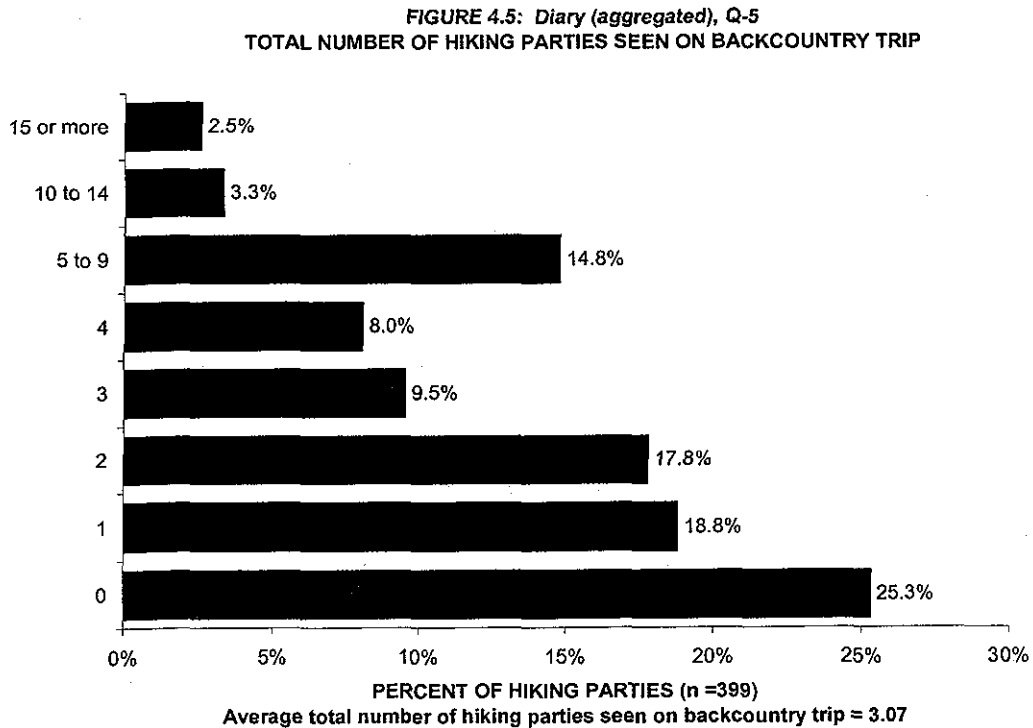
FIGURE 4.4: Diary (aggregated), Q-6
AVERAGE NUMBER OF HIKING PARTIES INTERACTED WITH PER TRIP DAY



IV. Human Presence

Total Number of Hiking Parties Seen on Trip

The *Total Number of Hiking Parties Seen per Trip* is simply the total number of hiking parties seen during a trip. It is calculated by summing the number of hiking parties seen reported each day.

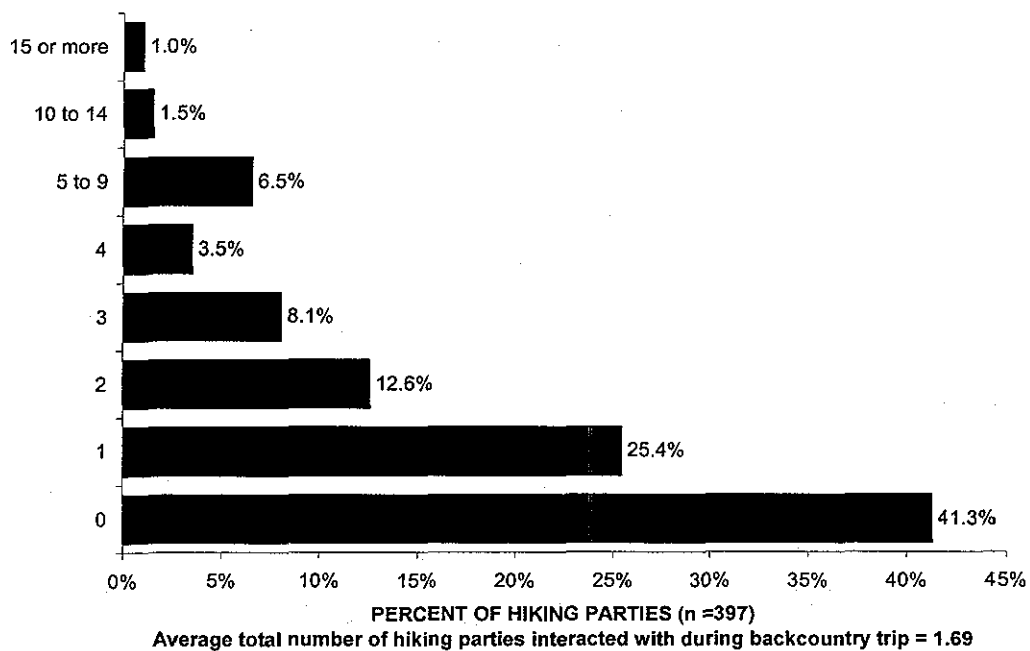


IV. Human Presence

Total Number of Hiking Parties Interacted with on Trip

The *Total Number of Hiking Parties Interacted with per Trip* is simply the total number of hiking parties interacted with during a trip. It is calculated by summing the number of hiking parties reported being interacted with each day.

FIGURE 4.6: Diary (aggregated), Q-6
TOTAL NUMBER OF HIKING PARTIES INTERACTED WITH DURING BACKCOUNTRY TRIP



Behaved in a Way to Avoid Other Hiking Parties

Mail Survey

11a. Once you began your backcountry trip, did your party behave in such a way so as to avoid other hiking parties? (Circle one number)

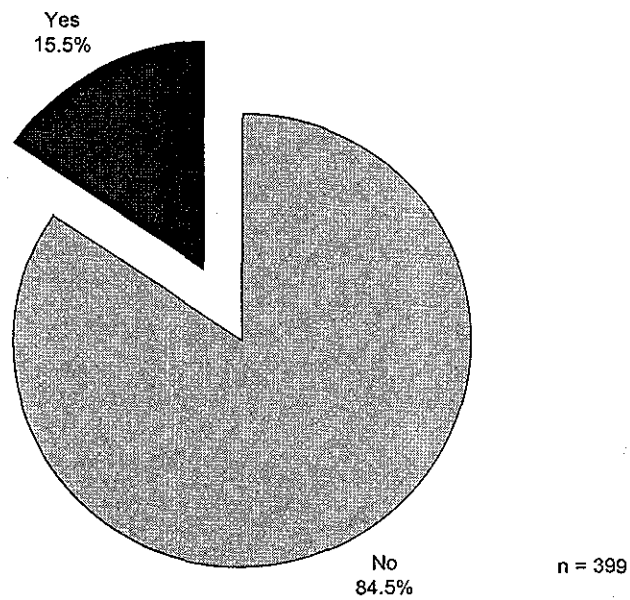
1 NO → GO TO QUESTION 12

2 YES → 11b. How did you avoid other parties? Did you.... (Circle as many as apply.)

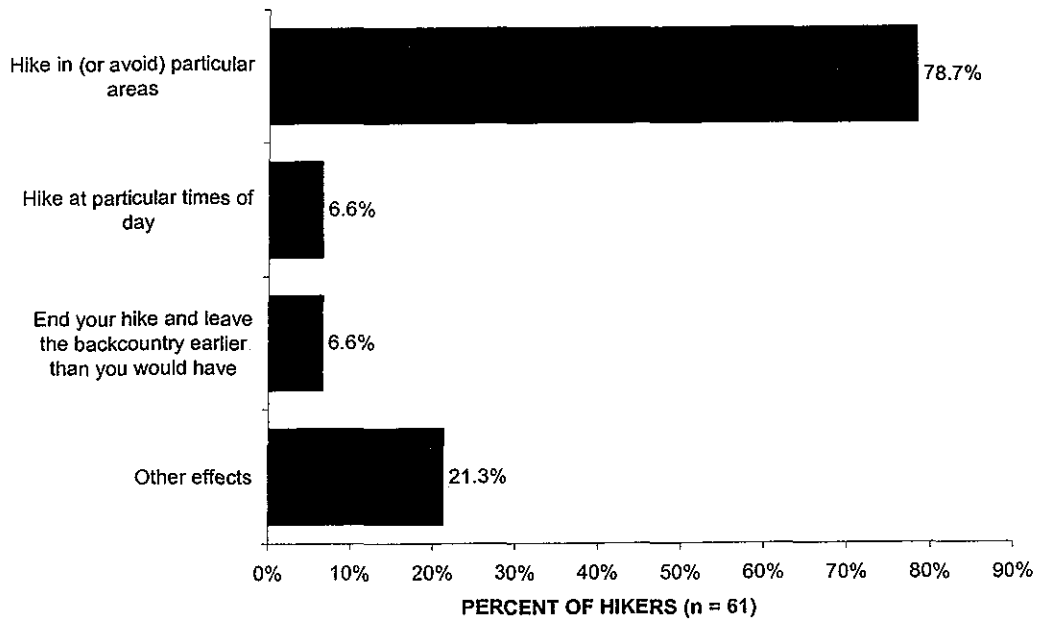
- 1 Hike at particular times of day
 - 2 Hike in (or avoid) particular areas
 - 3 End your hike and leave the backcountry earlier than you would have
 - 4 Other effects not described (Please specify below.)
-

IV. Human Presence

**FIGURE 4.7: Mail Survey, Q-11a
HIKER'S PARTY BEHAVED TO AVOID OTHER PARTIES**



**FIGURE 4.8: Mail Survey, Q-11b
BEHAVIORS ENGAGED IN TO AVOID OTHER PARTIES**



PERCENT OF HIKERS (n = 61)
Includes only the 15.5% of hikers who said they behaved in ways to avoid other parties.
Percentages sum to more than 100 because hikers may have behaved in multiple ways to avoid others.

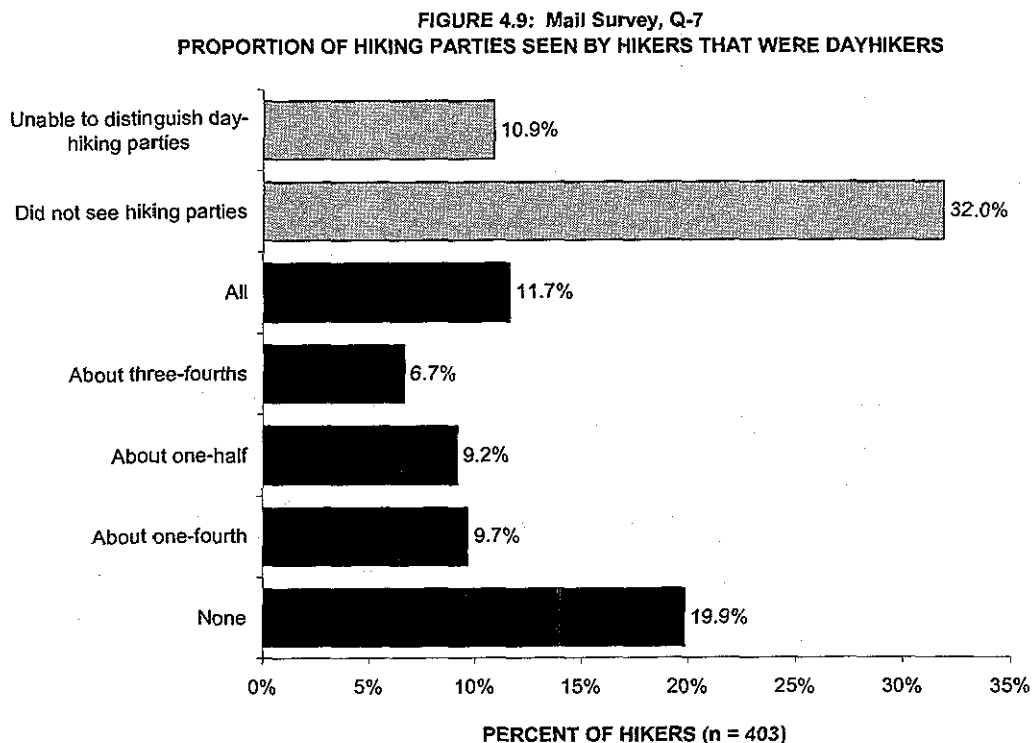
IV. Human Presence

Proportion of Total Hikers that were Dayhikers

Mail Survey

7. Of the hiking parties you saw on this overnight backcountry trip, about how many were **day-hiking** parties? (*Please circle the appropriate number.*)

- 1 Did not see hiking parties
- 2 Was unable to distinguish day-hiking parties from other parties
- 3 None
- 4 About one-fourth
- 5 About one-half
- 6 About three-fourths
- 7 All



Note: The percentage of *hikers* reporting not seeing any hiking parties is 32.0% while the percentage of *hiking parties* reporting not seeing any hiking parties is 25.3% (see Figure 4.5). In addition to being different samples, it is possible that the length of time between the experience and recollection may be contributing to the observed differences. It is not possible, however, to determine the extent to which either of these factors have an influence.

IV. Human Presence

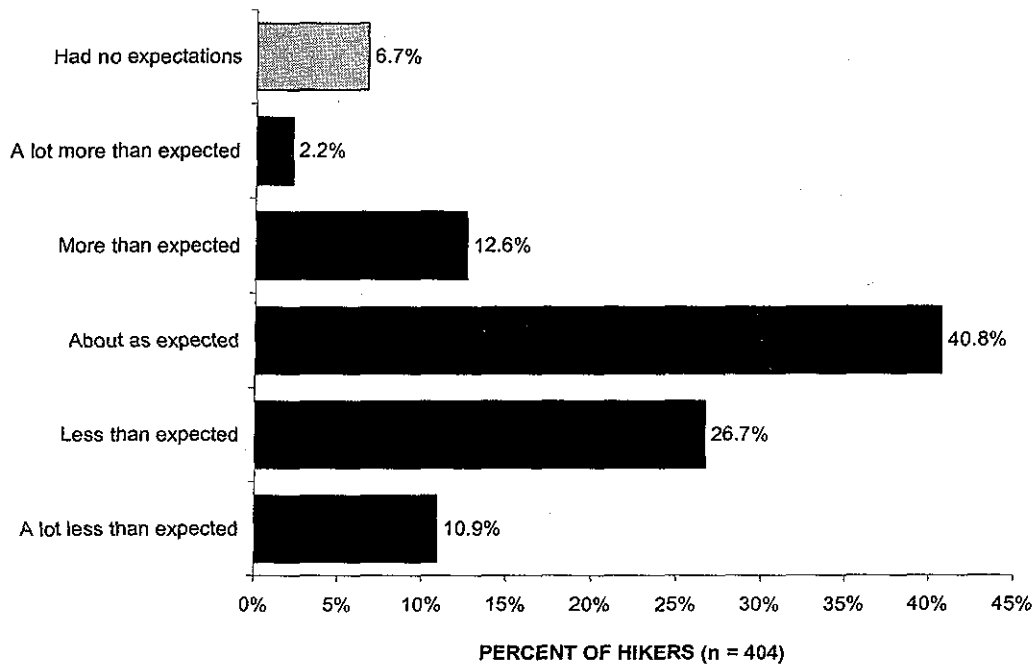
Number of All Hiking Parties Seen Versus Expected to See

Mail Survey

8. How did the number of hiking parties (all types) you saw compare with the number you thought you would see? (Please circle the appropriate number, even if you did not see hiking parties.)

- 1 A LOT LESS THAN EXPECTED
- 2 LESS THAN EXPECTED
- 3 ABOUT AS EXPECTED
- 4 MORE THAN EXPECTED
- 5 A LOT MORE THAN EXPECTED
- 6 HAD NO EXPECTATIONS ABOUT THE NUMBER TO BE SEEN

FIGURE 4.10: Mail Survey, Q-8
NUMBER OF ALL HIKING PARTIES SEEN VERSUS EXPECTED TO SEE



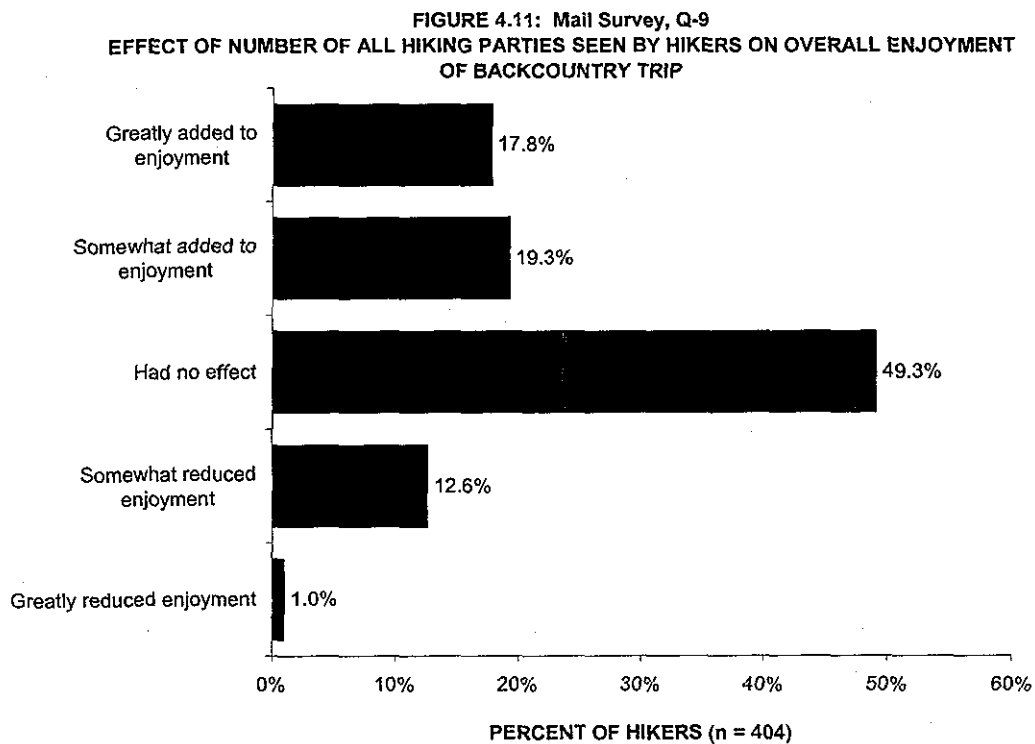
IV. Human Presence

Effect of Number of Hiking Parties on Overall Enjoyment

Mail Survey

9. How did the number of hiking parties (all types) you saw affect your overall enjoyment of this overnight backcountry trip? (Please circle one number, even if you did not see hiking parties.)

- 1 GREATLY ADDED TO ENJOYMENT
- 2 SOMEWHAT ADDED TO ENJOYMENT
- 3 HAD NO EFFECT
- 4 SOMEWHAT REDUCED ENJOYMENT
- 5 GREATLY REDUCED ENJOYMENT



IV. Human Presence

Encounters with Parties Camped Nearby

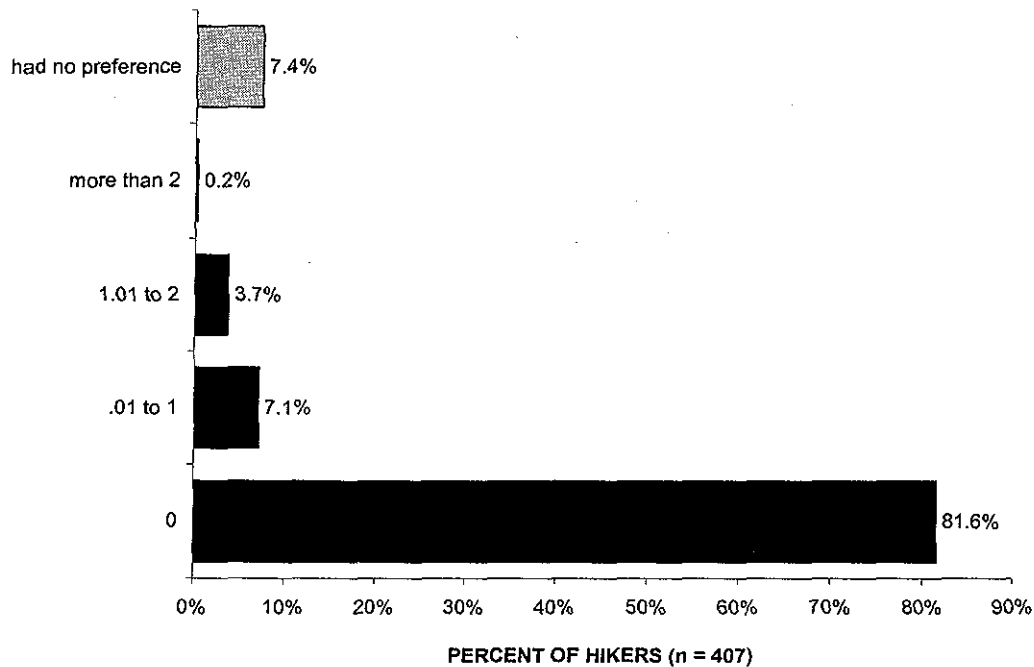
Number of Hiking Parties Prefer to have Camped within Sight and/or Sound

Mail Survey

13. What is the number of hiking parties that you would prefer to have camped within sight and/or sound of you at a typical backcountry camp in Denali? *(Please enter a number, or circle number 2 if you have no preference.)*

- 1 NUMBER OF PARTIES CAMPED _____
2 I HAVE NO PREFERENCE

FIGURE 4.12: Mail Survey, Q-13
NUMBER OF HIKING PARTIES HIKERS PREFER TO HAVE CAMPED WITHIN SIGHT/SOUND



Number of Hiking Parties Camped within Sight and/or Sound per Day

In both versions of the diary, respondents were asked daily to report on the number of other hiking parties that camped within sight and/or sound (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary values represent the

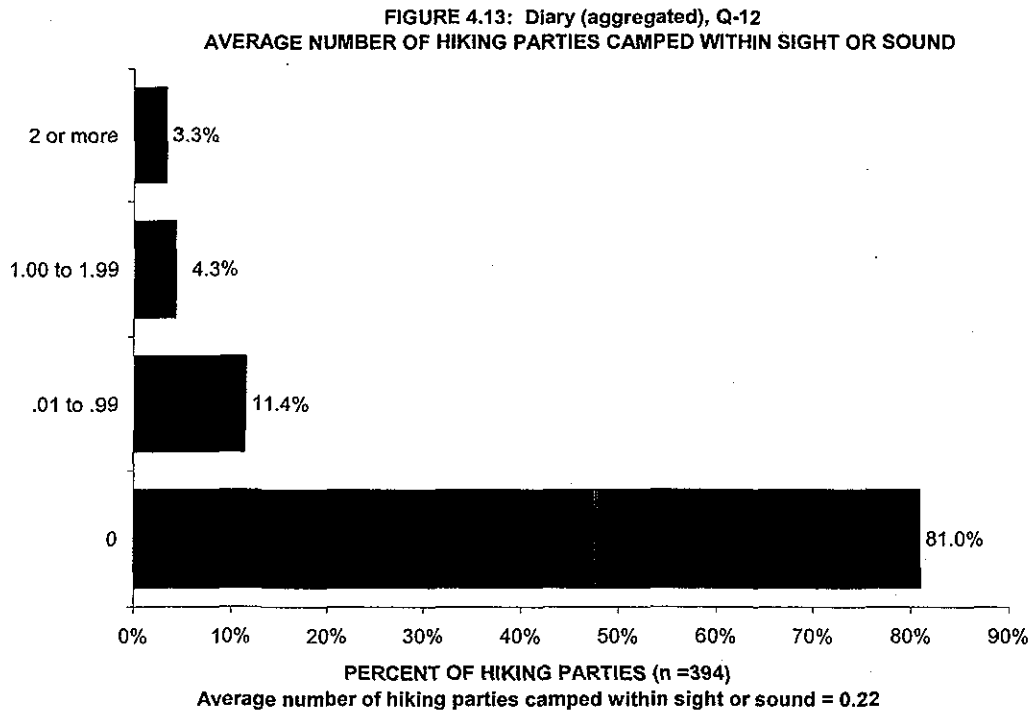
IV. Human Presence

data for this question: 1) the average per trip, 2) the maximum per trip, 3) the minimum per trip, 4) the standard deviation across trip days, and 5) the total number per trip. The average number of hiking parties camped within sight and/or sound per trip day is reported below and the total number of hiking parties camped within sight/sound per trip is reported later in the chapter (see page 72). Charts of all the summary data are presented in Appendix H.

The *Average per Trip Day* represents the total number of hiking parties camped within sight/sound reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties camped within sight/sound per full hiking day.

Diary, Versions 1 & 2

12. How many hiking parties are camped within sight or sound of your camp today? (If you did not camp, write "NA" for Q-12 and for Q-13.) _____



IV. Human Presence

Feelings about the Number of Parties Camped within Sight and/or Sound per Day

In both versions of the diary, respondents were asked daily to report on how they felt about the number of hiking parties camped within sight and/or sound (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each respondent's trip, four summary figures represent the data for this question: 1) the average per trip, 2) the maximum per trip, 3) the minimum per trip, and 4) the standard deviation across trip days. The average feeling rating about the number of hiking parties camped within sight and/or sound per trip day is reported below. Charts of all the summary data are presented in Appendix H.

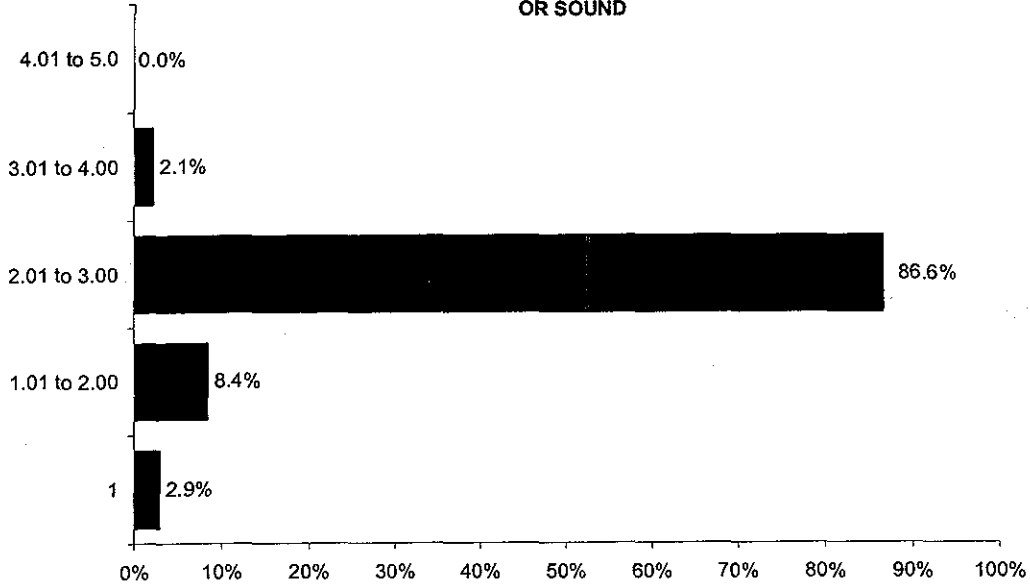
The *Average Feeling Rating about Number of Hiking Parties Camped within Sight/Sound per Trip Day* represents the sum of the feeling ratings of the number of hiking parties camped nearby each day divided by the number of trip days for a respondent selected to represent a party. Days may include partial hiking days from the first and/or last day of the diary.

Diary, Versions 1 & 2

13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (*List number*)
1. Saw too many, preferred seeing none
 2. Saw too many, preferred seeing less
 3. Saw about the right number
 4. Saw too few, preferred seeing more
 5. Saw too few, preferred seeing many more

IV. Human Presence

FIGURE 4.14: Diary (aggregated), Q-13
AVERAGE FEELING RATING ABOUT NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND



PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n =381)

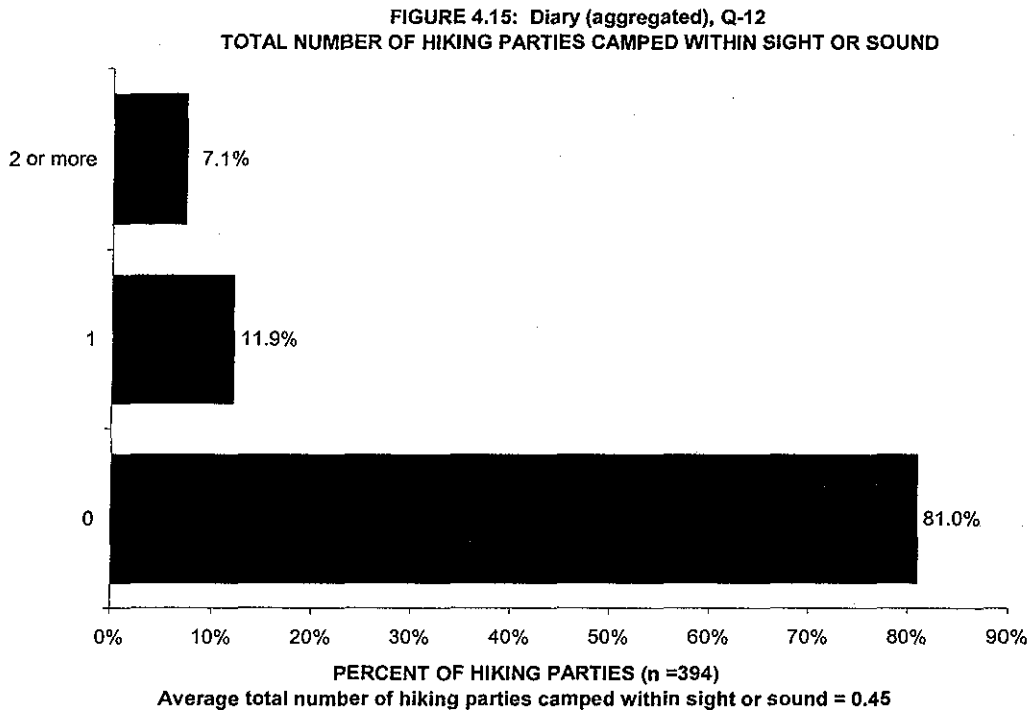
Average of average feeling rating about number of hiking parties camped within sight or sound = 2.91

*Taking the average results in values that fall between the response options

IV. Human Presence

Total number of Parties Camped within Sight and/or Sound During Trip

The *Total Number per Trip* is simply the total number of hiking parties camped nearby during a trip.



Encounters with Park Rangers

Number of Park Rangers Seen Today

In version 2 of the diary, respondents were asked daily to report on the number of park rangers they saw (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent the data for this question: 1) the average per trip, 2) the maximum per trip, 3) the minimum per trip, 4) the standard deviation across trip days, and 5) total number per trip. The average number of park rangers seen per trip day is reported below and the total number of park rangers seen per trip is reported later in the chapter (see page 75). Charts of all the summary data are presented in Appendix I.

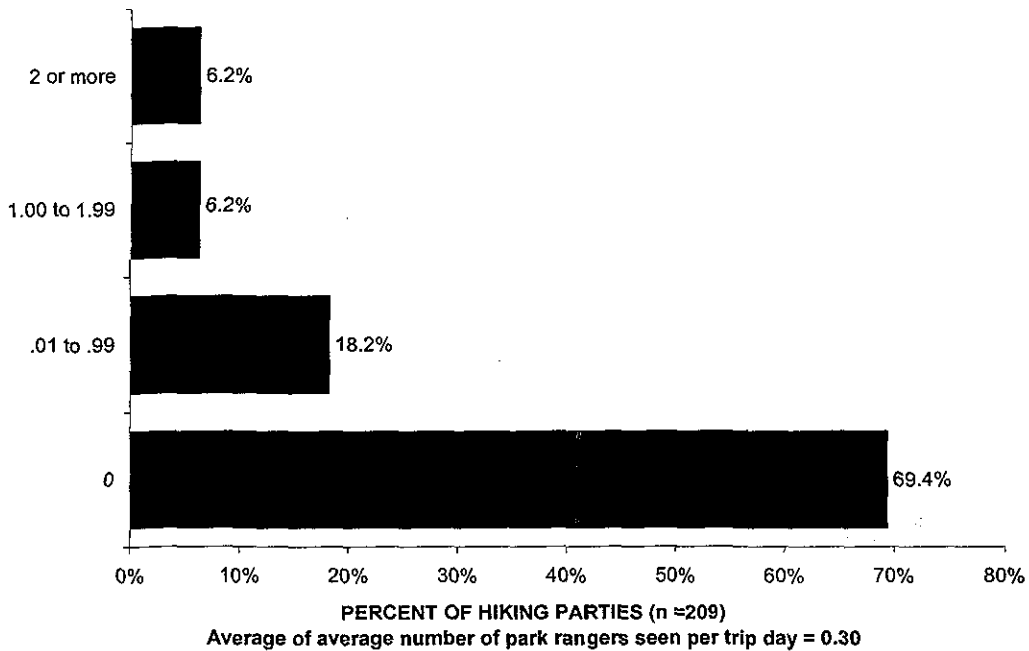
IV. Human Presence

The *Average per Trip Day* represents the total number of park rangers seen reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of park rangers seen per full hiking day.

Diary, Version 2

10. How many different park rangers did you see today? _____

FIGURE 4.16: Diary (aggregated), Q-10
AVERAGE NUMBER OF PARK RANGERS SEEN PER TRIP DAY



Number of Interactions with Park Rangers Today

In version 2 of the diary, respondents were asked daily to report on the number of park rangers with which they interacted (see below for exact wording of the question). Because the data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent the data for this question: 1) the average per trip, 2) the maximum per trip, 3) the minimum per trip, 4) the standard deviation across trip days, and 5) total number per trip. The average number of park

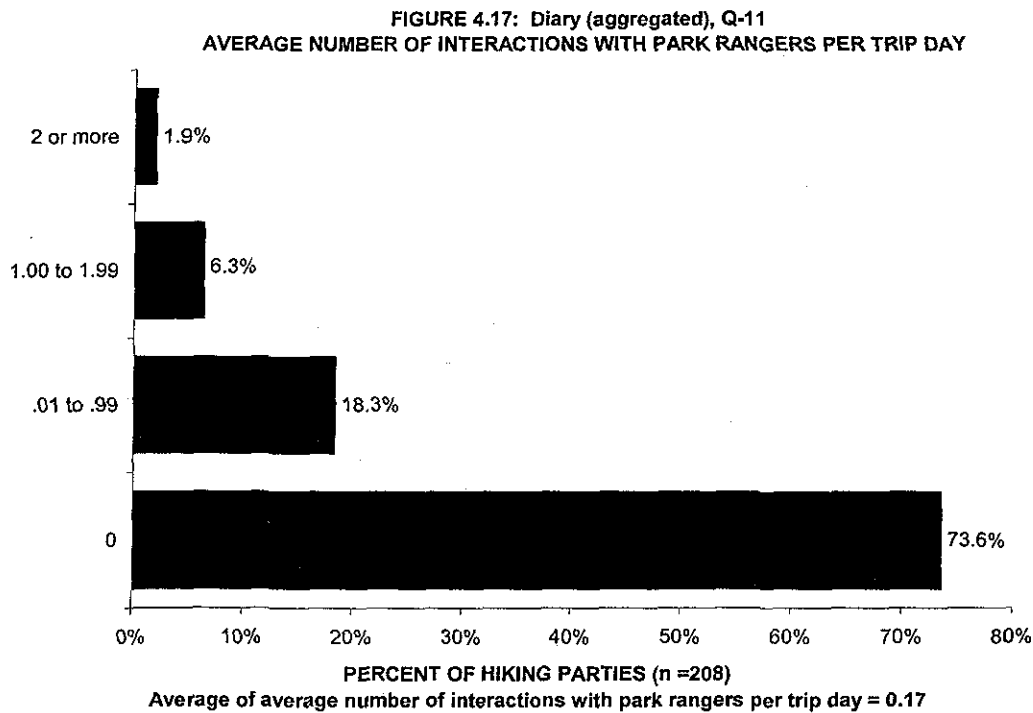
IV. Human Presence

rangers interacted with per trip day is reported below and the total number of park rangers interacted with per trip is reported later in the chapter (see page 76). Charts of all the summary data are presented in Appendix I.

The *Average per Trip Day* represents the total number of park rangers reported being interacted with divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of park rangers interacted with per full hiking day.

Diary, Version 2

11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal) _____

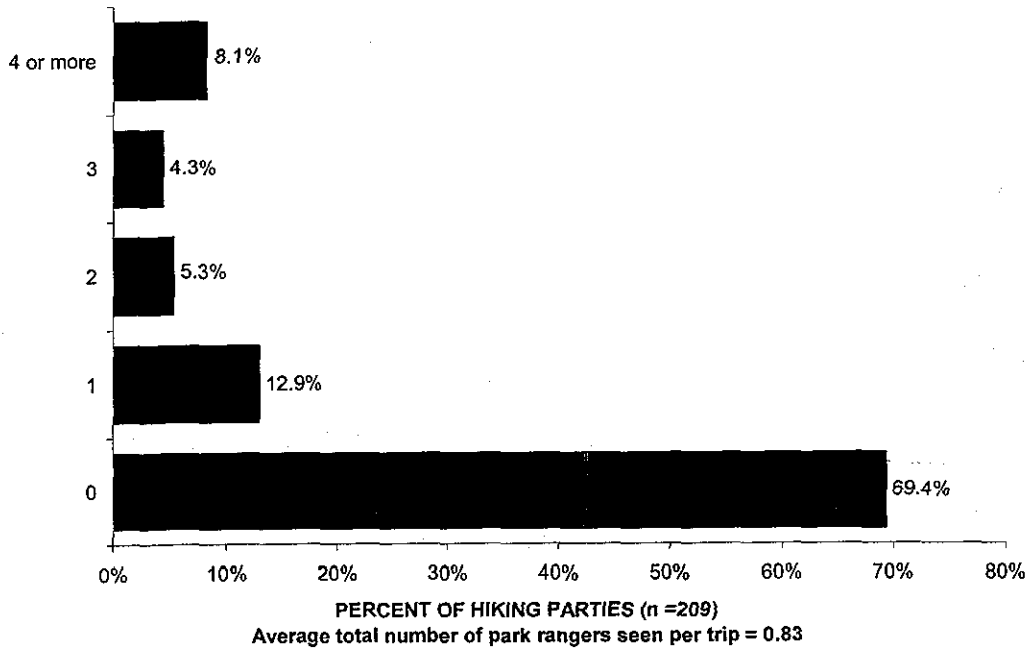


IV. Human Presence

Total Number of Park Rangers Seen During Trip

The *Total Number of Park Rangers Seen per Trip* is simply the total number of park rangers seen during a trip.

FIGURE 4.18: Diary (aggregated), Q-10
TOTAL NUMBER PARK RANGERS SEEN PER TRIP

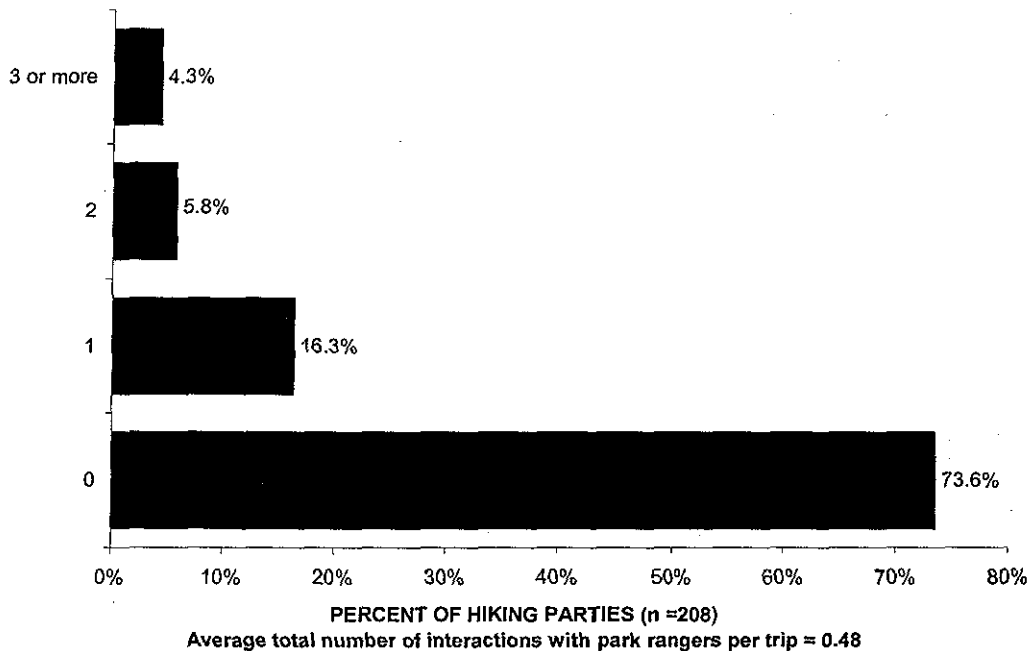


IV. Human Presence

Total Number of Park Rangers Interacted with During Trip

The *Total Number of Interactions with Park Rangers per Trip* is simply the total number of park rangers with which a hiking party interacted during a trip.

FIGURE 4.19: Diary (aggregated), Q-11
TOTAL NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP



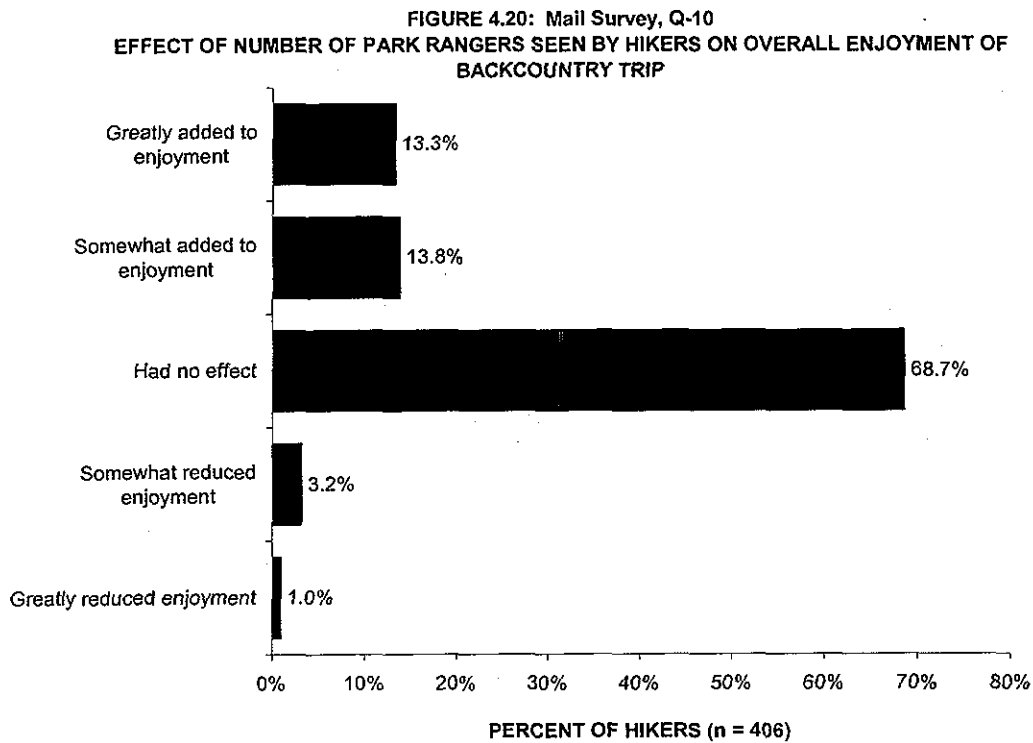
IV. Human Presence

Effect of Number of Park Rangers on Overall Enjoyment

Mail Survey

10. How did the number of park rangers you saw affect your overall enjoyment of this backcountry trip?
(Please circle one number, even if you did not see park rangers.)

- 1 GREATLY ADDED TO ENJOYMENT
- 2 SOMEWHAT ADDED TO ENJOYMENT
- 3 HAD NO EFFECT
- 4 SOMEWHAT REDUCED ENJOYMENT
- 5 GREATLY REDUCED ENJOYMENT



IV. Human Presence

Indirect Evidence of Human Presence

Types of Evidence of Humans Observed & Degree it Bothered Respondents

Mail Survey

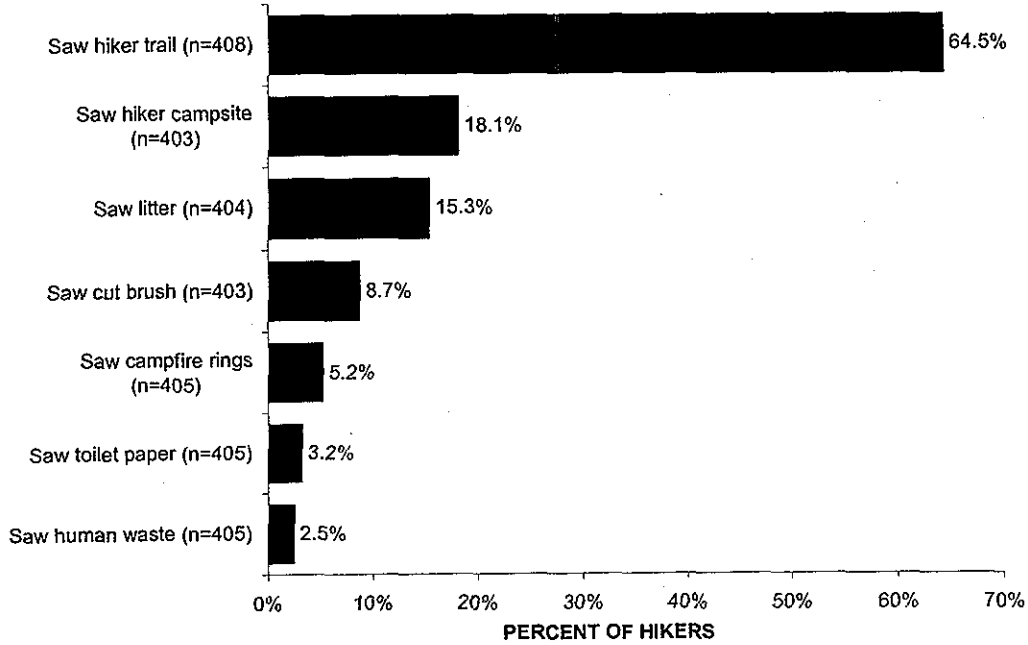
14. Did you see any evidence of human use on this overnight backcountry trip? *(Please circle one letter in the column "Saw evidence?" for each type of evidence of human use you observed in BACKCOUNTRY areas.)*

IF YES, about how much, if at all, did this evidence of human use bother you? *(Please circle one number in the column "IF YES, bothered you?" for those types of evidence of human use you saw.)*

	Saw evidence?			IF YES, bothered you?		
	No	Yes		Not Bothered	Somewhat Bothered	Very Bothered
a) Human waste.....	N	Y	→	NB	SB	VB
b) Toilet paper.....	N	Y	→	NB	SB	VB
c) Campfire rings.....	N	Y	→	NB	SB	VB
d) Litter.....	N	Y	→	NB	SB	VB
e) Cut bushes or trees.....	N	Y	→	NB	SB	VB
f) Hiker-made trails.....	N	Y	→	NB	SB	VB
g) Hiker-made campsites. (for example, soil compaction, vegetation trampling, moved rocks.)	N	Y	→	NB	SB	VB

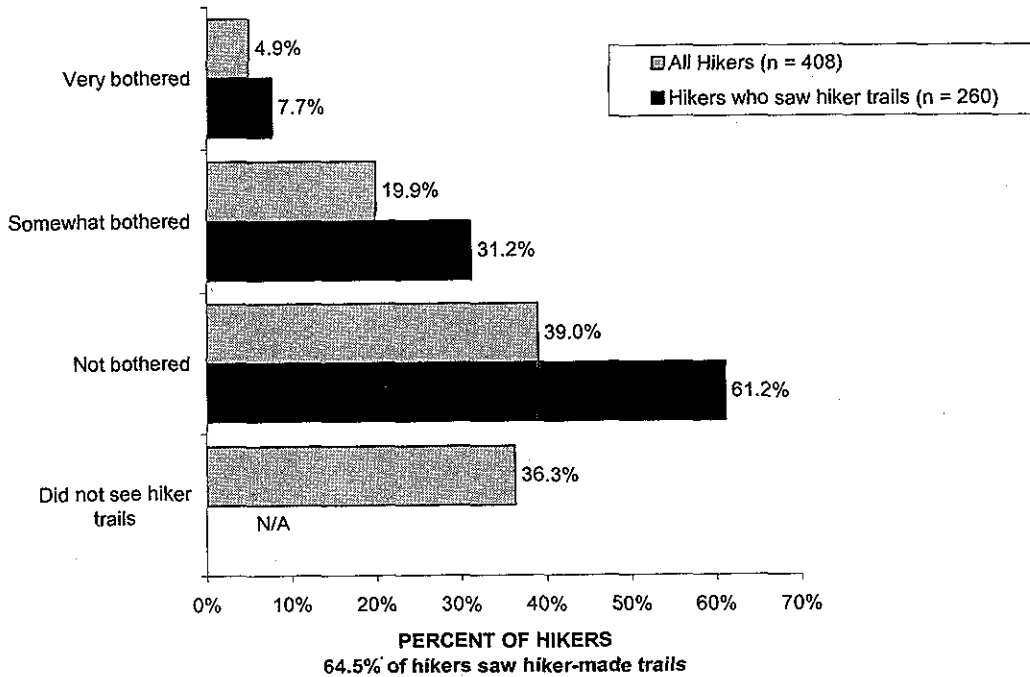
IV. Human Presence

FIGURE 4.21: Mail Survey, Q-14
PROPORTION OF HIKERS WHO SAW EVIDENCE OF EACH TYPE OF HUMAN USE IN THE BACKCOUNTRY



Percentages sum to more than 100 because hikers could see different types of evidence of human use.

FIGURE 4.22: Mail Survey, Q-14
EXTENT TO WHICH SEEING HIKER-MADE TRAILS BOTHERED HIKER



IV. Human Presence

FIGURE 4.23: Mail Survey, Q-14
EXTENT TO WHICH SEEING HIKER-MADE CAMPSITES BOTHERED HIKER

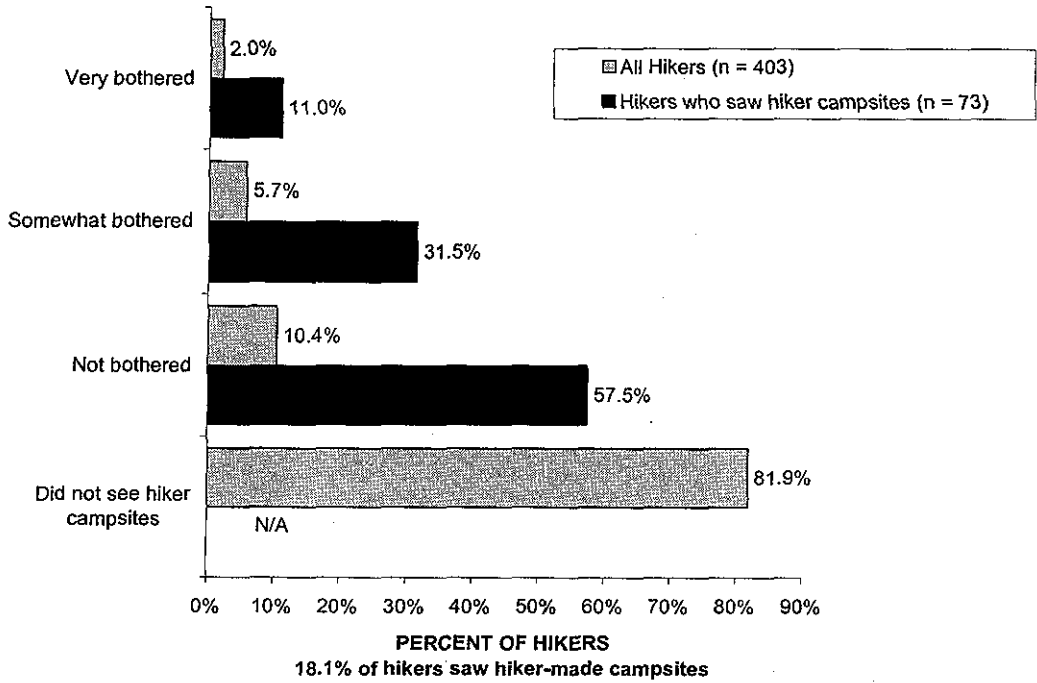
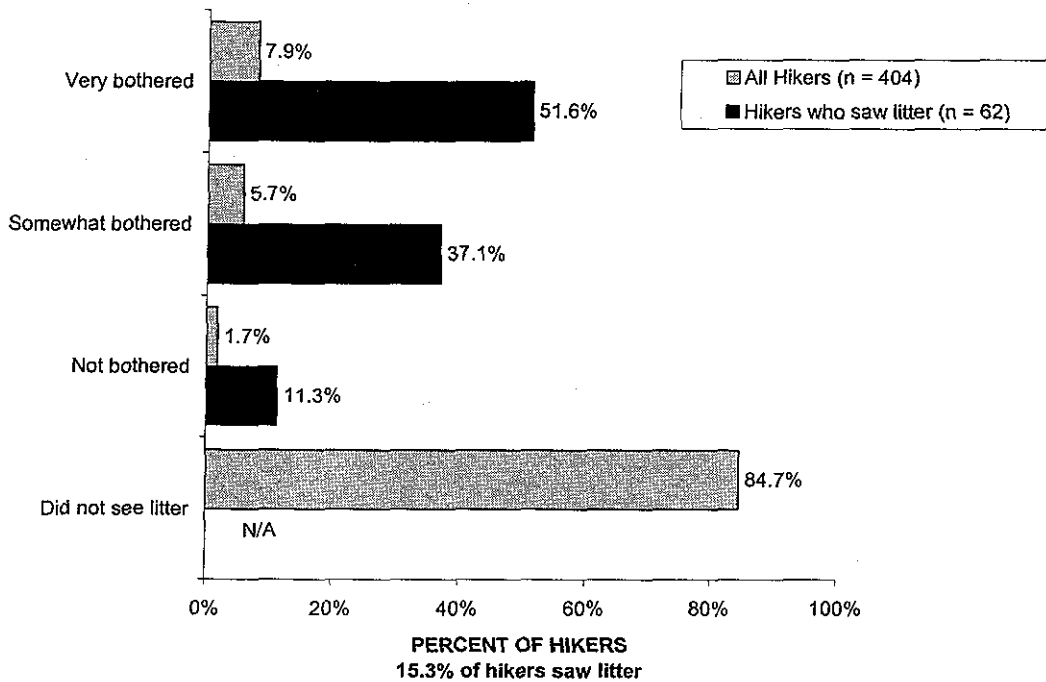


FIGURE 4.24: Mail Survey, Q-14
EXTENT TO WHICH SEEING LITTER BOTHERED HIKER



IV. Human Presence

FIGURE 4.25: Mail Survey, Q-14
EXTENT TO WHICH SEEING CUT BRUSH BOTHERED HIKER

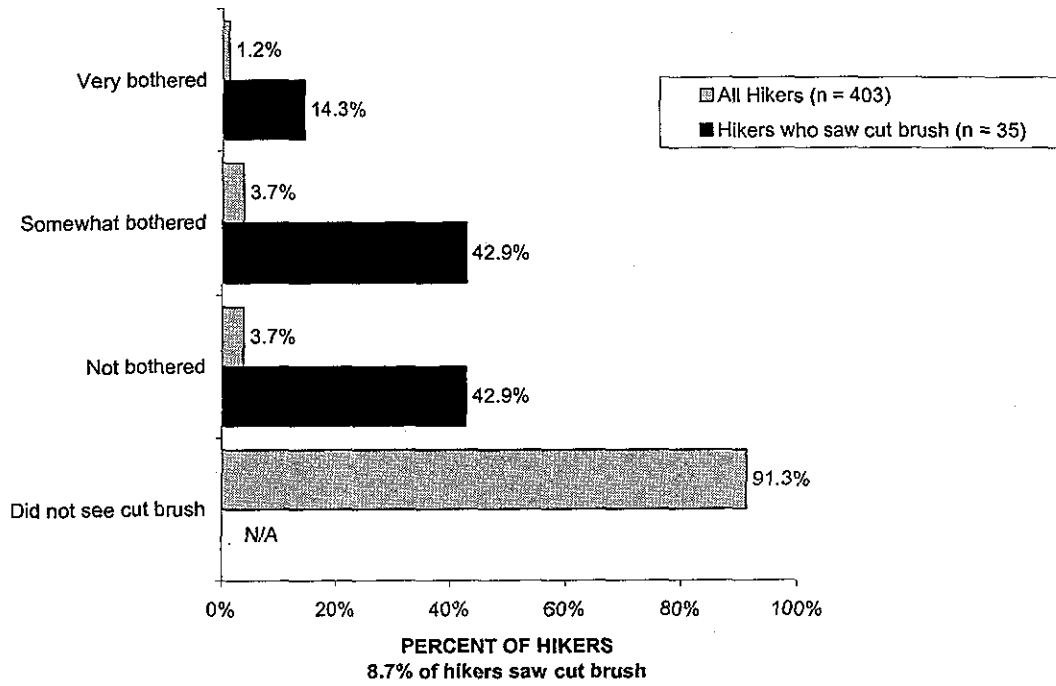
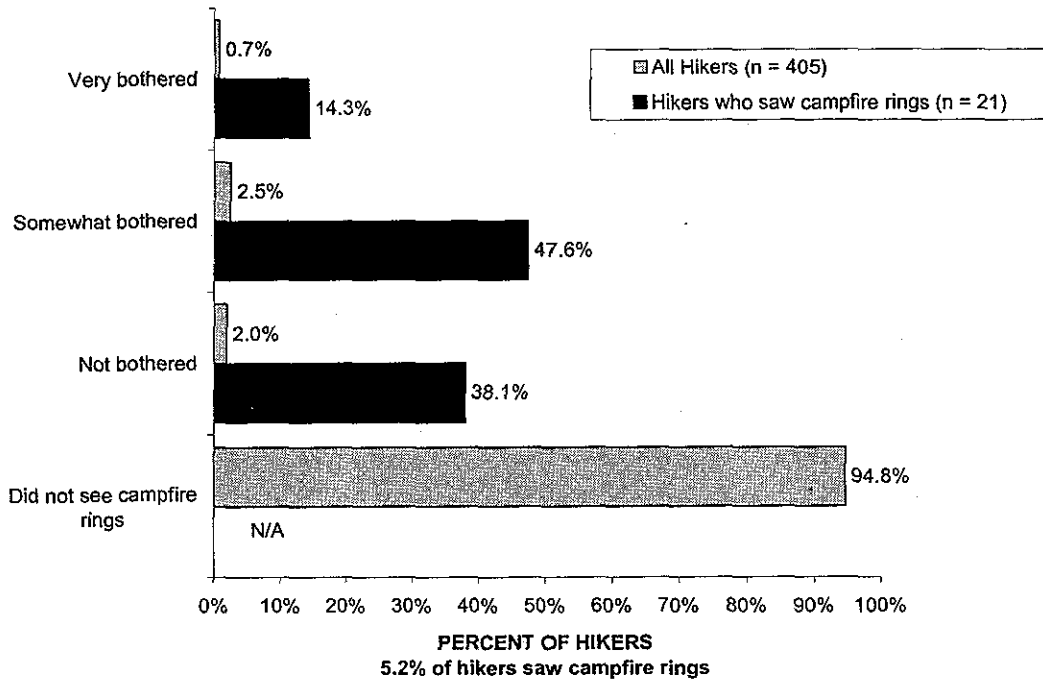


FIGURE 4.26: Mail Survey, Q-14
EXTENT TO WHICH SEEING CAMPFIRE RINGS BOTHERED HIKER



IV. Human Presence

FIGURE 4.27: Mail Survey, Q-14
EXTENT TO WHICH SEEING TOILET PAPER BOTHERED HIKER

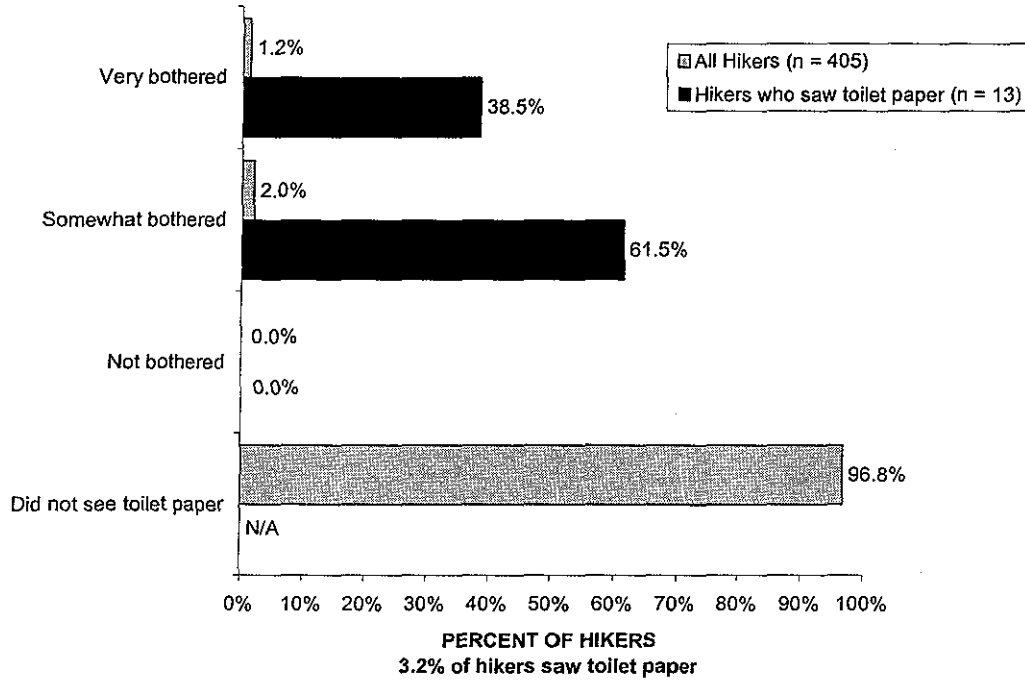
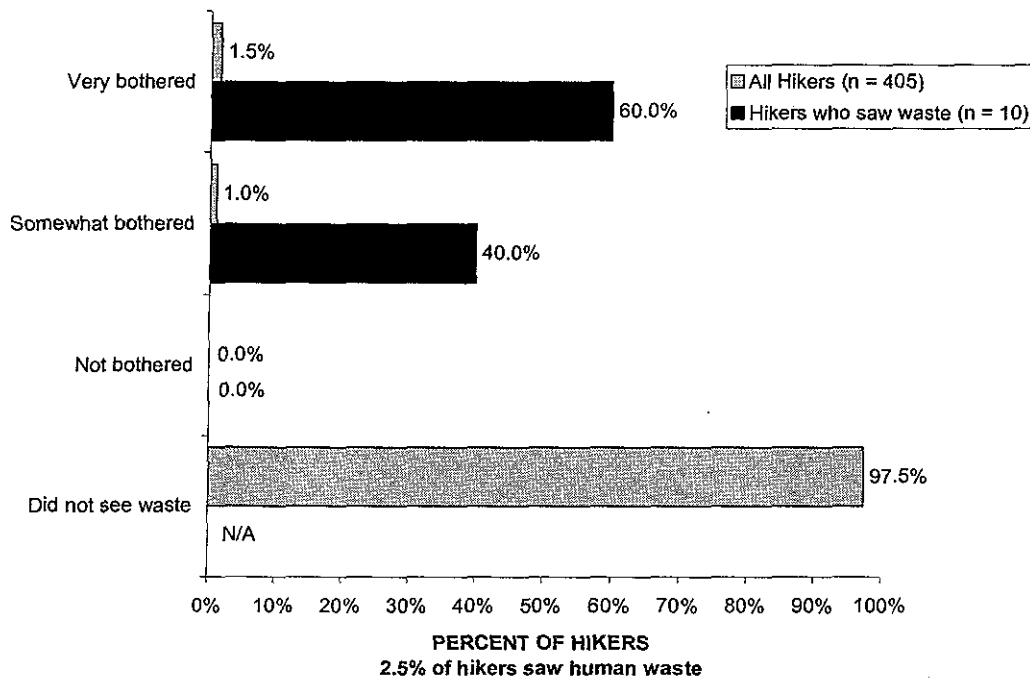


FIGURE 4.28: Mail Survey, Q-14
EXTENT TO WHICH SEEING HUMAN WASTE BOTHERED HIKER



IV. Human Presence

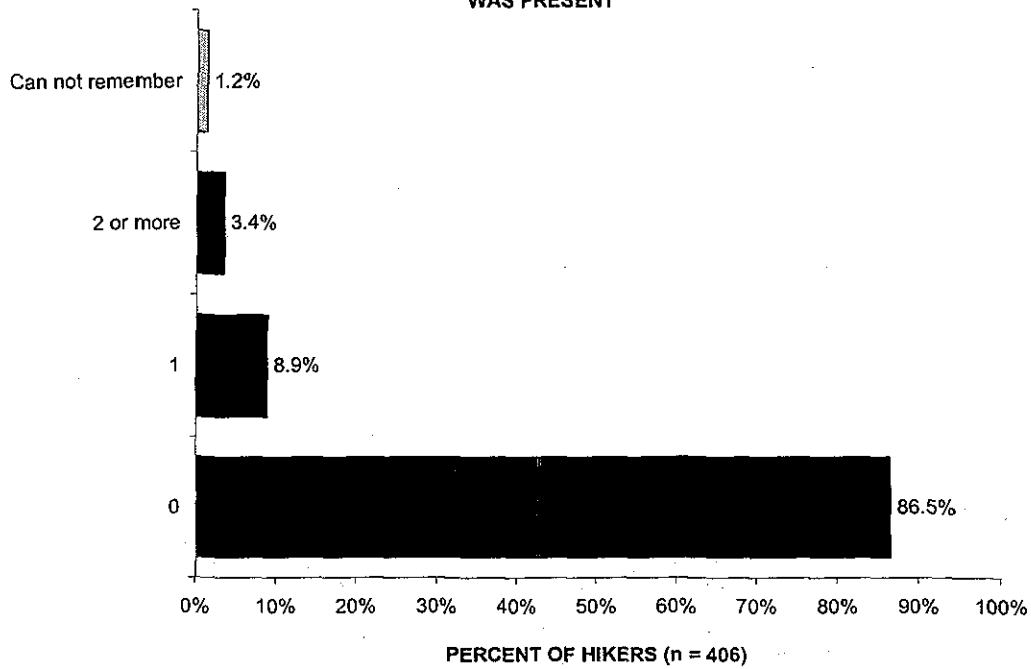
Number of Nights Where Campsite Had Evidence of Prior Human Use

Mail Survey

15. On this overnight backcountry trip, how many nights, if any, did you camp where there was evidence of previous overnight use? (For example, fire ring, soil compaction, vegetation trampling, or moved rocks. Please circle the appropriate number, or circle 'Can't remember'.)

0 1 2 3 4 5 6 7 8 9 10+ (Can't remember)

FIGURE 4.29: Mail Survey, Q-15
NUMBER OF NIGHTS HIKER CAMPED WHERE EVIDENCE OF PREVIOUS OVERNIGHT USE
WAS PRESENT



IV. Human Presence

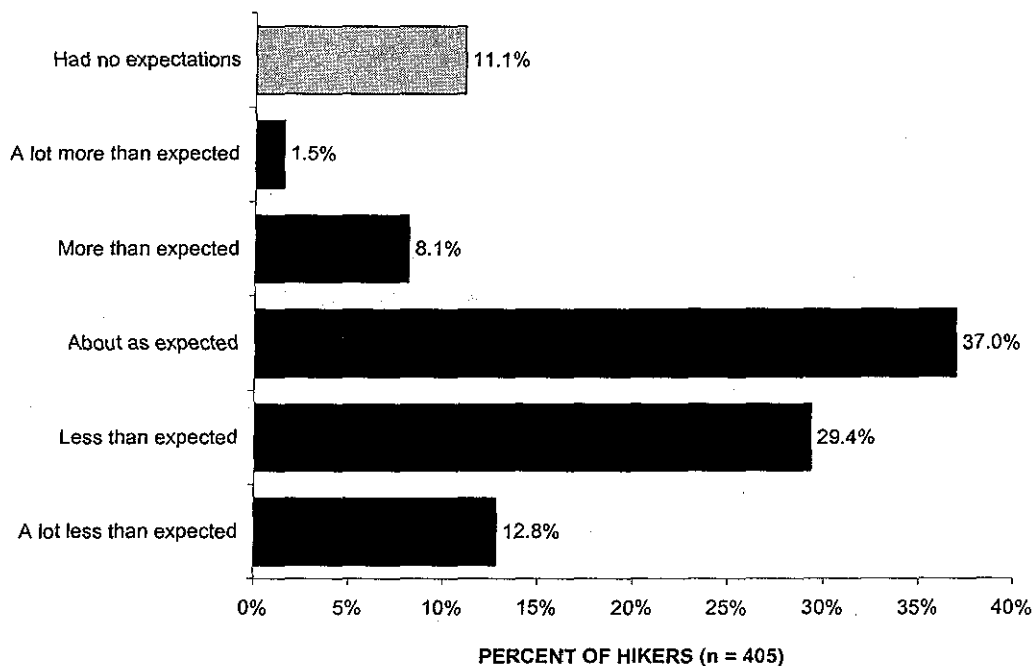
Actual Compared to Expected Amount of Evidence of Human Use

Mail Survey

16. How did the amount of evidence of human use you saw during this overnight backcountry trip compare with what you thought you would see? (Please circle one number even if you did not see any evidence of human use.)

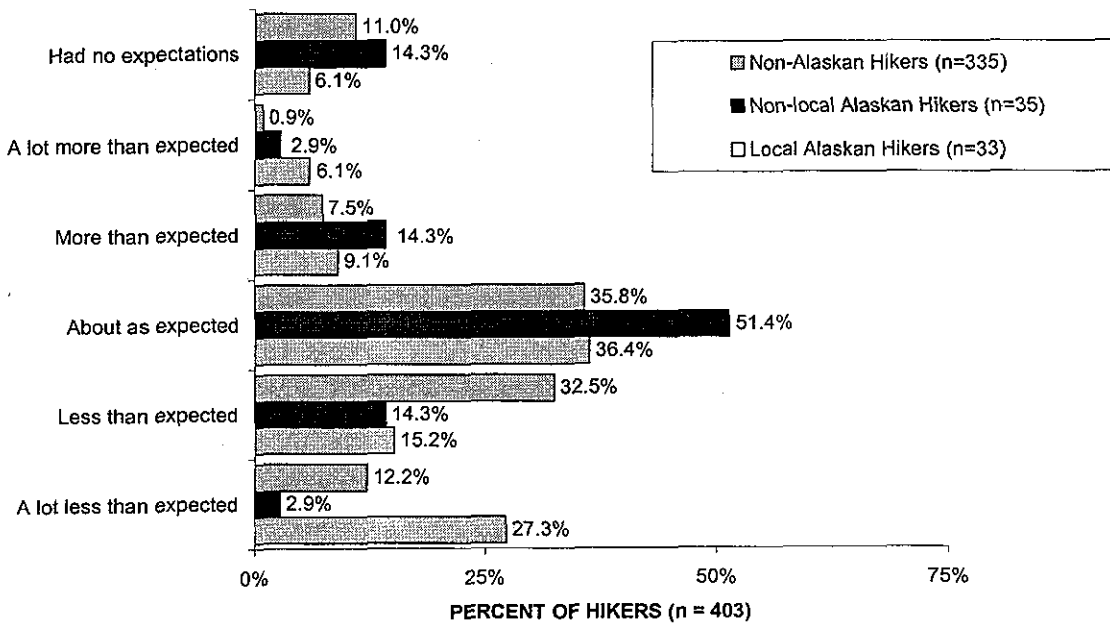
- 1 A LOT MORE THAN EXPECTED
- 2 MORE THAN EXPECTED
- 3 ABOUT AS EXPECTED
- 4 LESS THAN EXPECTED
- 5 A LOT LESS THAN EXPECTED
- 6 HAD NO EXPECTATIONS ABOUT THE AMOUNT OF EVIDENCE THAT WOULD BE SEEN

FIGURE 4.30: Mail Survey, Q-16
AMOUNT OF EVIDENCE OF PREVIOUS HUMAN USE SEEN VERSUS EXPECTED TO SEE



IV. Human Presence

FIGURE 4.31: Mail Survey, Q-16
AMOUNT OF EVIDENCE OF HUMAN USE SEEN VERSUS EXPECTED TO SEE BY RESIDENCE



IV. Human Presence

Crowding

Mail Survey

17a. To what extent did you feel "crowded" during this backcountry trip? (Circle one number.)

Not at all <u>Crowded</u>	<u>Slightly Crowded</u>		<u>Moderately Crowded</u>		<u>Extremely Crowded</u>	
1	2	3	4	5	6	7

↓
**GO TO
QUESTION 18**

→ 17b. IF YOU FELT CROWDED AT ALL (CIRCLED EITHER 2, 3, 4, 5, 6, OR 7), which of the following factors contributed to your feeling crowded? (Please circle one response for each factor.)

	<u>Did not contribute</u>	<u>Somewhat contributed</u>		<u>Greatly contributed</u>		<u>Don't know/ remember</u>
	1	2	3	4	5	
Number of hiking parties (all types) seen	1	2	3	4	5	DK/R
Number of day hiking parties seen.....	1	2	3	4	5	DK/R
Number of parties camped in sight/sound	1	2	3	4	5	DK/R
Amount of evidence of human use seen...	1	2	3	4	5	DK/R
Type of evidence of human use seen.....	1	2	3	4	5	DK/R
Other: (Specify: _____)	1	2	3	4	5	DK/R

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FIGURE 4.32: Mail Survey, Q-17
EXTENT TO WHICH HIKERS FELT CROWDED IN THE BACKCOUNTRY

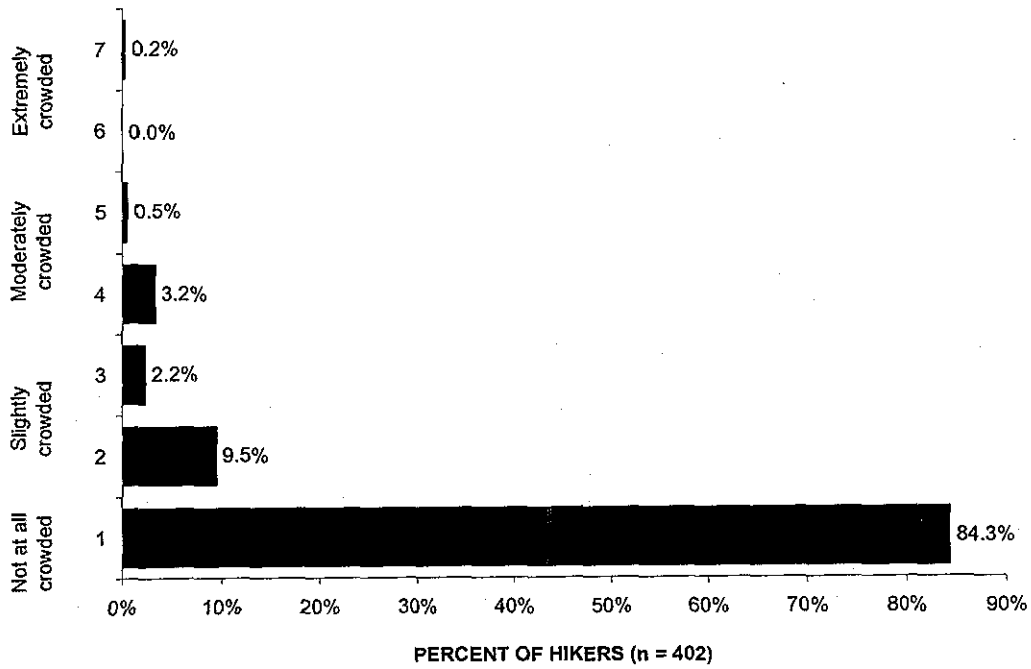
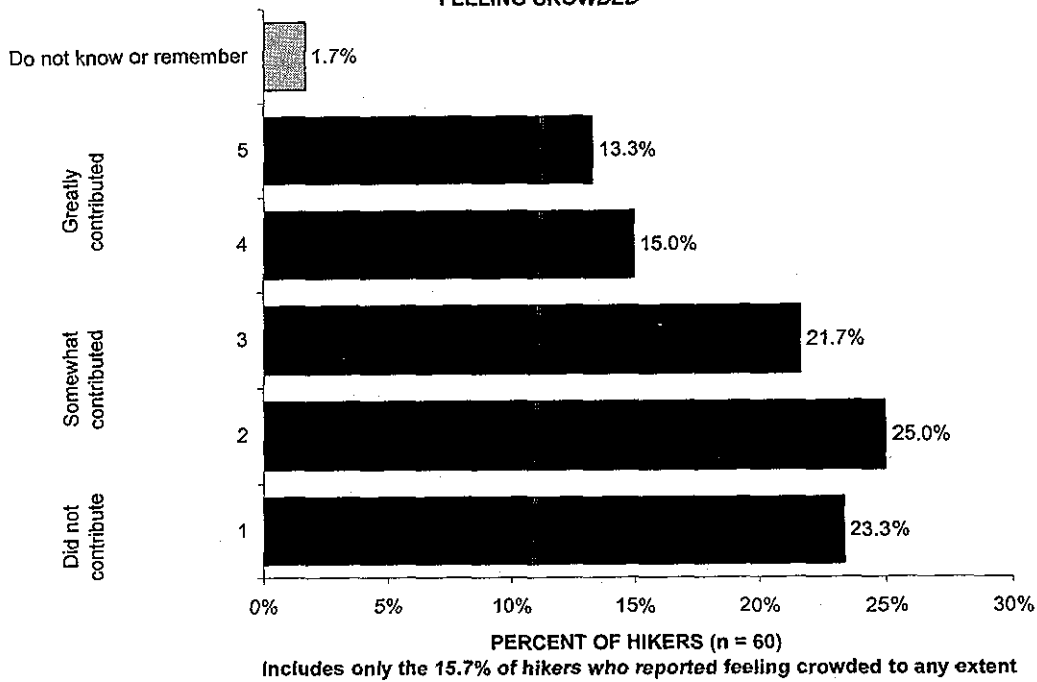


FIGURE 4.33: Mail Survey, Q-17
EXTENT TO WHICH NUMBER OF ALL HIKING PARTIES SEEN BY HIKER CONTRIBUTED TO FEELING CROWDED



IV. Human Presence

FIGURE 4.34: Mail Survey, Q-17
EXTENT TO WHICH NUMBER OF DAY HIKING PARTIES SEEN BY HIKER CONTRIBUTED TO FEELING CROWDED

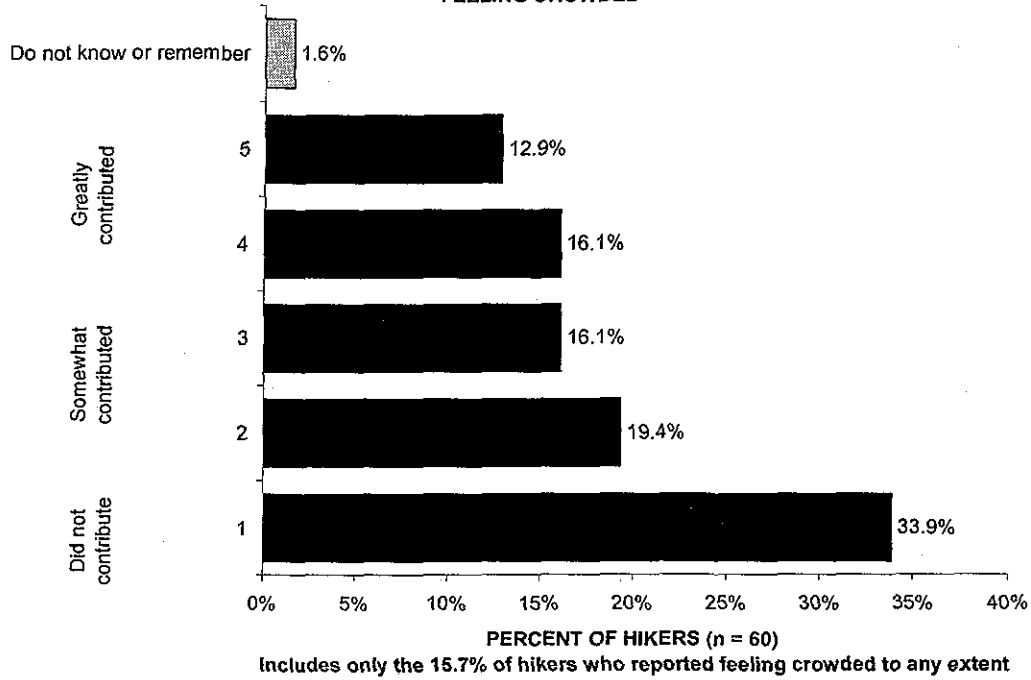
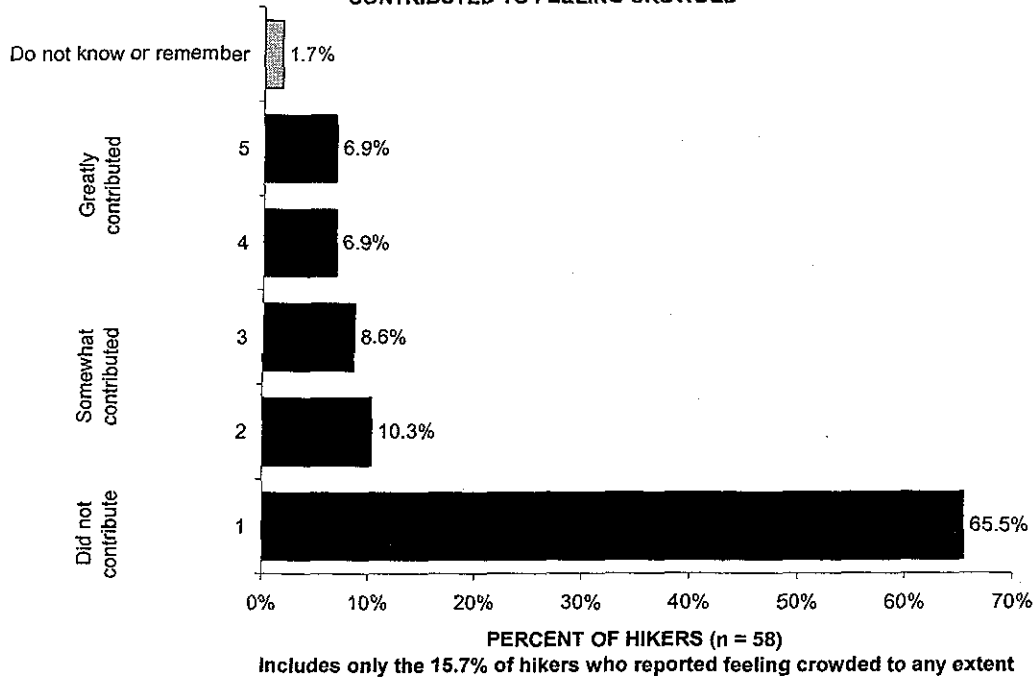


FIGURE 4.35: Mail Survey, Q-17
EXTENT TO WHICH NUMBER OF PARTIES CAMPED WITHIN SIGHT OR SOUND OF HIKER CONTRIBUTED TO FEELING CROWDED



IV. Human Presence

FIGURE 4.36: Mail Survey, Q-17
EXTENT TO WHICH AMOUNT OF EVIDENCE OF HUMAN USE SEEN BY HIKER CONTRIBUTED TO FEELING CROWDED

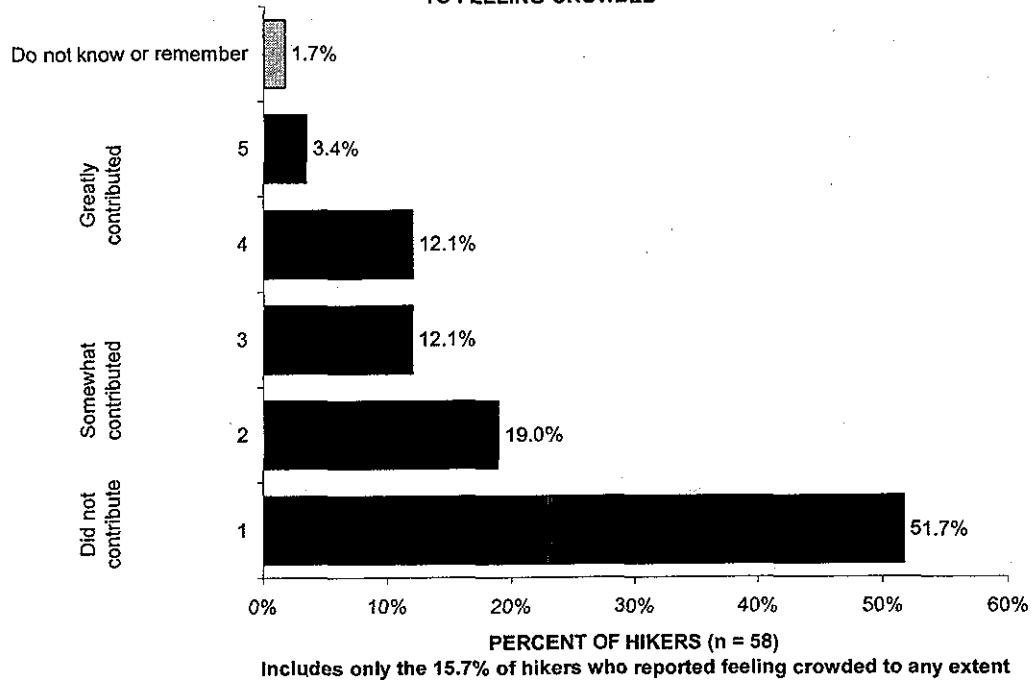
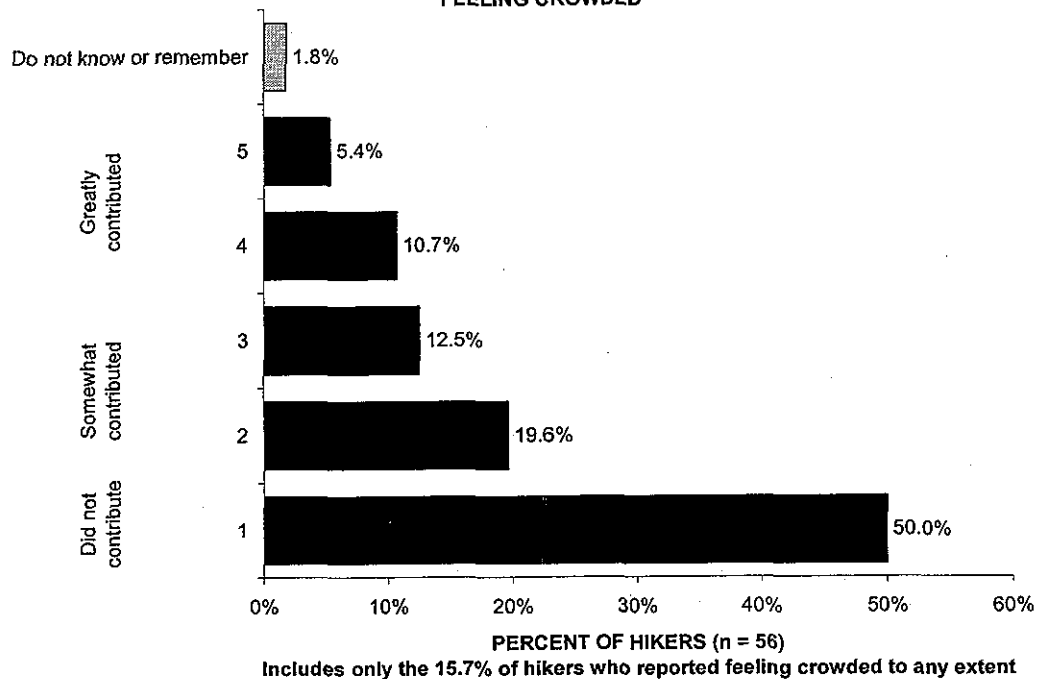
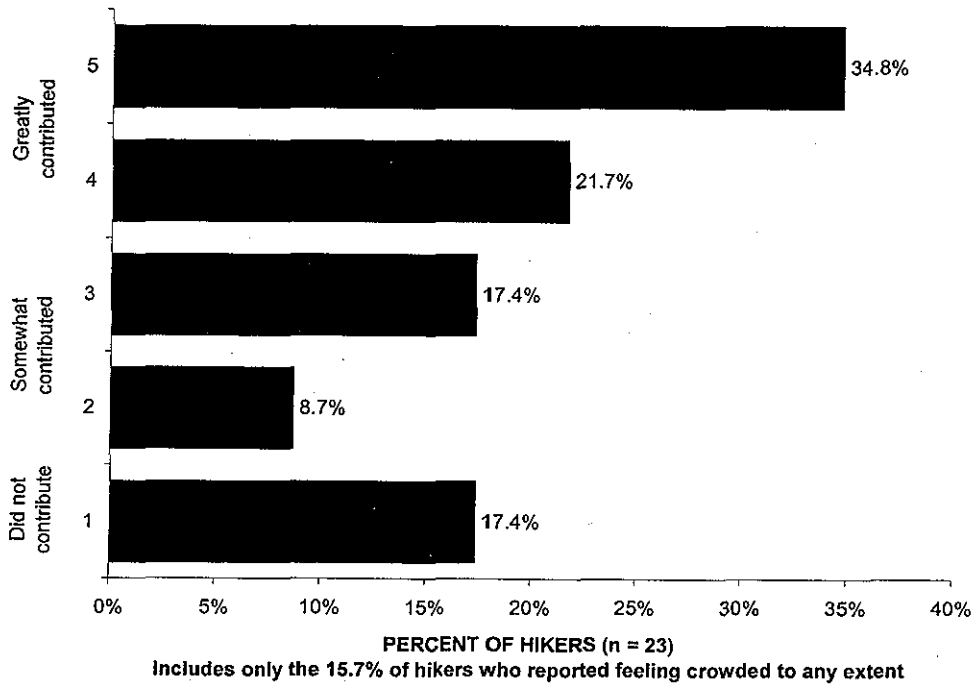


FIGURE 4.37: Mail Survey, Q-17
EXTENT TO WHICH TYPE OF EVIDENCE OF HUMAN USE SEEN BY HIKER CONTRIBUTED TO FEELING CROWDED



IV. Human Presence

FIGURE 4.38: Mail Survey, Q-17
EXTENT TO WHICH OTHER FACTORS CONTRIBUTED TO HIKER FEELING CROWDED



V. Aircraft Encounters and Evaluations

Mark E. Vande Kamp, Jane E. Swanson, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Aircraft are an element of the DENA Wilderness experience that has recently drawn increased management attention. The NPS as a whole has recognized natural soundscapes (i.e., the absence of anthropogenic sound) as resources they are mandated to protect. Although aircraft have a legal status in Alaskan parks that is different from their status in parks in other states, visitor comments and the observations of DENA staff have motivated this project's attempt to gather information about the encounters with aircraft that backpackers experience.

Backpackers representing hiking parties were asked a variety of questions about aircraft in the pre-trip and post-trip interviews as well as in one version of the diary. This chapter reports the basic findings from these questions as well as more complex analyses that examine 1) the effect of information about aircraft on backpackers' reactions to aircraft and 2) the effect of encounters with aircraft on backpackers' trip experience.

The Aircraft Information Experiment

One purpose of this project was to examine whether being informed about aircraft flying over Denali affects reactions to the aircraft and, in particular, reduces negative reactions. During the pre-trip interview, approximately half of the respondents representing hiking parties were asked about their knowledge of aircraft flying over Denali, whether the possibility of experiencing aircraft overflights affected the planning of their trip, and their expectations and preferences regarding hearing or seeing aircraft. They were then informed that aircraft fly over Denali and shown a map of common routes followed by flight-seeing aircraft. These respondents were also asked to report on their experiences with aircraft in their diaries. No mention of aircraft was made to the other half of the respondents -- they received no information, answered no questions during the pre-trip interview, and were not asked to report on experiences with aircraft in their

V. Aircraft Encounters and Evaluations

diaries. During the post-hike interview, all respondents were asked the same set of questions assessing their experiences with aircraft.

Responses to each question on the post-hike interview were examined for differences due to exposure to information about aircraft in the pre-hike interview. As in earlier chapters, responses to other questions related to aircraft were examined for the effects of respondents' residence (local employees, AK resident, and non-local).

Chapter Overview

The chapter begins with a condensed presentation summarizing the results of the survey and their implications. The next three sections generally focus on the results of: 1) the pre-trip interview, 2) the diary, and 3) the post-trip interview, including the results of the Aircraft Information Experiment. These sections are titled: 1) *Thoughts About Aircraft That Backpackers Bring To Their Trips*, 2) *Encounters With Aircraft During Backpackers' Trips*, and 3) *Backpackers' Reactions to Aircraft: An Experiment in Providing Information*. The chapter ends with a section that integrates the results of the three survey instruments through statistical analysis. It is titled *How Encounters With Aircraft Affect Backpackers' Trip Experiences*.

A Limitation for the Generalizability of the Sample

The respondents providing the data reported in this chapter were selected to represent all hiking parties. One individual was sampled from the members of the hiking party who interacted with DENA staff at the backcountry desk. It is reasonable to assume that the descriptive observations made by these respondents (e.g., the number of aircraft they heard/saw) represent the conditions experienced by their hiking party. However, it is possible that their reactions to aircraft do not accurately represent the reactions of all hikers in their party (see Introduction, pages 4 & 13-14). Analyses showed that the Mail Survey data for this sample did not differ from the rest of the sample representing all backpackers suggesting that the reactions to aircraft reported by this sample should likewise be unbiased. Strictly speaking, the extent (if at all) to which their reactions might differ from hiking parties in general can not be determined from these data. Therefore,

V. Aircraft Encounters and Evaluations

throughout this chapter data are reported as representing *backpackers selected to represent hiking parties*. Readers should note this limitation.

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V. Aircraft Encounters and Evaluations

Highlights and Implications

Because of the complexity of the survey (i.e., multiple instruments with some repeated questions completed by different samples) many of the major questions of interest concerning aircraft are not answered by a single numerical estimate. Nonetheless, substantive conclusions can be supported based on the multiple estimates that the survey provided.

Thoughts About Aircraft That Backpackers Bring To Their Trips

Most backpacking parties were not surprised to hear aircraft. About three-quarters of all backpackers selected to represent hiking parties (and 70 percent of the non-Alaskans) know that aircraft are sometimes heard or seen flying over DENA, (see Figures 5.1 and 5.2). Only about 22 percent expect that they will not hear or see aircraft (see Figure 5.5). This suggests that information campaigns will have a limited effect on the overall awareness that aircraft are present in DENA.

Most backpackers selected to represent hiking parties preferred to hear/see no aircraft. About three-quarters of all respondents said "0" when asked how many times they would prefer to hear aircraft on a typical trip day (see Figure 5.8). Less than ten percent specified that they preferred to hear/see two or more aircraft.

Almost none of the backpackers selected to represent hiking parties planned their trips around aircraft. Although 22 percent of respondents (57 of 263) said they considered the possibility of encountering aircraft when planning their trip, only 4 of 263 respondents said that aircraft affected their trip planning (see Figures 5.9 and 5.11). This finding may seem contradictory with the prior conclusion that backpackers prefer to see no aircraft. Together the findings suggest that trips are motivated primarily by factors other than getting away from aircraft, but that aircraft can still detract from trip enjoyment.

Encounters With Aircraft During Backpackers' Trips

Flight-seeing aircraft are a common feature of hikes in DENA. Analyses combining propeller planes and helicopters (i.e., aircraft used for flight-seeing) show that 58 percent of all backpacker parties hear/see these types of aircraft at some time during

V. Aircraft Encounters and Evaluations

their trip, and 28 percent hear/see them every trip day (see Figure 5.13). These figures include backpacking parties whose trips took place in poor weather when flight-seeing did not take place and those who took trips in zones rarely overflown by aircraft. Thus, for some sub-groups of DENA backpacking parties these figures underestimate the percentage who hear/see flight-seeing aircraft.

Most aircraft encounters were not extremely loud. About two-thirds of backpacking parties who encountered aircraft reported no aircraft sounds louder than a "Background noise where you could still talk in a normal voice" (see Appendix K). Although the noise scale used in the survey was relatively crude, later analyses nonetheless showed that sound was a strong predictor of negative impact due to aircraft encounters. Thus, future research focused on more detailed investigation of aircraft sound might help guide mitigation efforts and park policy related to aircraft.

Backpackers Reactions to Aircraft

Knowledge of aircraft prior to the trip had a significant influence on respondents' reactions to the aircraft they encounter – it made negative reactions more likely. Figure 5.22 and 5.23 show that although information about aircraft was expected to make aircraft encounters more acceptable to backpacking parties it had the opposite effect. The Aircraft Information Experiment showed that whether backpackers selected to represent hiking parties learned about aircraft from the survey workers or from other sources, about 60 percent of those who knew about overflights reported that they were annoyed, compared to 40 percent for those who did not know about aircraft prior to the trip. Possible interpretations of this finding are presented later in the chapter, but it is clear that simply telling hikers that they can expect to hear/see aircraft did not improve their hiking experience.

Between 50 and 60 percent of all backpackers selected to represent hiking parties reported some annoyance with aircraft, and about 45 percent reported that aircraft detracted from their experience. Care should be taken when interpreting these estimates of annoyance and detraction because they aggregate across trips in different weather and across the experimental and control conditions. For example, 28 percent of backpackers saw no flight-seeing aircraft during their trips (probably because of poor weather that

V. Aircraft Encounters and Evaluations

precluded flying), and Figure 5.26 shows that only 38 percent of respondents who were not given information about aircraft and did not know about aircraft from other sources reported that they were annoyed. It is likely that these estimates underestimate some groups' annoyance and detraction while overestimating it in other groups.

Experiences with aircraft will not alter the plans for future visits to DENA made by backpackers selected to represent hiking parties. Only about 10 percent of respondents said that aircraft would affect their future visits to DENA (see Figure 5.28). Even at this level, systematic displacement over time might affect the characteristics of backpackers or backpacking trips. However, such effects are unlikely -- only 2 of 370 respondents reported that they would stop visiting altogether due to aircraft, while 3 of 370 reported that aircraft made them more likely to return. Caution is necessary in interpreting these results because the question assumed that backpackers would return to DENA when some proportion are unlikely to do so. It is unclear how such backpackers interpreted and filled out the question.

How Encounters With Aircraft Affect Backpacking Parties' Trip Experiences

The loudness of the aircraft encountered by backpackers selected to represent those hiking parties is related to their overall trip satisfaction. Because single-item measures of trip satisfaction are frequently insensitive to manageable aspects of the trip experience, the relationship between the loudness of aircraft encounters and overall trip satisfaction represents an unexpected and potentially important effect. Such a correlation could result from a combination of factors other than a causal relationship in which the noise of aircraft encounters decrease satisfaction. For example, low clouds and poor visibility might cause aircraft to fly lower (increasing noise) while also decreasing the quality of backpackers' experiences. Future research would be necessary to rule out such alternate explanations before concluding that these results indicate that the noise of aircraft encounters decreases backpacker satisfaction.

Regression results (along with the earlier described finding that hikers who knew about aircraft were more likely to report negative effects) suggest that informing people of the presence of aircraft will be ineffective or counterproductive in reducing flight-seeing impact. The regression analyses (see Table 5.3) showed that for backpackers

V. Aircraft Encounters and Evaluations

selected to represent hiking parties, expectations concerning aircraft (alone, or in interaction with aircraft encounter variables) were not predictive of annoyance with aircraft, impacts of aircraft on trip enjoyment, or overall trip satisfaction. Thus, efforts to alter expectations are unlikely to mitigate aircraft impacts.

Regression results suggest that the number of planes, time they are heard, and maximum loudness could all be reduced to limit impact. However, moving planes away from backpacking parties to decrease loudness should decrease impacts most effectively. The regression analyses (see Table 5.3) showed that the average daily maximum loudness rating was: a) the strongest predictor of annoyance with aircraft and overall trip satisfaction, b) as strong a predictor of aircraft impacts on trip enjoyment as any of the other variables, and c) one of the components of every two-way interaction among the predictor variables that approached or exceeded statistical significance. Because it is the strongest predictor of negative aircraft impacts, minimizing the loudness of the aircraft backpackers encounter is the most promising avenue for efforts designed to mitigate negative impacts of aircraft.

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Thoughts About Aircraft That Backpackers Bring To Their Trips

Before embarking on their backing trip, respondents (i.e., backpackers selected to represent hiking parties) in the information condition of the Aircraft Information Experiment were asked a series of questions about their knowledge, expectations, preferences, and plans regarding aircraft. The data from these questions are reported in this section.

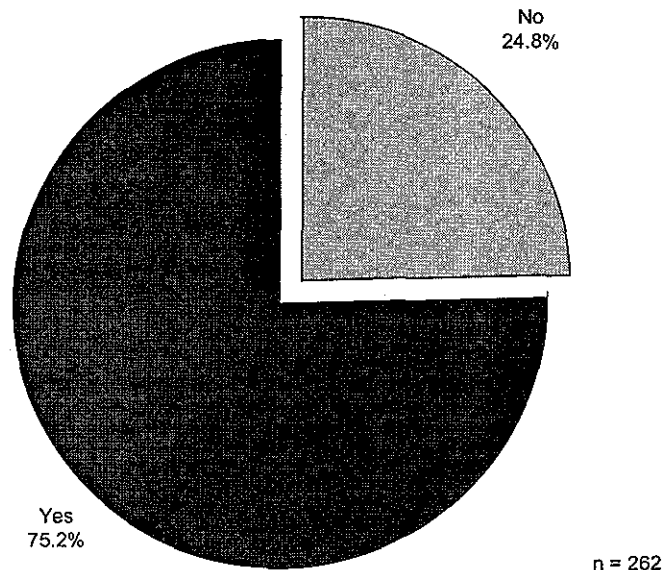
V. Aircraft Encounters and Evaluations

Respondents' Awareness of Aircraft

Pre-trip Interview

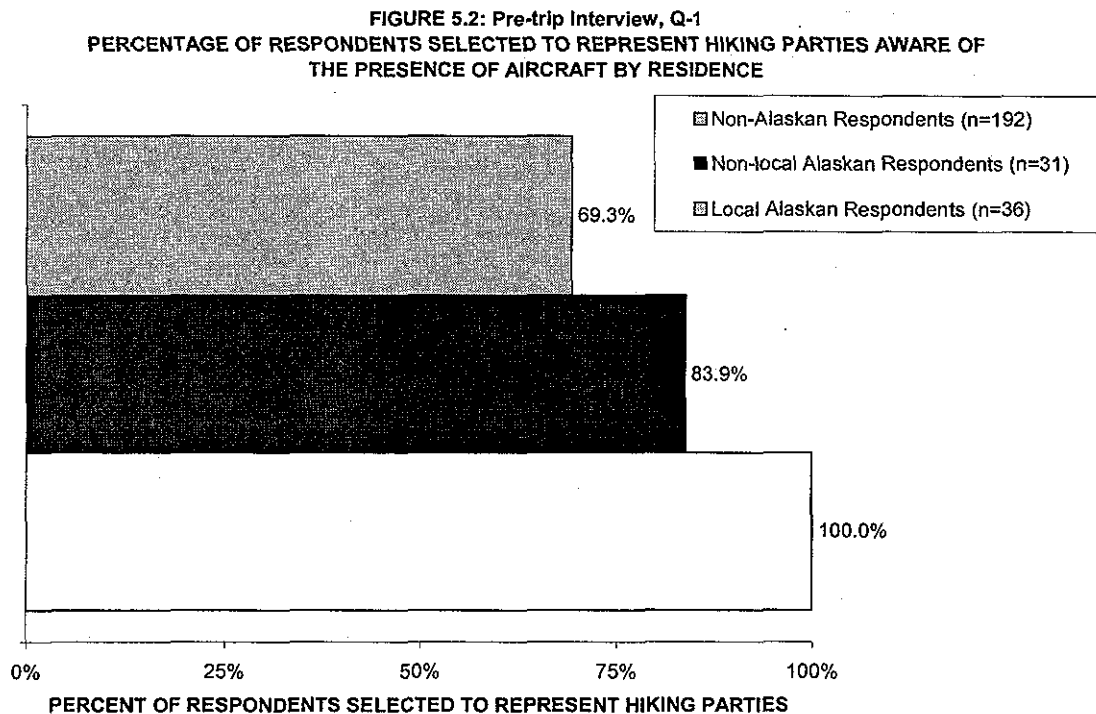
1. **Did you know that aircraft are sometimes heard or seen flying over Denali?**
- NO
YES → 1.1 **How did you learn about the presence of aircraft at Denali? (Check as many as reported. Probe by asking "Any others?" if they stop at one source.)**
1. PARK WEB SITE
 2. PRIOR VISITS TO DENALI
 3. GENERAL KNOWLEDGE/ALASKA EXPERIENCE
 4. FRIENDS OR RELATIVES
 5. TRAVEL GUIDE/TOUR BOOK
 6. NEWSPAPER/MAGAZINE
 7. MAPS/BROCHURES
 8. RADIO/TELEVISION
 9. DON'T REMEMBER WHERE
 10. OTHER (Please specify: _____)

FIGURE 5.1: Pre-trip Interview, Q-1
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES AWARE OF
THE PRESENCE OF AIRCRAFT



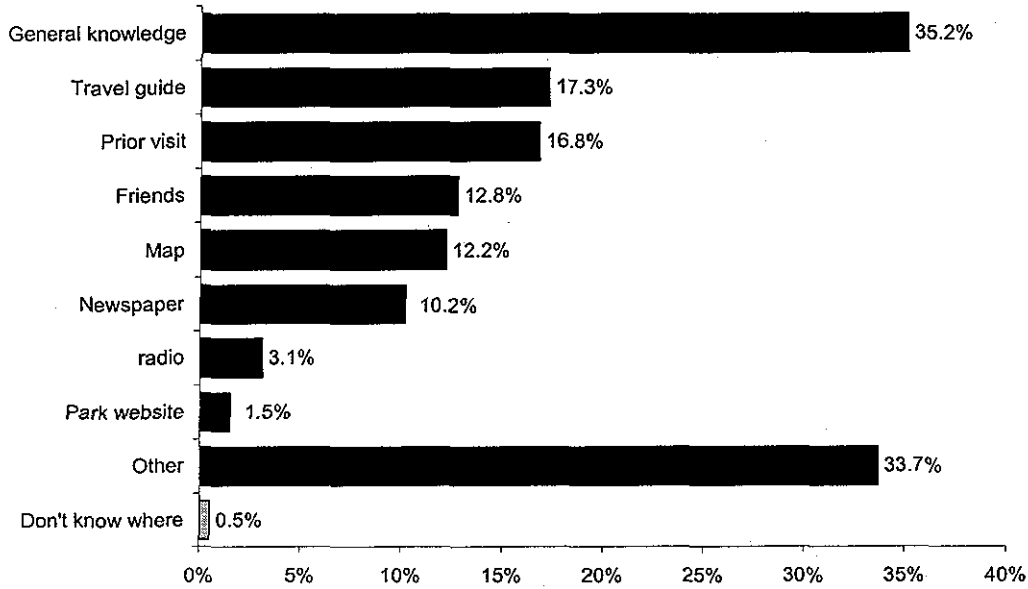
V. Aircraft Encounters and Evaluations

Respondents' awareness of aircraft varied significantly by residence, $\chi^2 (2, n = 259) = 16.78, p < .001$. As can be seen in Figure 5.2, all (100%) of the local Alaskan respondents were aware of aircraft while only 83.9 percent of non-local Alaskan respondents and 69.3 percent of non-Alaskan respondents were aware of aircraft.



V. Aircraft Encounters and Evaluations

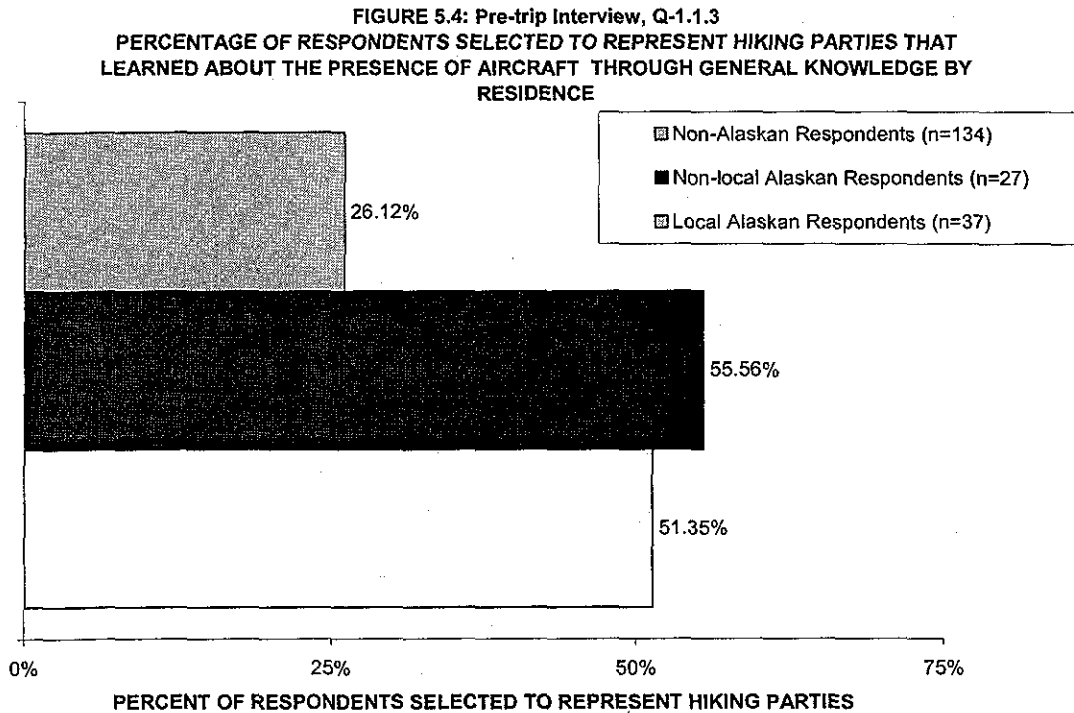
FIGURE 5.3: Pre-trip Interview Q-1.1
HOW RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES LEARNED ABOUT THE PRESENCE OF AIRCRAFT AT DENA



PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n = 196)
Only includes the 75.2% of hiking parties who know that aircraft are heard/seen over DENA.

V. Aircraft Encounters and Evaluations

The percentage of respondents who reported that they were aware of aircraft from general knowledge differed significantly by residence, $\chi^2 (2, n = 198) = 14.03, p = .001$. As can be seen in Figure 5.4, only about one-fourth (26.1%) of non-Alaskan respondents learned about aircraft through general knowledge while about half (55.6% and 51.4%, respectively) of non-local and local Alaskan residents learned about aircraft from general knowledge.



V. Aircraft Encounters and Evaluations

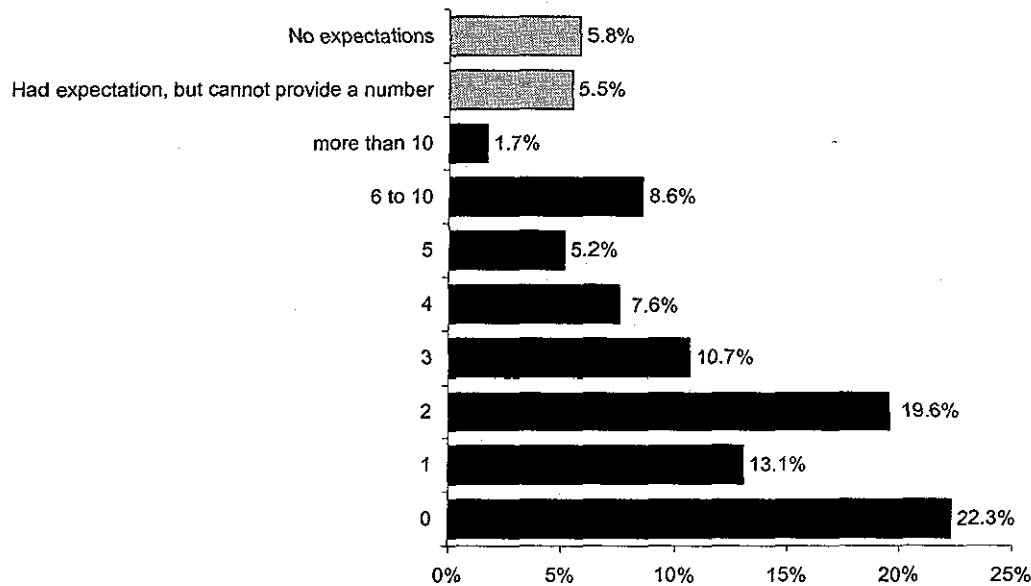
Expected Number of Aircraft Encounters

Pre-trip Interview

2. During a typical day on this trip, how many times do you expect to hear or see aircraft?

NUMBER OF TIMES _____ Record "no expectations" if respondent gives a "couldn't say/don't know" answer and persists after a probe

FIGURE 5.5: Pre-trip Interview Q-2
NUMBER OF TIMES RESPONDENTS SELECTED TO REPRESENT HIKING PARTY EXPECTED TO HEAR OR SEE AIRCRAFT



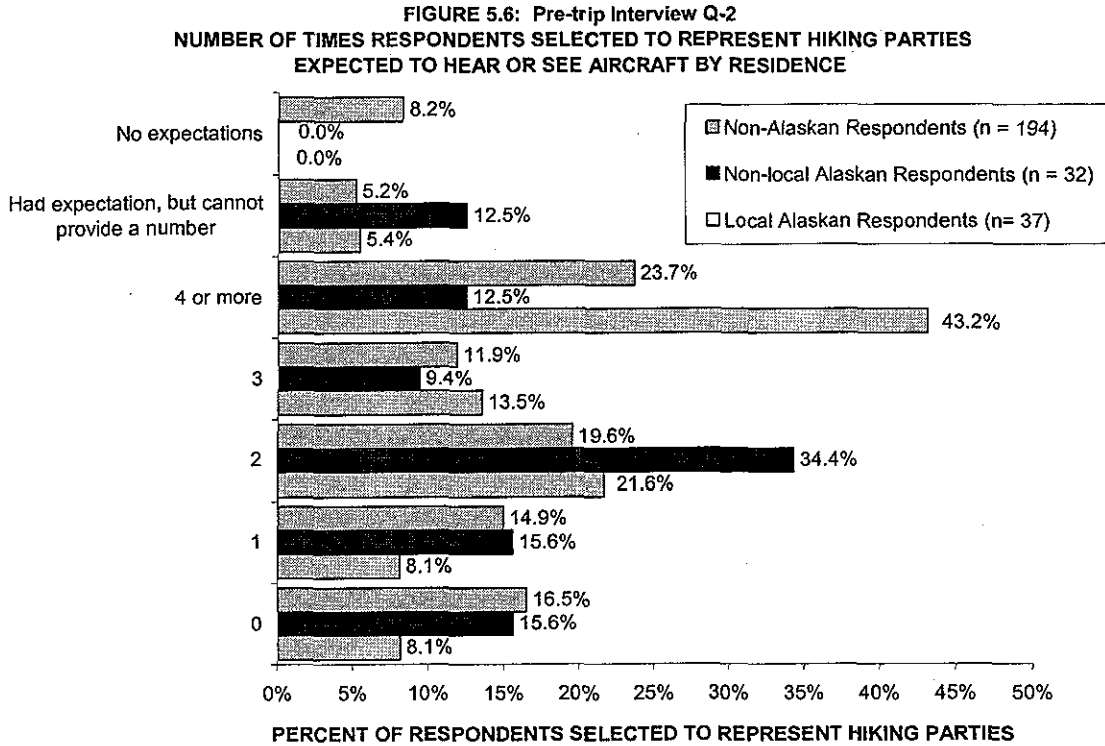
PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n = 291)

The number of times people expected to hear or see aircraft varied significantly by residence, $\chi^2 (10, n = 263) = 19.48, p = .035$ (6 cells had expected frequencies less than 5)². As can be seen in Figure 5.6, local Alaskan respondents were twice as likely to expect

² When cells have expected frequencies less than 5, the chi-square value is inflated and can lead to inappropriate rejection of the null hypothesis. In an effort to eliminate expected frequencies less than 5, an analysis was performed that combined the two nominal categories and another was performed that excluded both the nominal categories. In both cases, the findings were significant and there were cells with expected frequencies less than 5. Although the small cells may inflate the chi-square value, the percentage differences between respondents in the larger cells suggest substantive differences in response patterns.

V. Aircraft Encounters and Evaluations

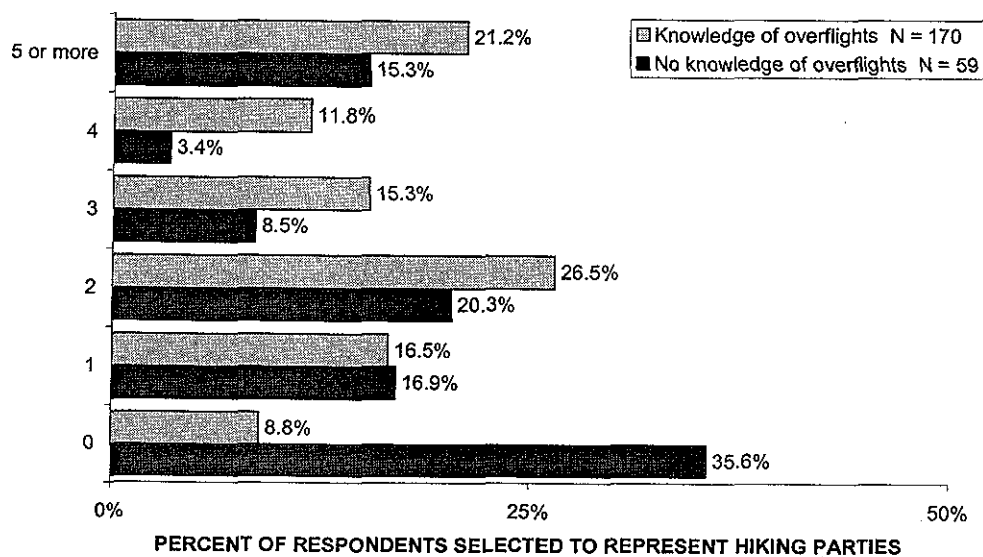
encounters with 4 or more aircraft and only half as likely to expect to encounter none or one aircraft compared to non-local Alaskan respondents or non-Alaskan respondents. No local or non-local Alaskan respondents reported that they had no expectations while 8.2 percent of non-Alaskan respondents had no expectations.



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It was predicted that individuals who were informed about aircraft would have expectations of seeing aircraft. Consistent with this hypothesis, expectations of number of aircraft that would be seen depended on initial level of knowledge about aircraft, $\chi^2(5) = 26.12, p < .001$ (see Figure 5.7). Respondents who reported knowing about aircraft before this trip were less likely to expect seeing no aircraft (8.8%) than respondents in the information condition who did not know about aircraft (35.6%). Additionally, respondents who knew about aircraft before this trip were more likely to expect seeing three or more aircraft (48.3%) than respondents who did not know about aircraft (27.2%)

FIGURE 5.7: Pre-Hike Interview Q-1
EXPECTED NUMBER OF AIRCRAFT OVERFLIGHTS BY KNOWLEDGE OF AIRCRAFT
OVERFLIGHTS OVER DENALI



V. Aircraft Encounters and Evaluations

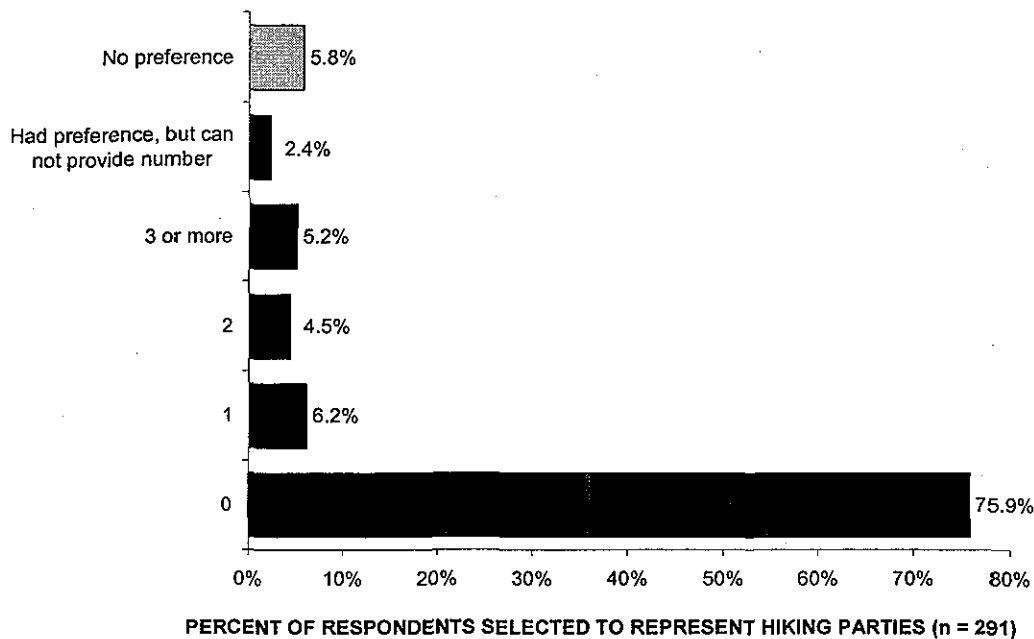
Preferred Number of Aircraft Encounters

Pre-trip Interview

3. **During a typical day on this trip, how many times would you prefer to hear or see aircraft?**

NUMBER OF TIMES _____ *If respondent can't provide a number, ask for differentiation between a "no preferences/don't care" answer and a "have a preference but can't provide a number answer."*

**FIGURE 5.8: Pre-trip Interview Q-3
NUMBER OF TIMES RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES
PREFERRED TO HEAR OR SEE AIRCRAFT**



V. Aircraft Encounters and Evaluations

Considered the Possibility of Seeing Aircraft when Planning Trip

Pre-trip Interview

4. **When you planned this visit to Denali, did you take into consideration the possibility that you might hear or see aircraft flying over the area?**

NO

YES → 4.1 **Did the possibility of encountering aircraft affect any aspect of how you planned your visit to Denali?**

NO

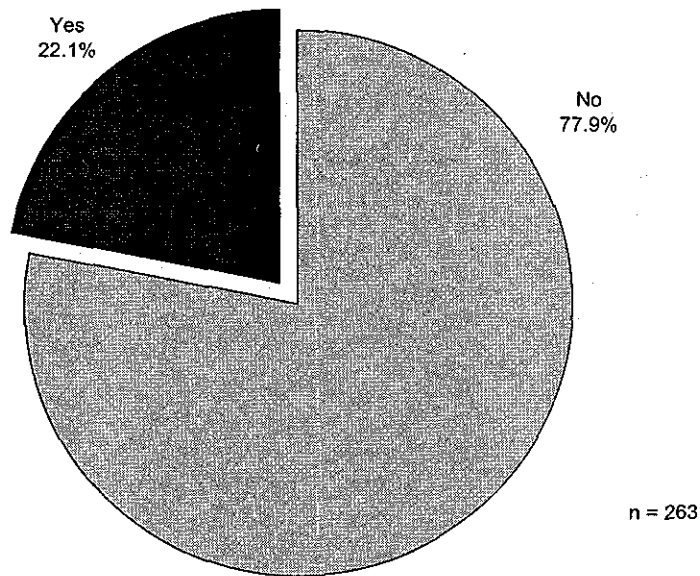
YES → 4.2 **How did the possibility of encountering aircraft affect your decision to visit Denali?**

(Check as many as respondent reports. Probe by asking "Any others?" if they stop at one effect.)

1. Came to see the aircraft?
2. Came at a different time of day than would otherwise?
3. Came on a different day of the week?
4. Planned to do different activities in Denali?
5. Planned to visit a different area of Denali?
6. Other effects not described *(Please specify below.)*
7. Don't know

V. Aircraft Encounters and Evaluations

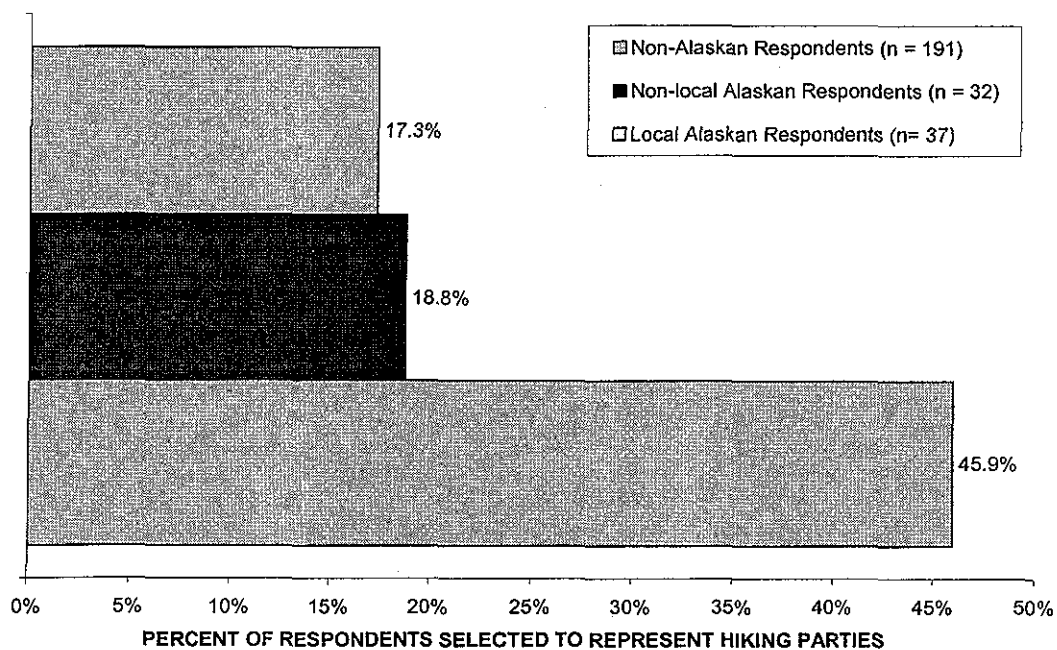
FIGURE 5.9: Pre-trip Interview, Q-4
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES THAT TOOK
POSSIBILITY OF ENCOUNTERING AIRCRAFT INTO CONSIDERATION



Consideration of the possibility of encountering aircraft varied significantly by residence, $\chi^2(2, n = 260) = 15.24, p < .001$ (see Figure 5.10). About twice as many local Alaskan respondents (45.9%) considered encountering aircraft when planning their trip than did non-local Alaskan respondents (18.8%) or non-Alaskan respondents (17.3%).

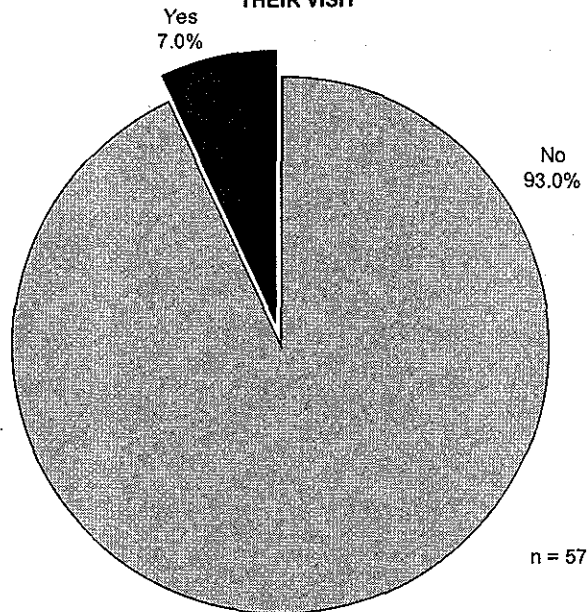
V. Aircraft Encounters and Evaluations

FIGURE 5.10: Pre-trip Interview Q-4
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES THAT
TOOK POSSIBILITY OF ENCOUNTERING AIRCRAFT INTO CONSIDERATION BY RESIDENCE



V. Aircraft Encounters and Evaluations

**FIGURE 5.11: Pre-trip Interview, Q-4.1
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES WHO
REPORTED THAT POSSIBILITY OF SEEING AIRCRAFT AFFECTED HOW THEY PLANNED
THEIR VISIT**



Includes only the 22.1% of hiking parties who when planning this visit, considered that they might hear/see aircraft in Denali.

Note that the seven percent section of the pie in Figure 5.11 represents only four backpackers selected to represent hiking parties, or 1.5 percent of the full sample. Of those four respondents, three said that they planned to visit a different area of DENA, one planned to do different activities, and one changed plans in an unspecified way (one respondent changed both the visited area and activity they planned).

V. Aircraft Encounters and Evaluations

Encounters With Aircraft During Backpackers' Trips

Two questions filled out daily in Version 1 of the trip diary asked backpacking parties to report the number of aircraft they heard or saw (each question is reproduced below). The first question asked about aircraft in general, whereas the second question³ asked specifically about the number of propeller planes, helicopters, jets, and other aircraft⁴. Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, up to six summary figures represent the data from each question or sub-question in the diary:

- The *Average per Trip Day* represents the total number of aircraft (of a particular type) reported during a trip divided by the number of trip days. Because partial hiking days could be recorded on the first and/or last day of the diary, the presented averages are low estimates of aircraft encounters per full hiking day.
- The *Maximum Daily Number per Trip* represents the number of aircraft (of a particular type) reported on the day when the most aircraft (of that type) were heard or seen. For example, if a party on a three-day hiking trip reported seeing 4, 0, and 2 propeller planes, the Maximum Daily Number of Propeller Planes would be 4.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest aircraft (of a particular type) were heard or seen (i.e., in the example, the Minimum Daily Number of Propeller Planes would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of aircraft (of a particular type) reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).

³ These two questions were not contiguous in the diary but are reported together in this chapter to improve the logical flow of the information.

⁴ The "Other Aircraft" category was almost always used for aircraft that were not specifically classified as prop planes, helicopters, or jets.

V. Aircraft Encounters and Evaluations

- The *Total Number per Trip* is simply the total number of aircraft (of a particular type) reported during a trip.
- The *Percentage of Trip Days that Respondents Saw/Heard Aircraft* represents the number of trip days for which the total number of aircraft (of a particular type) reported was more than zero divided by the total number of trip days.

All the summary figures can be found in Appendix J. In this chapter only the subset of the summary figures used in later regression analyses or considered most descriptive of hiking parties' experiences are reported.

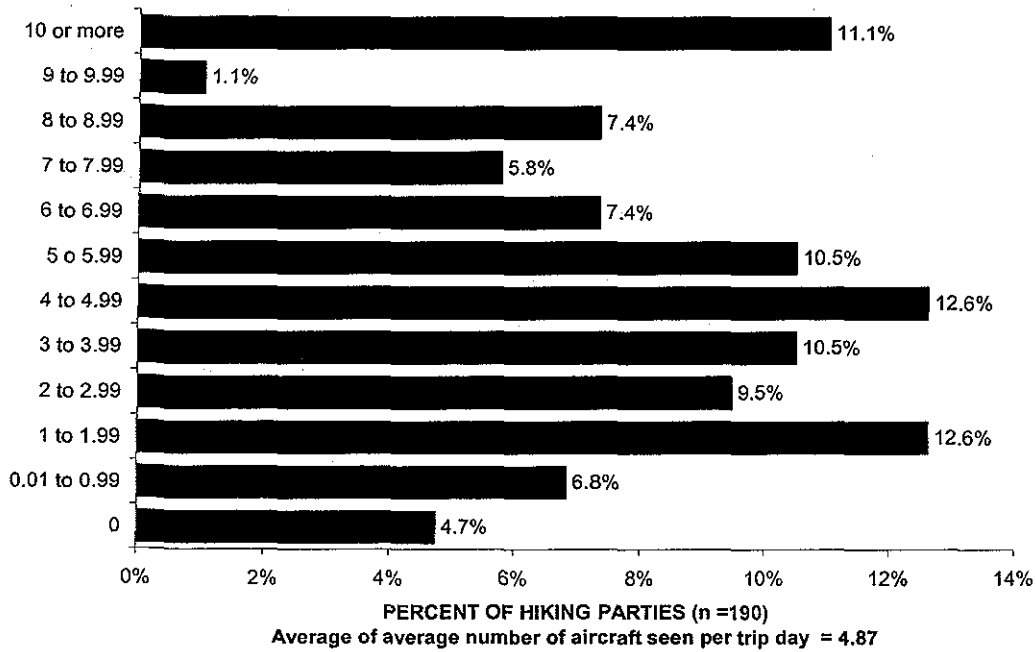
V. Aircraft Encounters and Evaluations

Number of Encounters With All Aircraft

Diary, Version 1

8. How many times did you hear or see aircraft today? (If none, write "0" and skip to question 12)

FIGURE 5.12: Diary, v1 (aggregated), Q-8
AVERAGE NUMBER OF AIRCRAFT SEEN PER TRIP DAY



V. Aircraft Encounters and Evaluations

Encounters with Different Kinds of Aircraft

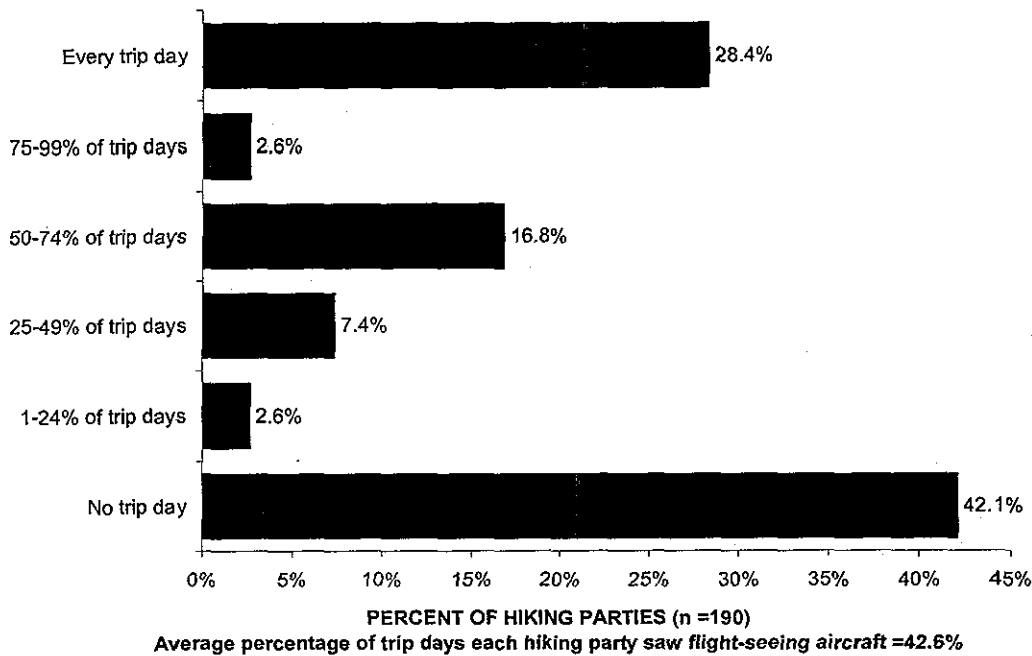
Diary, Version 1

10. What kind(s) of aircraft flew over? (Circle each type you identified and write the number of each type seen in the blank following)

1. Propeller plane _____ 3. Jet _____
2. Helicopter _____ 4. Other _____

Both propeller planes and helicopters are used for commercial flight-seeing trips in DENA. In order to represent backpackers' experience with this general class of aircraft, data for propeller planes and helicopters were combined. Summary figures for all types of aircraft can be found in Appendix J. However, this chapter reports only summary figures for flight-seeing aircraft.

FIGURE 5.13: Diary, v1 (aggregated), Q-10
PERCENTAGE OF TRIP DAYS EACH HIKING PARTY SAW FLIGHT-SEEING AIRCRAFT



V. Aircraft Encounters and Evaluations

FIGURE 5.14: Diary, v1 (aggregated), Q-10
AVERAGE NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP DAY

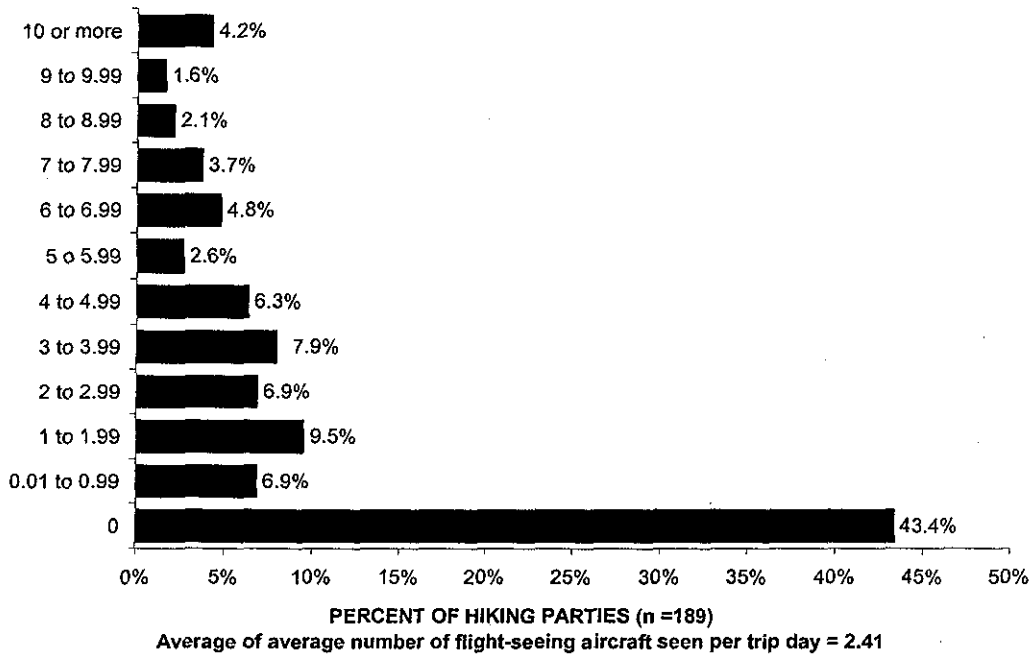
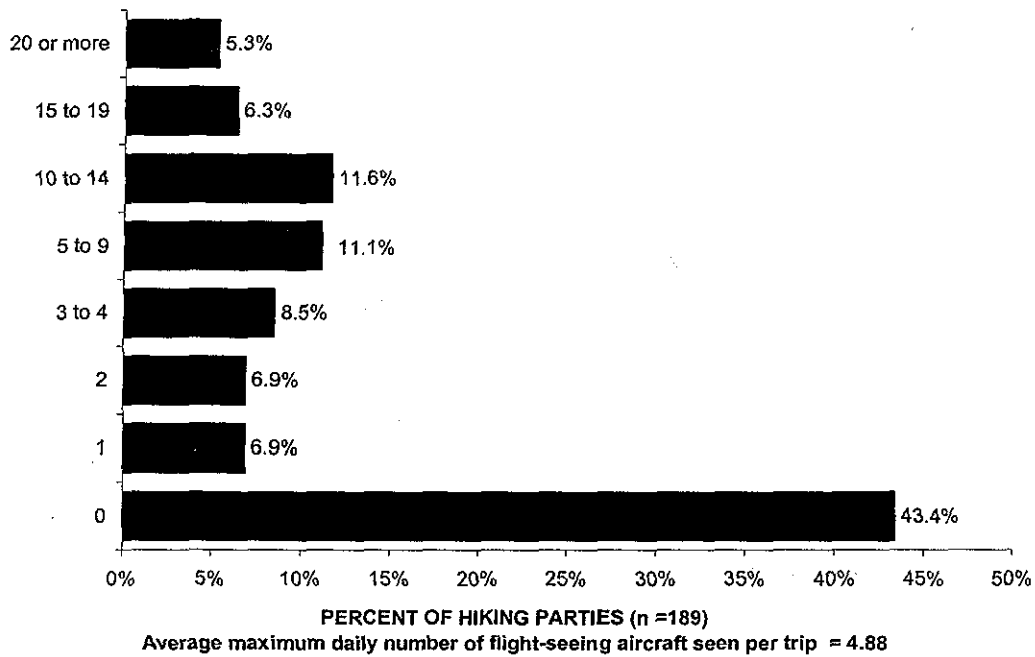


FIGURE 5.15: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP



V. Aircraft Encounters and Evaluations

FIGURE 5.16: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP

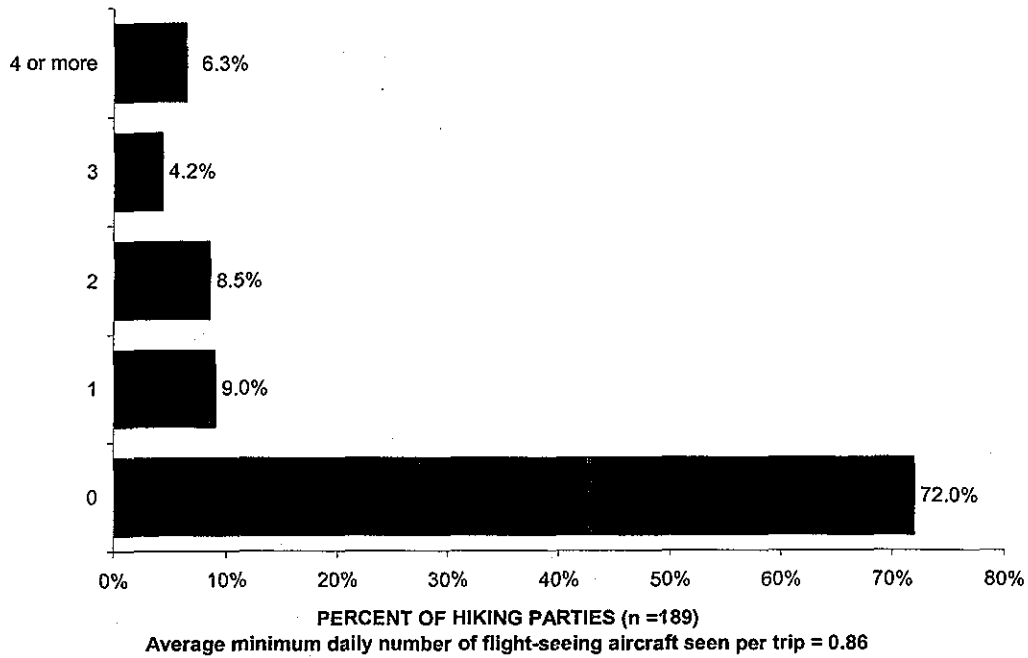
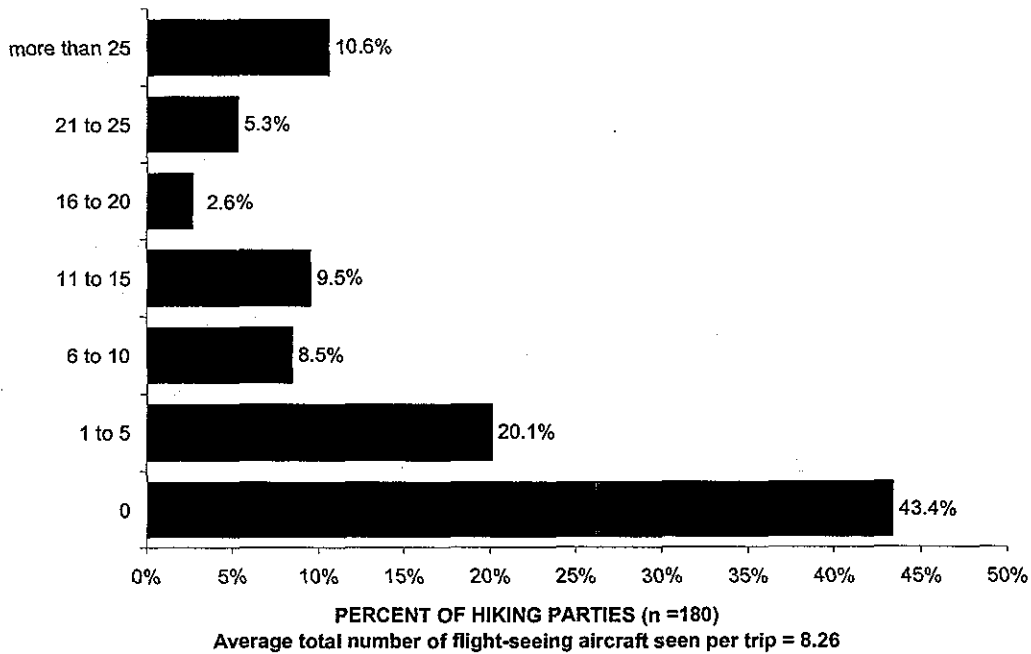


FIGURE 5.17: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP



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Duration of Aircraft Encounters

A question filled out daily in Version 1 of the trip diary asked backpackers to report the total time that any aircraft could be seen/heard (the question is reproduced below). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures can represent the data from the duration question:

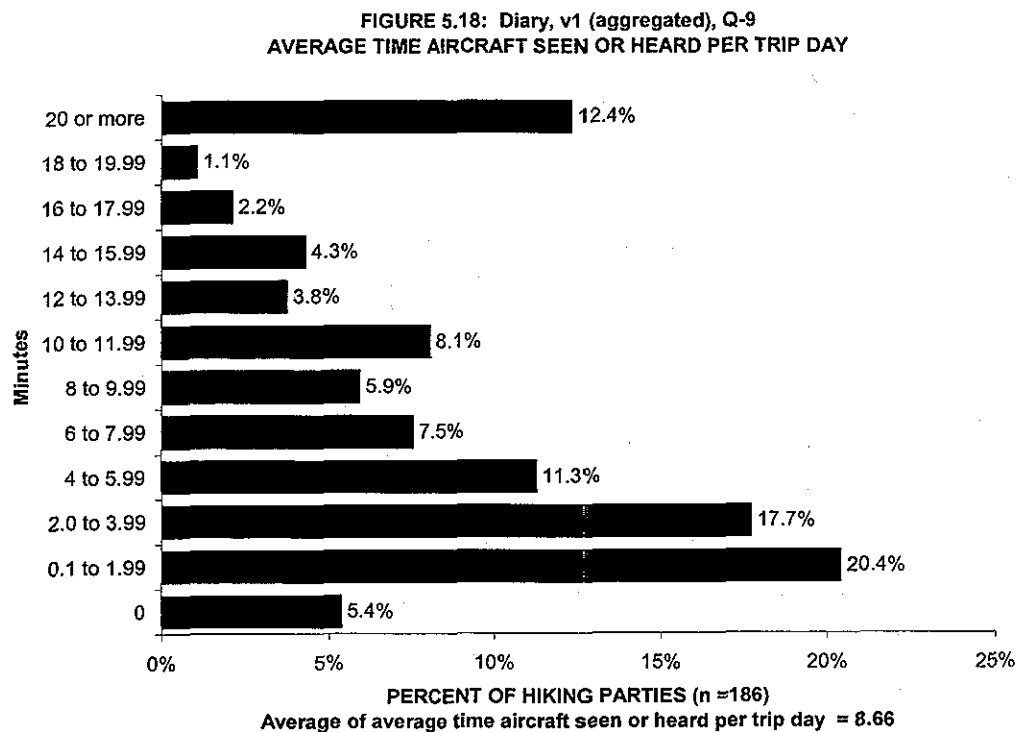
- The *Average Time per Trip Day* represents the total time that aircraft were reported as present during a trip divided by the number of trip days. Because partial hiking days could be recorded on the first and/or last day of the diary, the presented averages are low estimates of the time that aircraft are heard/seen per full hiking day.
- The *Maximum Daily Time per Trip* represents the number of minutes that aircraft were reported as present on the day when aircraft were heard/seen for the longest time. For example, if a party on a three-day hiking trip reported hearing/seeing aircraft for 3, 1, and 2 minutes, the *Maximum Daily Time* would be 3 minutes.
- The *Minimum Daily Time per Trip* is calculated in the same manner as the *Maximum Daily Time*, except that it represents the trip day when aircraft were heard/seen for the shortest time (i.e., in the example, the *Minimum Daily Time* would be 1).
- The *Standard Deviation per Trip Day* represents the variability in the daily time aircraft were reported as present across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, daily time of aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the *Average Time per Trip Day*).
- The *Total Time per Trip* is simply the total time that aircraft were reported as present during a trip.

All the summary figures can be found in Appendix K. In this chapter only the sub-set of the summary figures used in later regression analyses are reported.

V. Aircraft Encounters and Evaluations

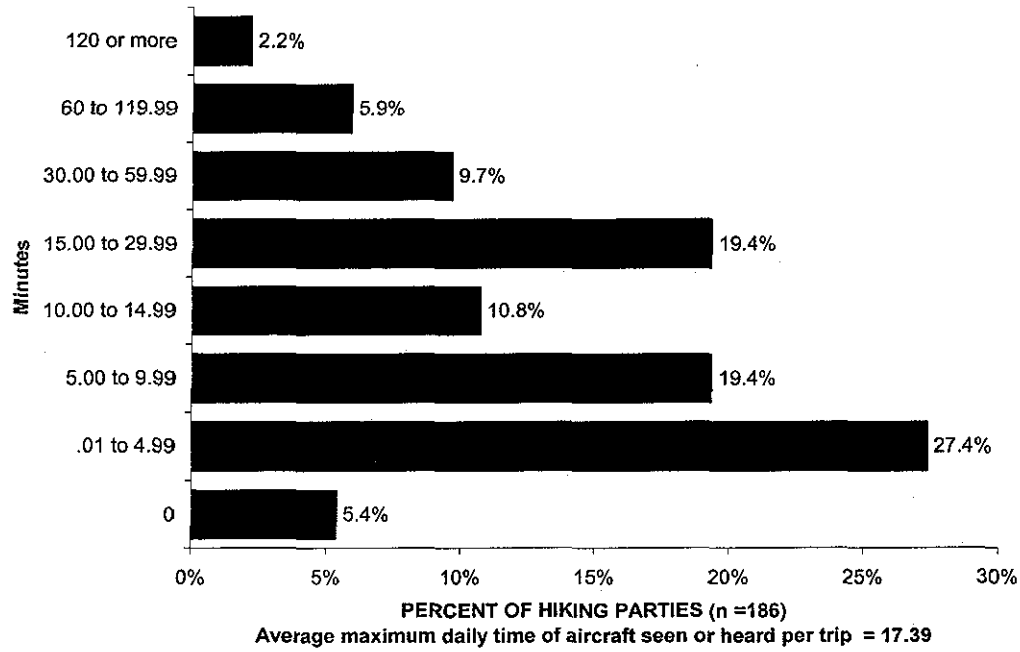
Diary, Version 1

9. How long was the total time that you could hear or see aircraft? (In minutes.)



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FIGURE 5.19: Diary, v1 (aggregated), Q-9
MAXIMUM DAILY TIME AIRCRAFT SEEN OR HEARD PER TRIP



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Loudness of Aircraft Encounters

A question filled out daily in Version 1 of the trip diary asked backpackers to report a loudness rating for the loudest aircraft they heard (the question is reproduced below). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, four summary figures could represent the data from the loudness question:

- The *Average Loudest Aircraft per Trip Day* represents the sum of the loudness ratings of the loudest aircraft reported on each trip day divided by the number of trip days.
- The *Maximum Loudest Aircraft per Trip* represents the loudness rating of the loudest aircraft reported during a trip.
- The *Minimum Loudest Aircraft per Trip* represents the rating of the loudest aircraft encountered on the trip day when the loudness rating was lowest. For example, if a party on a three-day hiking trip reported maximum daily loudness ratings of 3, 1, and 3, the Minimum Loudest Aircraft would be 1.
- The *Standard Deviation of Loudest Aircraft per Trip Day* represents the variability in the daily time aircraft were reported as present across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, daily time of aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the Average Loudest Aircraft per Trip Day).

All the summary figures can be found in Appendix K. In this chapter only the summary figure used in later regression analyses is reported.

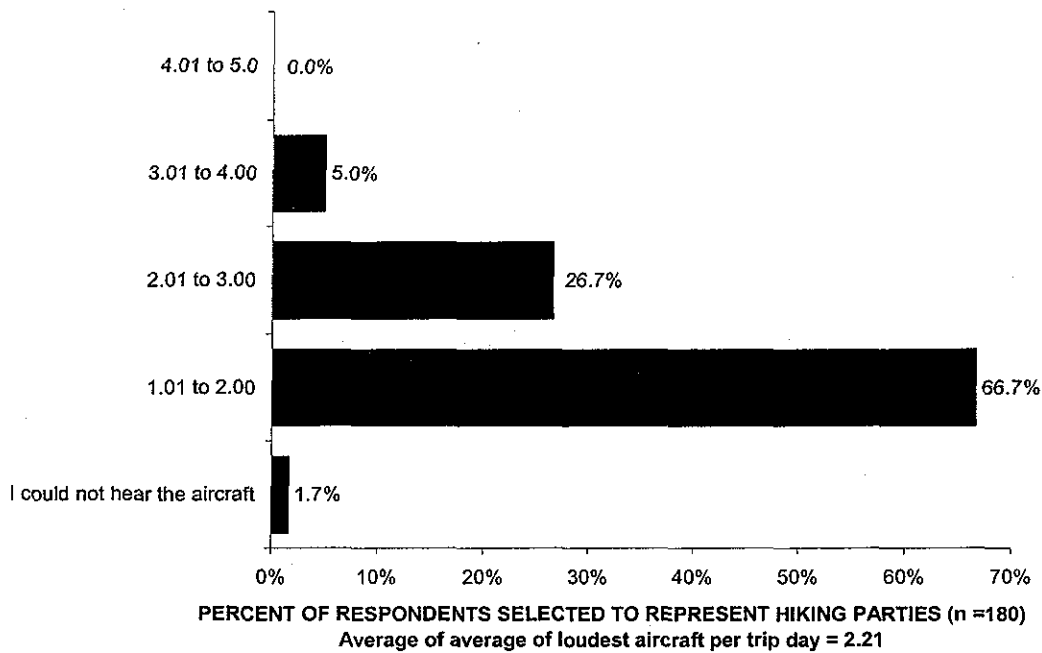
V. Aircraft Encounters and Evaluations

Diary, Version 1

11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (List number that describes the sound)

1. I couldn't hear the aircraft.
2. Background sound where you could still talk in a normal voice
3. Conspicuous sound where you would have to speak loudly to be heard
4. Dominant sound where you would have to shout to be heard
5. Overwhelming sound where you couldn't even hear shouting

FIGURE 5.20: Diary, v1 (aggregated), Q-11
AVERAGE OF LOUDEST AIRCRAFT PER TRIP DAY



*Taking the average results in values that fall between the response options

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Backpackers' Reactions to Aircraft: An Experiment in Providing Information

Reactions to aircraft were affected by several factors, including the provision of information in the Aircraft Information Experiment. Thus, it would be misleading to simply present aggregated results for all post-hike questions without considering those factors. Accordingly, two factors are discussed below in relation to backpackers' reactions to aircraft. These are: 1) knowledge prior to the trip that aircraft commonly fly over DENA, and 2) whether backpackers were given information about flight-seeing aircraft in the aircraft information experiment.

Knowledge of Aircraft Flying Over DENA Before this Backpacking Trip

During the post-hike interview, all respondents were asked about their knowledge of aircraft before this backpacking trip. Because the question asks "before this trip", it was expected that there should be no difference across the Aircraft Information Experiment conditions. As can be seen in Figure 5.21, a greater proportion of respondents in the information condition (72.9%) than in the control condition (55.0%) reported knowing about aircraft before this backpacking trip, $\chi^2(1) = 13.30, p < .001$.

Post-Hike Interview

5. Before this backpacking trip, did you know that aircraft are sometimes heard or seen flying over Denali?

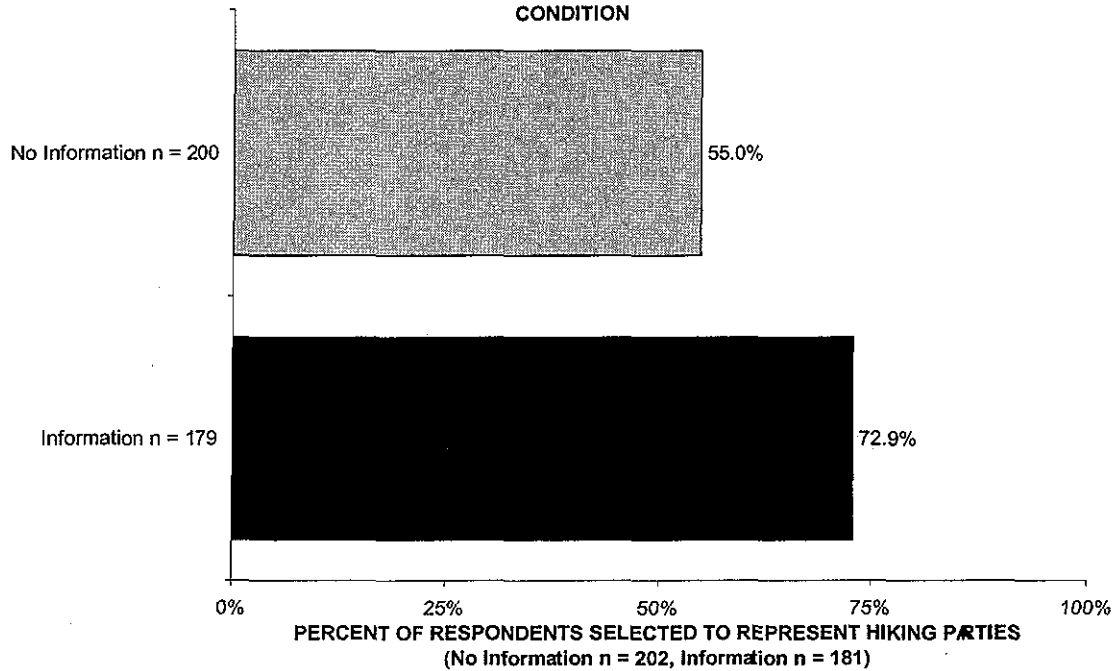
NO

YES → 5.1 How did you learn about the presence of aircraft at Denali? (Check as many as reported. Probe by asking "Any others?" if they stop at one source.)

- 1 HEARD/SAW THEM DURING PRESENT VISIT
- 2 PARK WEB SITE
- 3 PRIOR VISITS
- 4 GENERAL KNOWLEDGE/ALASKA EXPERIENCE
- 5 FRIENDS OR RELATIVES
- 6 TRAVEL GUIDE/TOUR BOOK
- 7 NEWSPAPER/MAGAZINE
- 8 MAPS/BROCHURES
- 9 RADIO/TELEVISION
- 10 DON'T REMEMBER WHERE
- 11 OTHER (Please specify: _____)

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FIGURE 5.21: Post-Hike Interview Q-5
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES WHO KNOW
AIRCRAFT ARE SOMETIMES HEARD OR SEEN FLYING OVER DENALI BY INFORMATION
CONDITION



Because this question was asked during the post-trip interview, one possibility is that individuals in the information condition were misattributing the source of their knowledge about aircraft overflights. That is, they might have mistakenly reported that they learned about aircraft outside the context of this study when in fact they learned about aircraft in the pre-test interview. Individuals in the information condition were also asked this question in the pre-hike interview prior to receiving information about aircraft. If such respondents were misattributing the source of their knowledge, then fewer of them should report knowing about aircraft in the pre-trip interview than in the post-trip. Examination of the pre-hike interview data revealed that 75.2 percent of respondents in the information condition had knowledge of aircraft overflights prior to participating in the study. Thus, the percentage of respondents reporting knowledge of aircraft over

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Denali in the pre-trip data was comparable to the post-trip data (75.2% vs. 72.9% respectively).⁵

We are left with the unexplained finding that more respondents in the information condition had knowledge of aircraft overflights in Denali than did respondents in the no information condition and must conclude that the randomization process did not produce two equivalent groups (perhaps simply due to chance). Because knowledge of aircraft may affect reactions to aircraft, initial level of knowledge of aircraft was examined for each dependent variable. The results of these analyses are reported along with the other findings for each dependent variable.

Were Respondents Annoyed by Aircraft?

Post-Hike Interview

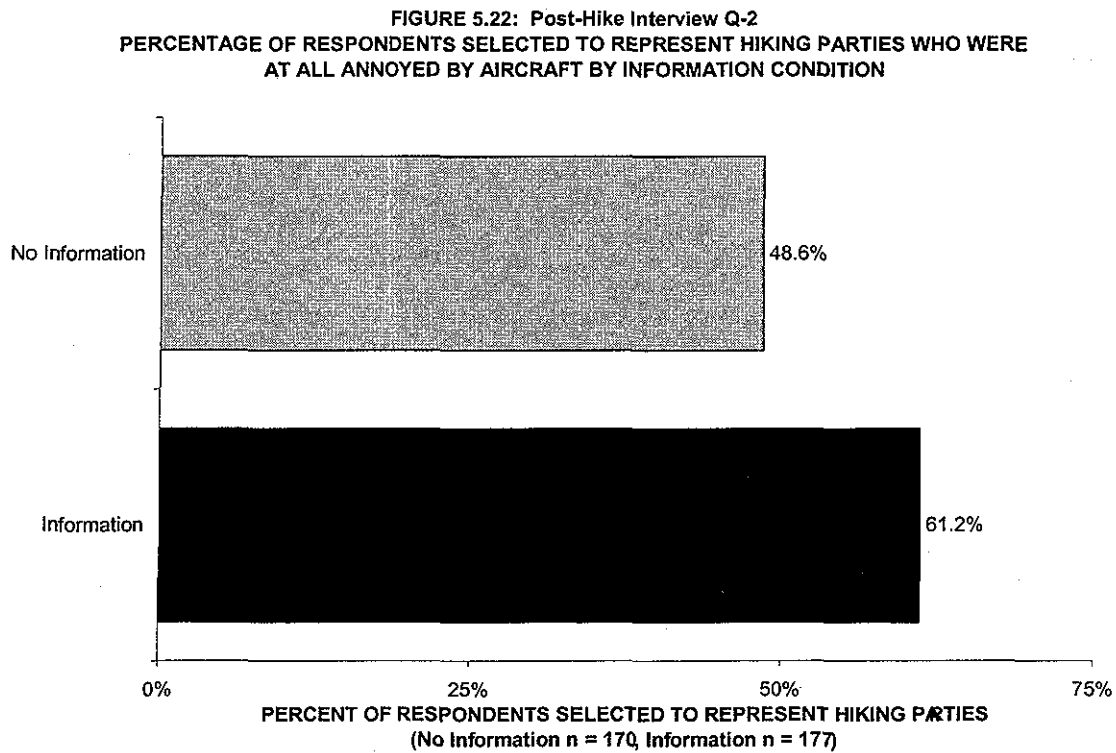
- | | |
|----|--|
| 2. | Were you at all annoyed by aircraft during this hiking trip in Denali? (<i>Circle one number.</i>) |
| 1 | NO → GO TO QUESTION 3 |
| 2 | DON'T KNOW/CAN'T REMEMBER → GO TO QUESTION 3 |
| 3 | YES → 2.1 How annoyed would you say that you were? (Give respondent the laminated card with response scale.) |
| | 1 SLIGHTLY ANNOYED |
| | 2 MODERATELY ANNOYED |
| | 3 VERY ANNOYED |
| | 4 EXTREMELY ANNOYED |

As can be seen in Figure 5.22, a greater proportion of respondents who received information about aircraft reported being annoyed by aircraft, $\chi^2(1) = 5.54, p = .019$. Further analyses revealed that the effect of information condition varied by initial knowledge of aircraft. Figure 5.23 shows no effect of information condition for respondents who reported knowing about aircraft prior to their trips (57.9% vs. 60.5%), $\chi^2(1) = 0.15, p = .699$. For respondents who did not know about aircraft, however, a greater proportion of those in the information condition reported being annoyed by

⁵ Additional analyses comparing the number of respondents who said they knew about aircraft in the pre-trip interview but said they didn't know in the post-trip to those who said they didn't know in the pre-trip and then said they knew in the post-trip showed that relatively few respondent made each switch.

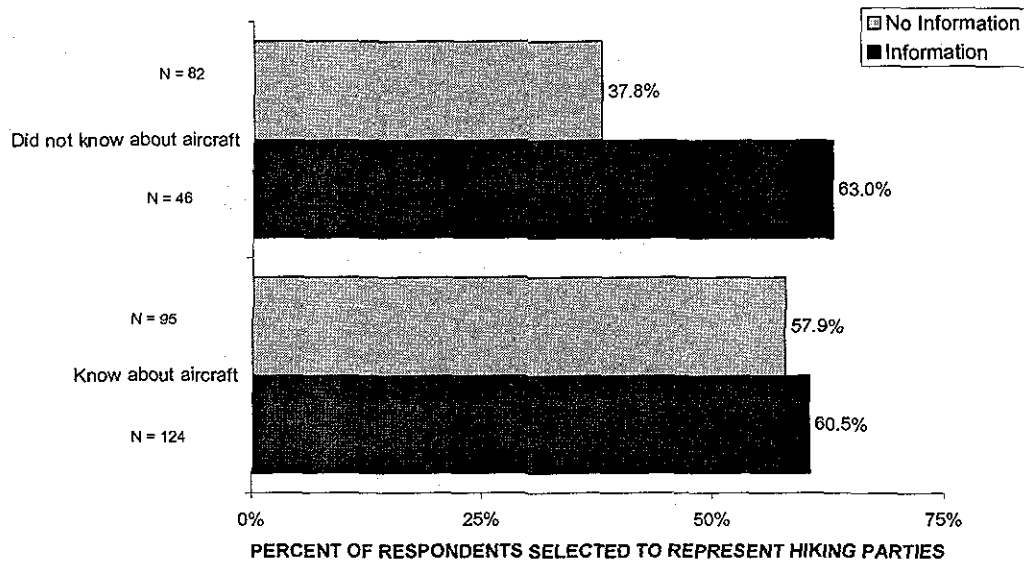
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aircraft than respondents in the control condition (63.0% vs. 37.8%), $\chi^2(1) = 7.54, p = .006$ (see Figure 5.23).



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FIGURE 5.23: Post-Hike Interview Q-2
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES WHO
REPORTED THAT THEY WERE ANNOYED BY AIRCRAFT BY KNOWLEDGE OF AIRCRAFT
OVERFLIGHTS BY INFORMATION CONDITION

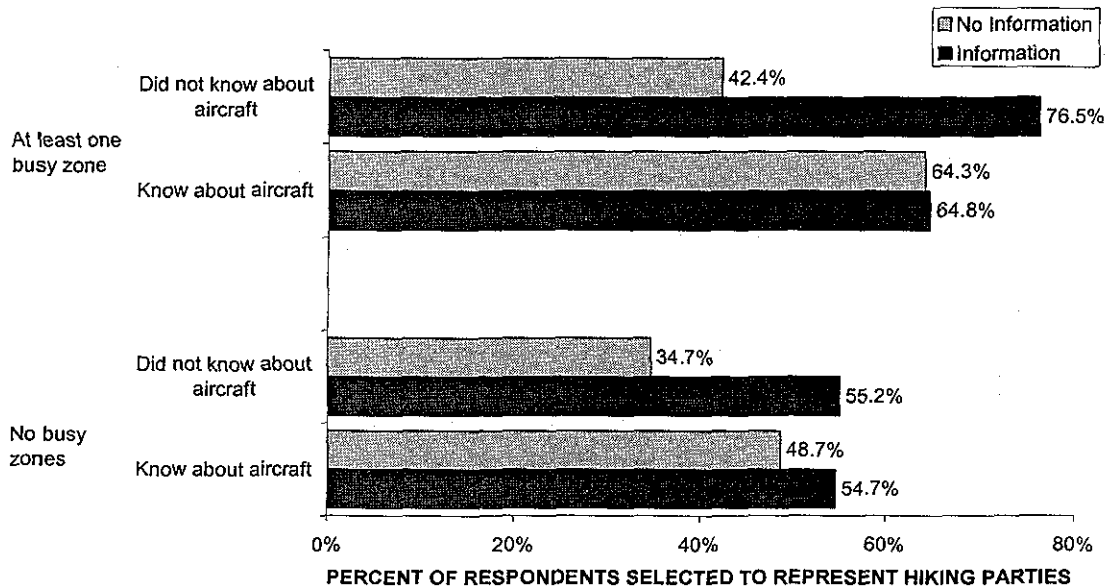


Because hikers in the information condition were both given information and asked to keep a diary of aircraft encounters one might argue that increased annoyance levels in that condition are partly or entirely due to the increased attention brought about by the diary rather than the information given about aircraft. However, the data in Figure 5.23 are not consistent with such an argument. If the diary was the source of increased annoyance, respondents in the information condition should show higher levels of annoyance, even when comparing only those hikers who knew about aircraft before their trip. The fact that no such difference was found argues for the interpretation that the information and not the diary increased annoyance with aircraft.

We also examined whether the relationship between annoyance and knowledge of aircraft differed based on the level of aircraft activity in the zones where respondents hiked and found that increased annoyance after learning about aircraft was most evident among respondents who did not know about aircraft and who hiked in at least one zone with high levels of aircraft activity (see Figure 5.24).

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FIGURE 5.24: Post-Hike Interview Q-2
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES WHO
REPORTED THAT THEY WERE ANNOYED BY AIRCRAFT BY KNOWLEDGE OF AIRCRAFT
OVERFLIGHTS BY INFORMATION CONDITION BY ZONE ACTIVITY LEVEL

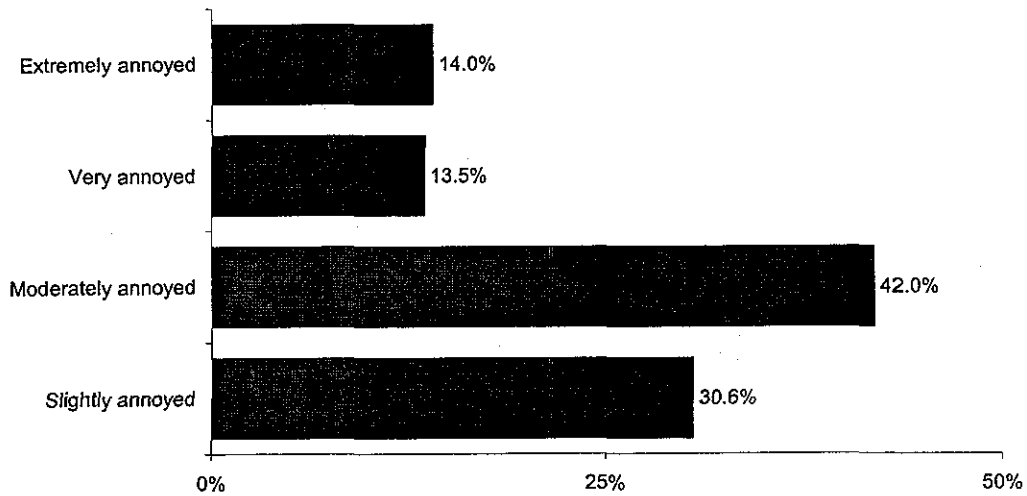


The zones classified as busy were determined through examination of a flight corridor map produced by DENA, by examination of DBS data, and in consultation with DENA staff. “Busy zones” included zones 2-13, 18, and 24.

Although more people in the information condition reported being annoyed, the degree to which people were annoyed by aircraft did not differ across information condition, $\chi^2(3) = 1.00, p = .800$. Respondents were most likely to report being “moderately annoyed” by aircraft (42.0%) with “slightly annoyed” (30.6%) being the second most frequent response (see Figure 5.25). This pattern did not differ by level of knowledge of aircraft or by zone activity level.

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**FIGURE 5.25: Post-hike Interview Q-2.1
DEGREE TO WHICH RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES
REPORTED BEING ANNOYED BY AIRCRAFT**



PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n=193)
Includes only the 48.6% of the No information and the 61.2% of the Information condition respondents who reported being annoyed.

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Did Aircraft Add to or Subtract from Respondents' Enjoyment of DENA?

Post-Hike Interview

4. Did aircraft overflights either add to or detract from your enjoyment of Denali on this trip? (*Circle one number.*)

1 NO, DIDN'T ADD OR DETRACT → GO TO QUESTION 5

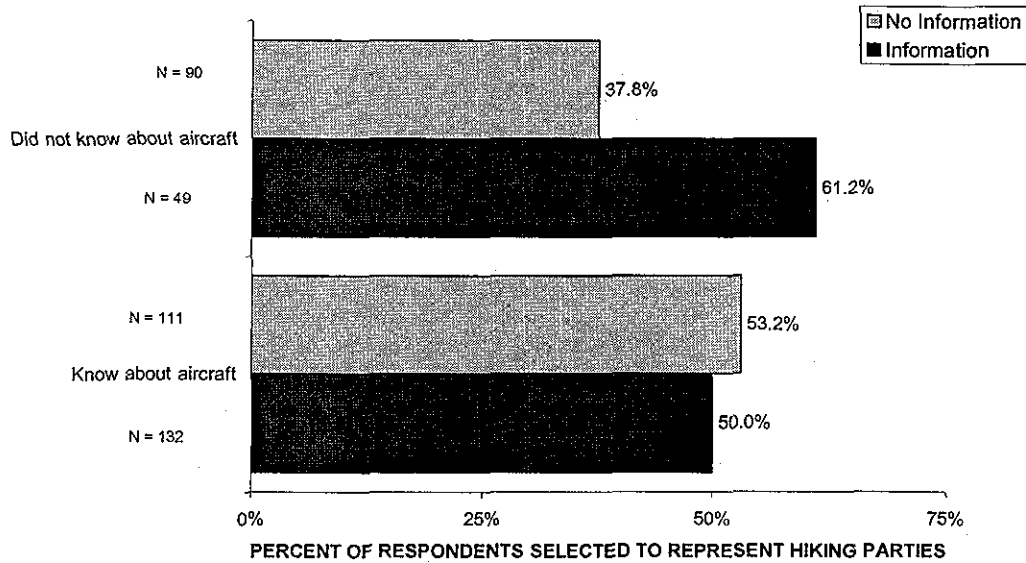
2 YES → 4.1 How would you say that aircraft affected your trip? (*Give respondent the laminated card with response scale.*)

- | | |
|---|----------------------|
| 1 | ADDED GREATLY |
| 2 | ADDED MODERATELY |
| 3 | ADDED SLIGHTLY |
| 4 | DETRACTED SLIGHTLY |
| 5 | DETRACTED MODERATELY |
| 6 | DETRACTED GREATLY |

Across the entire sample of backpackers selected to represent hiking parties, information condition did not affect the proportion of people who said that aircraft either added or detracted from their enjoyment of Denali, $\chi^2(1) = 1.75, p = .186$. However, further analyses revealed an effect that varied by initial knowledge of aircraft. For respondents who knew about aircraft, information condition had no effect (53.2% vs. 50.0%), $\chi^2(1) = 0.24, p = .624$. In contrast, among respondents who had no knowledge of aircraft, a greater proportion in the information condition reported that aircraft either added or detracted from their experience (61.2% vs. 37.8%), $\chi^2(1) = 7.02, p = .008$ (see Figure 5.26).

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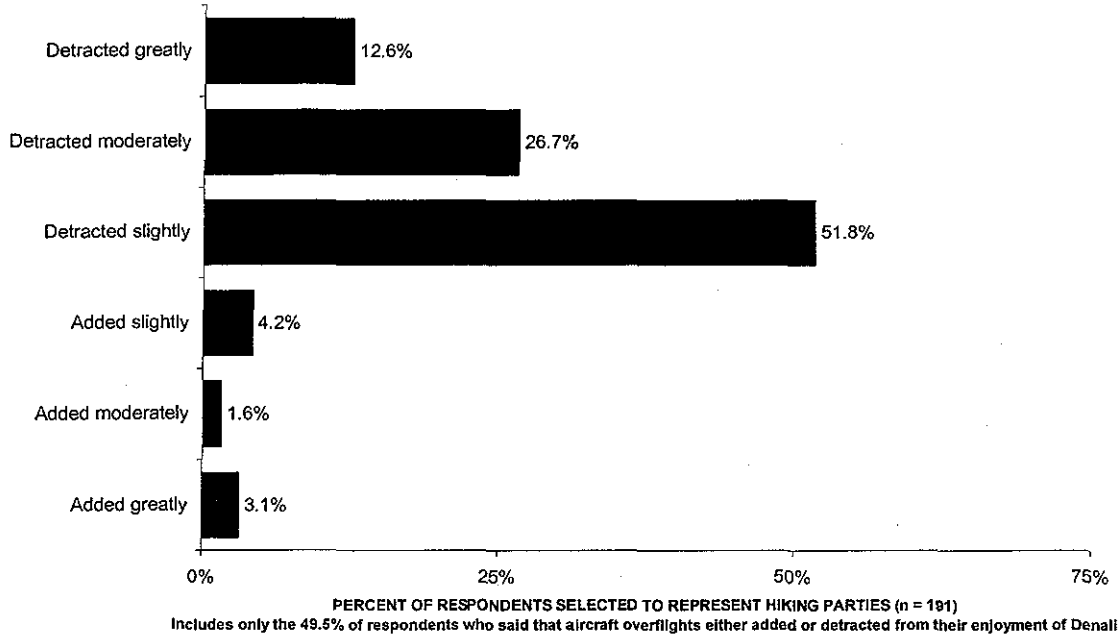
FIGURE 5.26: Post-Hike Interview Q-4
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES WHO
REPORTED THAT AIRCRAFT ADDED OR DEDUCTED FROM THEIR ENJOYMENT BY
KNOWLEDGE OF AIRCRAFT OVERFLIGHTS BY INFORMATION CONDITION



Of respondents who indicated that aircraft either added or detracted from their enjoyment, about three-fourths of them reported that aircraft detracted slightly or moderately from their enjoyment of Denali (51.8% and 26.7%, respectively), and about 10 percent of them indicated that aircraft added to their enjoyment of Denali (see Figure 5.27). This pattern did not differ by level of knowledge of aircraft or the aircraft activity level in visited zones.

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FIGURE 5.27: Post-Hike Interview Q-4.1
HOW RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES REPORTED THAT AIRCRAFT OVERFLIGHTS ADDED TO OR DEDUCTED FROM THEIR TRIP ENJOYMENT



Will Aircraft Affect Future Decisions to Visit DENA?

Post-Hike Interview

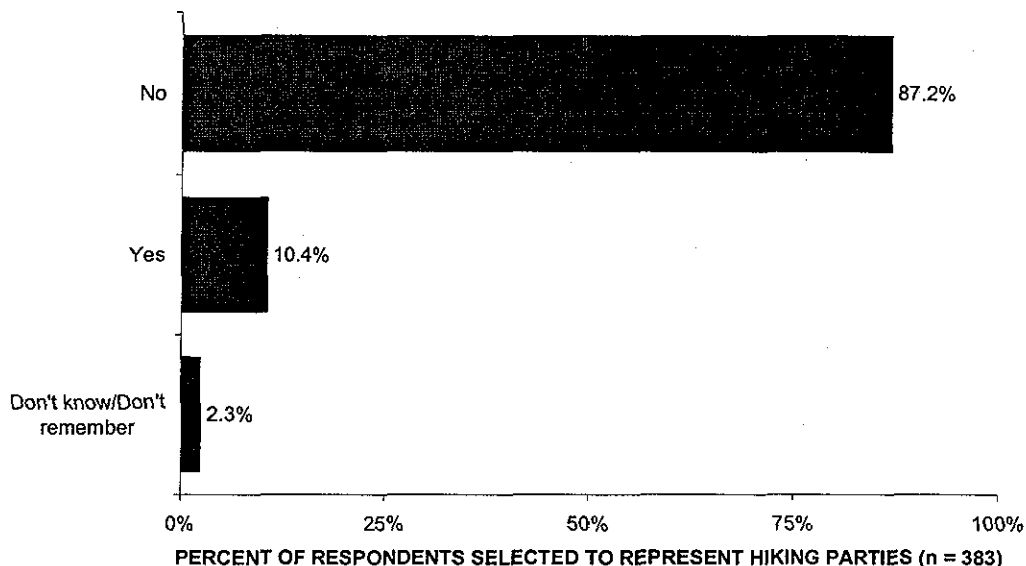
3. Will the aircraft you heard and/or saw during this trip affect your future visits to Denali? (Circle one number.)

- 1 NO → GO TO QUESTION 4
- 2 DON'T KNOW → GO TO QUESTION 4
- 3 YES → 3.1 How will your decisions concerning future visits be affected? (Classify response made.)

- 1 Will you be more likely to return to Denali
- 2 Will you come at a time when there is less aircraft activity
- 3 Will you plan to do different activities in Denali
- 4 Will you visit a different area of Denali
- 5 Will you stop visiting Denali
- 6 Other effects not described (Please specify below.)
- 7 Don't know how my decisions will be affected

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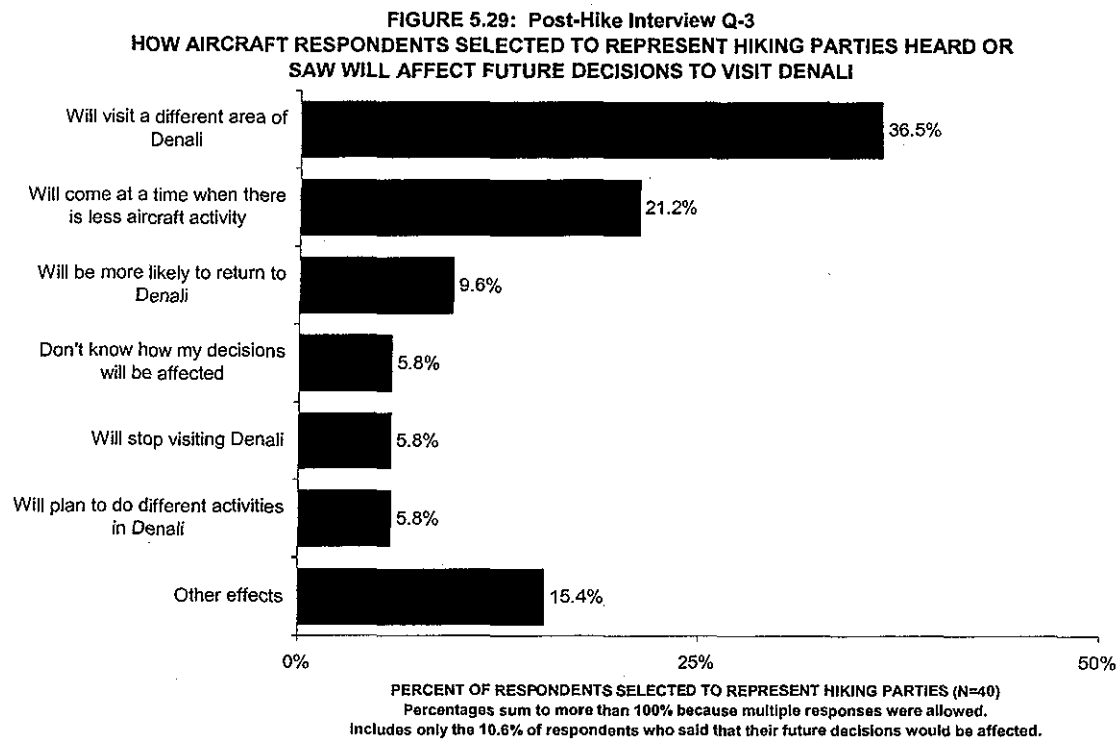
FIGURE 5.28: Post-Hike Interview Q-3
WILL AIRCRAFT RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES HEARD OR
SAW AFFECT FUTURE DECISIONS TO VISIT DENALI BY INFORMATION CONDITION



Information condition did not affect the percentage of people saying that the aircraft they experienced will affect future decisions to visit Denali, $\chi^2(1) = 1.22, p = .269$. As seen in Figure 5.28, most respondents (87.2%) reported that the aircraft they heard or saw would not affect future visits to Denali. Even though over 50 percent of respondents indicated that they were annoyed by aircraft and about 45 percent⁶ of respondents indicated that aircraft detracted from the enjoyment of their visit, most respondent's experience with aircraft will not alter future visits to Denali. Of those respondents indicating that aircraft they experienced will affect future visits to Denali, 36.5 percent (4% of all respondents) said that they would visit a different area of Denali (see Figure 5.29). This strategy is feasible, as aircraft tend to fly in certain areas of the park. The second most frequent way in which future decisions will be affected was to come at a time when aircraft activity is less (21.2% of those affected; 2% of all respondents). This strategy is difficult to put into action as aircraft fly during hiking

V. Aircraft Encounters and Evaluations

season as long as the weather is good. Thus, avoiding aircraft by coming at a different time means hiking when the weather is poor. Caution is necessary in interpreting these results because the question assumed that backpackers would return to DENA when some proportion are unlikely to do so. It is unclear how such backpackers interpreted and filled out the question.



Interpretation of the Aircraft Information Experiment

For backpackers selected to represent hiking parties, the results of the post-hike interview show that those who did not know about the presence of aircraft in DENA prior to their trip and who also participated in the information condition of the Aircraft Information Experiment made both increased reports of annoyance due to aircraft and increased reports that aircraft detracted from their enjoyment of DENA⁶ (see Figure 5.23

⁶ This figure was calculated by taking the 49.5 percent of people who said aircraft added or detracted from enjoyment multiplied by 91.1 percent, which reflects the percentage of those people saying that aircraft detracted from their enjoyment.

⁷ Note that less than 10 percent of respondents reporting that aircraft "added or detracted" reported that they added to their enjoyment.

V. Aircraft Encounters and Evaluations

and 5.27). These results are contrary to the predicted pattern in which information was expected to mitigate the negative impacts of aircraft overflights.

Although further research would be necessary to examine the reasons for this unexpected effect of information, some hypotheses can be formulated. Often, such hypotheses are generated by considering the conditions under which aircraft information might increase or decrease annoyance. For example, aircraft information may only be effective when flight-seeing is perceived to be a needed or legitimate use of the wilderness (Gramann 1999; Kariel 1990). Accordingly, the study results may have resulted because backpackers did not see the flight-seeing activities as needed, appropriate, or justifiable uses of the Denali wilderness.

A second possible limiting condition is backpackers' perceived degree of control over their exposure to aircraft (Staples 1997). The information provided in the AIE may have been ineffective because backpackers felt that they had no feasible options for avoiding aircraft and thus had no control over that aspect of their experience. A change in the experimental procedure may have exacerbated such an effect. It was originally desired that backpackers would be given the aircraft information before setting their zone itineraries. However, the logistics of the situation forced the use of a procedure where the information was presented later. Few, if any, hikers were likely to deem it feasible to return to the desk and alter their zone reservations in order to avoid aircraft. On the other hand, it is not clear that acceptable alterations were available even if they had wished to make them. The map showing common flight-seeing routes covers many of the most popular backcountry zones. Even if the aircraft information were presented earlier, to a backpacker not willing to hike in the most remote zones, it is not clear whether backpackers would feel that realistic options for avoiding aircraft were available.

Given the findings that many backpackers selected to represent hiking parties knew about aircraft prior to arriving at Denali (see Figure 5.1) but almost none of them reported that they altered their trip plans based on considering the presence of aircraft (see Figure 5.11), possible perceptions that flight-seeing was unneeded or inappropriate seem to be the more tenable of the two hypotheses explaining the ineffectiveness of the aircraft information in limiting the impact of encounters with aircraft.

V. Aircraft Encounters and Evaluations

How Encounters With Aircraft Affect Backpackers' Trip Experiences

The prior section describes the levels of annoyance and other possible reactions to aircraft that backpackers selected to represent hiking parties exhibited. This section describes more detailed analyses of the ways aircraft affect backpackers' trip experiences. These analyses examine whether reactions such as annoyance were due to encounters with aircraft, expectations that backpackers bring to their trip, or some combination thereof. The results will help managers judge the seriousness of current impacts of aircraft on trip experiences, but their most significant contribution is to provide information useful in assessing various alternatives for mitigating such impacts.

Two sets of analyses are presented in this section. The first set (i.e., the Dominance Analyses) determined which of three variables related to aircraft encounters (described below) best predict each of three different measures of trip experience. The second set of analyses examined more complex relationships (i.e., two-way interactions) among a set of predictor variables that included those examined in the prior analysis. Both analyses used the same set of predictor and outcome (or predicted) variables, described below.

Measures of Trip Experience (Predicted Variables)

Three different measures of trip experience were used as outcome variables: 1) degree annoyed by aircraft, 2) effect of aircraft on overall trip enjoyment, and 3) overall trip satisfaction. The first two of these variables were more directly related to backpackers' experience with aircraft and were collected during the post-trip interview. The third variable was a general satisfaction question measured during the mail survey.

Degree annoyed by aircraft. During the post-trip interview, respondents who saw aircraft were asked a two-part question about whether the aircraft annoyed them (see p. 123). In order to create a single, continuous measure of annoyance, respondents who indicated that they were not annoyed in the first question were scored as a "0 – Not annoyed" on the annoyance scale that made up the second question. One respondent circled "Don't know/Don't remember" to the first question and was excluded from all analyses where annoyance was the dependent measure.

V. Aircraft Encounters and Evaluations

Degree annoyed by aircraft was included in the questionnaire largely based on its use in past studies of aircraft and recreationists. Many studies have examined the relationship between aircraft encounters and annoyance and a means of comparing prior studies to the results obtained in Denali was desirable. However, annoyance does not map directly onto the mandates and goals of recreational managers.

Effect of aircraft on overall trip enjoyment. During the post-trip interview, respondents who saw aircraft were also asked two questions concerning whether aircraft had added or detracted from their trip enjoyment (see p. 127). A single, continuous measure of the effect of aircraft on overall trip enjoyment was generated by adding a category ("did not add or detract") between the "Added slightly" and "Detracted slightly" categories. Respondents who indicated in the first question that aircraft did not add or detract from their trip enjoyment were given this new intermediate code.

This second measure of trip experience is more clearly related to managerial goals and mandates than is annoyance. For example, the central NPS mandate dictates that managers provide for the enjoyment of park resources.

Overall trip satisfaction. Respondents were asked about their overall trip satisfaction in the mail survey (completed after the post-trip interview in the mail questionnaire; see p. 153 for specific wording of question). No transformations were necessary to obtain a continuous measure.

Overall trip satisfaction is generally a difficult measure to relate to manageable dimensions of a visitor's experience. There are several reasons for this difficulty, including low variability (most visitors report very high satisfaction), the high likelihood that visitors are psychologically motivated to report high satisfaction, and the predominance of unmanageable factors (e.g., weather, mosquitoes) in determining satisfaction (Gramann 1999). Nonetheless, it was included in the questionnaire and in this analysis because any manageable factor that is related to overall trip satisfaction is of clear importance to managers.

Measures Related to Aircraft Encounters (Predictor Variables)

Two general classes of variables related to aircraft encounters were used as predictor variables: 1) characteristics of aircraft encounters (collected in the diary); and

V. Aircraft Encounters and Evaluations

2) individual difference variables associated with aircraft encounters (collected at the pre-test). Characteristics of aircraft encounters are only available for backpackers who encountered at least one aircraft. Thus, the analyses reported in this section exclude the 9 respondents who reported that they heard or saw no aircraft.

Variables associated with characteristics of aircraft encounters. Characteristics of aircraft encounters included number of aircraft, length of time of aircraft encounter, and loudness of aircraft encounter (see pp. 112-122 and Appendix J). These data were aggregated across the trip for each respondent in multiple ways so that up to three variables could represent each characteristic in further analyses. The number of aircraft encountered and minutes that aircraft were encountered were represented as an average across trip days, total per trip, and maximum day per trip. The loudness of the aircraft encountered was represented by the average of the daily loudest encounter and by the maximum loudest aircraft per trip.

It was necessary to select a subset of the highly correlated measures representing aircraft encounters for use in later analyses. Toward this end, dominance analyses were used to determine whether one of each set of variables was the dominant, or strongest predictor for each trip experience measure.⁸ Table 5.1 below presents the results of these analyses. Where dominance could be established, the dominant variable representing each characteristic of the aircraft encounters was used in later regression analyses. In the two cases where dominance could not be established, the average per trip day measure was used.⁹

⁸ Dominance analysis is a statistical method using multiple regression equations to determine whether one of several independent variables is consistently the strongest predictor of the dependent variable and can be considered "dominant" in terms of predictive ability (Budescu 1993).

⁹ The average measure was used because respondents took trips of different lengths and the average equates encounter data across trip day.

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Table 5.1. Results of dominance analysis to determine the best predictors of trip experience variables from the various ways of representing aircraft encounter characteristics.

		Characteristics of Aircraft Encounters		
		Number of Aircraft Encountered	Time Aircraft Encountered	Loudness of Aircraft Encountered
Measures of Trip Experience	Annoyance with Aircraft	Average per Trip Day	Average per Trip Day	Trip Average of Daily Loudest Encounter
	Aircraft Effect on Trip Enjoyment	Average per Trip Day	No Dominance Established	Trip Average of Daily Loudest Encounter
	Overall Trip Rating	No Dominance Established	Max Trip Day	Trip Average of Daily Loudest Encounter

In sum, analyses predicting annoyance and effect of aircraft on overall trip enjoyment will have the following predictor variables: 1) average number of aircraft encountered per trip day, 2) average time of aircraft encountered per trip day, and 3) average daily maximum loudness rating. The analyses that have overall trip satisfaction as an outcome variable will have the following predictor variables: 1) average number of aircraft encountered per trip day, 2) the time from the trip day with the longest time of aircraft encounters, and 3) average daily maximum loudness rating.

Individual difference variables. Individual difference variables associated with aircraft that were collected included the number of aircraft backpackers expected to encounter and preferences about the number of aircraft they would encounter. Both expectations and preferences are likely to influence how actual encounters with aircraft affect visitor's experience. Park management, however, may only be able to influence people's expectations (e.g., through information) and not their preferences. As there is no practical way of modifying people's preferences, these data were not included in the analyses. The expectations data were collected during the pre-trip interview (see p. 103

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for specific wording of question). Respondents who answered “no expectations” or “couldn’t say/don’t know” (33 of 219 or 11.3%) were excluded from the analyses in order to obtain a continuous variable. Although it provides a major benefit in simplifying subsequent analyses, this exclusion removes a small group of backpackers from the analysis whose reactions to aircraft may be considerably different from those of the rest of the sample. It also removes the possibility of testing whether the presence/absence of expectations predicts the measures of trip experience that were examined.

Results of Dominance Analyses

These analyses assessed the relative dominance of the predictor variables associated with aircraft encounters in predicting the outcome variables associated with trip experience. Details about the variables included in each of the analyses are described above.

Analyses of a variety of variables collected in the backpacker survey indicated that local Alaskan residents (86.2% of whom were seasonal employees of local businesses) differed from other respondents. Accordingly, each dominance analysis was conducted for all respondents, and after dropping local Alaskan residents from the dataset. No differences were found that would change the general conclusions from those reported for all respondents (see Table 5.2).

As can be seen in Table 5.2, the average daily maximum loudness rating was the dominant predictor of annoyance with aircraft and overall trip satisfaction. No variable emerged as a dominant predictor for effect of aircraft on overall enjoyment, although expectations about aircraft encounters was the least dominant predictor. Not surprisingly, the four predictor variables explained more of the total variance for the outcome variables directly associated with aircraft (annoyance and effect of aircraft on overall enjoyment) than for the general outcome variable of overall trip satisfaction.

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Table 5.2. Summary of Relative Dominance for Each Outcome Variable

Predictor Variables	Relative Dominance for Each Outcome Variable		
	Annoyed by aircraft	Effect of aircraft on overall enjoyment	Overall trip satisfaction
Expectations	4 (4)	4 (4)	* (3)
Number of encounters	2 (*)	* (*)	* (4)
Time of encounters	3 (*)	* (*)	* (2)
Loudness	1 (1)	* (*)	1 (1)
Total R ²	.360 (.392)	.252 (.229)	.108 (.112)

Note: 1 = Most Dominant, 4 = Least Dominant, * Dominance could not be assigned. Figures in parentheses represent results for data excluding local AK residents.

Results of Regression Analyses

The dominance analysis sought to determine which aspect of aircraft encounters best predicted the measures of trip experience. However, it provided no indication of the magnitude of the predictive ability associated with each predictor variable. Perhaps more important, the dominance analysis focused on the direct predictive effects of the variables and did not examine the possibility that several aspects of the aircraft encounters might interact with each other. The purpose of the regression analyses was to determine whether the measured aspects of aircraft encounters *and their two-way interactions* were significant predictors of each of the outcome variables. Details about the variables included in these analyses are described above in the first part of this section. Table 5.3 shows the results of the regression analyses.

V. Aircraft Encounters and Evaluations

Table 5.3. Summary of Regression Analyses. (Analyses for local AK residents did not support different conclusions.)

All Respondents	Annoyed by aircraft		Effect of aircraft on overall enjoyment		Overall trip satisfaction	
	b	p	b	p	b	p
<i>Main Effects</i>						
Expectations	.010	.565	.013	.333	.018	.109
Number of encounters	.057	.073	.049	.044	-.023	.275
Time of encounters	.020	.081	.020	.024	-.007	.366
Loudness	1.202	<.001	.510	.001	.387	.008
<i>2-Way Interactions</i>						
Time by Number	-.004	.113	-.002	.292	-.001	.513
Time by Loudness	-.044	.068	-.037	.053	.012	.499
Number by Loudness	-.028	.474	.062	.042	.008	.783
Time by Expectations	-.003	.386	.062	.845	.0002	.940
Number by Expectations	-.003	.763	-.002	.819	-.003	.745
Loudness by Expectations	-.023	.704	.025	.597	.032	.476
Total R ²	.430		.300		.117	

As shown by the main effects listed in Table 5.3, the average daily maximum loudness rating was a significant predictor of all three outcome variables. As the average loudness of the loudest aircraft encountered per trip day increased: 1) the level of annoyance with aircraft increased, 2) the degree to which aircraft detracted from overall enjoyment increased, and 3) overall trip satisfaction decreased. No other predictors or their interactions were significant predictors of annoyance with aircraft or overall trip satisfaction.

For the outcome variable, *effect of aircraft on overall enjoyment*, there were significant predictors other than the average daily maximum loudness rating. Other significant main effects included the number of aircraft encountered per trip day and the average length of time of encounters per trip day. Increases in both the number of aircraft

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encountered and the length of time of those encounters were associated with greater detracting from overall enjoyment. The only two-way interaction that reached significance was the interaction between number of encounters and loudness of encounters. Encountering more aircraft had a greater impact on (detracted more from) overall trip enjoyment when the daily maximum loudness rating of aircraft was louder than when it was quieter (or couldn't be heard at all).

Conclusions of Dominance and Regression Analyses

One goal of these analyses was to provide information useful in evaluating the impact of aircraft encounters on the quality of backpackers' trip experiences. The finding above that is most relevant to this goal is the predictive relationship between the average daily maximum loudness rating and overall trip satisfaction. Recall that overall trip satisfaction is generally insensitive to manageable aspects of trip experience. For example, it is common for measures of crowding or ratings of park facilities to be unrelated to overall trip satisfaction. Accordingly, the observed evidence of a relationship between aircraft encounters and overall trip satisfaction represents a potentially important effect. However, caution is necessary in interpreting this finding because the relationship could result from a combination of factors other than a causal relationship in which the noise of aircraft encounters decrease satisfaction. For example, low clouds and poor visibility might cause aircraft to fly lower (increasing noise) while also decreasing the quality of backpackers' experiences. Future research would be necessary to rule out such alternate explanations before concluding that these results indicate that the noise of aircraft encounters decreases backpacker satisfaction.

A second goal of these analyses was to provide information useful in assessing various alternatives for mitigating the negative impacts of aircraft on trip experiences. These analyses (like the results of the Aircraft Information Experiment) suggest that providing information aimed at altering expectations is unlikely to be effective. Expectations (alone, or in interaction with experiences with aircraft) were not predictive of annoyance with aircraft, impacts of aircraft on trip enjoyment, or overall trip satisfaction. It is important to note that approximately ten percent of the original sample who did not have expectations were not included in these analyses. But even if

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information programs leading to accurate expectations in that group were to mitigate negative impacts of aircraft (a conclusion that is far from certain), the present analyses suggest that such programs would still be ineffective for almost 90 percent of backpackers.

The regression analyses suggest that efforts to mitigate aircraft impacts could most effectively focus on reducing the noise that backpackers hear. Of the three variables measuring aircraft encounters, the average daily maximum loudness rating that backpackers reported was clearly the strongest predictor of annoyance with aircraft and overall trip satisfaction. It also predicted the impacts of aircraft on trip enjoyment at least as well as the other variables. Finally, the few interactions among the predictor variables that approached or exceeded statistical significance in predicting the outcome variables all involved the average daily maximum loudness.

References

Budescu, D. V. (1993). Dominance analysis: A new approach to the problem of relative importance of predictors in multiple regression. *Psychological Bulletin*, 114(3), 542-551.

Gramann, J. H. (1998). *Effects of mechanical noise and natural sound on visitor experiences in units of the national park system: a review of the research*. National Park Service. Technical Report. 1-23.

Kariel, H. G. (1990). Factors affecting response to noise in outdoor recreational environments. *The Canadian Geographer*, 34, 142-149.

Staples, S. L. (1996). Human response to environmental noise: psychological research on public policy. *American Psychologist*, 51, 143-150.

VI. Trip Satisfaction

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions to assess their satisfaction with their backcountry trip. These questions were included in the mail survey and therefore, findings represent all hikers. This section describes backpackers' satisfaction with various aspects of their trip including the availability of information and their overall trip satisfaction.

VI. Trip Satisfaction

VI. Trip Satisfaction

Highlights

- Most backpackers rated their backcountry trip as either “Very Good” (59.5%) or “Good” (35.8%). Only 1.5 percent of backpackers rated their trip as “Poor” (see Figure 6.11).
- At least two-thirds of backpackers reported being “Satisfied” or “Very Satisfied” with ten selected aspects of their trip (see Figures 6.1-6.10). The greatest proportion of backpackers reported being dissatisfied or very dissatisfied with “information on backcountry zones” (14.3% of hikers) followed by “the amount of wildlife seen” (12.3% of hikers). Review of Figures 6.1 through 6.10 suggests that “descriptions of the backcountry zones” is the aspect of the trip with which people were least satisfied.

VI. Trip Satisfaction

VI. Trip Satisfaction

Satisfaction with Various Aspects of Trip

Mail Questionnaire

18. How satisfied or dissatisfied were you with the following aspects of this backcountry trip?

Please circle one response code for each aspect. The response codes are defined as follows:

VS	= VERY SATISFIED
S	= SATISFIED
N	= NEUTRAL
D	= DISSATISFIED
VD	= VERY DISSATISFIED

a)	Your experience in obtaining a backcountry travel permit.....	VS	S	N	D	VD
b)	The shuttle bus service.....	VS	S	N	D	VD
c)	The amount of wildlife you saw.....	VS	S	N	D	VD
d)	The variety of wildlife species you saw.....	VS	S	N	D	VD
e)	<u>Information on:</u>					
	Backcountry rules and regulations	VS	S	N	D	VD
	Description of backcountry zones	VS	S	N	D	VD
	Day-to-day use levels for backcountry zones.....	VS	S	N	D	VD
	River crossing hazards.....	VS	S	N	D	VD
	Wildlife hazards.....	VS	S	N	D	VD
f)	This research project.....	VS	S	N	D	VD

VI. Trip Satisfaction

FIGURE 6.1: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH EXPERIENCE IN OBTAINING BACKCOUNTRY PERMIT

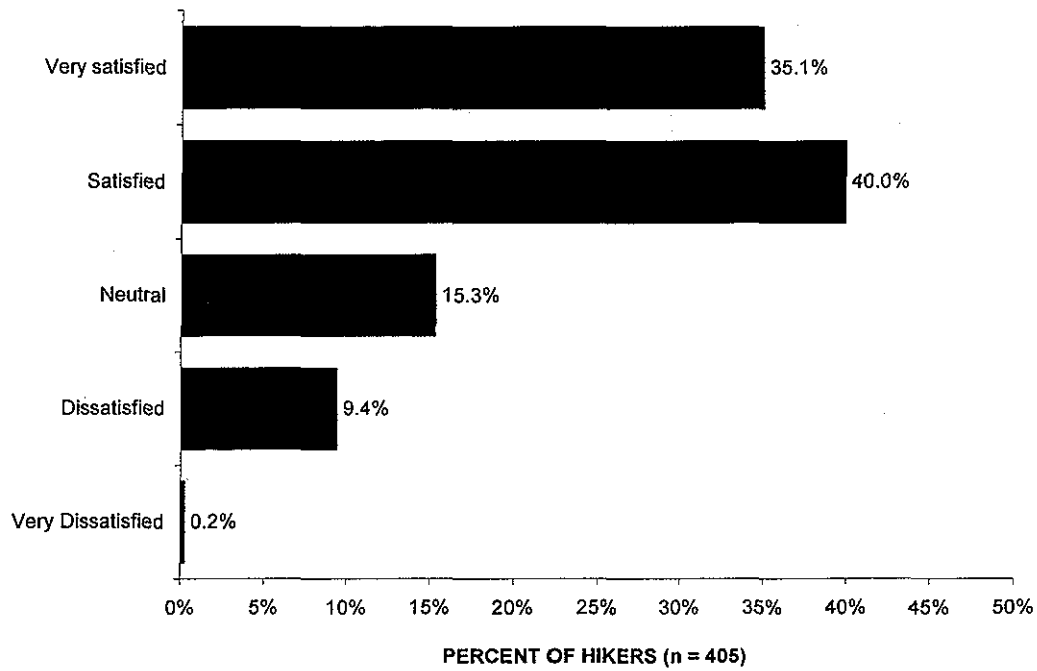
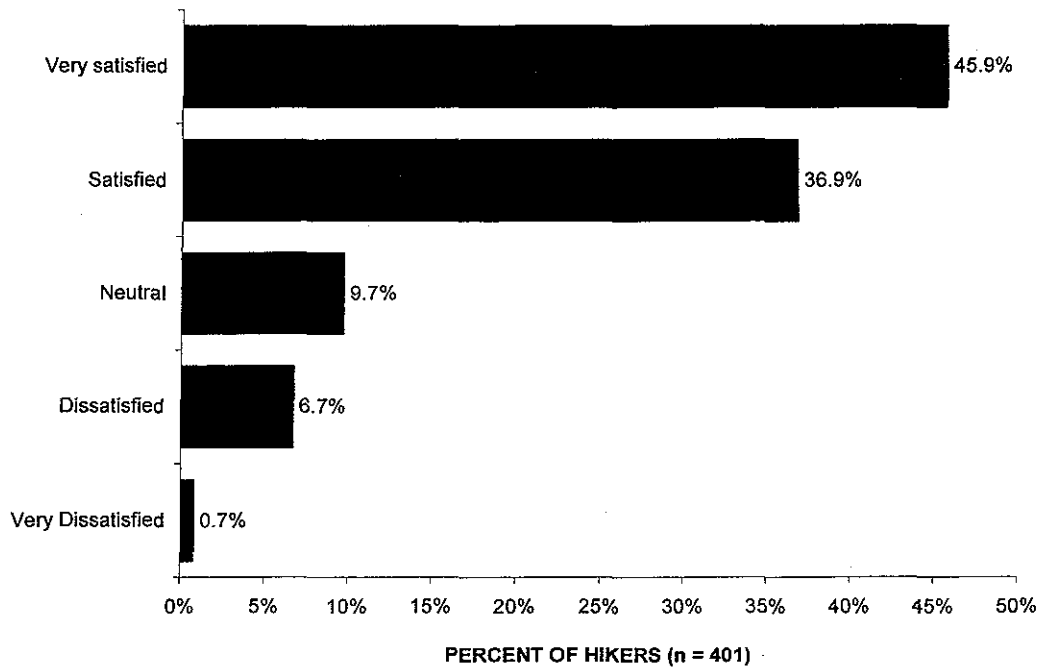


FIGURE 6.2: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH SHUTTLE BUS SERVICE



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FIGURE 6.3: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH AMOUNT OF WILDLIFE SEEN

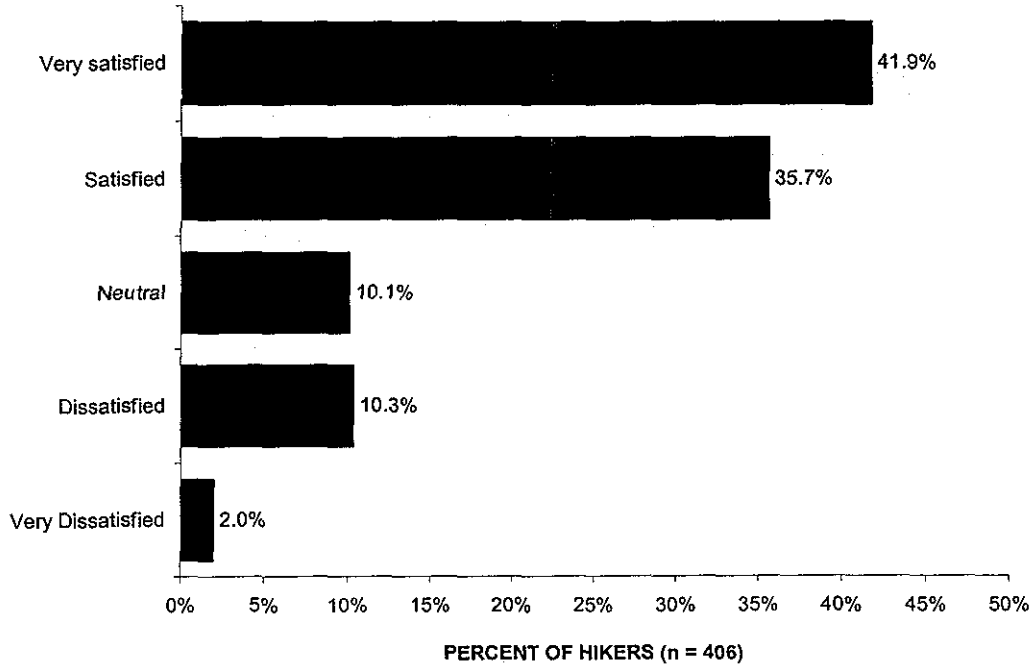
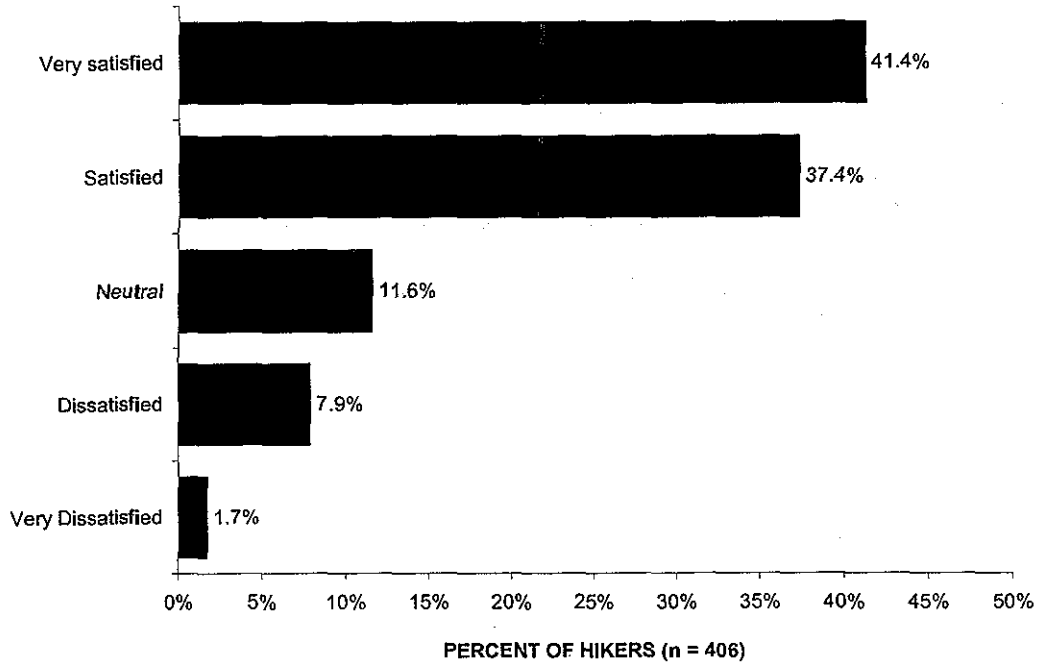
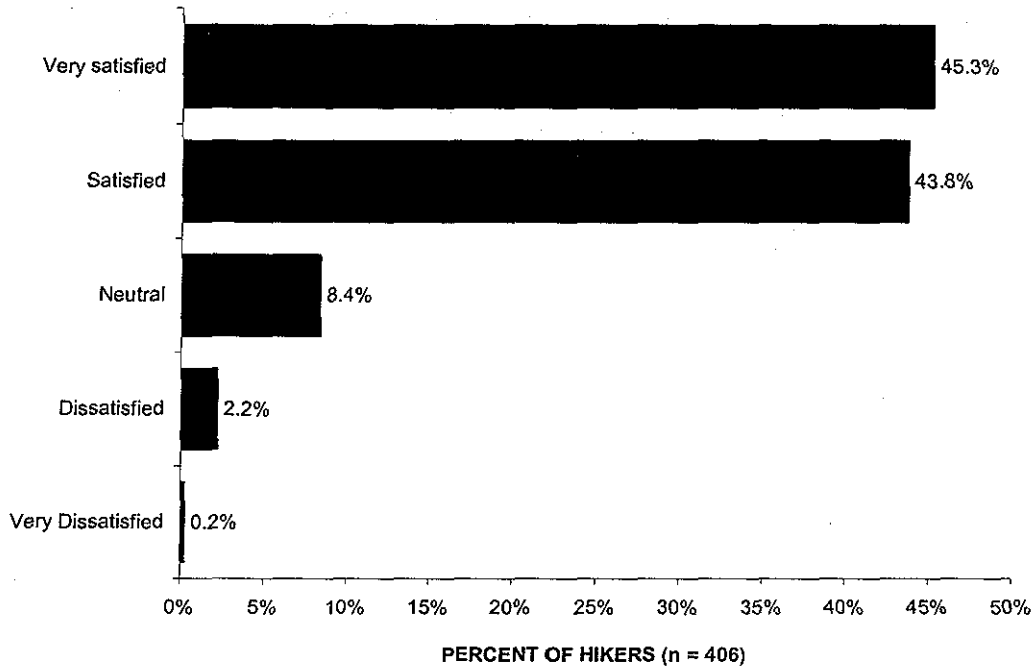


FIGURE 6.4: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH VARIETY OF WILDLIFE SEEN

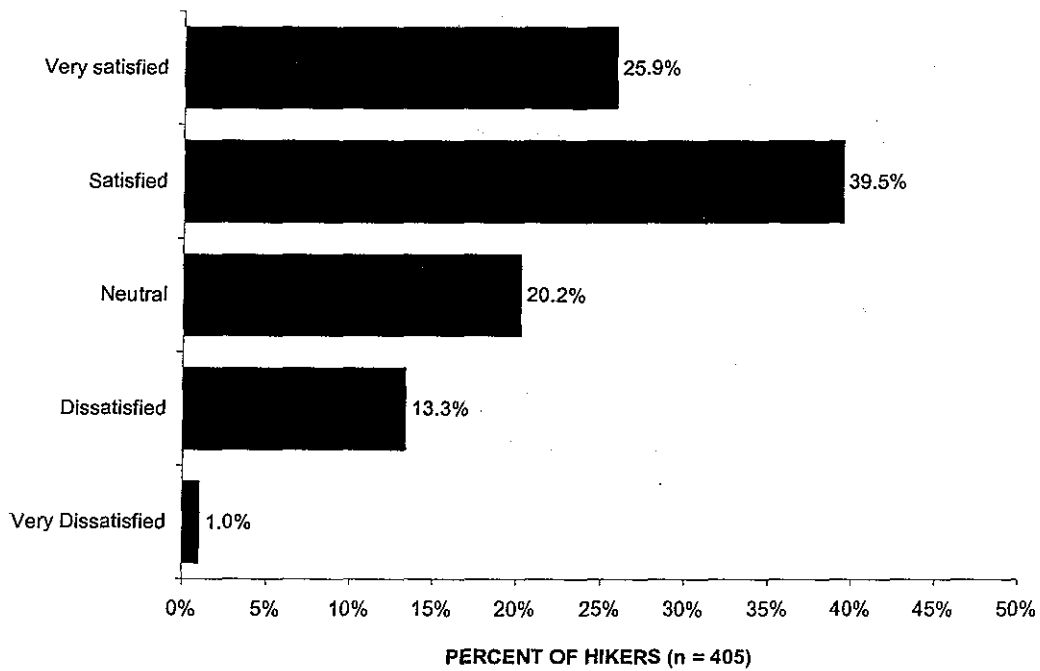


VI. Trip Satisfaction

**FIGURE 6.5: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON BACKCOUNTRY RULES AND REGULATIONS**



**FIGURE 6.6: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON BACKCOUNTRY ZONES**



VI. Trip Satisfaction

FIGURE 6.7: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON DAY-TO-DAY USE LEVELS FOR BACKCOUNTRY ZONES

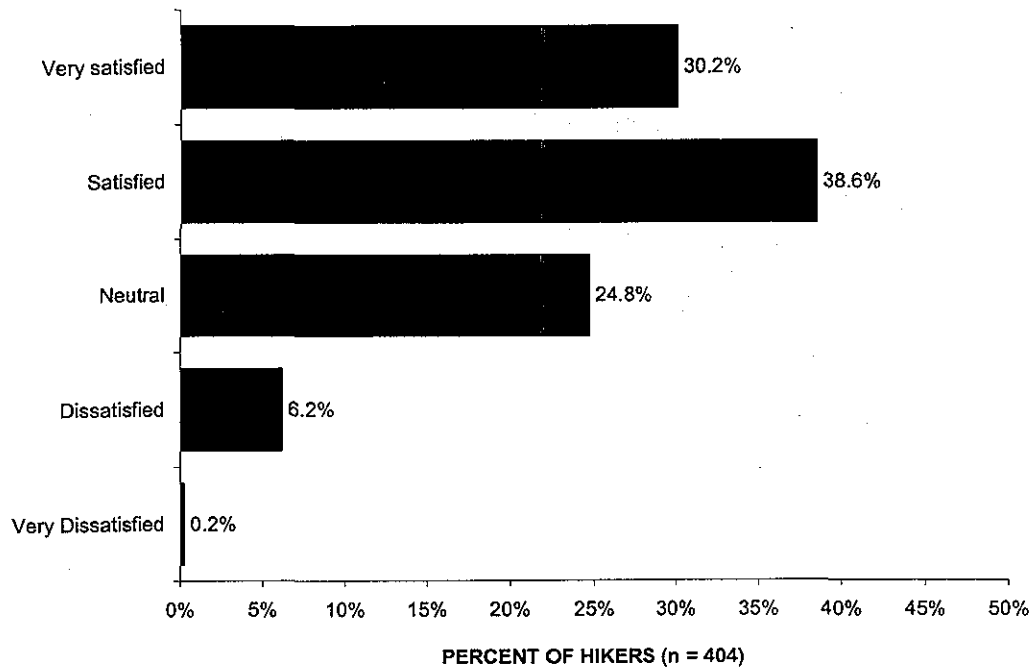
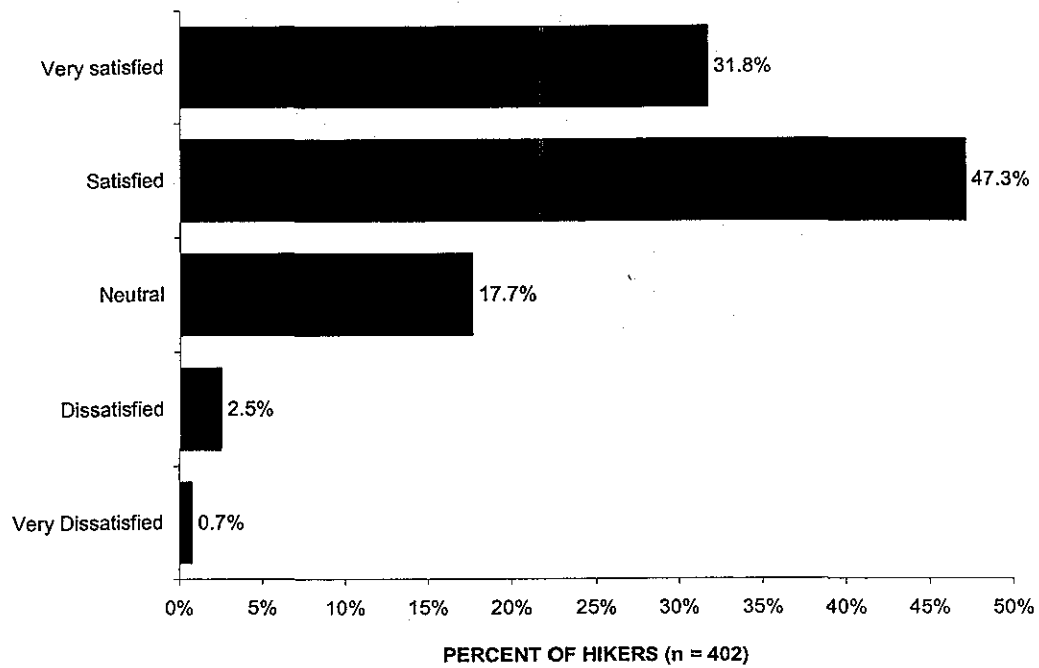


FIGURE 6.8: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON RIVER CROSSING HAZARDS



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FIGURE 6.9: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON WILDLIFE HAZARDS

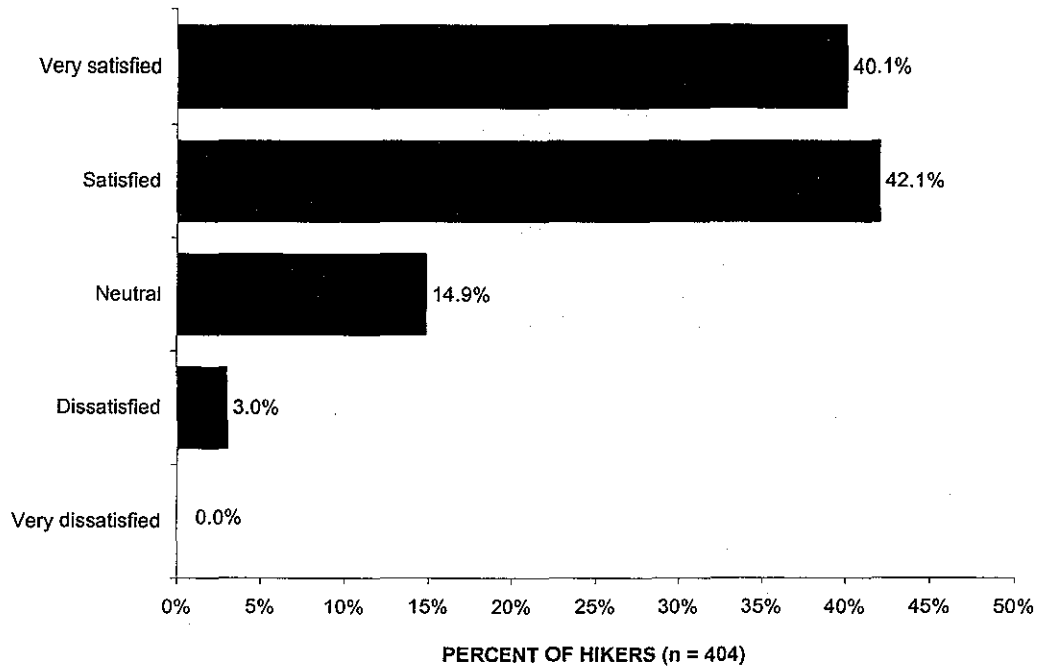
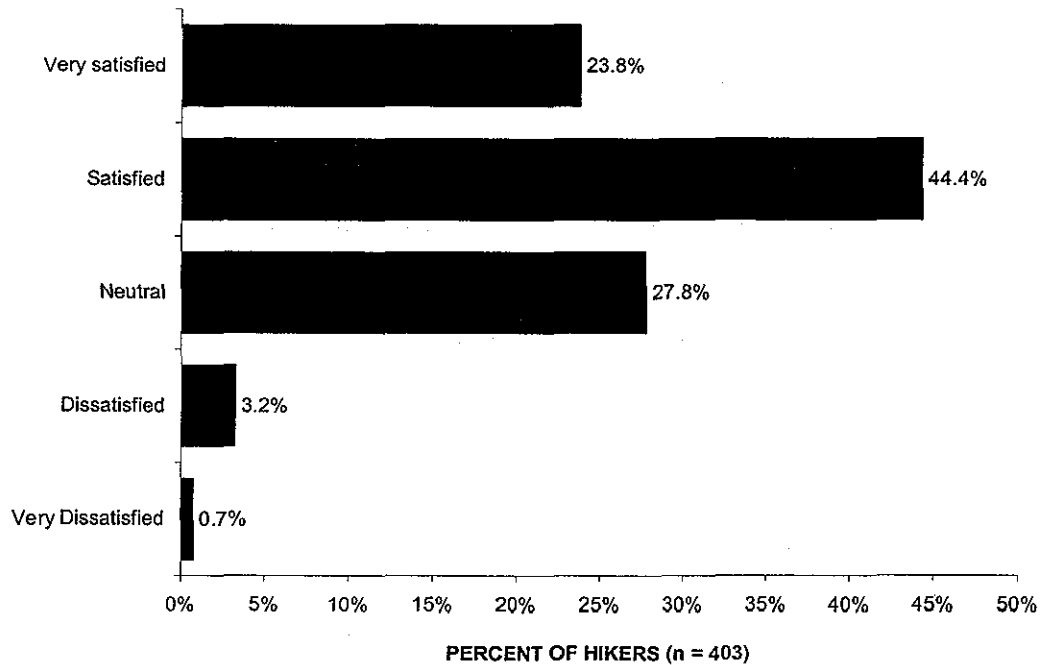


FIGURE 6.10: Mail Survey, Q-18
DEGREE OF SATISFACTION WITH INFORMATION ON RESEARCH PROJECT



VI. Trip Satisfaction

Overall Trip Satisfaction

Mail Questionnaire

19. Overall, how would you rate this backcountry trip? (Circle one response.)

Very Good

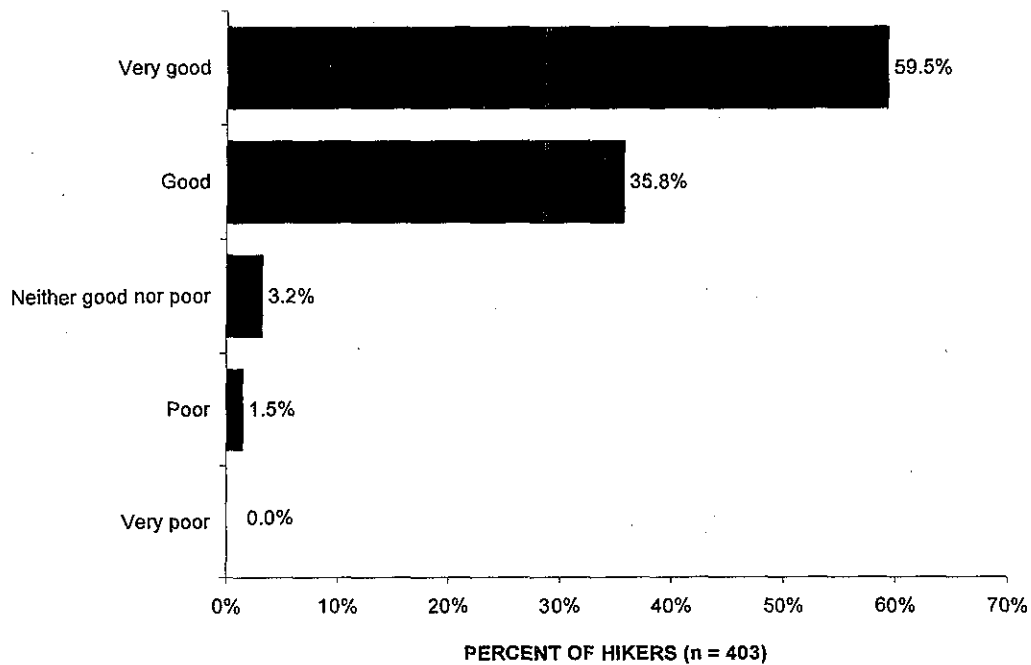
Good

Neither Good Nor
Poor

Poor

Very Poor

FIGURE 6.11: Mail Survey, Q-19
OVERALL SATISFACTION WITH BACKCOUNTRY TRIP



VII. Management Policies & Regulations: Awareness & Agreement

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions to assess their awareness of and agreement with various management policies and regulations. In addition to current policies, respondents were asked about possible alternative policies. All of these questions were included in the mail questionnaire and therefore, these data represent all hikers. This section presents the findings from these questions.

VII. Management Policies & Regulations

VII. Management Policies & Regulations

Highlights

- Only about half of hikers were aware of the following four policies: 1) some backcountry areas are permanently closed (42.3%), 2) backcountry campsites should not be visible from road (47.2%), 3) some backcountry areas are temporarily closed (53.8%) and 4) dayhikers do not require permits (55.1%; see Figure 7.1).
- Review of Figures 7.5 through 7.13 indicates that there is general support from hikers for current regulations that govern backcountry use in DENA. Most hikers (77.5%) strongly support that overnight hiking parties must obtain a backcountry travel permit (see Figure 7.5). The regulations receiving the most opposition are that backcountry permits may only be obtained 24 hours in advance of one's trip (28.2%) and that backcountry permits may only be obtained in the Park (14.2%).
- Although unlimited use (no rationing) was opposed by most hikers (87.2%) with 63.5 percent of hikers strongly opposed to unlimited use (see Figure 7.20), there was limited support for the alternate ways of rationing use. Issuing a limited number of permits on a first-come, first-served basis was the only alternate policy for rationing use that was supported by most hikers (83.2%; see Figure 7.14) while most hikers (70.8%) opposed issuing a limited number of permits on a lottery basis (see Figure 7.15). About 80 percent of local-Alaskans opposed a use fee of \$10, and the most support for a use fee of \$10 was from non-Alaskans (42.4%; see Figure 7.19).

To the extent that people perceive that a rationing option reduces the likelihood of their obtaining a permit for their trip, they may reduce their support for that option. People's perceptions of permit availability for any particular option however may have been inaccurate. Therefore, support for any of these rationing options may differ from what we observed if more complete descriptions of each option (including permit availability) are used.

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- The majority of hikers (83.9%) agree with the present policy that hikers should encounter no more than 2 other hiking parties per trip day (see Figure 7.21). Of those who disagreed (13.9%), almost 40 percent thought the maximum number of other hiking parties that hikers should encounter should be more than 2 while 18.2 percent thought hikers should never encounter other hiking parties (see Figure 7.22). These findings are consistent with the findings from the stated choice analysis that indicate that more than 2 encounters (i.e., up to 4 encounters) resulted in negative utility for backpackers (see Figure 10.1a).
- The majority of hikers (80.1%) agree with the present policy of allowing on average 6 hikers to camp per zone (see Figure 7.23). Of those hikers who disagreed with the present policy (14.4%), about 70 percent of them felt that more hikers should be allowed to camp in an average backcountry zone with 38.6 percent of them indicating that 10 or more hikers should be allowed (see Figure 7.24).
- The vast majority of hikers (93.8%) agreed with the present objective that backpackers should be able to camp out of sight or sound of all other parties (see Figure 7.25). These findings are consistent with the stated choice analysis that found that backpackers had positive utility for being able to camp out of sight and sound of others on "most nights" or "all nights" and negative utility when only able to do so on a "minority of nights" (see Figure 10.1b).
- Two-thirds of hikers felt that there should be a maximum party size for hiking parties in DENA (see Figure 7.27). About 40 percent said that the maximum party size should be between four and six and 38.6 percent said that the maximum party size should be between six and eight (see Figure 7.28). Almost 10 percent of hikers felt that the maximum party size should be 10 or more hikers.
- Almost 9 percent of hikers reported that hikers should never encounter park rangers during a backcountry trip while 13.8 percent reported all hikers should encounter park

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rangers once during a backcountry trip (see Figure 7.29). Almost half of hikers (49.4%) feel that hikers need not encounter park rangers, but should not encounter park rangers more than once per backcountry trip.

- Most hikers are opposed to selected additions to DENA's backcountry that increase evidence of human presence (see Figures 7.31-7.39). About 20 percent of hikers supported the following additions: developed hiking trails (see Figure 7.31), bridges over rivers (see Figure 7.37), and food caches for bear protection (see Figure 7.39). These findings suggest that hikers prefer to keep the wilderness in a pristine state. Additional support for this conclusion is the finding of the stated choice model that backpackers have positive utility for little to some signs of human use at campsites, but negative utility for extensive signs of human use at campsites (see Figure 10.1d).

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VII. Management Policies & Regulations

Awareness of Management Policies and Regulations Prior to Arriving at DENA

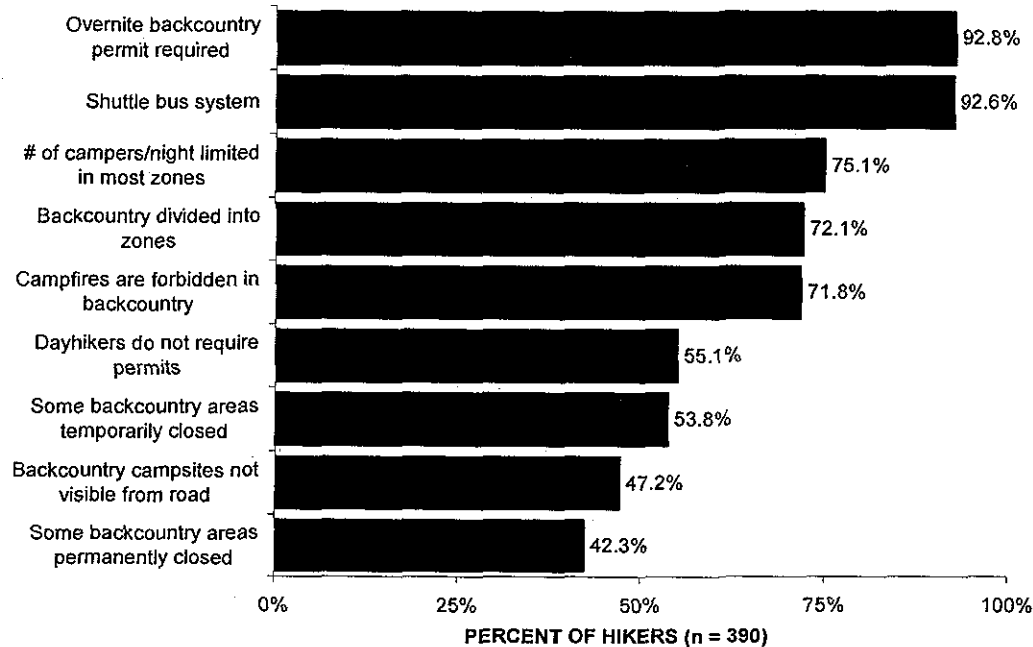
Mail Questionnaire

20. Before arriving at Denali, were you aware of the following management policies and regulations? (Circle one response for each item)

		<u>Was aware?</u>	
a)	That there is a shuttle bus transportation system.....	NO	YES
b)	That the backcountry is divided into travel zones.....	NO	YES
c)	That a permit is required for overnight travel in the backcountry.....	NO	YES
d)	That only a certain number of hikers are permitted to camp in most zones on any given night.....	NO	YES
e)	That day hikers are not required to have travel permits.....	NO	YES
f)	That certain areas of the backcountry are permanently closed to overnight backcountry use.....	NO	YES
g)	That hikers are sometimes prohibited from entering certain backcountry zones.....	NO	YES
h)	That campfires are not allowed in the backcountry.....	NO	YES
i)	That backcountry campsites must not be visible from the park road.....	NO	YES

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FIGURE 7.1: Mail Survey, Q-20
 PERCENTAGE OF HIKERS AWARE OF FOLLOWING MANAGEMENT POLICIES AND
 REGULATIONS BEFORE ARRIVING AT DENALI

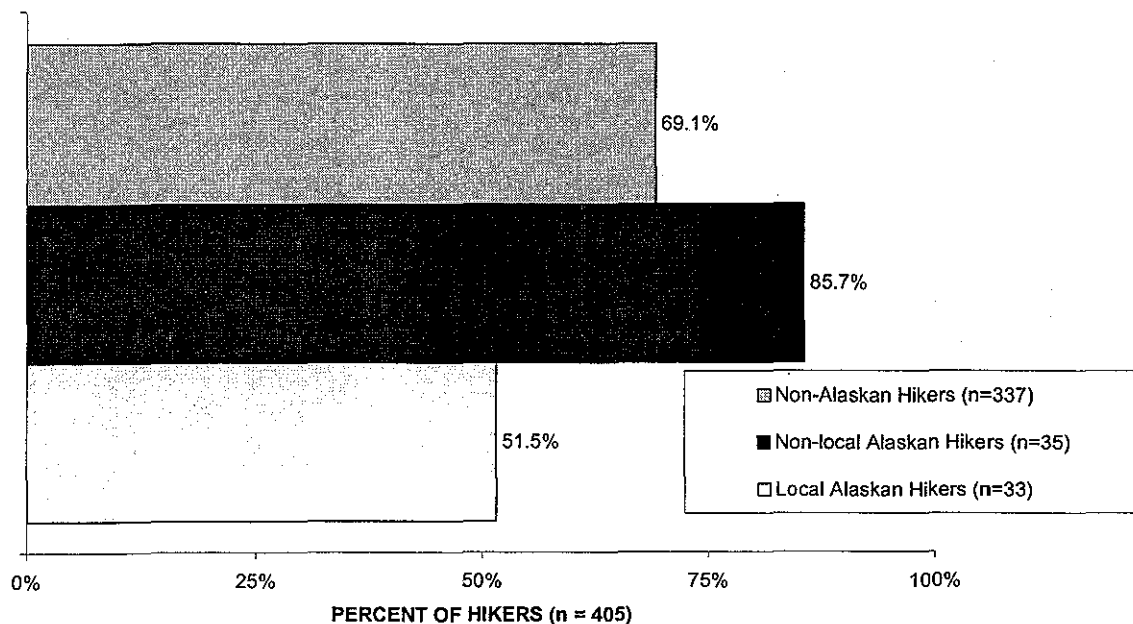


Percentages sum to more than 100 because hikers can be aware of more than one policy or regulation.

The effect of hikers' residence on their awareness (prior to this trip) for each of the management policies and regulations was examined. Hikers' awareness that the backcountry is divided into travel zones depended on hikers' residence, $\chi^2 (2, n = 405) = 9.31, p = .010$. As can be seen in Figure 7.2, local Alaskan hikers were least likely to be aware that the backcountry is divided into travel zones (51.5%) while non-local Alaskan hikers were the most likely to be aware that the backcountry is divided into travel zones (85.7%). The low percentage of local Alaskan hikers being aware of this policy prior to their current trip is most likely because most of these people are young summer employees who are not from Alaska, and we most likely contacted them on their first trip to the DENA wilderness. Additionally, these individuals (compared to those who planned a vacation trip to DENA) were probably less likely to seek information about what was required to take a backcountry trip until they had actually arrived at DENA.

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FIGURE 7.2: Mail Survey, Q-20b
PERCENTAGE OF HIKERS AWARE THAT THE BACKCOUNTRY IS DIVIDED INTO TRAVEL
ZONES BY RESIDENCE



Hikers awareness that only a certain number of hikers are permitted to camp in most zones varied significantly by residence, $\chi^2 (2, n = 405) = 9.78, p = .008$. As can be seen in Figure 7.3, local Alaskan hikers were least likely to be aware (54.5%) while non-local Alaskan hikers were most likely to be aware (88.6%). This pattern is consistent with that found for awareness that the backcountry is divided into travel zones.

As can be seen in Figure 7.4, awareness that backcountry campsites must not be visible from the park road differed significantly by hikers' residence, $\chi^2 (2, n = 405) = 6.69, p = .035$. Non-local Alaskan hikers (65.7%) were more likely to be aware of this regulation than either local Alaskan or non-Alaskan hikers (42.4% and 43.0%, respectively).

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FIGURE 7.3: Mail Survey, Q-20d
PERCENTAGE OF HIKERS AWARE THAT ONLY A CERTAIN NUMBER OF HIKERS ARE PERMITTED TO CAMP IN MOST ZONES BY RESIDENCE

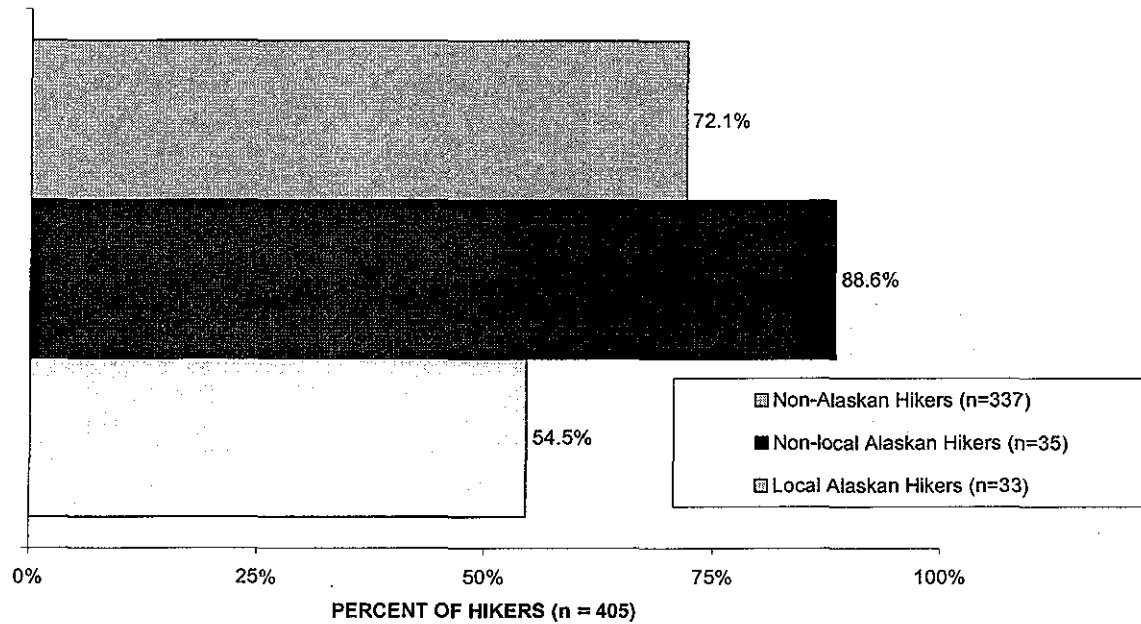
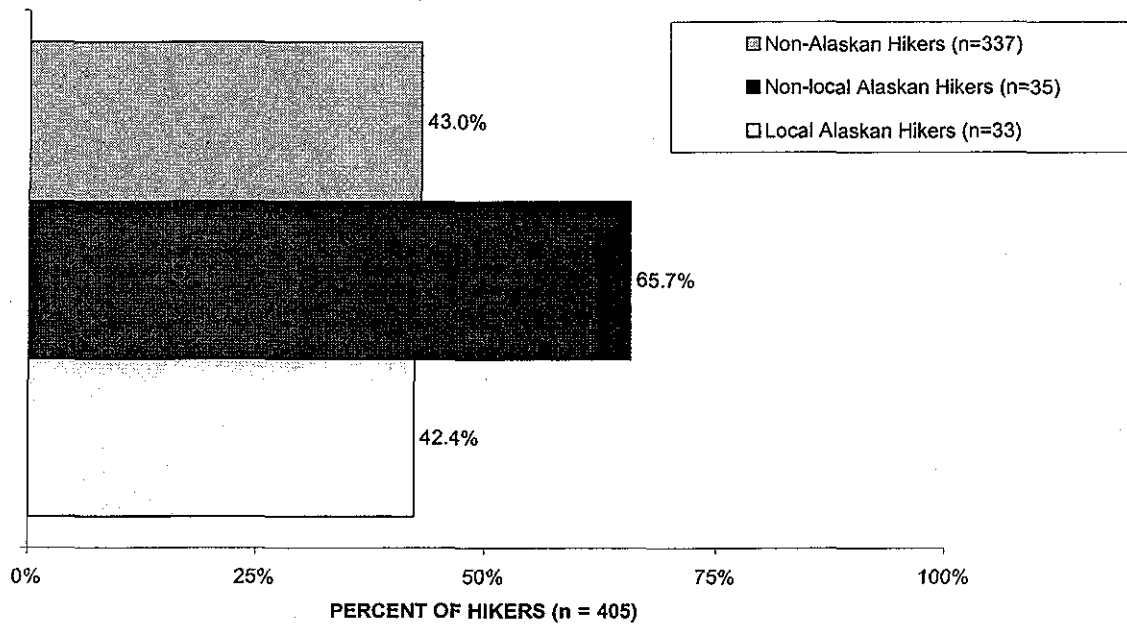


FIGURE 7.4: Mail Survey, Q-20i
PERCENTAGE OF HIKERS AWARE THAT BACKCOUNTRY CAMPSITES MUST NOT BE VISIBLE FROM THE PARK ROAD BY RESIDENCE



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Permit System for Rationing Use

Feelings about Current System for Rationing Use

Mail Questionnaire

24. What are your feelings about each of the following regulations that currently govern backcountry use in Denali National Park?

Please circle one response code for each regulation. The response codes are defined as follows:

SS = Strongly Support
 S = Support
 N = Neutral
 O = Oppose
 SO = Strongly Oppose

- | | | | | | | |
|----|---|----|---|---|---|----|
| a) | All overnight hiking parties must obtain a backcountry travel permit..... | SS | S | N | O | SO |
| b) | Backcountry travel permits may only be obtained in the Park | SS | S | N | O | SO |
| c) | Backcountry travel permits may only be obtained 24 hours in advance of one's trip..... | SS | S | N | O | SO |
| d) | Overnight hikers may only camp in the backcountry zones specified by their permit..... | SS | S | N | O | SO |
| e) | Overnight hikers may only camp in the backcountry on the nights specified by their permit. | SS | S | N | O | SO |
| f) | Overnight hikers may hike in zones other than those specified by their permit for camping..... | SS | S | N | O | SO |
| g) | Day hikers do not need travel permits..... | SS | S | N | O | SO |
| h) | Hiking parties may camp most anywhere within their scheduled backcountry zones..... | SS | S | N | O | SO |
| : | : | : | : | : | : | : |
| : | : | : | : | : | : | : |
| m) | Capacities (# of hiking parties) for backcountry zones are determined on the basis of individual hikers , rather than by hiking parties | SS | S | N | O | SO |

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FIGURE 7.5: Mail Survey, Q-24a
SUPPORT/OPPOSITION FOR REGULATION THAT ALL OVERNIGHT HIKING PARTIES MUST OBTAIN A BACKCOUNTRY TRAVEL PERMIT

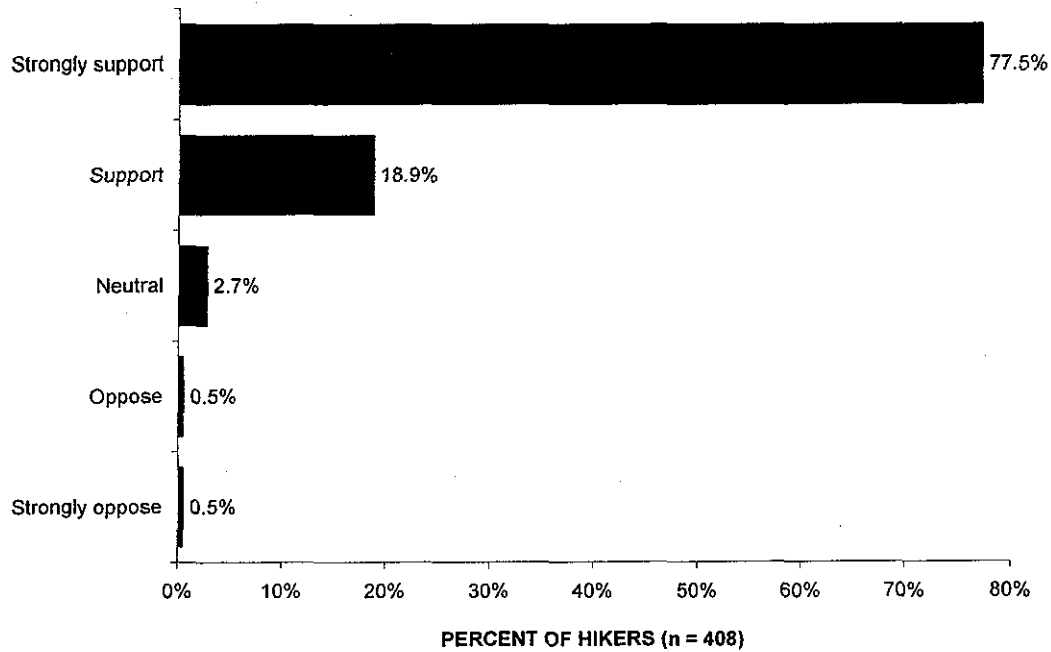
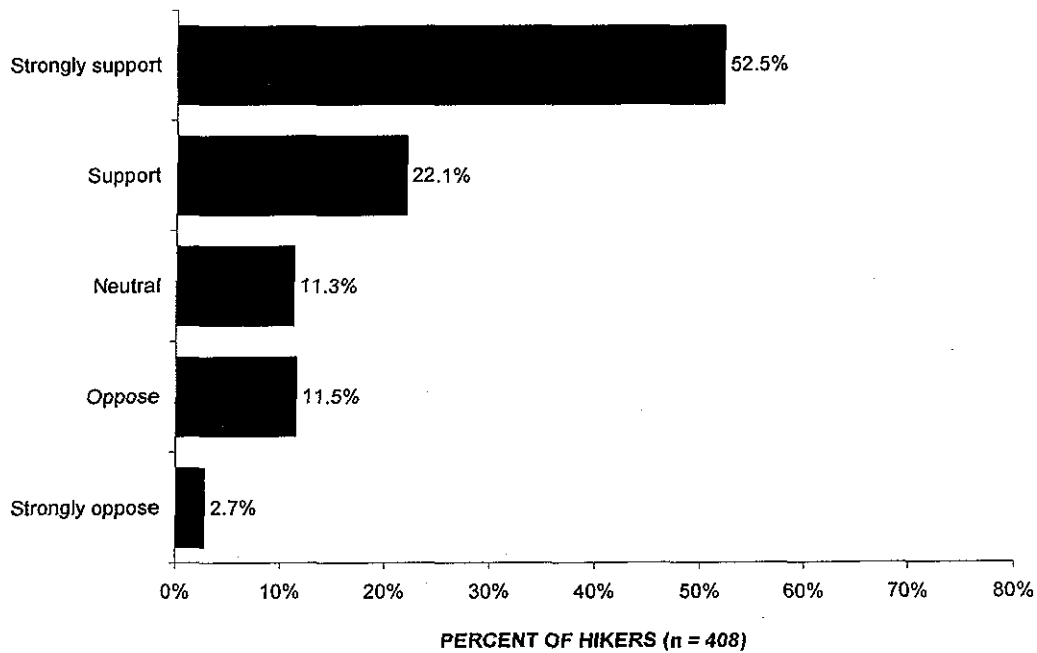


FIGURE 7.6: Mail Survey, Q-24b
SUPPORT/OPPOSITION FOR REGULATION THAT BACKCOUNTRY TRAVEL PERMITS MAY ONLY BE OBTAINED IN THE PARK



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FIGURE 7.7: Mail Survey, Q-24c
SUPPORT/OPPOSITION FOR REGULATION THAT BACKCOUNTRY PERMITS MAY ONLY BE OBTAINED 24 HOURS IN ADVANCE OF ONE'S TRIP

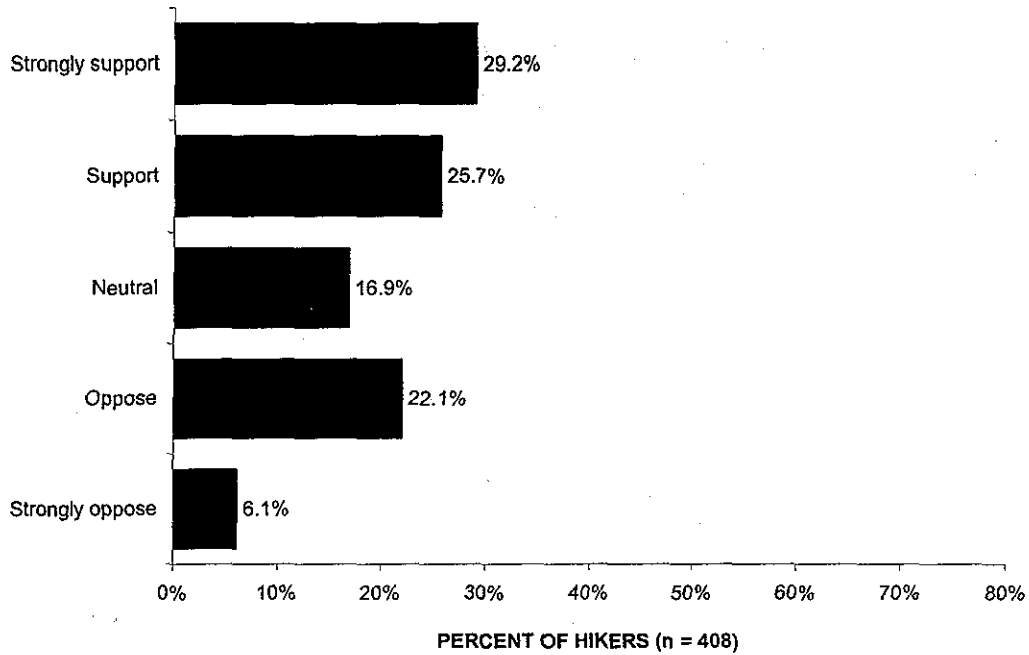
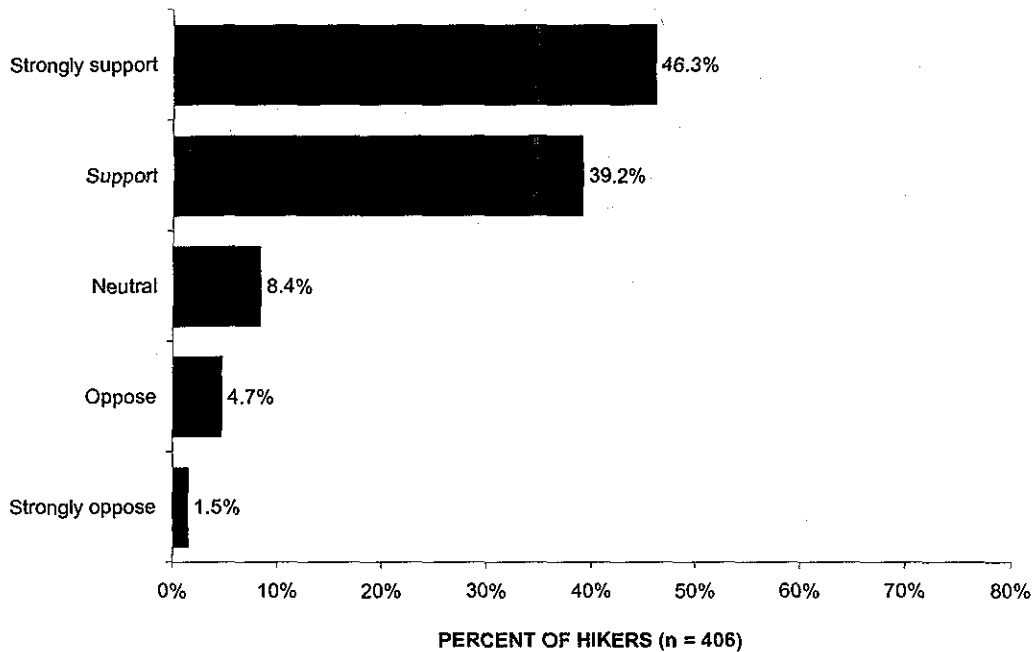


FIGURE 7.8: Mail Survey, Q-24d
SUPPORT/OPPOSITION FOR REGULATION THAT HIKERS MAY ONLY CAMP IN THE BACKCOUNTRY ZONES SPECIFIED BY THEIR PERMIT



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FIGURE 7.9: Mail Survey, Q-24e
SUPPORT/OPPOSITION FOR REGULATION THAT HIKERS MAY ONLY CAMP ON NIGHTS SPECIFIED BY THEIR BACKCOUNTRY PERMIT

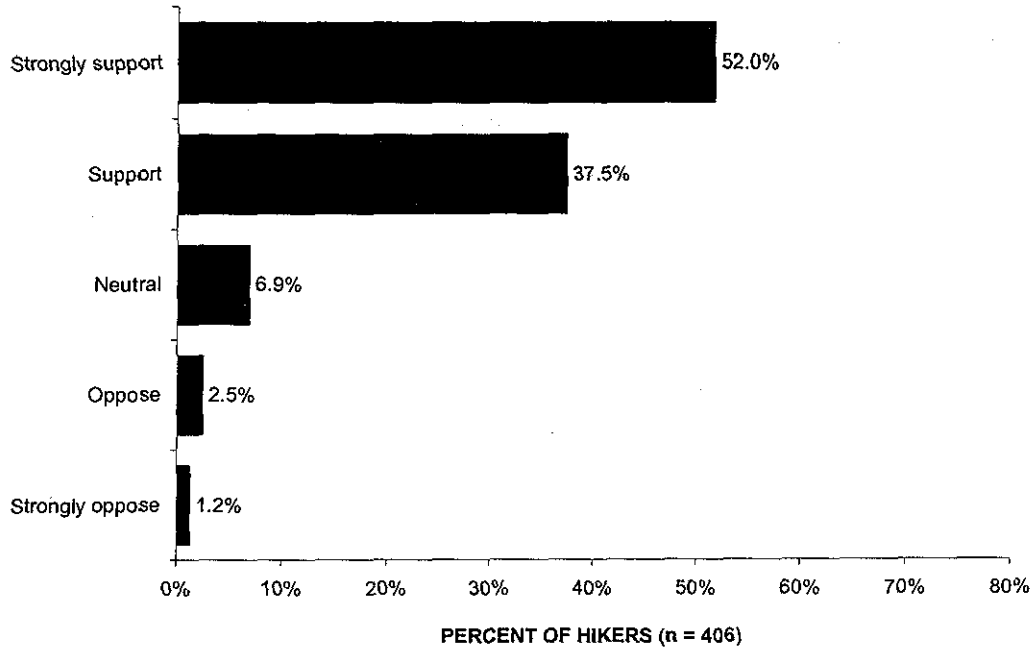
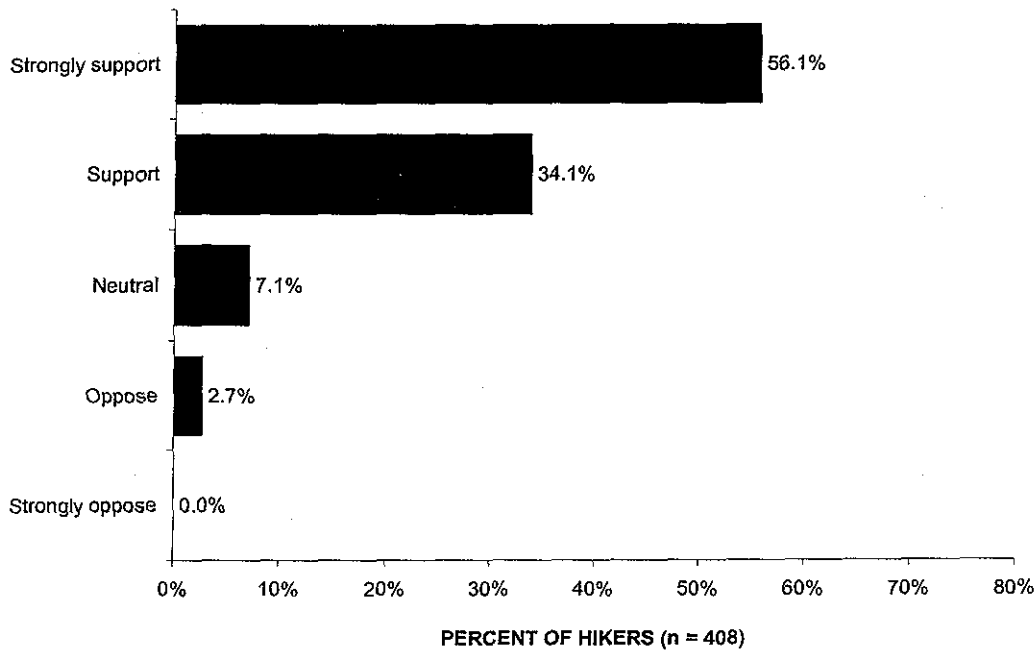


FIGURE 7.10: Mail Survey, Q-24f
SUPPORT/OPPOSITION FOR REGULATION THAT HIKERS MAY HIKE IN ZONES OTHER THAN THOSE SPECIFIED BY THEIR PERMIT



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FIGURE 7.11: Mail Survey, Q-24g
SUPPORT/OPPOSITION FOR REGULATION THAT DAYHIKERS DO NOT NEED TRAVEL PERMITS

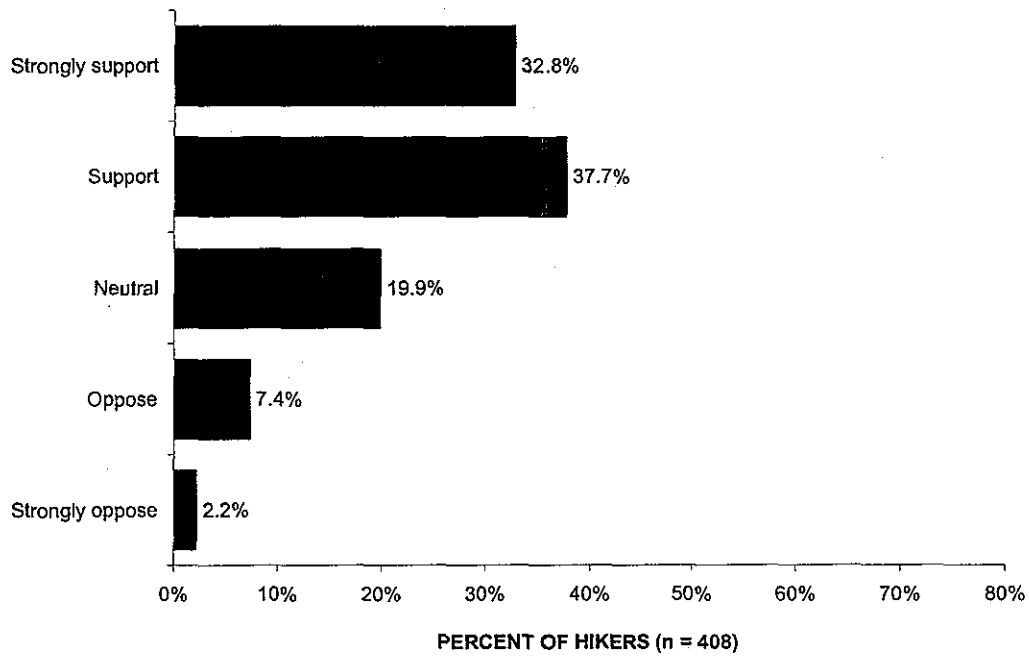
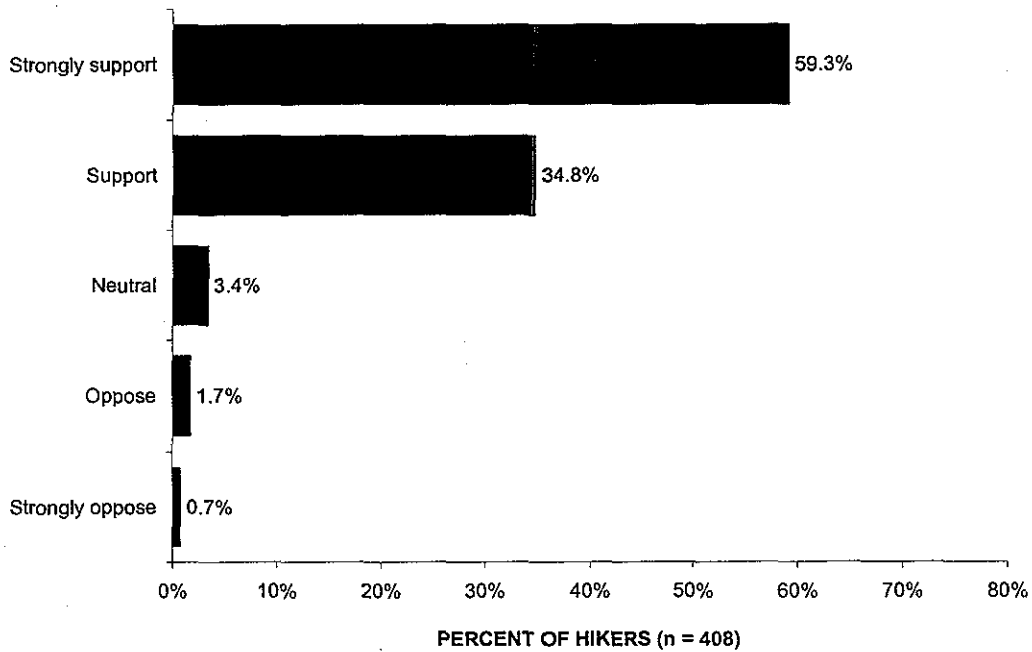
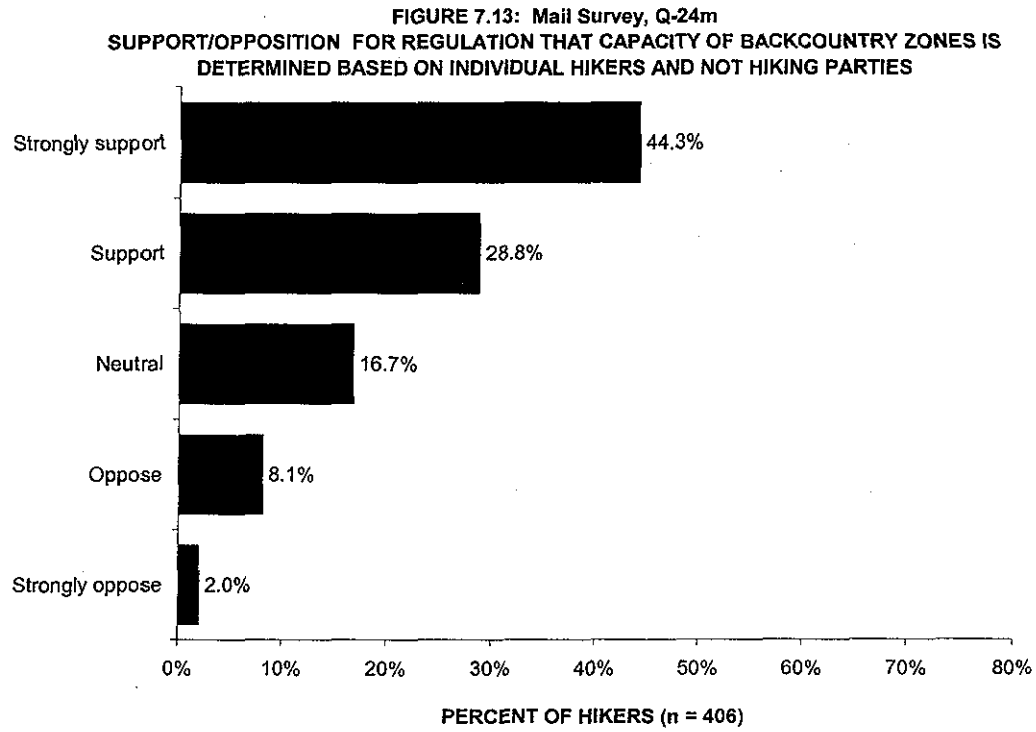


FIGURE 7.12: Mail Survey, Q-24h
SUPPORT/OPPOSITION FOR REGULATION THAT HIKERS MAY CAMP MOST ANYWHERE WITHIN THEIR SCHEDULED ZONES



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Support for Alternate Policies for Rationing Use

Mail Questionnaire

26. Do you support or oppose each of the following possible management policies for rationing use in the Denali backcountry?

Please circle one response code for each regulation. The response codes are defined as follows:

SS = Strongly Support
 S = Support
 N = Neutral
 O = Oppose
 SO = Strongly Oppose

a)	Issue a limited number of permits on a first-come, first-served basis.....	SS	S	N	O	SO
b)	Issue a limited number of permits on a drawing or lottery basis.....	SS	S	N	O	SO
c)	Issue a limited number of permits through an advanced reservation system.....	SS	S	N	O	SO
d)	Issue a limited number of permits to those who can demonstrate a certain level of knowledge and skill..	SS	S	N	O	SO
e)	Charge a use fee of no more than \$10 per trip for backcountry permits.....	SS	S	N	O	SO
f)	Allow use without rationing (i.e., unlimited use)....	SS	S	N	O	SO

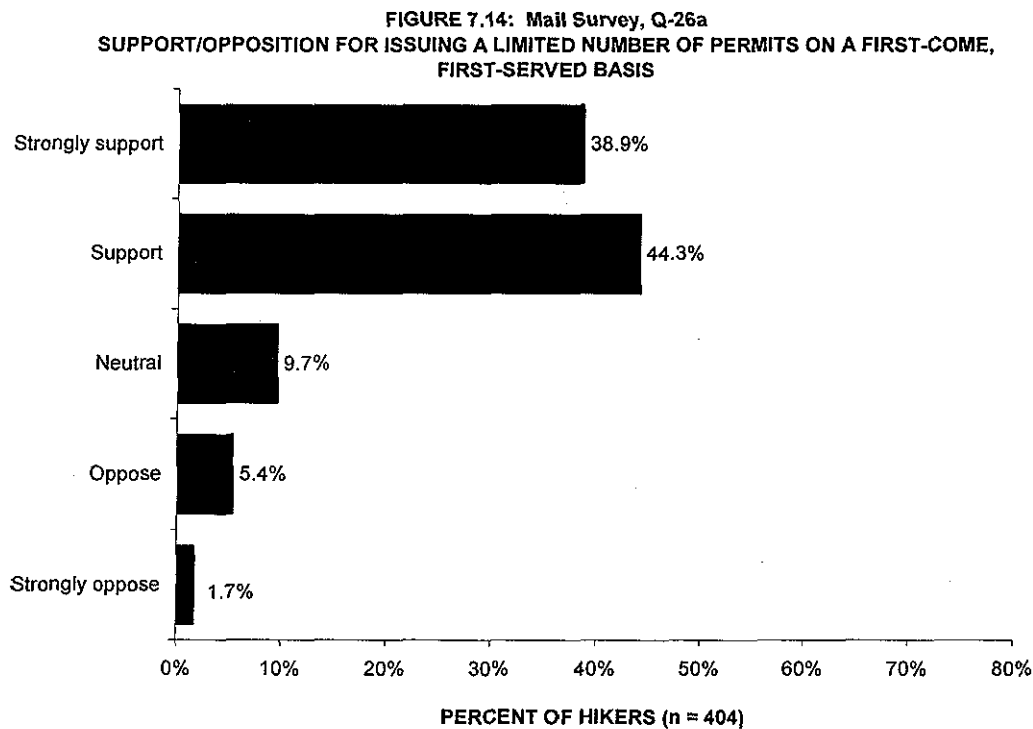
Although unlimited use (no rationing) was opposed by most hikers (87.2%) with 63.5 percent of hikers strongly opposed to unlimited use (see Figure 7.20), there was limited support for the alternate ways of rationing use. Issuing a limited number of permits on a first-come, first-served basis was the only alternate policy for rationing use that was supported by most hikers (83.2%; see Figure 7.14) while most hikers (70.8%) opposed issuing a limited number of permits on a lottery basis (see Figure 7.15). There was less consensus in terms of support for the remaining rationing options.

Although the stated choice analysis did not consider the means by which rationing of permits occurred, it included the availability of permits as one of its attributes. The findings suggested that people were relatively insensitive to changes in permit availability (compared to the other attributes being traded off). Specifically, there was little difference in utility

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whether most people were able to get their preferred versus their second choice trip. However, backpackers had negative utility if only a minority of people were able to get a permit.

To the extent that people perceive that a rationing option reduces the likelihood of their obtaining a permit for their trip, they may reduce their support for that option. People's perceptions of permit availability for any particular option however may have been inaccurate. Therefore, support for any of these rationing options may differ from what we observed if more complete descriptions of each option (including permit availability) are used.



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FIGURE 7.15: Mail Survey, Q-26b
SUPPORT/OPPOSITION FOR ISSUING A LIMITED NUMBER OF PERMITS ON A DRAWING OR LOTTERY BASIS

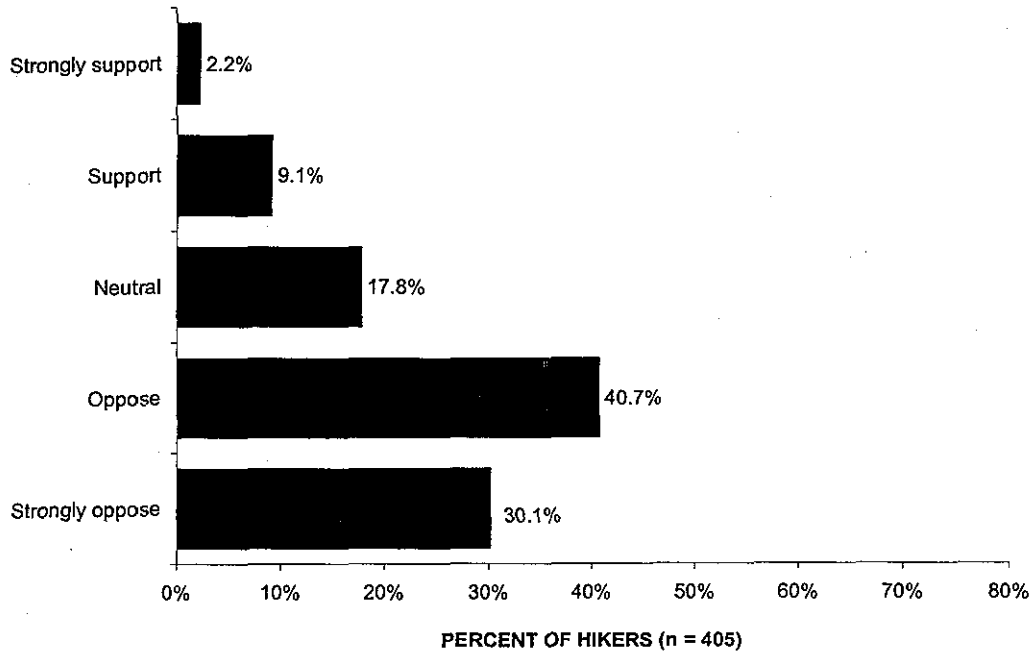
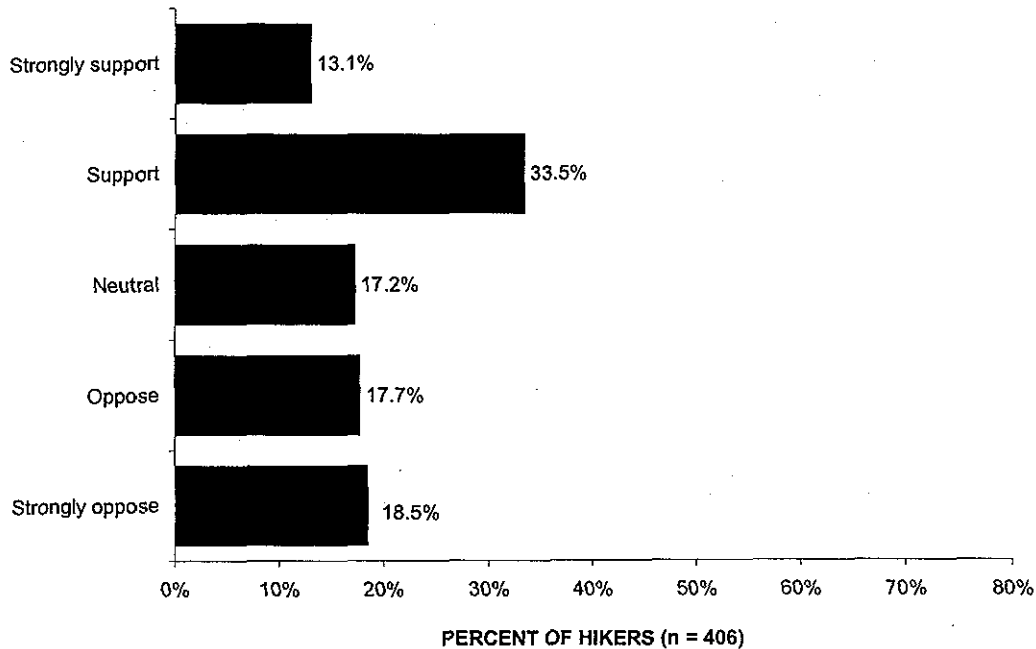


FIGURE 7.16: Mail Survey, Q-26c
SUPPORT/OPPOSITION FOR ISSUING A LIMITED NUMBER OF PERMITS THROUGH AN ADVANCED RESERVATION SYSTEM



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FIGURE 7.17: Mail Survey, Q-26d
SUPPORT/OPPOSITION FOR ISSUING A LIMITED NUMBER OF PERMITS TO THOSE WHO DEMONSTRATE A CERTAIN LEVEL OF SKILL OR KNOWLEDGE

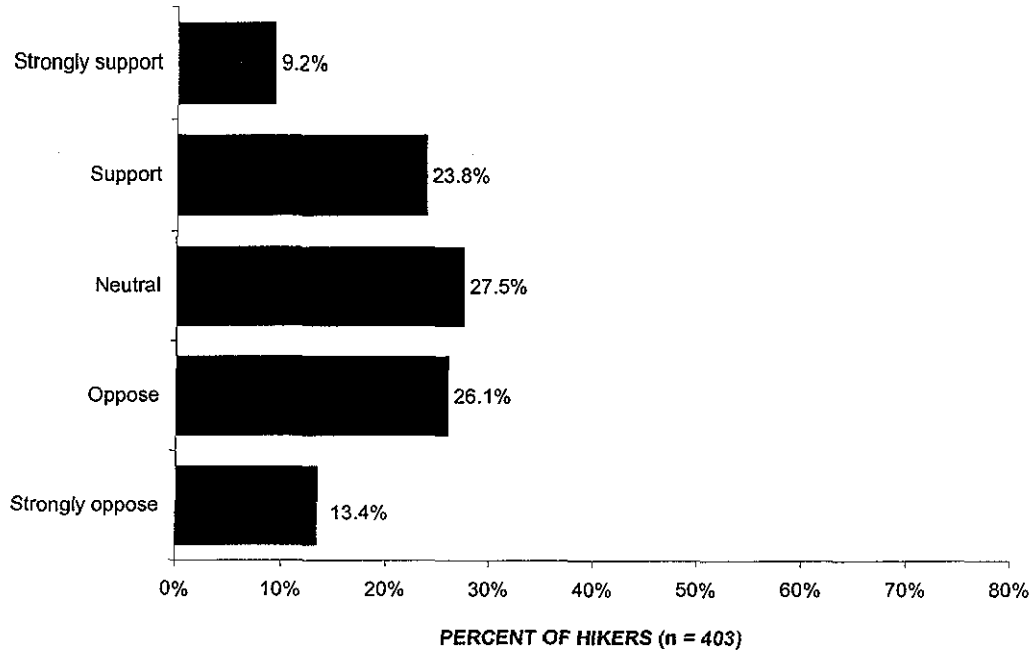
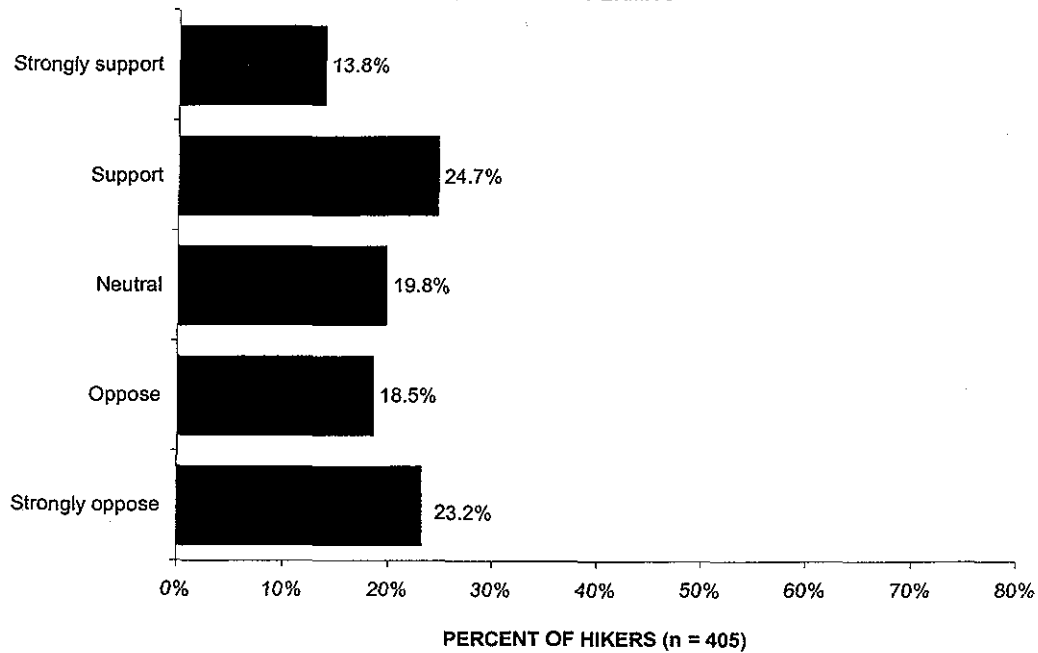
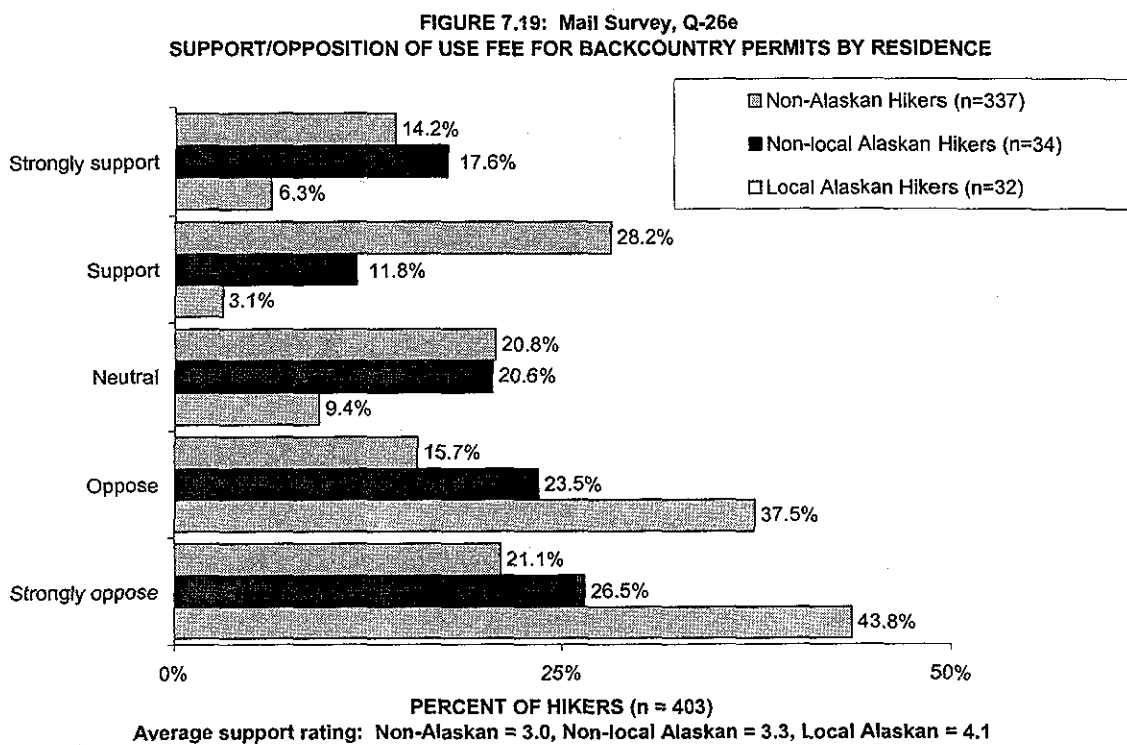


FIGURE 7.18: Mail Survey, Q-26e
SUPPORT/OPPOSITION FOR CHARGING A USE FEE OF NO MORE THAN \$10 PER TRIP FOR BACKCOUNTRY PERMITS



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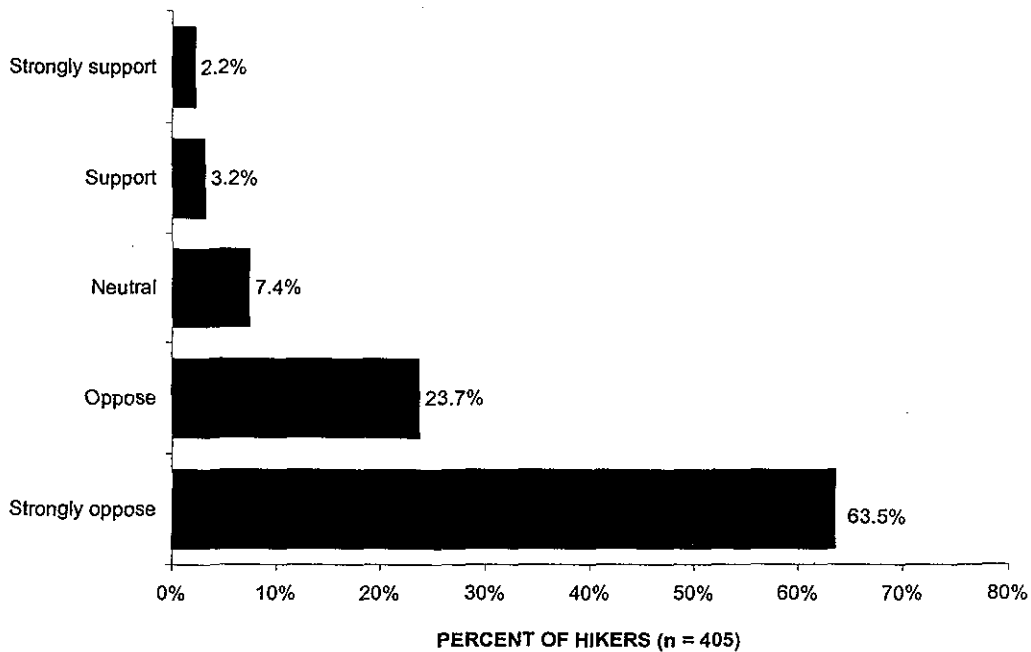
Support for a use fee for backcountry permits varied significantly by hikers' residence, $\chi^2 (6, n = 403) = 25.86, p < .001^{12}$. As can be seen in Figure 7.19, 81.3 percent of local Alaskan hikers either "Strongly opposed" or "Opposed" a use fee compared to 36.8 percent of non-Alaskan hikers and 50.0 percent of non-local Alaskan hikers. This increasing opposition toward a use fee for backcountry permits corresponds positively with use and thus, the cost to the user. Figure 2.14 shows that local Alaskan hikers had obtained the most backcountry permits ($M = 7.8$ permits) followed by non-local Alaskan hikers ($M = 5.4$ permits) and then non-Alaskan hikers ($M = 1.3$ permits).



¹² The categories "Strongly Support" and "Support" were combined to eliminate cells with expected frequencies less than 5.

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FIGURE 7.20: Mail Survey, Q-26f
SUPPORT/OPPPOSITION FOR ALLOWING USE WITHOUT RATIONING (UNLIMITED USE)



User Density

Encounters with Other Hiking Parties

22a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should encounter no more than two other hiking parties per day? (Circle one number)

1 DON'T KNOW OR DON'T CARE → GO TO QUESTION 23a

2 I AGREE → GO TO QUESTION 23a

3 I DISAGREE →

22b. Generally speaking, what is the maximum number of other hiking parties that backpackers should encounter on any given day?

(Check one blank)

_____ Backpackers should encounter no other hiking parties	_____ 12-16
_____ 1	_____ 17-22
_____ 3-4	_____ 23 or more
_____ 5-7	_____ Unlimited use should be allowed
_____ 8-11	_____ Don't know

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FIGURE 7.21: Mail Survey, Q-22a
AGREEMENT WITH THE PRESENT OBJECTIVE THAT BACKPACKERS SHOULD ENCOUNTER
NO MORE THAN 2 OTHER HIKING PARTIES PER DAY

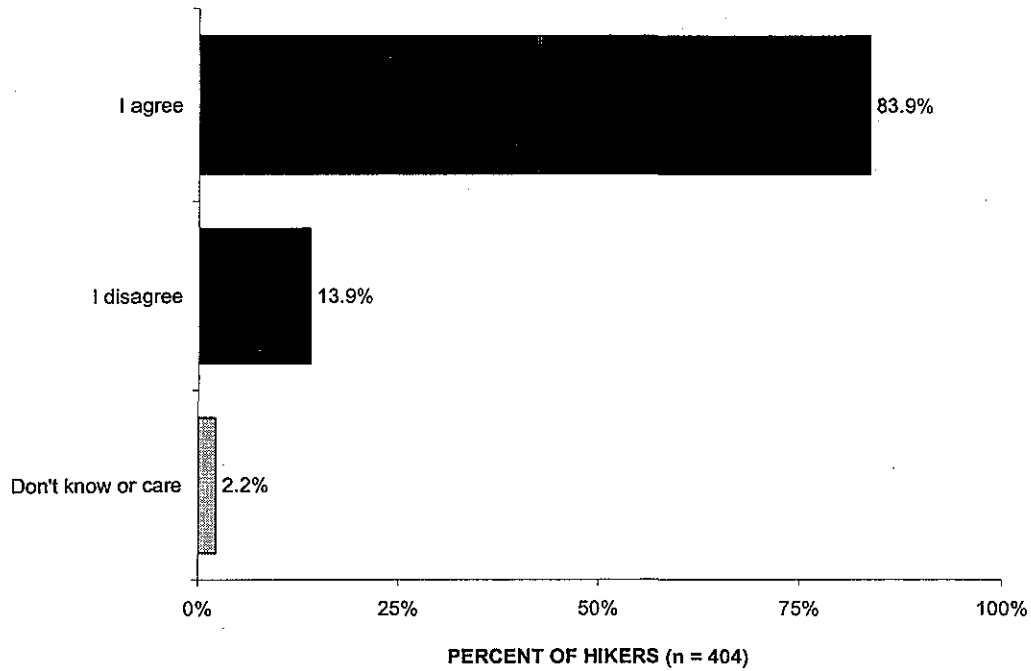
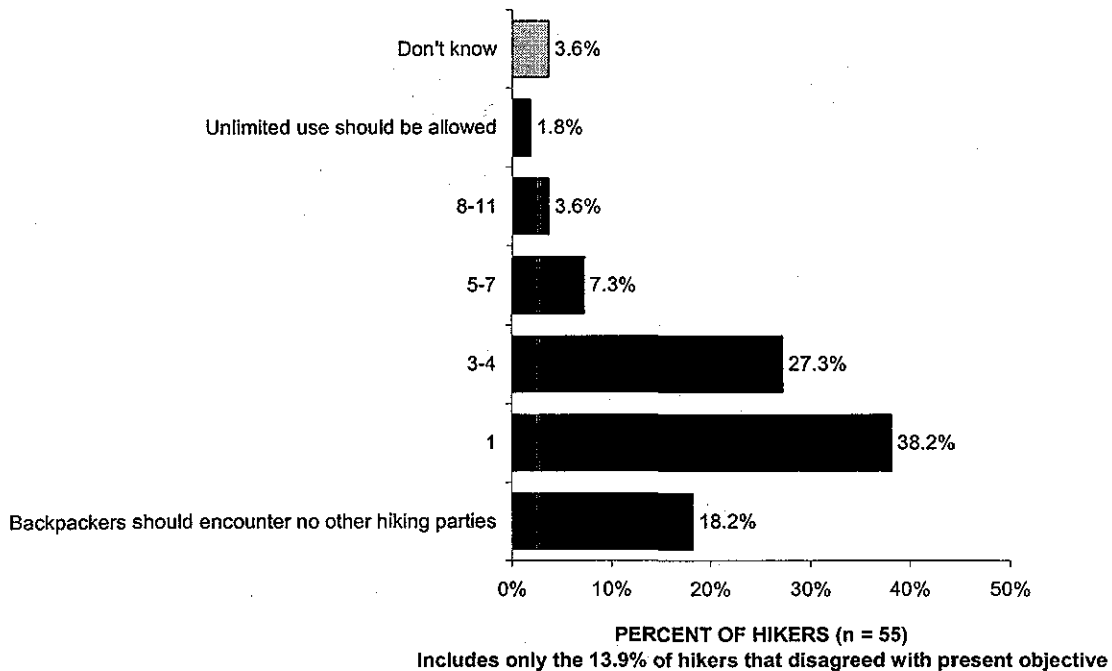


FIGURE 7.22: Mail Survey, Q-22b
MAXIMUM NUMBER OF OTHER HIKING PARTIES THAT SHOULD BE ENCOUNTERED ON ANY
GIVEN DAY



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Camping

Mail Questionnaire

21a. Generally speaking, do you agree or disagree with the present policy of allowing, on the average, about 6 hikers to **camp** in most Denali backcountry zones on any given night? (*Circle one number*)

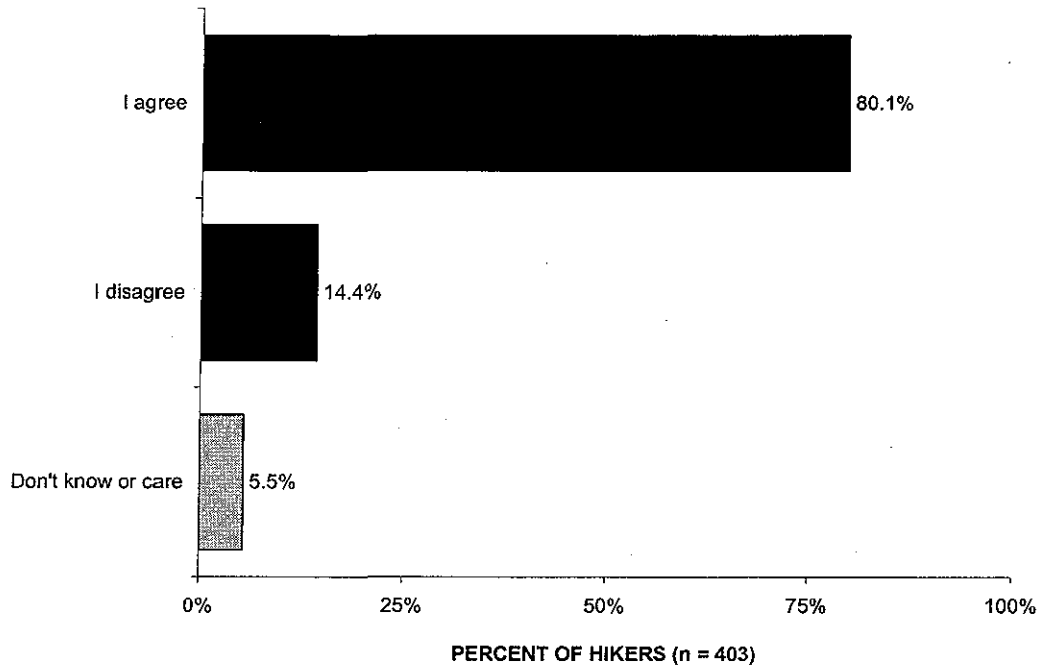
1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 22a**

2 I AGREE → **GO TO QUESTION 22a**

3 I DISAGREE → **21b.** Generally speaking, about how many hikers should be allowed to **camp** in an average backcountry zone on any given night?
(*Check one blank*)

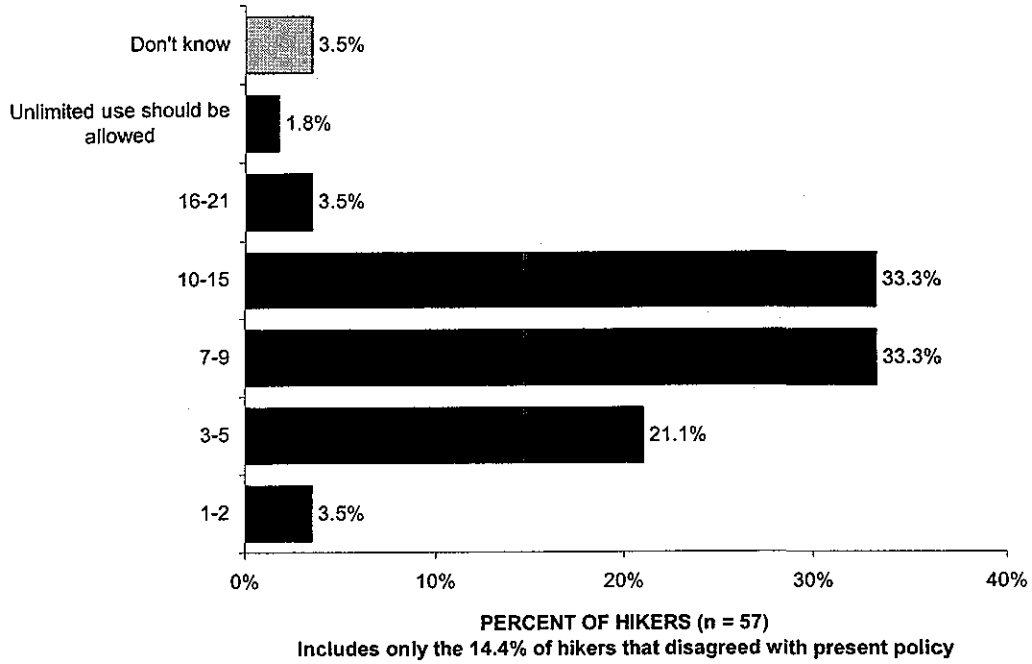
_____	No overnight use should be allowed	_____	16-21
_____	1-2	_____	22-27
_____	3-5	_____	28 or more
_____	7-9	_____	Unlimited use should be allowed
_____	10-15	_____	Don't know

FIGURE 7.23: Mail Survey, Q-21a
AGREEMENT WITH THE PRESENT POLICY OF ALLOWING ON AVERAGE 6 HIKERS TO CAMP PER ZONE



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FIGURE 7.24: Mail Survey, Q-21b
NUMBER OF HIKERS THAT SHOULD BE ALLOWED TO CAMP IN AN AVERAGE
BACKCOUNTRY ZONE



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Mail Questionnaire

23a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should be able to camp out of sight and sound of **all** other hiking parties? (*Circle one number*)

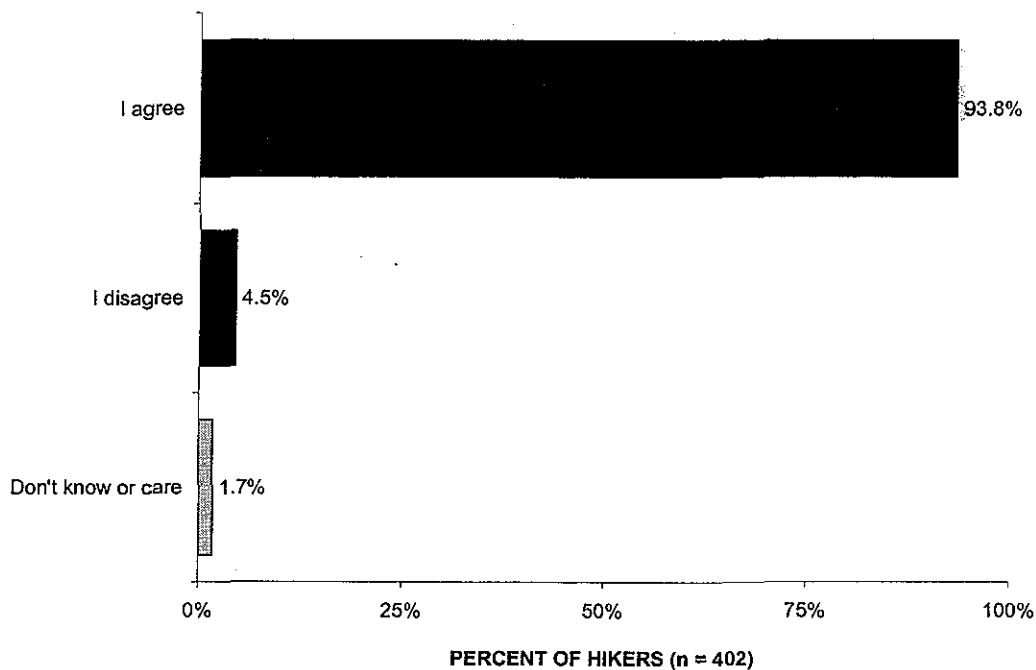
1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 24**

2 I AGREE → **GO TO QUESTION 24**

3 I DISAGREE → **23b.** Generally speaking, what is the **maximum** number of other hiking parties that should be camped within sight and/or sound of a given camp? (*Check one blank*)

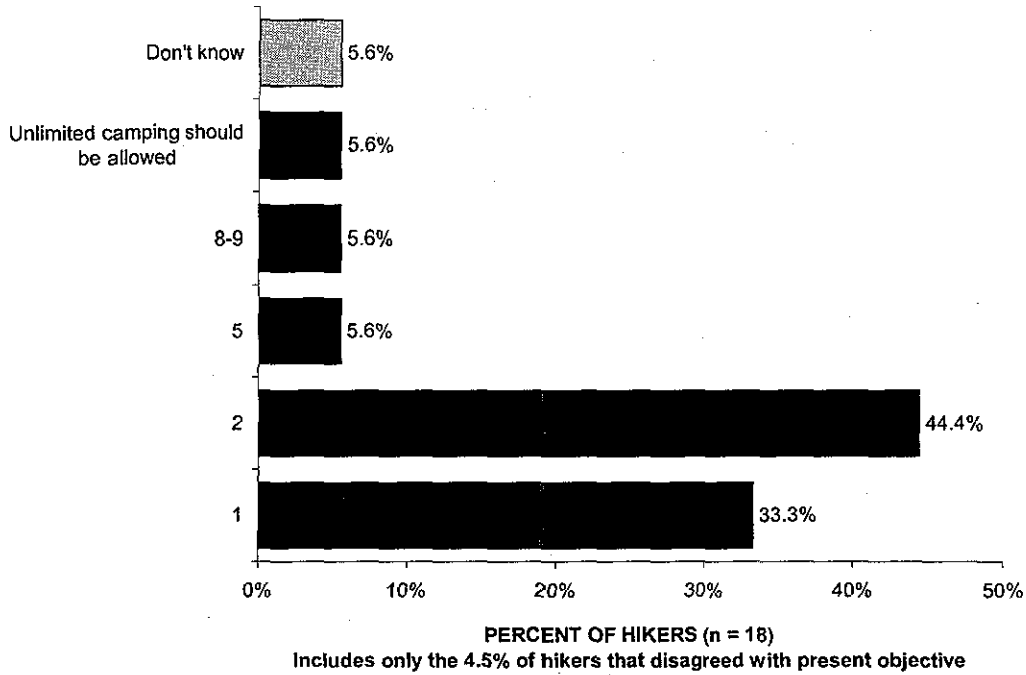
_____ 1	_____ 6-7
_____ 2	_____ 8-9
_____ 3	_____ 10 or more
_____ 4	_____ Unlimited camping should be allowed
_____ 5	_____ Don't know

FIGURE 7.25: Mail Survey, Q-23a
AGREEMENT WITH PRESENT OBJECTIVE THAT BACKPACKERS SHOULD BE ABLE TO
CAMP OUT OF SIGHT OR SOUND OF ALL OTHER PARTIES



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FIGURE 7.26: Mail Survey, Q-23b
MAXIMUM NUMBER OF OTHER HIKING PARTIES THAT SHOULD BE CAMPED WITHIN SIGHT
OR SOUND OF A GIVEN CAMP



Size of Hiking Parties

Mail Questionnaire

25a. Generally speaking, do you feel there should be a maximum party size for the Denali backcountry?
(Circle one number)

- 1 DON'T KNOW OR DON'T CARE → GO TO QUESTION 26
- 2 NO → GO TO QUESTION 26
- 3 YES → 25b. What should be the maximum party size?

MAXIMUM PARTY SIZE: _____

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FIGURE 7.27: Mail Survey, Q-25a
FEEL THERE SHOULD BE A MAXIMUM PARTY SIZE FOR DENALI BACKCOUNTRY

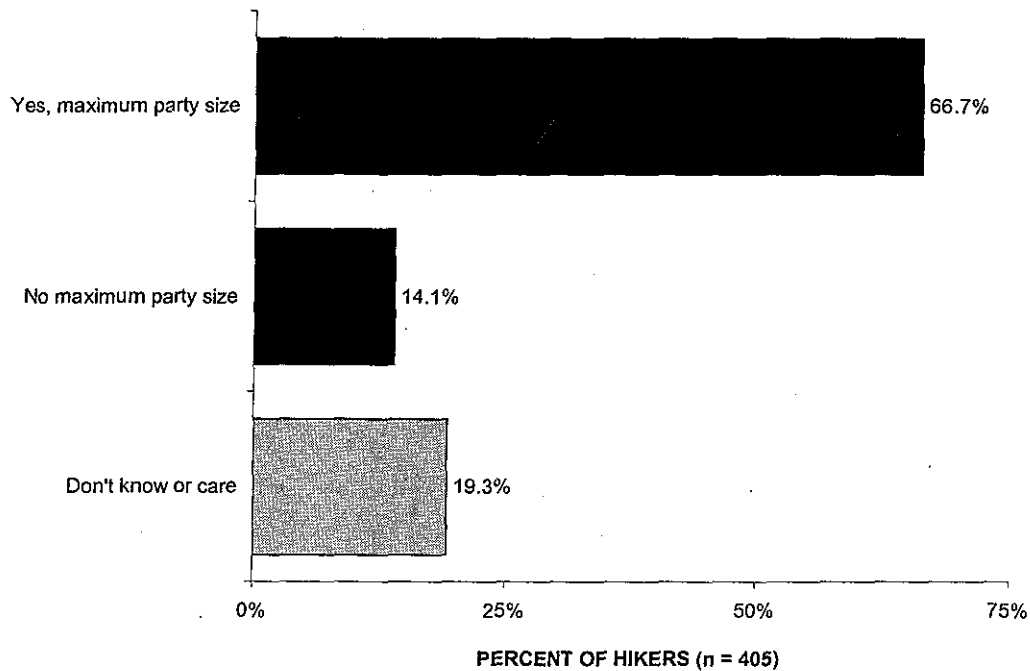
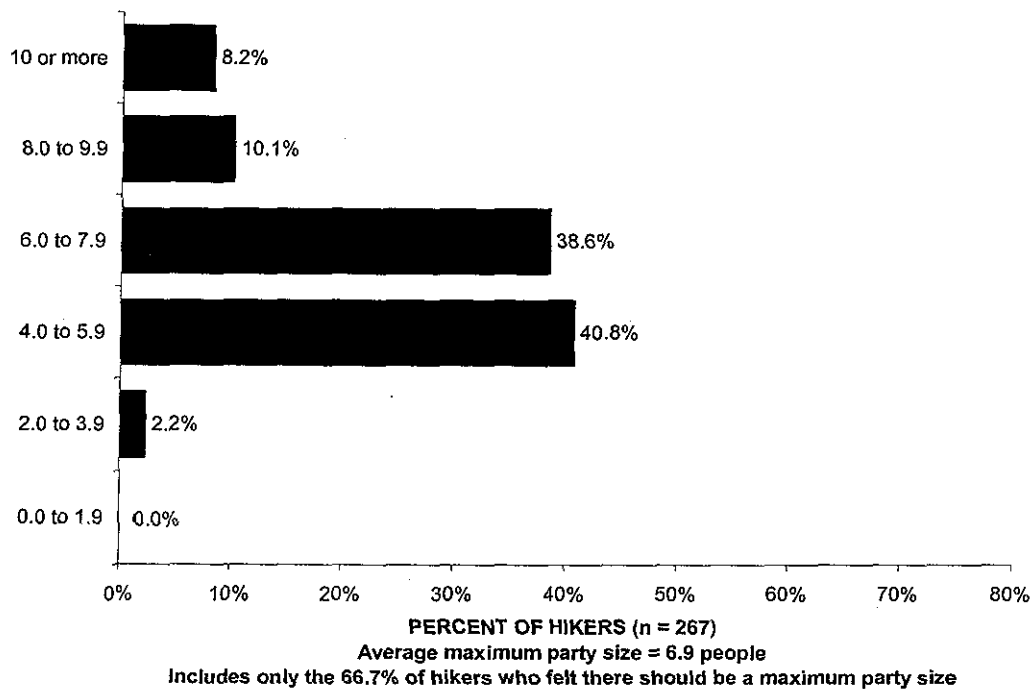


FIGURE 7.28: Mail Survey, Q-25b
MAXIMUM PARTY SIZE FOR DENALI BACKCOUNTRY



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Park rangers

Mail Questionnaires

27a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should encounter **park rangers** no more than **once** during a backpacking trip? *(Circle one number)*

- 1 DON'T KNOW OR DON'T CARE → GO TO QUESTION 28
- 2 I AGREE →
- 3 I DISAGREE →

27b. Do you think **all** backpackers should encounter park rangers at some point during a backpacking trip? *(Circle one number.)*

- 1 YES → GO TO QUESTION 27d

2 NO → 27c. Do you think that backpackers should **never** encounter park rangers during a backpacking trip? *(Circle one number.)*

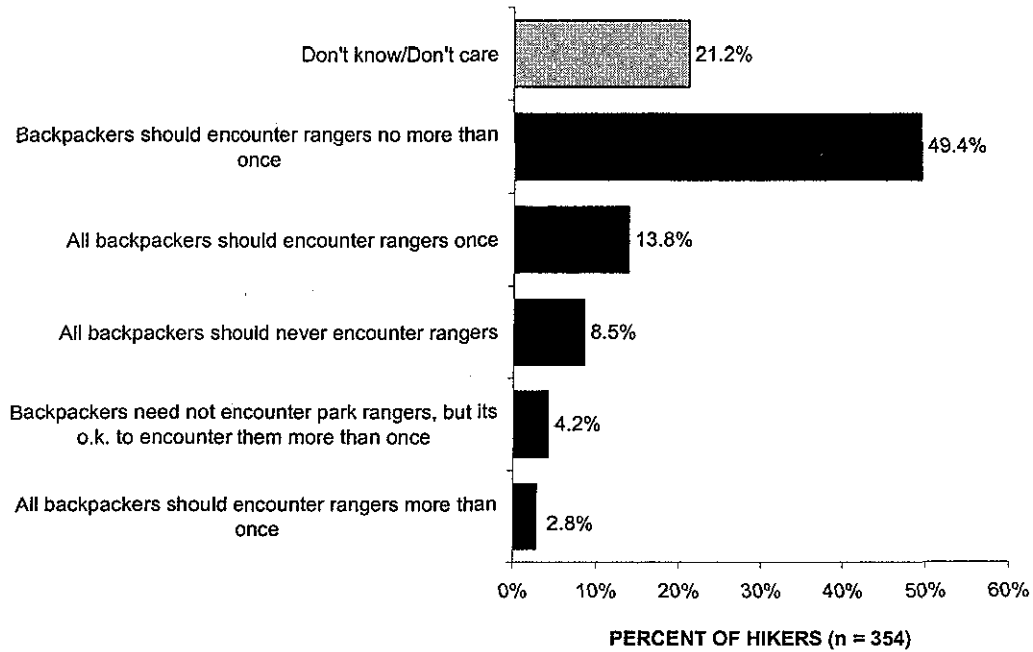
- 1 YES → GO TO QUESTION 28

2 NO → 27d. What is the maximum number of park rangers that backpackers should encounter during a backpacking trip?
(Enter a question mark "?" if you don't know.)

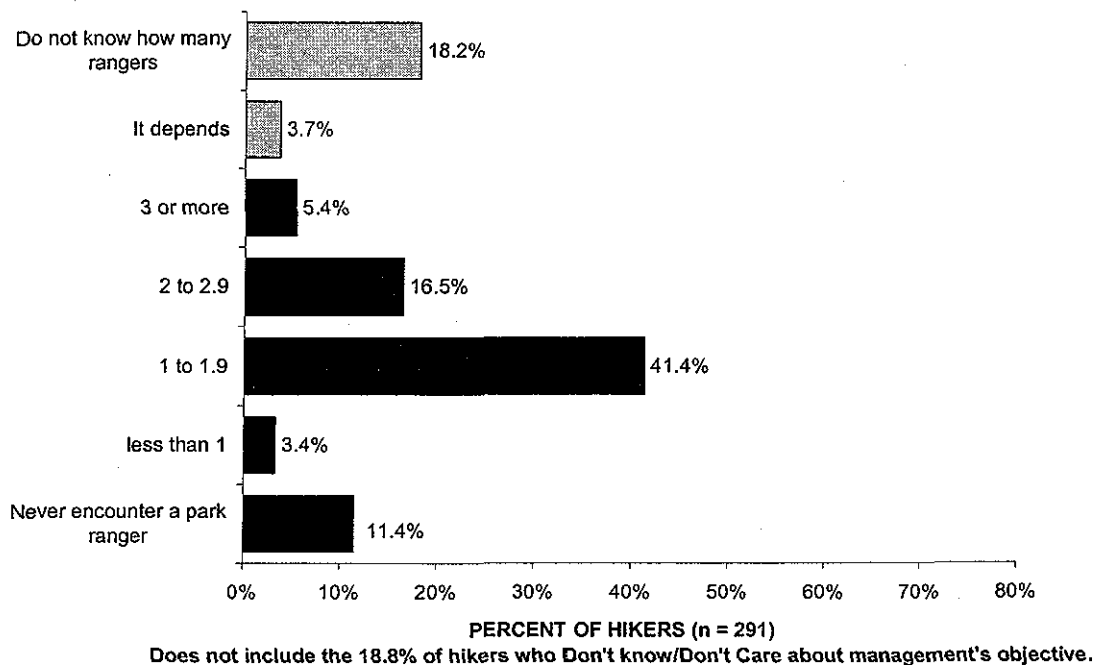
MAXIMUM RANGER ENCOUNTERS: _____

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**FIGURE 7.27: Mail Survey, Q-29a-c
PREFERRED FREQUENCY BACKPACKERS SHOULD ENCOUNTER PARK RANGERS DURING
A BACKPACKING TRIP**



**FIGURE 7.30: Mail Survey, Q-27d
MAXIMUM NUMBER OF TIMES A BACKPACKER SHOULD ENCOUNTER PARK RANGERS
DURING A BACKPACKING TRIP**



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Potential Additions to the Backcountry

Mail Questionnaire

28. Do you support or oppose each of the following potential additions to the Denali backcountry?

Please circle one response code for each regulation. The response codes are defined as follows:

SS	= Strongly Support
S	= Support
N	= Neutral
O	= Oppose
SO	= Strongly Oppose

a) Developed hiking trails.....	SS	S	N	O	SO
b) Designated campsites.....	SS	S	N	O	SO
c) Tables.....	SS	S	N	O	SO
d) Shelters.....	SS	S	N	O	SO
e) Toilets.....	SS	S	N	O	SO
f) Fire rings.....	SS	S	N	O	SO
g) Bridges over rivers.....	SS	S	N	O	SO
h) Interpretive signs.....	SS	S	N	O	SO
i) Food caches for bear protection.....	SS	S	N	O	SO

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FIGURE 7.31: Mail Survey, Q-28a
SUPPORT/OPPOSITION FOR THE ADDITION OF DEVELOPED HIKING TRAILS TO DENALI BACKCOUNTRY

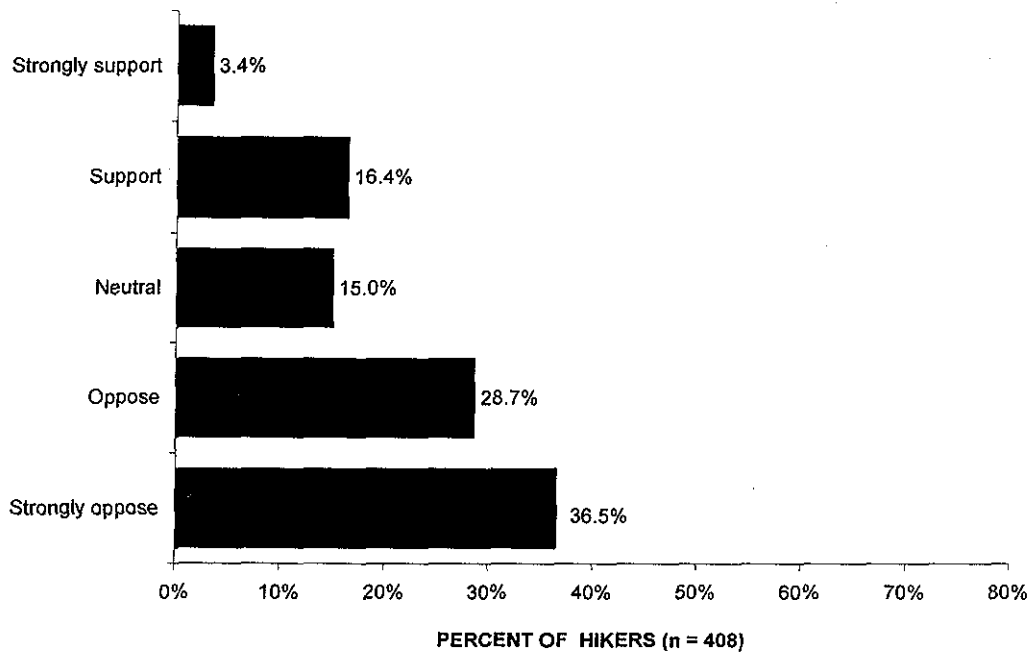
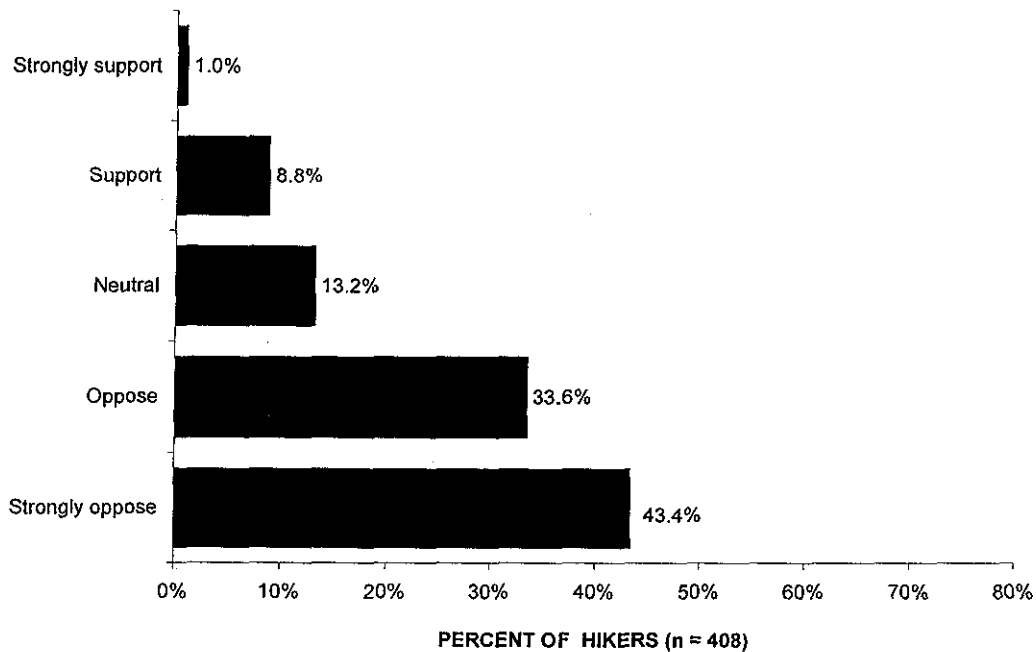


FIGURE 7.32: Mail Survey, Q-28b
SUPPORT/OPPOSITION FOR THE ADDITION OF DESIGNATED CAMPSITES TO DENALI BACKCOUNTRY



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FIGURE 7.33: Mail Survey, Q-28c
SUPPORT/OPPOSITION FOR THE ADDITION OF TABLES TO DENALI BACKCOUNTRY

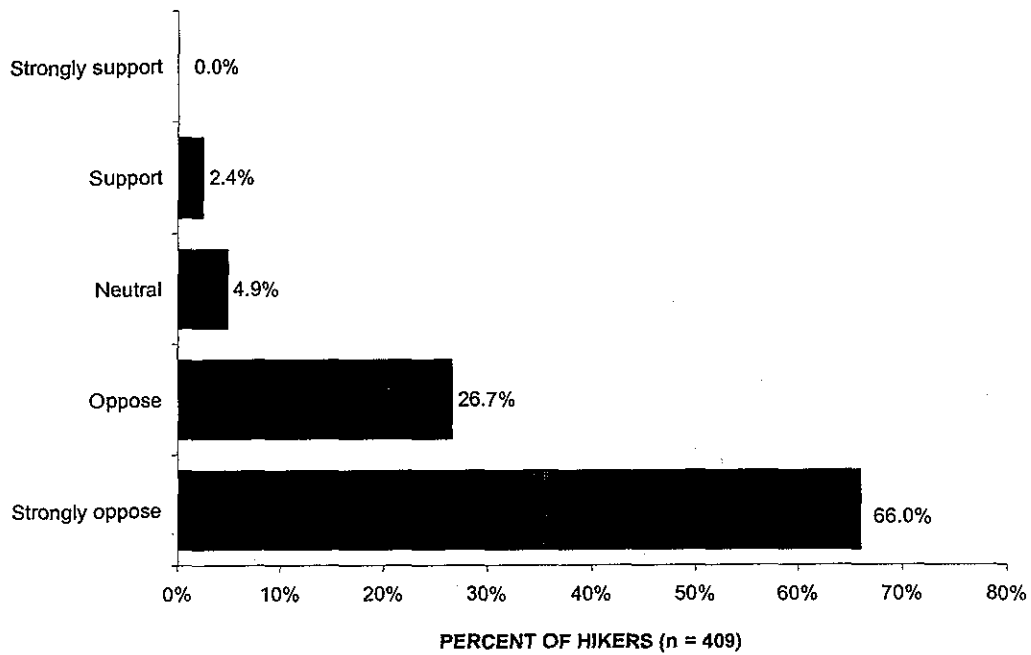
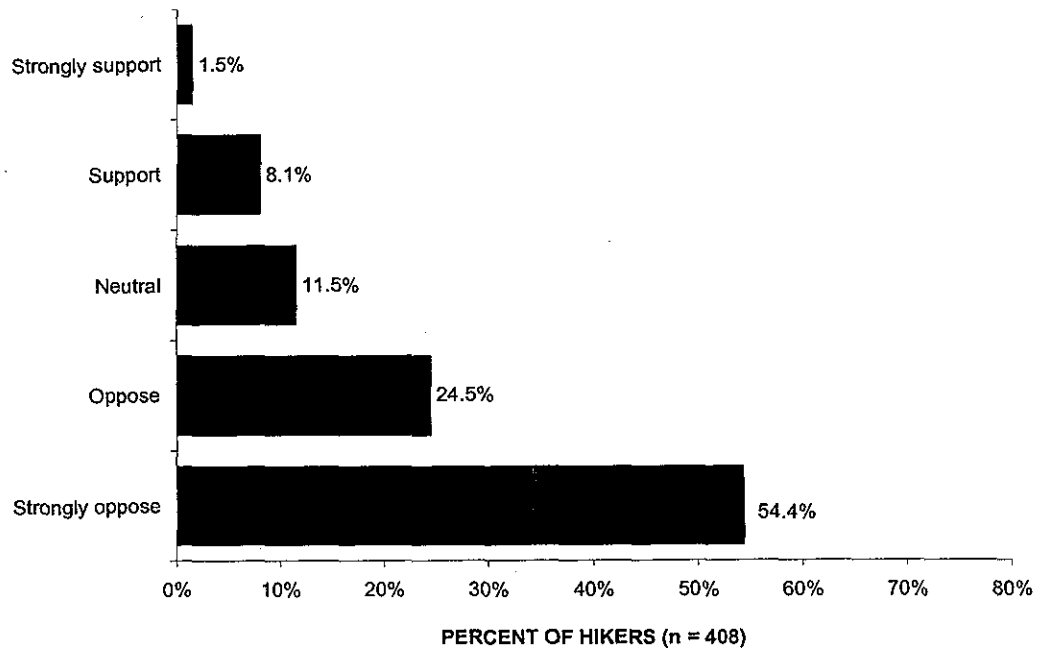


FIGURE 7.34: Mail Survey, Q-28d
SUPPORT/OPPOSITION FOR THE ADDITION OF SHELTERS TO DENALI BACKCOUNTRY



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FIGURE 7.35: Mail Survey, Q-28e
SUPPORT/OPPOSITION FOR THE ADDITION OF TOILETS TO DENALI BACKCOUNTRY

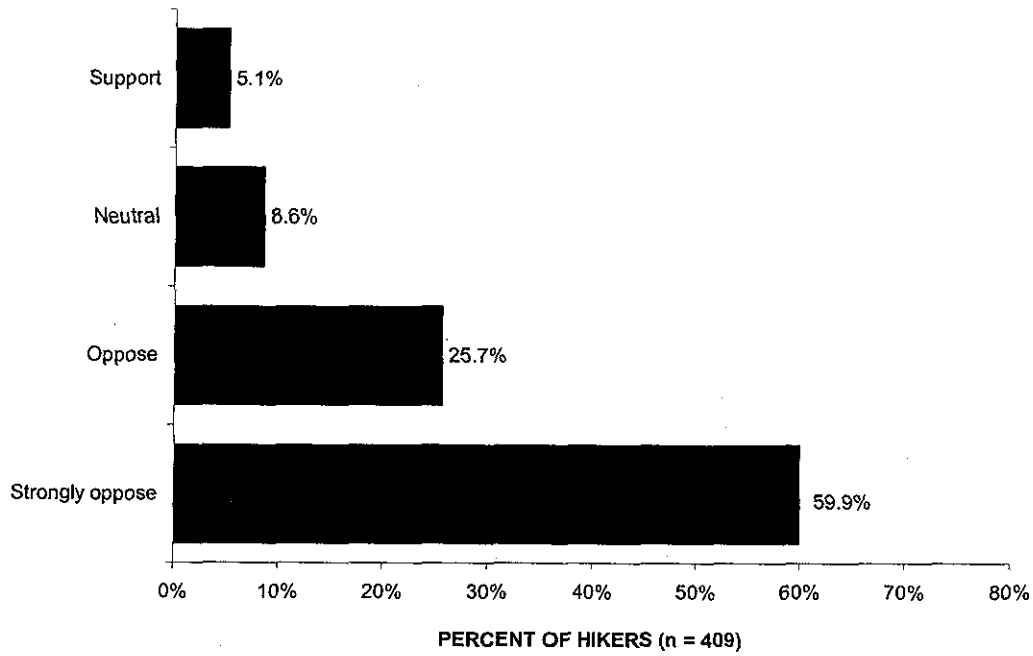
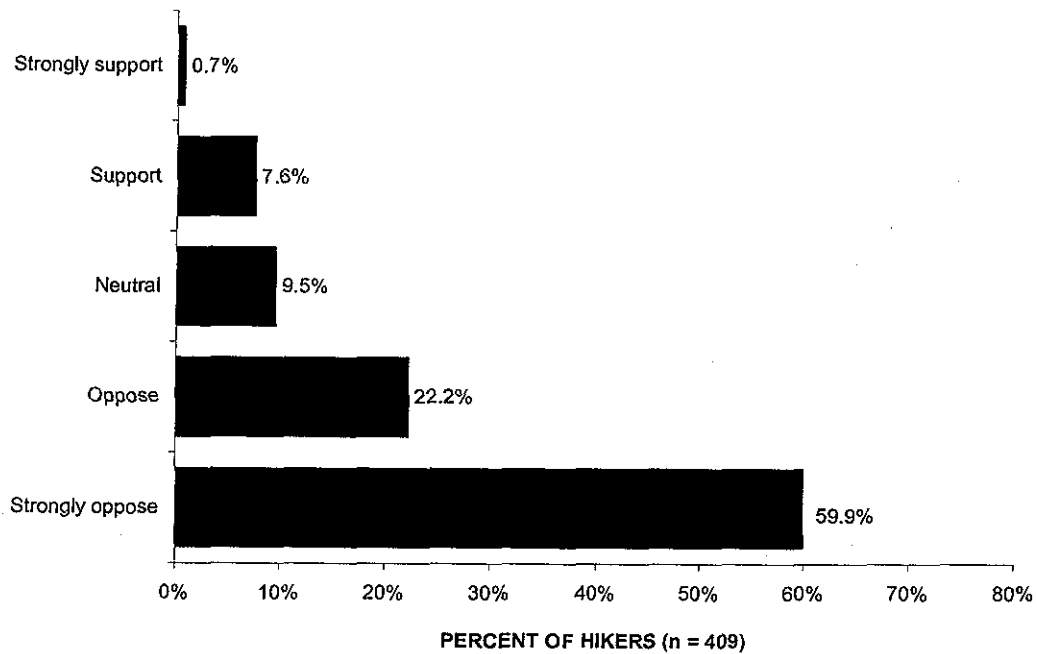


FIGURE 7.36: Mail Survey, Q-28f
SUPPORT/OPPOSITION FOR THE ADDITION OF FIRE RINGS TO DENALI BACKCOUNTRY



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FIGURE 7.37: Mail Survey, Q-28g
SUPPORT/OPPOSITION FOR THE ADDITION OF BRIDGES OVER RIVERS TO DENALI
BACKCOUNTRY

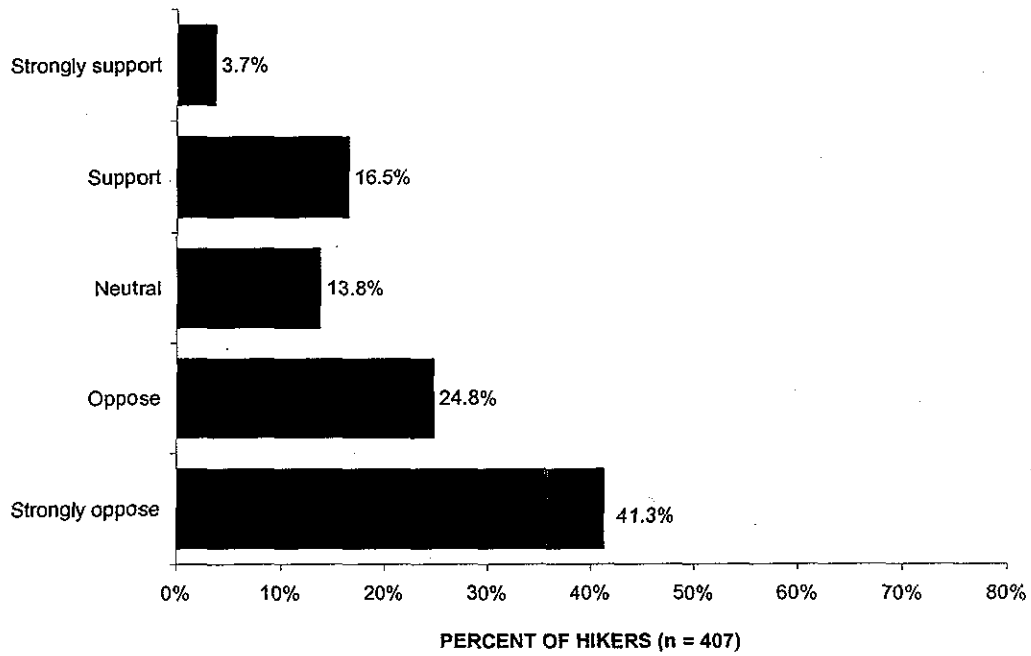
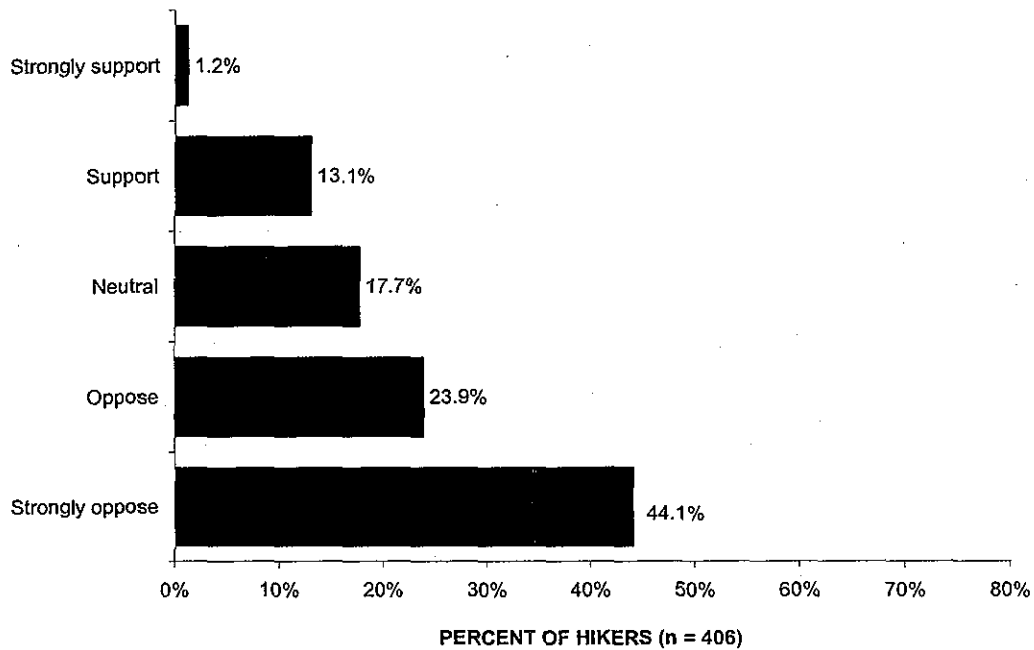
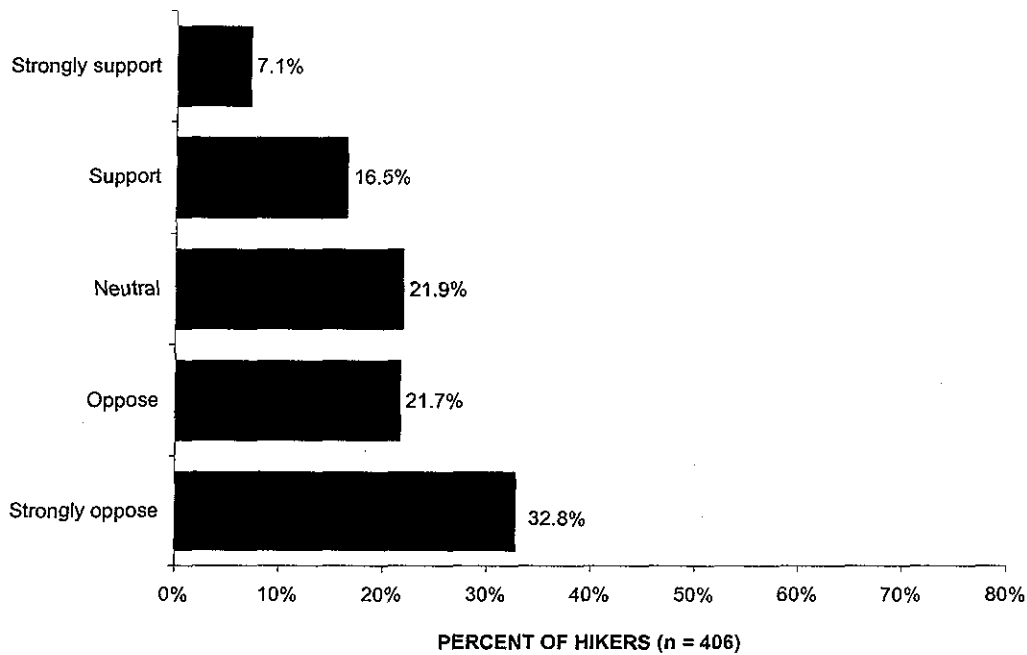


FIGURE 7.38: Mail Survey, Q-28h
SUPPORT/OPPOSITION FOR THE ADDITION OF INTERPRETIVE SIGNS TO DENALI
BACKCOUNTRY



VII. Management Policies & Regulations

FIGURE 7.39: Mail Survey, Q-28i
SUPPORT/OPPOSITION FOR THE ADDITION OF FOOD CACHES FOR BEAR PROTECTION TO
DENALI BACKCOUNTRY

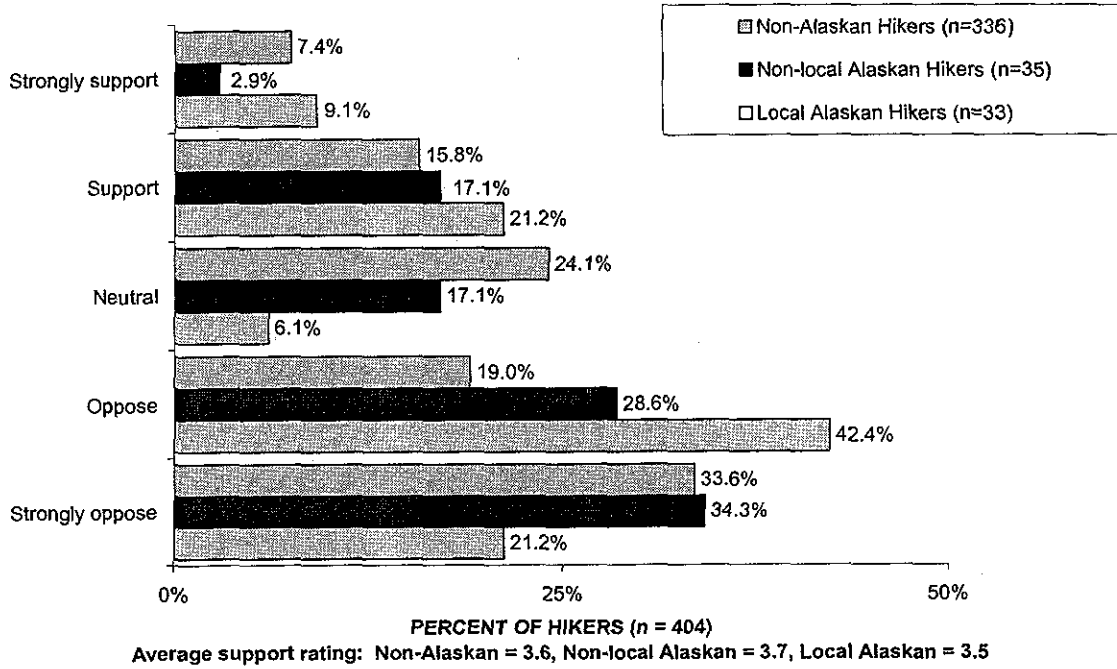


Support for the addition of food caches for bear protection varied by hikers' residence, $\chi^2 (6, n = 404) = 15.50, p < .017^{13}$. As can be seen in Figure 7.40, local Alaskan hikers were least likely to be neutral in their support for food caches (6.1% vs. 24.1% and 17.1%). Although more local Alaskan hikers "Oppose" food caches than non-Alaskan or non-local Alaskan hikers (42.4% vs. 19.0% and 28.6%, respectively), fewer local Alaskan hikers "Strongly oppose" food caches than the other two groups (21.2% vs. 33.6% and 34.3%).

¹³ The categories "Strongly support" and "Support" were combined to eliminate cells with expected frequencies less than five.

VII. Management Policies & Regulations

FIGURE 7.40: Mail Survey, Q-28i
SUPPORT/OPPPOSITION FOR FOOD CACHES FOR BEAR PROTECTION BY RESIDENCE



VII. Management Policies & Regulations

Other Current Backcountry Regulations

Mail Questionnaire

24. What are your feelings about each of the following regulations that currently govern backcountry use in Denali National Park?

Please circle one response code for each regulation. The response codes are defined as follows:

SS = Strongly Support
 S = Support
 N = Neutral
 O = Oppose
 SO = Strongly Oppose

:	:	:	:	:	:	
:	:	:	:	:	:	
i)	Backcountry campsites must not be visible from the park road.....	SS	S	N	O	SO
j)	Campfires are not allowed in the backcountry.....	SS	S	N	O	SO
k)	Some areas of the backcountry are permanently closed to overnight hikers in order to protect fragile wildlife habitats.....	SS	S	N	O	SO
l)	Some backcountry zones are temporarily closed to hikers in order to protect hikers from unpredictable wildlife.....	SS	S	N	O	SO
:	:	:	:	:	:	
:	:	:	:	:	:	

VII. Management Policies & Regulations

FIGURE 7.41: Mail Survey, Q-24i
SUPPORT/OPPOSITION FOR REGULATION THAT BACKCOUNTRY CAMPSITES MUST NOT BE VISIBLE FROM ROAD

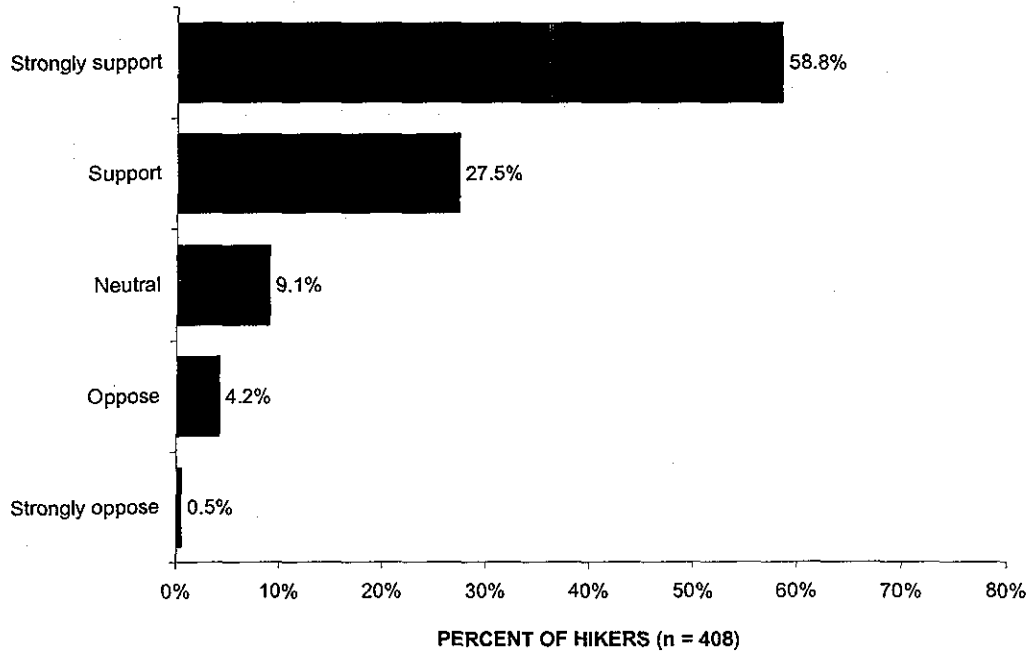
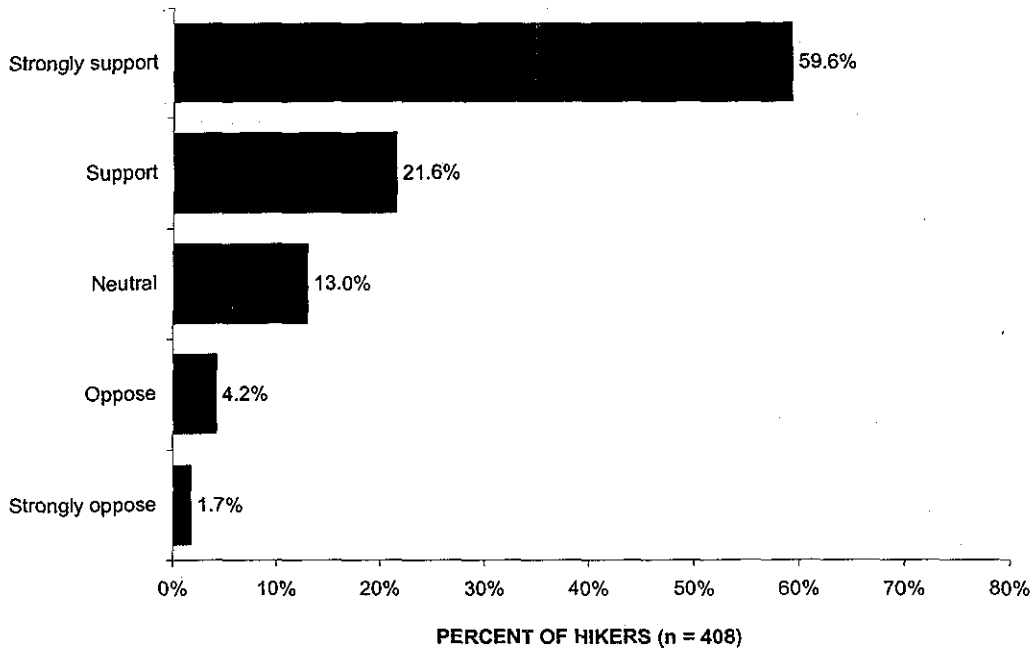


FIGURE 7.42: Mail Survey, Q-24j
SUPPORT/OPPOSITION FOR REGULATION THAT CAMPFIRE ARE NOT ALLOWED IN BACKCOUNTRY



VII. Management Policies & Regulations

FIGURE 7.43: Mail Survey, Q-24k
SUPPORT/OPPOSITION FOR REGULATION THAT SOME AREAS ARE PERMANENTLY CLOSED TO PROTECT WILDLIFE HABITAT

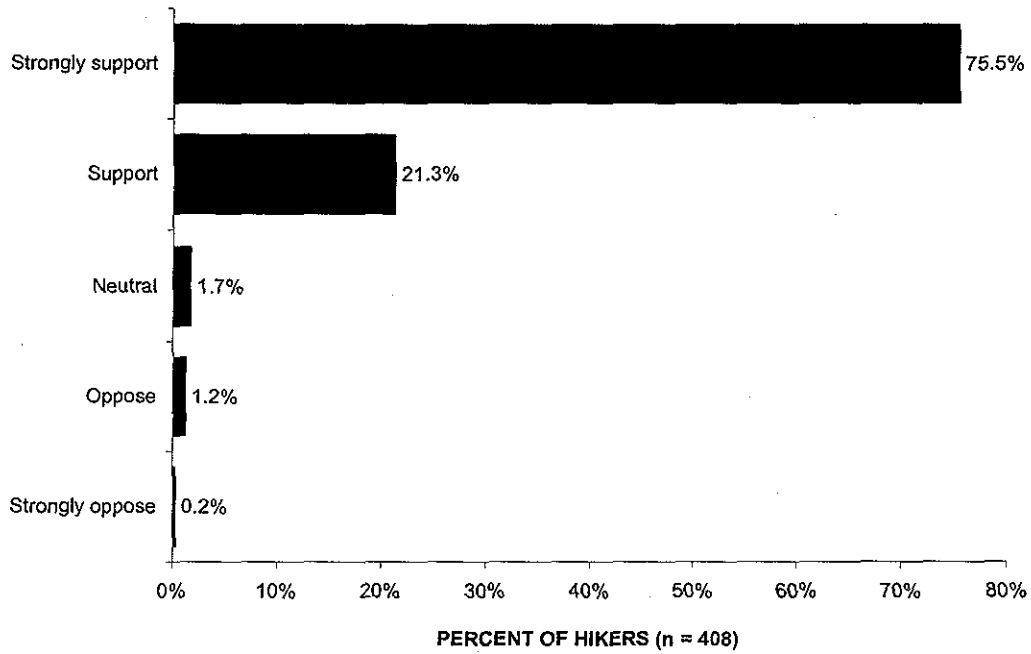
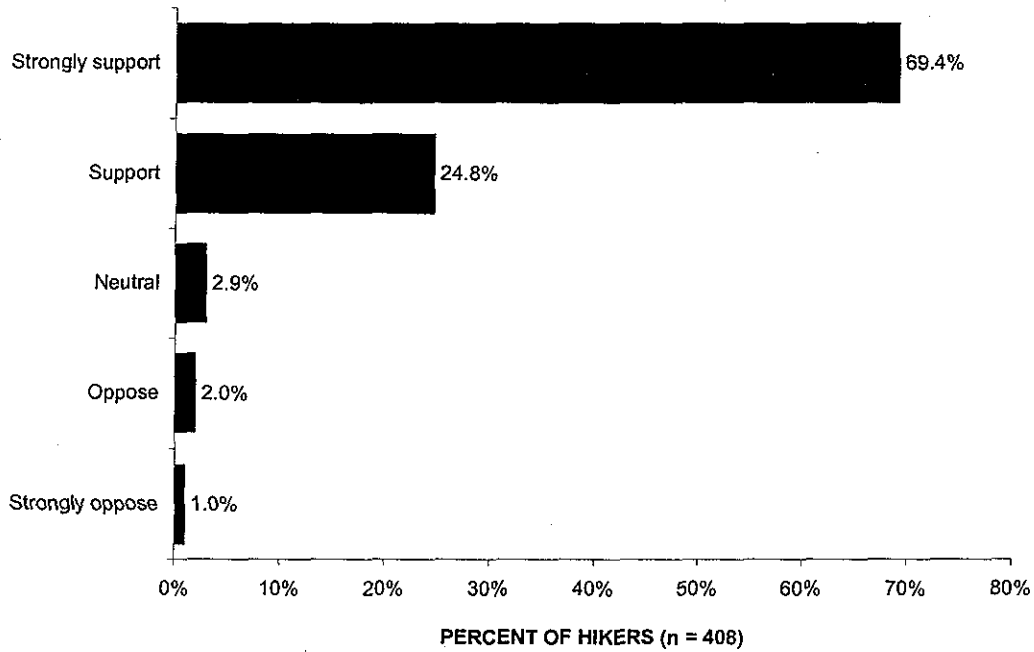


FIGURE 7.44: Mail Survey, Q-24l
SUPPORT/OPPOSITION FOR REGULATION THAT SOME AREAS ARE TEMPORARILY CLOSED TO PROTECT HIKERS FROM UNPREDICTABLE WILDLIFE



VIII. Trip Motivations

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions to assess the relative importance of different reasons or motivations for their overnight backcountry trip and the opportunity to satisfy those reasons. In this chapter, readers will first find the ratings for individual items. Next, readers will encounter a description of a factor analysis that was done to derive the underlying dimensions of the importance of the different motivations for this trip. Scale scores for each underlying trip motivation dimension were then calculated and used as a basis for grouping respondents in a cluster analysis. These clusters or groups of respondents correspond to market segments—groups of people who are similar in the importance of different trip motivations. Finally, these clusters were compared on a variety of variables including individual differences and trip satisfaction.

VIII. Trip Motivation Factors

VIII. Trip Motivation Factors

Highlights

- *Individual items indicated most hikers' trips were motivated by a desire to get away from their everyday lives and experience tranquility.* Review of Figures 8.1 through 8.12 indicates that the two individual trip motivation items that were most important for this backcountry trip were 1) get away from the usual demands of life and 2) experience tranquility. For each item, over half of respondents indicated that it was "Extremely important" and about another 30 percent indicated that it was "Very important" (see Figures 8.7 & 8.11). The individual trip motivation item that was least important was observing other people in the area with 95.4 percent of backpackers rating it as "not important" as a trip motivation for this trip to DENA (see Figure 8.3).
- *Factor analyses revealed three primary trip motivations to underlie hikers' overnight backcountry trips in DENA.* A factor analysis of the individual trip motivation items revealed three interpretable trip motivation dimensions: 1) wilderness derived experiences, 2) experiences with friends/similar others, and 3) experiences with family. As seen in Table 8.2, across all hikers, wilderness derived experiences were the most important trip motivation with an average rating of 3.7 (4 = Very important). The next most important motivation was "Experiences with Friends/Similar Others" (M = 3.33, 3 = Moderately Important). "Experiences with Family" (M = 2.06, 2 = Somewhat Important) was the least important of the three motivations for this group as a whole.
- *Six different groups of people emphasize different motivations for their overnight backcountry trip to DENA.* Six different groups (segments) of people defined by similar trip motivations for their overnight backcountry trip in DENA were identified through cluster analysis. As can be seen in Table 8.3, the groups differed in the relative importance of the 12 trip motivations asked about in Question 29. Although four of the six market segments varied in the importance of wilderness derived experiences as a motivation for their trip, this motivation was still at least "very important" for all four groups. These groups differed more in their motivations for sharing this experience with different social groups (e.g., family, friends, family and friends, or no one). The other

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two segments revealed different patterns of importance for the wilderness derived experiences. In each segment, a different set of two wilderness derived experiences were relatively more important motivations for their trip than the remaining wilderness derived experiences.

- *Respondents in the six segments that differed in trip motivations were more similar than different.* Comparing the six segments on a variety of individual difference variables revealed that although the groups can be characterized as being made up of different types of people, the differences were small, and there was considerable overlap in the groups (see pages 212 –214 for detailed description).
- *Two of the six segments differed in their overall trip satisfaction, and none of the segments differed in their feelings of crowding.* Comparing the six segments on overall trip satisfaction measures revealed that Segments 5 and 6 differed in their overall trip satisfaction (see page 214). Segment 5 had the highest overall trip satisfaction of any segment. Although Segment 6 respondents had the lowest overall trip satisfaction of any segment, they still rated their trips as better than "Good" ($M = 1.75$, 1 = Very Good, 2 = Good). The six segments did not differ in their feelings of crowding with an average for all respondents indicating people felt mostly "Not at all crowded" ($M = 1.27$, 1 = Not at all crowded, 2 = Slightly crowded).

VIII. Trip Motivation Factors

Importance of & Opportunity to Satisfy Different Motivations for Backcountry Trip

Although all people in this survey took an overnight backcountry trip, different people may have had different reasons or motivations for taking this trip. Expectancy theory “suggests that people engage in activities in specific settings to realize a group of psychological outcomes that are known, expected, and valued” (Manning, 1999, p. 159). Trip motivations can be conceptualized as these anticipated psychological outcomes associated with engaging in a particular activity in a specific setting.

Using the above framework, Driver and associates (see Driver, 1976) developed the Recreation Experience Preference (REP) scales to measure motivations for recreational experiences. Given the constraints of this mail survey, one drawback of using Driver’s REP scales as originally developed was the large number of items. Instead, a subset of twelve items was used based on research by Johnson, Foster, & Kerr (1990) that found six different recreational experience factors underlying 31 REP items in a sample of visitors contacted at the gate to Mount Rainier National Park. We included in the DBS the two items with the highest loadings on each factor in order to examine a range of experiences. Although in retrospect, it may have been better to select only items that we would expect to be related to a wilderness experience, including a few items that were more likely to be unrelated such as “observe other people” and finding low importance ratings (as will be seen) provides some assurance of the validity of the REP items. Instructions and response options were consistent with Driver’s work and asked the respondent to indicate how important it was for them to do each of the twelve items on their overnight backcountry trip to DENA (see Question 29 below).

In addition to assessing respondents trip motivations for their overnight backcountry trip, we were interested in assessing perceived opportunity in DENA for satisfying the different trip motivations. To do this, we used the same twelve REP items, but asked respondents to indicate how much opportunity there was on their overnight backcountry trip in DENA to do each of the twelve items (see Question 30 below).

VIII. Trip Motivation Factors

Mail Questionnaire

29. Below are 12 reasons that people might make overnight hiking trips in the Denali backcountry. To the right of each reason is a scale of how important each reason was in motivating your visit.

On your overnight trip in the Denali backcountry, how IMPORTANT was it for you to...
(Circle one response for each reason. Circle 'Not Important' if a reason is not relevant to you.)

Example:

a Relaxing physically	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
-----------------------	------------------	-----------------------	-------------------------	-------------------	------------------------

For this person, relaxing physically was a somewhat important reason why they chose to visit.

a Develop your skills and abilities	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
b Do something with your family	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
c Observe other people in the area	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
d Bring your family closer together	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
e Experience new and different things	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
f Learn more about nature	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
g Get away from the usual demands of life	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
h Be with others who enjoy the same things you do	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
I Talk to new and varied people	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
j Be with friends	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
k Experience tranquility	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
l Learn what you are capable of	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT

VIII. Trip Motivation Factors

Mail Questionnaire

30. Below are the same 12 reasons that people might take overnight hikes in Denali, but this time the scale on the right concerns how much opportunity there was to satisfy each reason for the trip.

On your overnight trip in the Denali backcountry, how much **OPPORTUNITY** was there for you to...
(Circle one response for each reason. If a reason is not relevant to you, indicate the general opportunity available.)

Example:

a Relaxing physically	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
-----------------------	-------------------	---------------------	---------------------	--------------------------	--------------------------

This person felt that on their trip they had a good opportunity to relax physically.

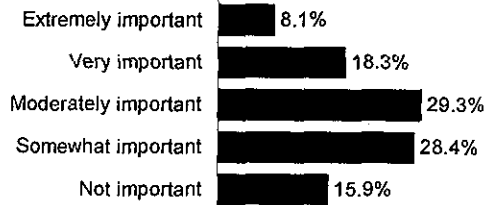
a Develop your skills and abilities	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
b Do something with your family	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
c Observe other people in the area	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
d Bring your family closer together	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
e Experience new and different things	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
f Learn more about nature	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
g Get away from the usual demands of life	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
h Be with others who enjoy the same things you do	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
i Talk to new and varied people	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
j Be with friends	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
k Experience tranquility	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
l Learn what you are capable of	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY

VIII. Trip Motivation Factors

**FIGURE 8.1: Mail Survey, Q-29 & Q-30
DEVELOP YOUR SKILLS AND ABILITIES**

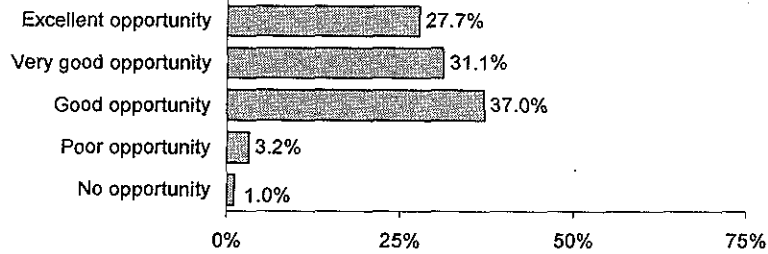
How important to trip? (n = 409)

Average rating = 2.7



How much opportunity was there? (n = 408)

Average rating = 3.8



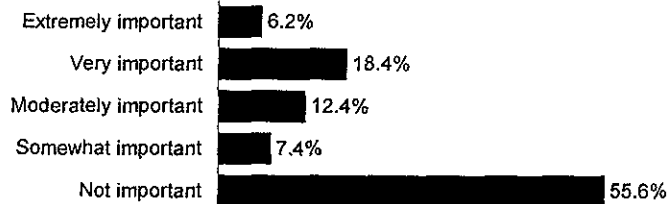
NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

PERCENT OF HIKERS

**FIGURE 8.2: Mail Survey, Q-29 & Q-30
DO SOMETHING WITH YOUR FAMILY**

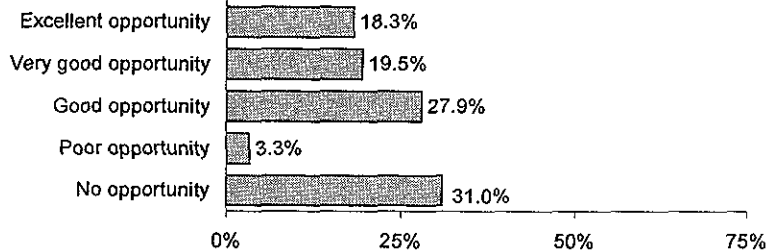
How important to trip? (n = 403)

Average rating = 2.1



How much opportunity was there? (n = 394)

Average rating = 2.9



NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

PERCENT OF HIKERS

VIII. Trip Motivation Factors

**FIGURE 8.3: Mail Survey, Q-29 & Q-30
OBSERVE OTHER PEOPLE IN THE AREA**

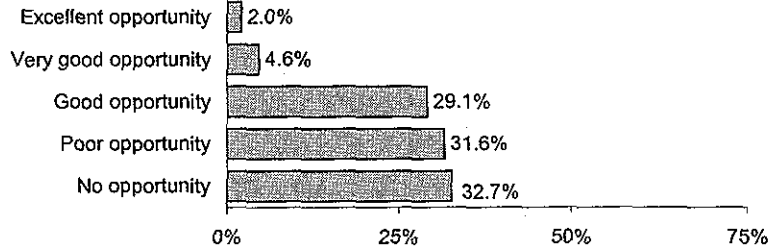
How important to trip? (n = 409)

Average rating = 1.1



How much opportunity was there? (n = 395)

Average rating = 2.1



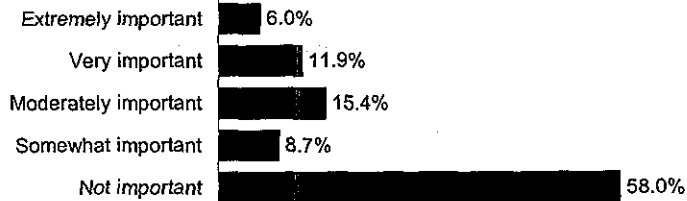
NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

PERCENT OF HIKERS

**FIGURE 8.4: Mail Survey, Q-29 & Q-30
BRING YOUR FAMILY CLOSER TOGETHER**

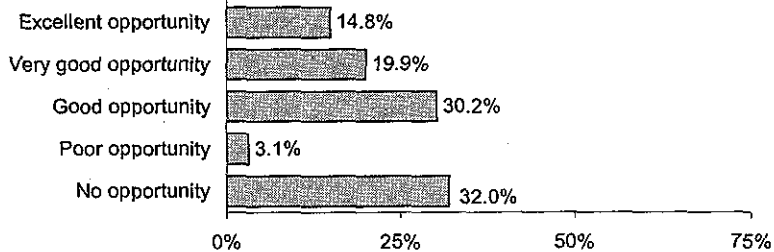
How important to trip? (n = 402)

Average rating = 2.0



How much opportunity was there? (n = 391)

Average rating = 2.8



NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

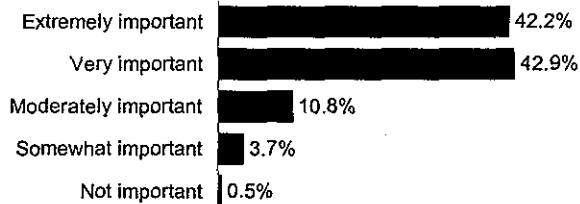
PERCENT OF HIKERS

VIII. Trip Motivation Factors

**FIGURE 8.5: Mail Survey, Q-29 & Q-30
EXPERIENCE NEW AND DIFFERENT THINGS**

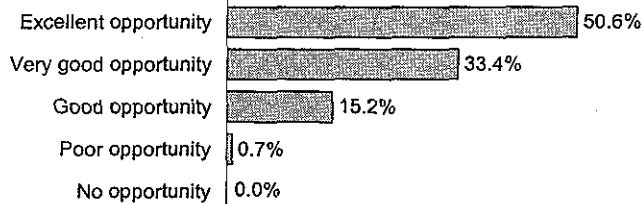
How important to trip? (n = 408)

Average rating = 4.2



How much opportunity was there? (n = 407)

Average rating = 4.3



0% 25% 50% 75%

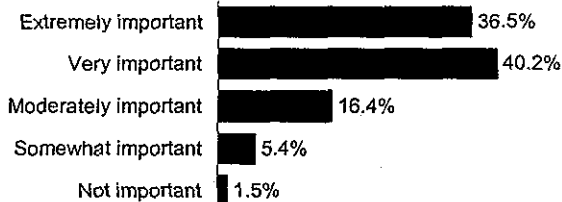
PERCENT OF HIKERS

NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

**FIGURE 8.6: Mail Survey, Q-29 & Q-30
LEARN MORE ABOUT NATURE**

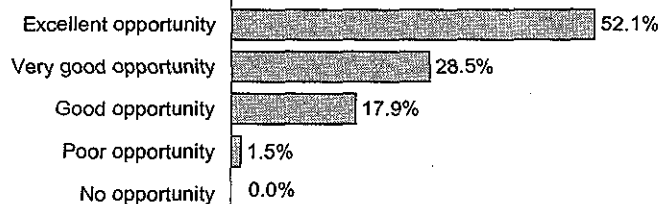
How important to trip? (n = 408)

Average rating = 4.0



How much opportunity was there? (n = 407)

Average rating = 4.3



0% 25% 50% 75%

PERCENT OF HIKERS

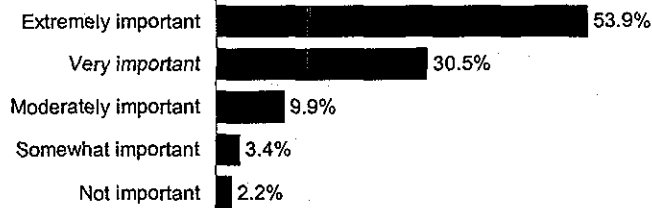
NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

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**FIGURE 8.7: Mail Survey, Q-29 & Q-30
GET AWAY FROM THE USUAL DEMANDS OF LIFE**

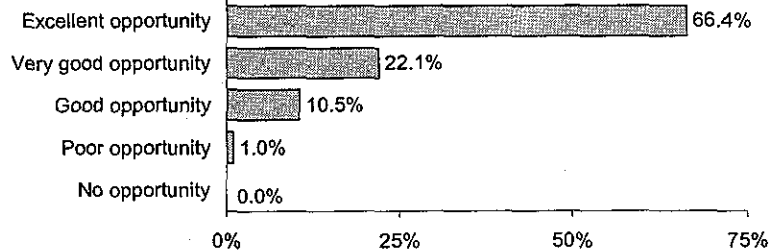
How important to trip? (n = 406)

Average rating = 4.3



How much opportunity was there? (n = 408)

Average rating = 4.5



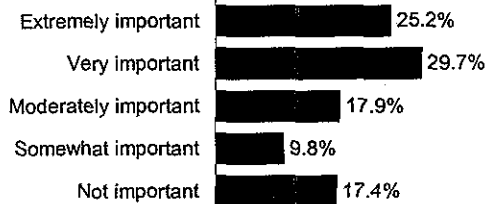
NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

PERCENT OF HIKERS

**FIGURE 8.8: Mail Survey, Q-29 & Q-30
BE WITH OTHERS WHO ENJOY THE SAME THINGS YOU DO**

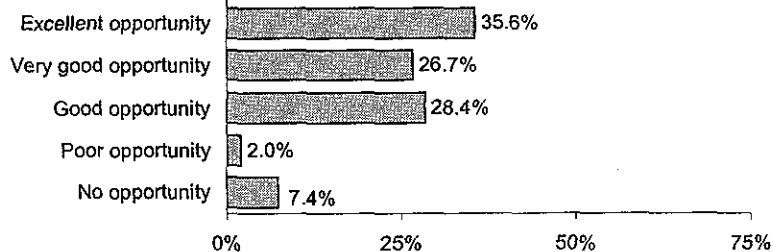
How important to trip? (n = 408)

Average rating = 3.4



How much opportunity was there? (n = 405)

Average rating = 3.8

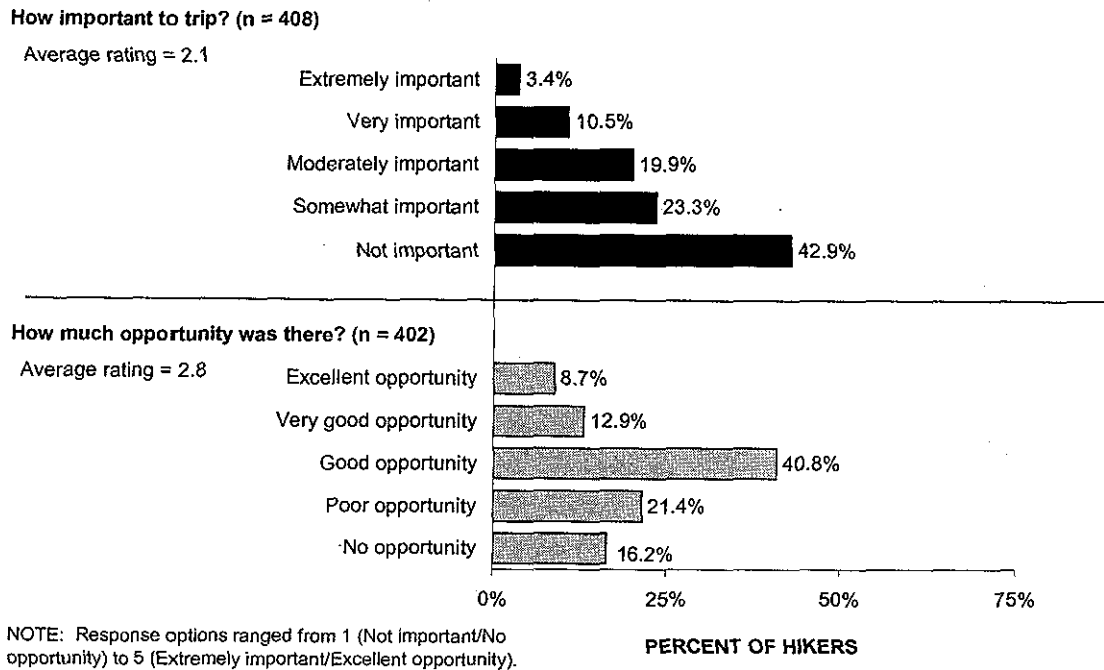


NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

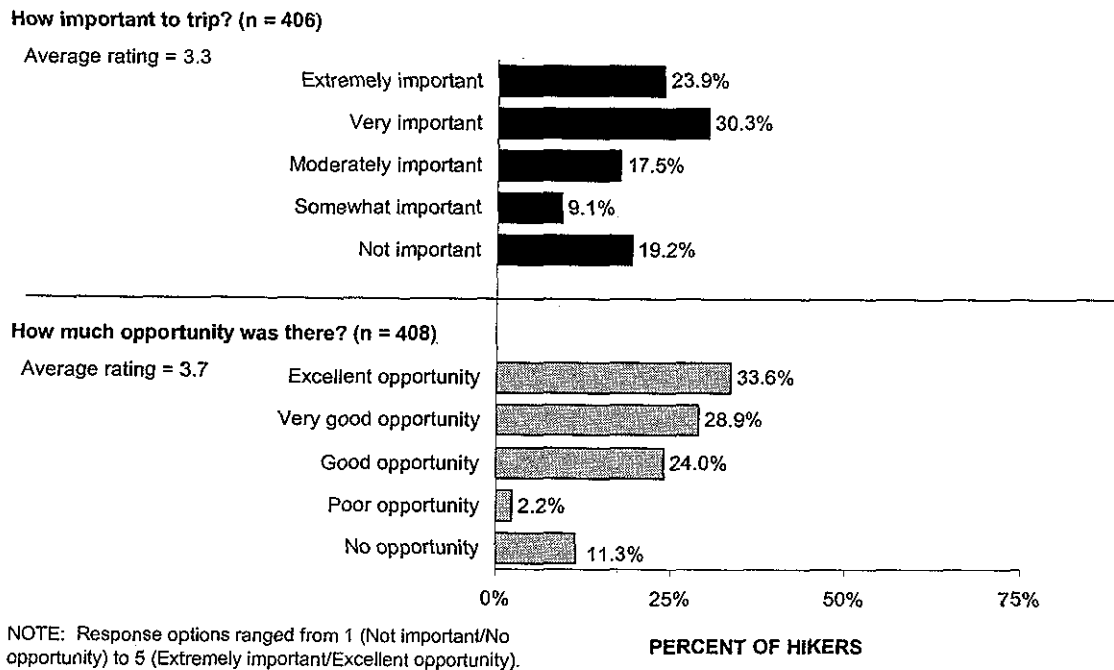
PERCENT OF HIKERS

VIII. Trip Motivation Factors

**FIGURE 8.9: Mail Survey, Q-29 & Q-30
TALK TO NEW AND VARIED PEOPLE**



**FIGURE 8.10: Mail Survey, Q-29 & Q-30
BE WITH FRIENDS**

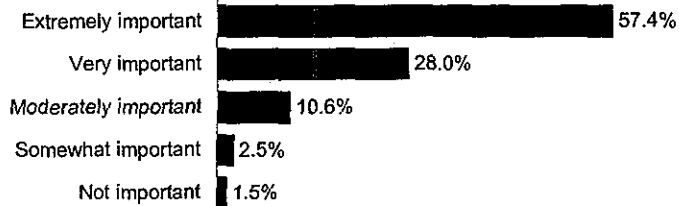


VIII. Trip Motivation Factors

**FIGURE 8.11: Mail Survey, Q-29 & Q-30
EXPERIENCE TRANQUILITY**

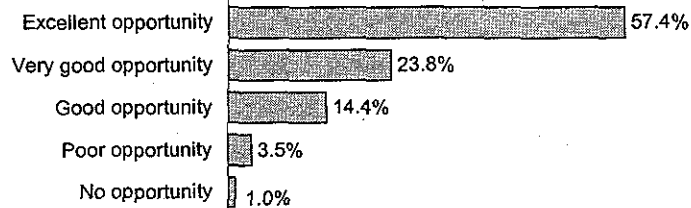
How important to trip? (n = 404)

Average rating = 4.4



How much opportunity was there? (n = 404)

Average rating = 4.3



0% 25% 50% 75%

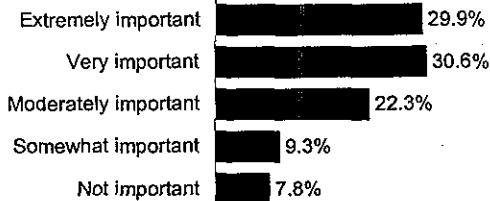
PERCENT OF HIKERS

NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

**FIGURE 8.12: Mail Survey, Q-29 & Q-30
LEARN WHAT YOU ARE CAPABLE OF**

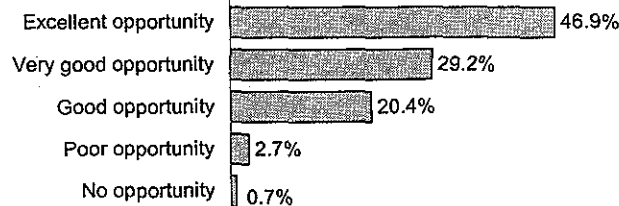
How important to trip? (n = 408)

Average rating = 3.7



How much opportunity was there? (n = 407)

Average rating = 4.2



0% 25% 50% 75%

PERCENT OF HIKERS

NOTE: Response options ranged from 1 (Not important/No opportunity) to 5 (Extremely important/Excellent opportunity).

VIII. Trip Motivation Factors

Determining Underlying Dimensions of Importance of Reasons Motivating Backcountry Trip: Factor Analyses

Question 29 was included as a means of exploring the importance of these 12 potential motivations for taking an overnight backcountry trip. To determine whether the importance ratings of these 12 items reflect fewer dimensions, a principal components factor analysis with varimax rotation was performed. The factor analysis revealed four independent factors with eigenvalues greater than one that explained a total of 63.8 percent of the variance. The first factor explained 20.9 percent of the variance, the second factor explained 16.0 percent, the third factor explained 14.7 percent, and the fourth factor explained 12.1 percent.

Examination of the loadings of each question on each factor provided a basis for interpreting the underlying dimension that unifies the group of variables loading on it (see Table 8.1). Variables loading¹² onto the first factor were a) experience new and different things (.69), b) learn more about nature (.69), c) experience tranquility (.65), d) learn what you are capable of (.64), and e) get away from the usual demands of life (.62). These items all correspond to activities or benefits directly flowing from being in the wilderness. This factor seems to correspond to the concept "Wilderness Derived Experiences".

Variables loading on the second factor were a) do something with your family (.94) and b) bring your family closer together (.93). As both of these variables involve family, this factor seems to correspond to the concept of "Experiences with Family".

Variables loading on the third factor were a) be with friends (.82), b) be with others who enjoy the same things you do (.79), and c) talk to new and varied people (.52)¹³. This factor seems to correspond to the concept of "Experiences with Friends/Similar others".

Variables loading on the fourth factor were a) observe other people in the area (.70), b) develop your skills and abilities (.60), and c) talk to new and varied people (.57)¹⁴. The item "talk to new and varied people" had a loading of over .5 on two factors. It is unclear how to interpret the dimension underlying the remaining two items based on the face validity of the items. Additionally, these items had low mean importance ratings and low variability

¹² Factor loadings less than .5 were not interpreted.

¹³ This variable also loaded on the fourth factor with a slightly greater loading (.57).

VIII. Trip Motivation Factors

suggesting that these motivations were not important for overnight backpackers in Denali. For these reasons, this factor was not interpreted.

Table 8.1 Factor Loadings of Importance Ratings of Reasons for Backcountry Trip

	Factor			
	1	2	3	4
1. Wilderness Experiences				
Q29e Experience new and different things	0.689	0.271	0.130	-0.048
Q29f Learn more about nature	0.686	0.187	-0.025	0.196
Q29k Experience tranquility	0.653	-0.062	0.167	-0.162
Q29l Learn what you are capable of	0.640	-0.103	-0.004	0.449
Q29g Get away from the usual demands of life	0.617	0.033	0.282	-0.033
2. Experiences with Family				
Q29b Do something with your family	0.075	0.944	0.024	0.036
Q29d Bring your family closer together	0.124	0.929	0.063	0.093
3. Experiences with Friends/Similar Others				
Q29j Be with friends	0.097	0.052	0.823	0.028
Q29h Be with others who enjoy the same things you do	0.193	0.059	0.786	0.059
<i>Not interpreted (see text for explanation)</i>				
Q29c Observe other people in the area	-0.140	0.181	0.128	0.698
Q29a Develop your skills and abilities	0.508	-0.010	-0.230	0.601
Q29l Talk to new and varied people	0.056	-0.056	0.523	0.568

For each respondent, scale scores corresponding to the first three factors were computed by averaging the ratings for the items loading on that factor. The relative importance of the three underlying motivation dimensions across all respondents is shown in Table 8.2. Overall, the most important reason motivating Denali backpackers overnight backcountry trips was “Wilderness Derived Experiences” with an average rating of 4.13 (4 = Very Important). The next most important motivation was “Experiences with Friends/Similar Others” (M = 3.33, 3 = Moderately Important). “Experiences with Family” (M = 2.06, 2 = Somewhat Important) was the least important of the three motivations for this group as a whole. Examination of the standard deviations for the three scales indicate that there is less variability in the importance of wilderness experiences in motivating this overnight backcountry trip than experiences with either friends/similar others or family. These findings are consistent with the idea that all respondents were at DENA to take a wilderness trip, however, not all respondents would be sharing that trip with the same types of people (e.g., friends, family), if anyone at all. It is possible that there are distinct groups of

¹⁴ This variable also loaded on the third factor with a slight small loading (.52).

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people who have similar motivations for their wilderness trip. We explore this possibility in the next section using cluster analysis.

Table 8.2. Summary Statistics of Importance of Motivations Scale Scores

Scale	Mean	SD	N
Wilderness Derived Experiences	4.13	.66	401
Experiences with Family	2.06	1.31	402
Experiences with Friends/Similar Others	3.33	1.24	405

Grouping Respondents Based on Importance of Motivations: Cluster Analyses

For planning purposes, it may be useful to understand how groups of people who have similar motivations for their trip differ from each other. For example, respondents whose primary reason for their trip was to take a wilderness trip with family may be more likely to be older. To determine if respondents could be meaningfully grouped based on their importance of different motivations, a cluster analysis was done.

Cluster analysis is an exploratory statistical technique that considers a range of characteristics and searches for groups of similar objects within them. In this case, the objects are respondents and the characteristics under consideration are the twelve REP item scores that measure the importance of different motivations for people's trips.

Even for an exploratory statistical technique, cluster analysis is very subjective. In particular, the analyst must determine the number of clusters in which objects will be grouped. A variety of techniques come into play when selecting the number of clusters, but there are no strict conventions defining the "best" solution.

To examine the data in question (the REP item scores), cluster analyses specifying three through nine clusters were conducted. We compared the mean REP item scores for each cluster in the three to nine cluster solutions. Based on these comparisons, we determined that the six-cluster solution consisted of interpretable clusters and that several of these clusters were also found in solutions with other numbers of clusters. Accordingly, the six-cluster solution is discussed in detail below.

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The six clusters identified in the analysis are shown in Table 8.3. These clusters can be thought of as groups of people who had similar trip motivations for their overnight backcountry trip in Denali. The mean scores for each REP item are also presented in Table 8.3. They range from 1.00 to 4.70 out of a possible range of 1 for "Not important" and 5 "Extremely important". It should be noted that there is considerable variability within each segment. Although cluster 2's average score for importance of being with family is quite low, not every respondent in cluster 2 can be assumed to have given the same low rating. Thus, in the following discussion of the clusters, readers should not assume that descriptions of the clusters *on average* apply to every respondent classed in that segment or cluster.

As can be seen in Table 8.3, respondents clustered into six segments. Review of the mean REP item scores for the six segments reveal that the different segments have different mean item scores. These findings suggest that overnight backpackers in DENA have different motivations and that changes that affect the opportunities to satisfy a particular motivation may have dramatic effects on only some visitors.

Table 8.4 summarizes how the different segments differ on selected individual difference variables. First, it should be noted that the segments had more in common than they differed. As can be seen in Table 8.4, the six segments did not differ on 12 of the 16 individual difference variables, and for those variables in which group differences were found, it was often the case that the segments spanned a range and only segments on the low or high end differed from each other.

Below we described by segment the findings contained in Tables 8.3 and 8.4.

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Table 8.3. Cluster Analysis of REP Items: Mean Item Scores and Number of Cases Per Segment

Importance of ...	Segment					
	1	2	3	4	5	6
	<u>Mean Scale Score¹</u>					
Experience tranquility	4.59 ^{ab}	4.52 ^{ab}	4.24 ^b	4.68 ^a	4.57 ^{ab}	2.76 ^c
Get away from the usual demands of life	4.63 ^{ab}	4.26 ^c	4.26 ^{bc}	4.70 ^a	4.36 ^{abc}	2.86 ^d
Experience new and different things	4.55 ^a	3.80 ^{bc}	4.41 ^{ab}	4.66 ^a	4.12 ^b	3.43 ^c
Learn more about nature	4.50 ^a	3.31 ^c	4.06 ^b	4.54 ^a	4.21 ^{ab}	3.41 ^c
Learn what you are capable of	4.28 ^a	2.98 ^b	3.07 ^b	4.48 ^a	4.03 ^a	2.27 ^c
Develop your skills and abilities	3.22 ^a	1.94 ^b	2.43 ^b	3.28 ^a	3.19 ^a	1.84 ^b
Do something with your family	3.81 ^a	1.29 ^b	3.89 ^a	1.22 ^b	1.10 ^b	1.41 ^b
Bring your family closer together	3.77 ^a	1.13 ^b	3.30 ^c	1.30 ^b	1.10 ^b	1.22 ^b
Be with friends	4.09 ^a	4.03 ^a	2.52 ^b	4.13 ^a	1.66 ^c	2.19 ^{bc}
Be with others who enjoy the same things you do	4.05 ^a	3.57 ^b	2.87 ^c	4.51 ^a	1.59 ^d	2.43 ^c
Talk with new and varied people	2.72 ^a	1.82 ^b	1.33 ^b	2.86 ^a	1.47 ^b	1.78 ^b
Observe other people in the area	1.24 ^a	1.02 ^b	1.02 ^b	1.05 ^b	1.00 ^b	1.03 ^b
Number of Respondents	78	87	54	79	58	37
Percent of cases	19.8%	22.2%	13.7%	20.1%	14.8%	9.4%

Note: All p-values for the omnibus test of significance for each item were less than .001.

¹For each variable, groups with same superscript means did not differ based on results of a post hoc Tukey test (e.g., Segment 2's mean importance rating for Experience tranquility of 4.24 differs significantly from the mean importance rating of Experience Tranquility for Segment 4 and Segment 6, although the mean importance rating for Experience Tranquility for Segments 1 and 2 do not differ from each other or from the mean rating for Segment 3 or Segment 4).

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Table 8.4. Comparing Segments on Selected Individual Difference Variables.

	Segment					
	1	2	3	4	5	6
	<u>Mean Score¹</u>					
Age (p<.001, n=391)	28.9 ^{bc}	28.5 ^{bc}	34.0 ^a	26.5 ^c	31.1 ^{ab}	29.9 ^{abc}
Number of nights spent in backcountry (p=.027, n=387)	2.6 ^b	3.5 ^{ab}	2.6 ^b	3.1 ^{ab}	4.5 ^a	3.3 ^{ab}
Level of Education (p=.037, n=392)	16.7 ^{ab}	16.1 ^a	17.6 ^b	16.3 ^{ab}	16.9 ^{ab}	16.6 ^{ab}
	<u>Percent of Respondents²</u>					
Employment (p=.003, n=390)						
Employed/Military	68.0	64.4	78.8	49.4	64.9	44.4
Unemployed	2.7	6.9	5.8	13.9	17.5	19.4
Student/Homemaker/Retired	29.3	28.7	15.4	36.7	17.5	36.1
Residence (p < .001, n = 391)						
Alaska residents	19.5	17.2	13.0	17.7	14.0	13.5
Other U.S. residents	64.9	60.9	75.9	65.8	64.9	29.7
Foreign residents	15.6	21.8	11.1	16.5	21.1	56.8
<u>Segments did not differ significantly on the following variables:</u>						
Male respondents (p = .121, n =391)						
Race (p = .130, n = 388)						
Party size (p=.778, n=274)						
Trips to Denali (p=.276, n=381)						
Number of Denali backcountry permits issued in lifetime (p=.363, n=380)						
Number of hiking parties prefer to see in a day (p = .303, n = 391)						
Number of hiking parties prefer camped nearby (p = .055, n = 391)						
When first decided to take trip (p=.213, n=387)						
Number of nights spent in park (p=.282, n=385)						
Number of backcountry day hikes (p=.149, n=389)						
Party behaved in a way to avoid others (p=.217, n=383)						

Note: The p-values for significant omnibus tests are in parentheses.

¹For each variable, groups with same superscript means did not differ based on results of a post hoc Tukey test (e.g., Segment 2's mean number of nights spent in backcountry of 3.31 does not differ significantly from the mean number of nights spent in the backcountry by Segment 1 or Segment 3, although the mean number of nights spent in the backcountry by Segment 1 differs from Segment 3).

²A chi-square test was done for each variable to see if the percent of respondents reporting each response differed by segment.

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Market Segment 1. Segment 1 comprises 19.8 percent (78 out of 393) of the mail survey respondents. The most important motivations for Segment 1 were getting away from the usual demands of life, experiencing tranquility, experiencing new and different things, learning more about nature, and learning what you are capable of (M's between 4.28 and 4.63). Motivations associated with friends and similar others were rated as the most important social motivations (M = 4.09 and M = 4.05, 4 = Very important) followed closely by motivations associated with family (M = 3.81 and M = 3.77). Although motivations associated with family were second in importance of the social motivations, this segment rated the motivations associated with family as important or more important than any of the other segments (Segment 3 rated the motivation of doing something with your family slightly more important than Segment 1). Segment 1 had the most Alaska residents of any segment, and Segment 1 respondents spent the fewest nights in the backcountry.

Market Segment 2. Segment 2 comprises 22.2 percent (87 out of 393) mail survey respondents, the most of any cluster. The most important motivation for Segment 2 was to experience tranquility (M = 4.52, 5 = Extremely Important) followed by getting away from the usual demands of life (M = 4.26, 4 = Very Important) and being with friends (M = 4.03, 4 = Very Important). Motivations associated with family and developing skills and abilities were all rated as low in importance (all M's < 1.95, 2 = Somewhat Important). Respondents in this segment differ from those in other segments in that they have the fewest years of schooling (see Table 8.4).

Market Segment 3. Segment 3 comprises 13.7 percent (54 out of 393) of mail survey respondents. The most important motivation for Segment 3 was experiencing new and different things (M = 4.41, 4 = Very Important) followed by getting away from the usual demands of life, experiencing tranquility, and learning more about nature (M = 4.26, M = 4.24, and M = 4.09, respectively; 4 = Very Important). Segment 3 had the highest importance rating of any segment for the motivation of doing something with your family (M = 3.89, 4 = Very important), and motivations associated with family were more important than other social motivations (i.e., friends, other or new people) for this segment.

Segment 3 respondents differed from the other segments in that they were the oldest group, had the most schooling, and were the most likely to be employed or in the military.

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Additionally, they had the fewest Alaska residents and spent the fewest nights in the backcountry of any segment.

Market Segment 4. Segment 4 comprises 20.1 percent (79 out of 393) of mail survey respondents. The seven motivations that were most important to Segment 4 were the same as those for Segment 1. Segment 4 however rated the motivation of being with others who enjoy the same things as you do as more important than Segment 1 ($M = 4.51$ vs. $M = 4.05$, respectively). Additionally, motivations associated with family were not at all important to Segment 4 ($M = 1.22$ and $M = 1.30$) while they were moderately to very important for Segment 1 ($M = 3.81$ and $M = 3.77$). Segment 4 respondents differed from the other segments in that they were the youngest cluster and had the largest number of students¹⁵.

Market Segment 5. Segment 5 comprises 14.8 percent (58 out of 393) of mail survey respondents. Segment 5 is distinguished from the other segments in that it has the lowest importance ratings of any group for all the social motivations (i.e., family, friends, others). Segment 5 does rate the motivations experiencing tranquility, getting away from the usual demands, learning more about nature, experiencing new and different things, and learning what you are capable of as very to extremely important (M 's range from 4.03 to 4.57, 4 = Very important). Segment 5 respondents differed from other respondents in that they spent the most nights in the backcountry.

Market Segment 6. Segment 6 comprises 9.4 percent (37 out of 393) of mail survey respondents, and is the smallest cluster. The primary distinguishing characteristic of Segment 6 is that no motivation was rated higher than 3.43 (3 = Moderately important, 4 = Very important). The two most important motivations were experiencing new and different things and learning more about nature ($M = 3.43$ and $M = 3.41$, respectively). Motivations associated with friends and similar others were more important than other social motivations (family or others), although they were only rated as somewhat important ($M = 2.19$ and $M = 2.43$, respectively; 2 = Somewhat important). It may be that Segment 6 respondents are

¹⁵ Table 8.4 indicates that Segment 4 had the largest number of students, homemakers, and retired individuals combined. Further review indicated that these differences were being driven by differences in the percentage of students across segments.

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motivated by experience outcomes not represented in the selection of REP items included in the DBS.

Segment 6 had the greatest percentage of foreign residents and the smallest percentage of non-Alaskan residents. Additionally, it had a high number of students and a low number of employed or military people.

Summary. These results suggest that backpackers who take overnight backcountry trips in Denali differ in their motivations for the trip. Although Segments 1, 3, 4 and 5 varied in the importance of the motivations associated with wilderness derived experiences (tranquility, get away from the usual demands, experience new and different things, learn more about nature, learn what you are capable of), these motivations were at least very important for all groups. These groups differed more in their motivations for sharing this experience with different social groups (e.g., family, friends, family and friends, or no one). In contrast, Segments 2 and 6 revealed different patterns of importance for the wilderness derived experiences. In each segment, a different set of two wilderness derived experiences were relatively more important motivations for their trip than the remaining wilderness derived experiences. Specifically, tranquility and getting away from the usual demands were important motivations for Segment 2 while experiencing new and different things and learning more about nature were important motivations for Segment 6. Thus, some groups of backpackers are motivated by or are seeking a larger number of experiences from their overnight backcountry trip in Denali than other groups.

Comparing the six segments on a variety of individual difference variables revealed that although the groups can be characterized as being made up of different types of people, the differences were small, and there was considerable overlap in the groups. These groups were more similar than different.

Comparing Market Segments on Trip Satisfaction

It is possible that segments that differed in their trip motivations may have differed in their trip satisfaction. Specifically, we examined whether the segments differed on overall trip satisfaction and feelings of crowding. The segments differed significantly on overall trip satisfaction, $F(5, 383) = 2.42, p = .035$. Post hoc Tukey tests revealed that respondents in Segment 5 ($M = 1.36$; Scale ranged from 1 to 5) had significantly greater overall trip

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satisfaction than respondents in Segment 6 ($M = 1.76$). Segment 5 had the highest overall trip satisfaction of any segment. Although Segment 6 respondents had the lowest overall trip satisfaction of any segment, they still rated their trips as better than "Good" ($M = 1.75$, 1 = Very Good, 2 = Good). The six segments did not differ in their feelings of crowding, $F(5, 380) = 1.012$, $p = .407$, with an average for all respondents indicating people felt mostly "Not at all crowded" ($M = 1.27$, 1 = Not at all crowded, 2 = Slightly crowded).

IX. Daily Diary Information For Each Hiking Zone

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

The information presented in the tables below was gathered using the Daily Diary of the Denali Backpacker Survey (see Appendices B and C). A total of 1309 days of diary information was collected. Figures summarizing this information for all respondents are presented and discussed in Chapters IV and V of this report. These tables present the same information, but summarized for each of the numbered hiking zones in DENA so that it represents the reported experiences of all backpackers who hiked in each zone.

A wide variety of insights can be gained by examining the tables. Examples of several questions and discussions concerning their answers in the tables include:

- **Q:** In which zones did backpackers most commonly hike?
A: The first data column in the table gives the percentage of reported days (i.e., cases) that backpackers in the sample spent in each zone. The second column gives the ranking from most to least commonly visited. Zone 8 was most commonly visited (at 8.3 percent of all reported days).
- **Q:** In which zone did backpackers encounter the most other hikers?
A: The data column titled "Number of Hiking Parties Seen" gives the mean (average) number for each zone. Zone 24 had the highest reported number of other hiking parties seen at 3.5 per day. It is important to note that this estimate is based on only 12 reported days (zone 24 was only the 31st most visited zone). Estimates based on such a small sample of hiking days are likely to vary widely. One might note that the zones where backpackers encountered the most other hikers (zones 24, 15, 26, 36) were not the same zones in which backpackers most commonly hiked (zones 8, 31, 5, 10). This suggests that day-hikers account for many of the hiking parties seen by backpackers.
- **Q:** In which zone did backpackers report the most minutes of audible aircraft?

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A: The data column titled "Total Time Heard Aircraft (minutes)" gives the mean minutes for each zone. Zone 17 had the highest reported minutes of aircraft sound at 22.5 minutes per day. It is particularly important to note that this estimate is based on only 4 reported days. Such small sample sizes are particularly common in the information about aircraft because only half the backpackers completed the version of the diary that asked questions about aircraft. One strategy to alleviate problems with small samples would be to compare groups of zones. For example, one might compare the reported minutes of aircraft sound in zones under common flight corridors to the reported minutes in all other zones.

These are only a few examples of questions that might be answered using these tables. The three example questions were answered directly from the information in the table, but other questions might require additional analysis. For example, one might wish to know if the zones in which backpackers most commonly hike are also the zones in which aircraft are most commonly heard or seen. This question could be answered by calculating the correlation between the appropriate columns of data. Such analyses could be readily conducted upon request.

Zone	Hiked in Zone		Camped in Zone		Number of Hiking Parties Seen				Number of Hiking Parties Interacted With				Feel about Number of Hikers Seen			
	% of all		% of all		M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank
	cases	Rank	cases	Rank												
1	2.0%	25	1.2%	25	1.48	3.42	23	7	0.61	1.16	23	9	2.91	0.51	23	20
2	1.0%	34	0.8%	31	0.44	1.01	9	31	0.33	1.00	9	20	3.00	0.00	9	4
3	1.3%	31	0.8%	31	1.00	1.71	16	13	0.56	1.09	16	10	3.13	0.50	16	1
4	4.3%	13	2.7%	11	0.26	0.44	46	34	0.23	0.79	47	29	2.96	0.70	46	16
5	6.2%	3	4.6%	3	0.54	1.27	69	27	0.29	0.79	69	25	2.91	0.60	66	21
6	5.5%	6	3.5%	6	0.94	1.29	63	15	0.38	0.68	63	18	2.68	0.62	60	33
7	3.2%	17	2.0%	18	0.71	0.95	24	22	0.33	0.70	24	20	2.75	0.68	24	29
8	8.3%	1	5.2%	1	0.60	0.85	84	26	0.33	0.81	83	22	2.93	0.59	81	18
9	5.9%	5	3.5%	6	0.95	1.04	59	14	0.54	0.72	54	11	2.81	0.56	53	27
10	6.0%	4	4.0%	4	0.76	0.88	62	21	0.44	0.67	62	16	2.89	0.55	62	22
11	1.3%	31	0.8%	31	0.70	1.06	10	23	0.10	0.32	10	34	2.40	0.97	10	39
12	5.0%	10	2.8%	9	0.80	1.27	44	18	0.43	0.79	44	17	2.98	0.26	45	13
13	5.5%	6	2.4%	12	1.23	1.34	47	9	0.51	0.72	47	13	2.87	0.58	47	25
14	2.2%	22	1.3%	23	1.14	2.03	21	12	0.86	1.85	21	7	2.95	0.67	21	17
15	2.9%	18	1.7%	21	2.93	5.68	27	2	1.74	3.84	27	3	2.68	0.77	28	34
16	1.6%	29	0.9%	30	0.11	0.32	18	36	0.11	0.32	18	33	3.00	0.00	18	4
17	0.4%	39	0.3%	38	0.00	0.00	4	37	0.00	0.00	4	35	3.00	0.00	4	4
18	2.2%	22	1.5%	22	1.44	1.31	16	8	0.81	0.83	16	8	2.38	0.89	16	40
19	0.6%	35	0.6%	35	0.33	0.82	6	33	0.00	0.00	6	35	2.80	0.45	5	28
20	0.1%	41	0.0%	41	--	--	--	--	--	--	--	--	--	--	--	--
23	0.6%	35	0.4%	37	0.00	0.00	5	37	0.00	0.00	5	35	3.00	0.00	5	4
24	1.3%	31	0.9%	29	3.50	3.71	12	1	3.00	3.59	12	1	2.85	0.55	13	26
25	1.7%	28	1.0%	26	1.89	4.61	18	6	0.89	1.49	19	6	3.12	0.49	17	2
26	2.1%	24	1.3%	24	2.05	2.42	22	3	1.86	3.54	22	2	2.67	0.73	21	35
27	2.9%	18	1.9%	20	0.35	0.59	37	32	0.14	0.42	37	32	2.92	0.44	36	19
28	2.7%	21	2.0%	18	0.50	0.83	24	28	0.25	0.68	24	26	2.96	0.20	24	15
29	4.6%	12	2.4%	12	1.15	4.22	47	11	0.30	0.51	47	24	2.69	0.67	45	32
30	2.9%	18	2.1%	16	0.78	0.75	32	19	0.25	0.44	32	26	2.88	0.66	32	24
31	7.8%	2	5.0%	2	0.78	0.94	77	20	0.24	0.59	76	28	3.01	0.53	76	3
32	4.0%	15	2.4%	12	0.90	1.36	41	16	0.44	0.67	41	15	2.73	0.63	41	30
33	4.7%	11	2.4%	15	0.64	0.93	45	25	0.31	0.79	45	23	2.88	0.54	43	23
34	5.1%	9	3.2%	8	0.47	0.90	55	30	0.35	0.95	55	19	2.98	0.56	55	12
35	3.4%	16	2.1%	16	0.24	0.50	33	35	0.15	0.36	33	31	2.97	0.64	33	14
36	1.9%	26	0.7%	34	2.00	3.83	13	4	1.18	2.14	11	5	2.69	0.63	13	31
37	0.5%	38	0.2%	39	0.50	0.58	4	28	0.00	0.00	4	35	3.00	0.00	4	4
38	0.2%	40	0.1%	40	0.00	*	1	37	0.00	*	1	35	3.00	*	1	4
39	1.4%	30	1.0%	26	0.67	0.71	9	24	0.22	0.44	9	30	3.00	0.00	7	4
40	0.6%	35	0.5%	36	0.00	0.00	4	37	0.00	0.00	4	35	3.00	0.00	3	4
41	1.8%	27	1.0%	26	1.19	1.94	16	10	0.50	1.10	16	14	2.47	0.83	15	38
42	5.5%	6	3.6%	5	1.90	3.13	59	5	1.47	2.82	59	4	2.65	0.62	55	36
43	4.2%	14	2.8%	9	0.88	1.37	43	17	0.52	0.93	44	12	2.64	0.73	42	37
Mean	3.1%		1.9%		0.92				0.52				2.85			
Median	2.7%		1.7%		0.77				0.33				2.91			

Zone	Number of Park Rangers Seen				Number of Park Rangers Interacted with				Number of Parties Camped in Sight or Sound				Feel about Number of Parties Camped Nearby			
	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank
1	0.20	0.56	15	15	0.07	0.26	15	22	0.42	1.43	19	2	2.84	0.50	19	32
2	0.13	0.35	8	22	0.13	0.35	8	15	0.00	0.00	7	29	3.00	0.00	6	8
3	0.60	1.58	10	6	0.60	1.58	10	3	0.00	0.00	13	29	3.23	0.44	13	1
4	0.23	0.87	22	14	0.05	0.21	22	27	0.11	0.39	38	15	2.95	0.61	38	26
5	0.07	0.33	54	26	0.06	0.30	54	24	0.05	0.40	55	26	2.96	0.43	54	24
6	0.16	0.69	43	20	0.05	0.31	41	26	0.04	0.20	51	28	2.80	0.58	46	34
7	0.00	0.00	7	30	0.00	0.00	7	29	0.06	0.24	18	25	2.82	0.73	17	33
8	0.28	0.70	29	12	0.21	0.56	29	10	0.05	0.27	66	27	3.03	0.18	64	6
9	0.06	0.25	31	28	0.03	0.18	31	28	0.28	0.86	39	6	2.48	1.09	44	40
10	0.17	0.51	36	19	0.08	0.28	36	21	0.13	0.40	47	13	2.77	0.70	47	35
11	0.00	0.00	4	30	0.00	0.00	4	29	0.00	0.00	9	29	3.00	0.00	9	8
12	0.43	0.98	21	9	0.29	0.72	21	7	0.07	0.26	28	20	3.00	0.00	28	8
13	0.19	0.62	27	18	0.11	0.32	27	18	0.14	0.35	37	12	3.00	0.42	35	8
14	0.29	0.49	7	11	0.29	0.49	7	7	0.00	0.00	19	29	3.17	0.38	18	2
15	0.85	1.34	13	4	0.23	0.60	13	9	1.17	3.83	24	1	2.92	0.28	24	27
16	0.00	0.00	13	30	0.00	0.00	13	29	0.00	0.00	14	29	3.00	0.00	14	8
17	--	--	--	--	--	--	--	--	0.00	0.00	3	29	3.00	0.00	3	8
18	0.00	0.00	11	30	0.00	0.00	11	29	0.07	0.27	14	20	2.69	1.03	13	38
19	0.00	0.00	4	30	0.00	0.00	4	29	0.00	0.00	6	29	3.00	0.00	6	8
20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	0.00	0.00	5	30	0.00	0.00	5	29	0.00	0.00	5	29	3.00	0.00	5	8
24	1.67	1.37	6	1	1.00	0.89	6	1	0.25	0.71	8	7	3.00	0.71	5	8
25	0.67	1.15	12	5	0.50	0.67	12	4	0.21	0.80	14	8	3.07	0.47	14	4
26	1.44	1.59	9	2	0.78	0.83	9	2	0.07	0.26	15	23	3.00	0.00	13	8
27	0.07	0.26	15	27	0.07	0.26	15	22	0.32	1.19	31	4	2.90	0.40	30	28
28	0.19	0.54	16	17	0.19	0.54	16	12	0.10	0.30	21	17	2.95	0.22	21	25
29	0.20	0.55	30	15	0.11	0.31	28	20	0.09	0.38	34	18	2.74	0.77	31	36
30	0.06	0.24	18	29	0.06	0.24	18	24	0.07	0.27	27	19	3.11	0.32	27	3
31	0.13	0.40	47	21	0.13	0.40	46	14	0.10	0.30	61	16	2.97	0.41	61	23
32	0.50	1.28	20	8	0.35	0.81	20	5	0.06	0.24	33	24	2.85	0.51	33	31
33	0.00	0.00	27	30	0.00	0.00	27	29	0.21	0.73	34	9	3.03	0.18	31	5
34	0.10	0.41	29	25	0.14	0.58	29	13	0.07	0.26	43	22	3.02	0.47	41	7
35	0.11	0.47	18	23	0.00	0.00	18	29	0.17	0.48	24	11	2.88	0.68	24	29
36	1.40	2.61	5	3	0.20	0.45	5	11	0.18	0.40	11	10	2.64	0.81	11	39
37	0.00	0.00	3	30	0.00	0.00	3	29	0.00	0.00	3	29	3.00	0.00	3	8
38	--	--	--	--	--	--	--	--	0.00	*	1	29	3.00	*	1	8
39	0.25	0.71	8	13	0.13	0.35	8	15	0.13	0.35	8	14	3.00	0.00	6	8
40	0.00	*	1	30	0.00	*	1	29	0.00	0.00	4	29	3.00	0.00	3	8
41	0.11	0.33	9	23	0.11	0.33	9	18	0.00	0.00	10	29	3.00	0.00	9	8
42	0.36	1.15	25	10	0.12	0.44	25	17	0.39	1.50	46	3	2.86	0.47	43	30
43	0.55	1.15	20	7	0.30	0.73	20	6	0.31	0.59	32	5	2.70	0.84	30	37
Mean	0.30				0.17				0.13				2.93			
Median	0.16				0.11				0.07				3.00			

Zone	Number of Times Heard Aircraft				Total Time Heard Aircraft (minutes)				Loudness of Loudest Aircraft that Day			
	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank
1	3.50	3.74	8	32	4.13	4.97	8	35	2.57	1.13	7	6
2	5.00	*	1	18	10.00	*	1	15	2.00	*	1	28
3	5.17	3.71	6	17	8.83	8.23	6	21	2.50	0.55	6	7
4	8.00	5.32	25	6	13.26	10.66	25	5	2.48	0.65	25	9
5	9.27	8.00	15	3	15.46	20.66	13	3	2.29	0.61	14	14
6	8.70	6.45	20	4	6.25	7.57	20	28	2.40	0.75	20	11
7	5.44	5.44	18	16	8.08	13.78	18	23	2.69	0.95	16	3
8	7.27	9.42	55	7	9.47	12.83	51	19	2.31	0.73	45	13
9	6.14	5.45	28	12	10.72	12.18	25	12	2.19	0.49	26	19
10	6.35	8.33	26	9	10.13	16.26	26	14	2.42	0.69	19	10
11	15.00	12.18	6	1	13.80	9.26	5	4	2.50	0.84	6	7
12	3.14	3.06	22	35	6.25	9.62	22	28	2.00	0.61	17	28
13	5.75	6.12	20	14	12.40	21.69	20	8	2.27	0.59	15	16
14	5.93	4.46	14	13	19.07	24.52	14	2	2.18	0.40	11	21
15	4.07	4.57	15	25	8.25	11.42	15	22	2.08	0.29	12	27
16	3.80	3.03	5	29	7.60	4.93	5	25	2.00	0.00	5	28
17	4.75	5.50	4	20	22.50	28.72	4	1	3.50	0.71	2	1
18	8.20	10.85	5	5	11.10	13.82	5	10	2.60	0.89	5	5
19	10.00	7.07	2	2	12.00	*	1	9	2.00	0.00	2	28
20	--	--	--	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--	--	--	--
24	2.83	2.14	6	37	1.17	0.41	6	38	1.86	0.38	7	39
25	3.43	4.47	7	33	6.71	10.84	7	27	2.20	0.45	5	18
26	2.75	4.35	12	38	3.54	5.51	12	36	2.00	0.00	9	28
27	3.64	4.23	22	31	9.00	19.18	22	20	2.19	0.40	16	20
28	4.63	3.85	8	21	9.75	8.19	8	17	2.00	0.00	7	28
29	3.69	3.52	16	30	5.63	7.17	16	32	2.00	0.00	11	28
30	3.23	4.36	13	34	3.21	4.42	14	37	2.13	0.35	8	24
31	5.57	6.31	30	15	10.84	16.78	28	11	2.13	0.34	23	23
32	4.29	4.56	21	24	5.82	6.78	17	31	2.18	0.39	17	22
33	4.39	3.97	18	23	13.06	13.18	18	6	2.31	0.60	16	12
34	4.04	3.31	25	26	7.41	8.43	23	26	2.10	0.30	21	25
35	4.60	6.75	15	22	4.50	5.27	14	34	2.09	0.54	11	26
36	7.00	7.60	8	8	9.75	13.40	8	17	2.00	0.63	6	28
37	4.00	*	1	27	6.00	*	1	30	2.00	*	1	28
38	4.00	*	1	27	10.00	*	1	15	3.00	*	1	2
39	1.00	*	1	39	1.00	*	1	39	2.00	*	1	28
40	6.33	5.51	3	10	12.67	4.04	3	7	2.67	0.58	3	4
41	6.29	5.96	7	11	10.14	10.93	7	13	2.29	0.49	7	14
42	3.09	3.64	34	36	4.59	5.89	33	33	2.24	0.51	29	17
43	4.88	5.16	24	19	7.79	10.75	24	24	2.00	0.33	19	28
Mean	5.36				9.02				2.27			
Median	4.75				9.00				2.19			

Zone	Proportion of People Who Saw Prop Planes				Average Number of Prop Planes Seen Each Day				Proportion of People Who Saw Helicopters				Average Number of Helicopters Seen Each Day			
	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank
1	0.38	0.52	8	29	1.75	3.06	8	24	0.13	0.35	8	20	0.25	0.71	8	11
2	0.00	*	1	40	0.00	*	1	40	0.00	*	1	35	0.00	*	1	34
3	0.67	0.52	6	8	0.67	1.15	3	37	0.50	0.55	6	4	0.00	0.00	3	34
4	0.74	0.45	27	6	4.92	5.18	25	5	0.33	0.48	27	7	0.74	1.32	27	6
5	0.47	0.52	15	18	4.80	7.49	15	6	0.07	0.26	15	28	0.07	0.26	15	29
6	0.60	0.50	20	10	4.95	6.07	20	4	0.40	0.50	20	6	1.30	1.81	20	3
7	0.37	0.50	19	30	0.94	1.47	18	32	0.16	0.37	19	14	0.33	1.19	18	9
8	0.48	0.50	56	17	2.93	4.58	55	13	0.29	0.46	56	8	1.29	2.87	55	4
9	0.41	0.50	29	23	1.93	3.59	28	21	0.21	0.41	29	11	0.18	0.39	28	17
10	0.38	0.50	26	26	3.42	6.84	26	10	0.15	0.37	26	15	0.62	2.04	26	7
11	0.83	0.41	6	5	7.00	6.42	6	1	0.00	0.00	6	35	0.00	0.00	6	34
12	0.35	0.49	23	31	1.52	2.54	23	26	0.04	0.21	23	32	0.04	0.21	23	32
13	0.38	0.50	21	27	1.90	3.35	21	22	0.10	0.30	21	25	0.10	0.30	21	26
14	0.47	0.52	15	18	2.36	3.77	14	15	0.07	0.26	15	28	0.07	0.26	15	29
15	0.47	0.52	15	18	0.80	1.08	15	34	0.00	0.00	15	35	0.00	0.00	15	34
16	0.60	0.55	5	10	2.20	2.28	5	18	0.20	0.45	5	12	0.20	0.45	5	16
17	0.00	0.00	4	40	0.00	0.00	4	40	0.00	0.00	4	35	0.00	0.00	4	34
18	0.60	0.55	5	10	6.40	10.26	5	2	0.20	0.45	5	12	0.40	0.89	5	8
19	0.50	0.71	2	14	6.00	8.49	2	3	0.50	0.71	2	4	1.00	1.41	2	5
20	0.50	0.53	8	14	0.75	1.04	8	35	0.25	0.46	8	9	0.25	0.46	8	11
23	0.43	0.53	7	21	1.86	3.29	7	23	0.14	0.38	7	17	0.14	0.38	7	20
24	0.25	0.45	12	37	0.67	1.23	12	37	0.08	0.29	12	26	0.08	0.29	12	27
25	0.42	0.50	24	22	1.38	2.20	24	28	0.04	0.20	24	33	0.04	0.20	24	33
26	0.25	0.46	8	37	0.75	1.49	8	35	0.13	0.35	8	20	0.13	0.35	8	23
27	0.13	0.34	16	39	0.63	1.75	16	39	0.06	0.25	16	31	0.25	1.00	16	11
28	0.29	0.47	14	36	0.93	2.16	14	33	0.07	0.27	14	27	0.07	0.27	14	28
29	0.40	0.50	30	24	1.93	3.31	29	20	0.03	0.18	30	34	0.07	0.37	30	29
30	0.33	0.48	21	32	2.14	4.49	21	19	0.00	0.00	21	35	0.00	0.00	21	34
31	0.39	0.50	18	25	1.28	2.67	18	30	0.11	0.32	18	24	0.17	0.51	18	18
32	0.31	0.47	26	35	1.35	2.61	26	29	0.15	0.37	26	15	0.15	0.37	26	19
33	0.33	0.49	15	32	2.87	6.38	15	14	0.07	0.26	15	28	0.13	0.52	15	22
34	0.50	0.53	8	14	3.63	4.93	8	9	0.00	0.00	8	35	0.00	0.00	8	34
35	1.00	*	1	1	1.00	*	1	31	1.00	*	1	1	0.00	*	1	34
36	1.00	*	1	1	3.33	3.21	3	11	1.00	*	1	1	2.33	2.08	3	1
37	1.00	*	1	1	2.29	2.21	7	16	0.00	*	1	35	1.43	3.78	7	2
38	1.00	0.00	3	1	1.38	3.39	34	27	0.67	0.58	3	3	0.32	1.39	34	10
39	0.71	0.49	7	7	4.13	5.30	24	8	0.14	0.38	7	17	0.21	0.66	24	15
40	0.32	0.47	34	34	3.33	3.21	3	11	0.12	0.33	34	23	0.12	0.33	34	25
41	0.54	0.51	24	13	2.29	2.21	7	16	0.13	0.34	24	20	0.13	0.34	24	23
42	0.38	0.49	29	28	1.62	3.63	29	25	0.14	0.35	29	19	0.14	0.35	29	21
43	0.63	0.50	19	9	4.53	5.25	19	7	0.21	0.42	19	10	0.21	0.42	19	14
Mean	0.48				2.40				0.19				0.32			
Median	0.43				1.93				0.13				0.14			

Zone	Proportion of People Who Saw Jets				Average Number of Jets Seen Each Day				Proportion of People Who Saw Other Aircraft				Average Number of Other Aircraft Seen Each Day			
	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank	M	SD	N	Rank
1	0.13	0.35	8	30	0.25	0.71	8	28	0.13	0.35	8	4	0.25	0.71	8	9
2	0.00	*	1	37	0.00	*	1	36	0.00	*	1	18	0.00	*	1	17
3	0.33	0.52	6	10	0.00	0.00	4	36	0.00	0.00	6	18	0.00	0.00	6	17
4	0.30	0.47	27	13	0.56	1.19	25	12	0.07	0.27	27	9	0.11	0.42	27	11
5	0.27	0.46	15	16	1.07	1.94	15	2	0.07	0.26	15	11	0.47	1.81	15	4
6	0.35	0.49	20	9	0.75	1.29	20	6	0.20	0.41	20	2	0.40	0.99	20	6
7	0.16	0.37	19	26	0.11	0.32	18	34	0.26	0.45	19	1	0.58	1.07	19	3
8	0.20	0.40	56	23	0.27	0.62	55	27	0.07	0.26	56	10	0.04	0.27	53	16
9	0.10	0.31	29	35	0.24	0.79	29	30	0.00	0.00	29	18	0.00	0.00	29	17
10	0.23	0.43	26	19	0.54	1.21	26	13	0.04	0.20	26	17	0.04	0.20	26	15
11	0.67	0.52	6	3	1.83	1.60	6	1	0.00	0.00	6	18	0.00	0.00	6	17
12	0.13	0.34	23	29	0.30	0.93	23	24	0.04	0.21	23	16	0.09	0.42	23	12
13	0.19	0.40	21	24	0.29	0.64	21	26	0.05	0.22	21	15	0.62	2.84	21	2
14	0.20	0.41	15	22	0.36	0.93	14	22	0.00	0.00	15	18	0.00	0.00	15	17
15	0.07	0.26	15	36	0.07	0.26	15	35	0.00	0.00	15	18	0.00	0.00	15	17
16	0.40	0.55	5	6	0.80	1.10	5	4	0.00	0.00	5	18	0.00	0.00	5	17
17	0.00	0.00	4	37	0.00	0.00	4	36	0.00	0.00	4	18	0.00	0.00	4	17
18	0.80	0.45	5	2	0.80	0.45	5	4	0.00	0.00	5	18	0.00	0.00	5	17
19	0.50	0.71	2	5	0.50	0.71	2	14	0.00	0.00	2	18	0.00	0.00	2	17
20	0.38	0.52	8	7	0.38	0.52	8	19	0.13	0.35	8	4	0.00	0.00	7	17
23	0.14	0.38	7	27	0.43	1.13	7	15	0.14	0.38	7	3	0.43	1.13	7	5
24	0.00	0.00	12	37	0.00	0.00	12	36	0.08	0.29	12	7	0.08	0.29	12	13
25	0.13	0.34	24	30	0.29	0.81	24	25	0.00	0.00	24	18	0.00	0.00	24	17
26	0.38	0.52	8	7	0.63	1.06	8	8	0.00	0.00	8	18	0.00	0.00	8	17
27	0.19	0.40	16	25	0.25	0.58	16	28	0.06	0.25	16	14	0.19	0.75	16	10
28	0.29	0.47	14	14	0.43	0.85	14	15	0.00	0.00	14	18	0.00	0.00	14	17
29	0.33	0.48	30	10	0.61	1.31	28	9	0.07	0.25	30	11	0.27	1.14	30	8
30	0.33	0.48	21	10	0.43	0.68	21	15	0.00	0.00	21	18	0.00	0.00	21	17
31	0.11	0.32	18	34	0.33	1.03	18	23	0.00	0.00	18	18	0.00	0.00	18	17
32	0.12	0.33	26	33	0.15	0.46	26	31	0.08	0.27	26	8	0.31	1.09	26	7
33	0.27	0.46	15	16	0.40	0.74	15	18	0.07	0.26	15	11	0.07	0.26	15	14
34	0.25	0.46	8	18	0.88	2.10	8	3	0.13	0.35	8	4	1.13	3.18	8	1
35	0.00	*	1	37	0.00	*	1	36	0.00	*	1	18	0.00	*	1	17
36	1.00	*	1	1	0.00	*	1	36	0.00	*	1	18	0.00	*	1	17
37	0.00	*	1	37	0.67	0.58	3	7	0.00	*	1	18	0.00	*	1	17
38	0.67	0.58	3	3	0.57	0.98	7	10	0.00	0.00	3	18	0.00	0.00	3	17
39	0.29	0.49	7	14	0.12	0.33	34	33	0.00	0.00	7	18	0.00	0.00	7	17
40	0.12	0.33	34	32	0.38	0.82	24	19	0.00	0.00	34	18	0.00	0.00	34	17
41	0.21	0.41	24	21	0.57	0.98	7	10	0.00	0.00	24	18	0.00	0.00	24	17
42	0.14	0.35	29	28	0.14	0.35	29	32	0.00	0.00	29	18	0.00	0.00	29	17
43	0.21	0.42	19	20	0.37	0.83	19	21	0.00	0.00	19	18	0.00	0.00	19	17
Mean	0.26				0.41				0.04				0.12			
Median	0.21				0.37				0.00				0.00			

X. STATED CHOICE ANALYSIS OF TRADEOFFS AMONG SOCIAL, RESOURCE, AND MANAGEMENT ATTRIBUTES OF THE DENALI WILDERNESS EXPERIENCE

Steven R. Lawson and Robert E. Manning
School of Natural Resources
University of Vermont

Current efforts to revise the wilderness management plan for Denali include decisions concerning whether to maintain, reduce, or increase the number of permits issued for each of the park's wilderness management units. Previous research (Bultena, Albrecht, & Womble, 1981) concluded that Denali visitors supported use limitations, but also suggested that future decisions will have to weigh the importance of protecting park resources and the quality of visitors' experiences against the benefit of granting more visitors access to the Denali wilderness. Backpackers were asked a series of questions regarding such tradeoffs using a question format and method of statistical analysis referred to as stated choice analysis. This chapter reports the findings of this analysis and the implications for management.

Chapter Overview

This chapter begins with a brief description of stated choice analysis and the methods used to apply it in this study. The next section of this chapter reports potential limitations of the stated choice analysis. The last section of the chapter summarizes the results of the stated choice survey and their implications. Included in this section is information about the relative importance Denali backpackers place on opportunities for hiking and camping solitude, the degree of impact to trails and campsites, and the degree of freedom visitors have from management restrictions. The findings reported in this section also include a decision-making model that can be used to estimate the degree of Denali backpackers' support for various Denali wilderness management alternatives.

A Limitation for the Generalizability of the Sample

Participants in the stated choice survey were selected to represent all Denali wilderness backpackers. However, only individuals who did not participate in the multi-

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stage & mail only components were asked to participate in the stated choice survey. Therefore, it is possible that the responses of study participants do not accurately represent the attitudes and preferences of all Denali wilderness backpackers. Several questions from the visitor profile section of the mail survey questionnaire were included in the stated choice questionnaire and can be used to test for differences between the two samples. Analyses showed that the stated choice sample did not differ from the mail survey sample on these visitor profile questions. Although we have no indication that our sample differs from Denali wilderness backpacker in general, strictly speaking, the extent (if at all) to which their tradeoff preferences revealed in the stated choice analysis might differ from Denali wilderness backpackers in general can not be determined from these data. Therefore, throughout this chapter data are reported as representing *backpackers selected to represent overnight Denali wilderness visitors*. Readers should note this limitation.

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Highlights and Implications

- Results of the stated choice analysis provide insight into the relative importance that backpackers place on selected wilderness attributes within the context of tradeoffs associated with Denali wilderness management. Although all study attributes provided utility to backpackers, backpackers were more sensitive to different levels of evidence of human use at campsites followed by solitude-related attributes. In contrast, backpackers were relatively insensitive to the different levels of camping regulations and permit availability examined in this study. Together, these findings suggest that respondents would prefer to trade away some freedoms (due to increased management) in order to improve opportunities for a quality wilderness experience.
- The decision-making model derived from the stated choice analysis provides a tool for predicting the extent to which backpackers might support various management scenarios proposed in the wilderness management plan. Results of a hypothetical referendum analyzed using the decision-making model suggest that respondents would prefer (by a margin of three to one) a wilderness setting that emphasizes solitude through relatively restrictive management actions over a more congested wilderness setting with limited management restrictions. This finding suggests that Denali overnight wilderness visitors are at least somewhat diverse in their attitudes concerning the management of the Denali wilderness. Continuing to manage the Denali wilderness using a zoning approach to provide a spectrum of opportunities for visitors may be an effective method to address this diversity.

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The Stated Choice Survey

In stated choice analysis, respondents are asked to make choices among alternative configurations of a multi-attribute good. Each alternative configuration is defined by varying levels of selected attributes of the good. For example, respondents may be asked to choose between alternative recreation settings that vary in the number of other groups encountered, the quality of the natural environment, and the intensity of management regulations imposed on visitors. Respondents' choices among the alternatives are evaluated to estimate the relative importance of the condition of each attribute to the respondents and to predict public support for different configurations of the attributes (i.e., management alternatives) not directly presented to respondents.

In this project, respondents were asked to choose between different pairs of hypothetical Denali wilderness settings. A review of the literature and discussion with park management resulted in a set of six wilderness setting attributes, each with three possible levels (or conditions), being selected to describe the hypothetical settings. Table 10.1 presents the Denali wilderness setting attributes used in this project and their corresponding levels. Combining the six study attributes at varying levels produced a series of pairs of hypothetical Denali wilderness setting descriptions. Four versions of the stated choice questionnaire were developed such that each version of the questionnaire included a series of nine paired comparison questions. In each question, respondents were asked to read descriptions of two hypothetical Denali wilderness settings and indicate which of the two settings they preferred. A copy of one version of the questionnaire is included in Appendix M.

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Table 10.1. Denali Wilderness Setting Attributes and Levels

<p><u><i>Social conditions</i></u></p> <p>Number of other groups encountered per day while hiking: Encounter 0 other groups per day while hiking Encounter up to 2 other groups per day while hiking Encounter up to 4 other groups per day while hiking</p> <p>Opportunity to camp out of sight and sound of other groups: Able to camp out of sight and sound of other groups all nights Able to camp out of sight and sound of other groups most nights Able to camp out of sight and sound of other groups a minority of nights</p> <p><u><i>Resource conditions</i></u></p> <p>Extent and character of hiking trails: Hiking is along intermittent, animal like trails Hiking is along continuous single track trails developed from prior human use Hiking is along continuous trails with multiple tracks developed from prior human use</p> <p>Signs of human use at camping sites: Camping sites have little or no signs of human use Camping sites have some signs of human use – light vegetation damage, a few moved rocks Camping sites have extensive signs of human use – bare soil, many rocks moved for wind protection and cooking</p> <p><u><i>Management conditions</i></u></p> <p>Regulation of camping: Allowed to camp in any zone on any night Required to camp in specified zones Required to camp in designated sites</p> <p>Chance of receiving an overnight backcountry permit: Most visitors are able to get a permit for their preferred trip Most visitors are able to get a permit for at least their second choice trip Only a minority of visitors are able to get a backcountry permit</p>

Sampling & Visitor Contacts

The population to which generalizability was desired was the population of all Denali backpackers over the age of 17 who camped overnight in the backcountry between July 24, 2000 and September 2, 2000. The procedure used to allocate visitors to the three survey components, however, did not result in a random sample of visitors to the stated choice survey component (see Visitor Contacts p. 5 for more detail on how visitors were approached and allocated between different survey components).

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Specifically, only visitors who had not participated in the multi-stage survey component or the mail-only survey component were asked to participate in the stated choice survey component. Because respondents to the stated choice survey component were not randomly selected, their tradeoff preferences captured in this survey cannot a priori be assumed to be representative of all Denali backpackers over the age of 17 who camped overnight in the backcountry, and strictly speaking, the extent to which they may differ cannot be determined from these data. Comparison of this sample to backpackers completing the mail questionnaire on several questions asked in both surveys, however, revealed no differences between the two samples. Nonetheless, the data reported in this chapter will be reported as representing *backpackers selected to represent overnight Denali wilderness visitors*.

People were contacted for the stated choice survey upon their return from the backcountry. When the hiking party came to the backcountry desk at the conclusion of their trip to return their food canister, park personnel asked them to speak with the survey workers. At this time, hiking party members who were not participating in the other survey components were asked to participate in the stated choice survey. A total of 383 visitors were contacted specifically for the stated choice survey with 311 (81.2%) visitors agreeing to participate and completing a questionnaire. Participants were randomly assigned to complete one of the four versions of the questionnaire on the laptop resulting in approximately 78 completed questionnaires for each version and a total of 2,799 pairwise comparisons.

Limitations of the Stated Choice Analysis

A potential limitation of this study is that the relative importance of the Denali wilderness setting attributes considered are influenced by the levels of the attributes selected. Our findings may have varied if we had used different levels to represent the range of conditions for each attribute. For example, we may have found the relative importance Denali overnight wilderness visitors place on the chance of receiving an overnight backcountry permit to be greater if we had used "Visitors have a 5% chance of receiving a backcountry permit" rather than "Only a minority of visitors are able to get a backcountry permit". However, the levels of the Denali wilderness setting attributes

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were selected to represent a realistic range of conditions for each of the Denali wilderness setting attributes, based on current conditions in the Park. As a result, it seems reasonable to conclude that the results of this study realistically represent respondents' attitudes and preferences concerning contemporary conditions of social, resource, and managerial attributes of the Denali wilderness experience.

The six attributes selected for this study do not constitute a comprehensive list of variables related to the wilderness experience. As a result, it is likely that there are variables that would significantly affect respondents' choices among Denali wilderness setting scenarios that were left out of this model. Again, a choice was made to limit the number of attributes included in the model in order to control the level of respondent burden. The attributes that were used to define the Denali wilderness settings purposely span the social, resource, and managerial dimensions of the wilderness experience. Further, the study attributes used to represent these three dimensions of the wilderness experience were selected because of their importance to the wilderness experience, as suggested by research on indicators of quality for the wilderness experience.

While there are potential interactions among the wilderness setting attributes selected for the stated choice model, the study only tested main effects of the attributes. The decision to exclude interaction effects was made to avoid excessive respondent burden. That is, had the stated choice experiment been designed to test interaction effects, the number of comparisons each respondent would have had to evaluate would have increased to a potentially unmanageable level.

Local Alaskan residents are under-represented in the stated choice sample. The percentage of local Alaskan *hiking parties* obtaining permits per the Park's data was 28.6% while the percentage of local Alaskan *hikers* participating in our study was 1.9%. It is possible that the tradeoff preferences of local Alaskan hikers differ from those of other Denali backpackers. However, there are an insufficient number of local Alaskan respondents in the sample to test this hypothesis. (See pages 8, 11, and 13-17 in the Introduction for more detail about issues related to local Alaskan respondents.)

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Stated Choice Analysis Results

The responses to the stated choice survey were analyzed using logistic regression analysis. The overall fit of the model was supported by the results of the Hosmer and Lemeshow goodness of fit test, $\chi^2 = 3.492, p = 0.836$. The regression coefficients, together with their standard errors, Wald Chi-Square values, and p values are presented in Table 10.2. All coefficients were significantly different than zero at the $<.001\%$ level, except the coefficients on "Up to 2 other groups" and "Intermittent animal like trails". The absolute magnitude of the coefficients reflects the relative importance of the corresponding level of the attribute to wilderness visitors. The greater the relative importance of an attribute, the more it adds to or detracts from respondents' preference (i.e., utility) for the wilderness setting. Levels of attributes with high coefficient values are preferred to levels of attributes with lower coefficient values. A large negative coefficient suggests that the corresponding level of the attribute detracts substantially from respondents' utility associated with the wilderness setting. A large positive coefficient suggests that the corresponding level of the attribute substantially increases respondents' utility associated with the wilderness setting.

Figures 10.1a through 10.1f plot the level of utility respondents associate with the levels of each wilderness setting attribute. Values on the x-axis represent the level of the corresponding Denali wilderness setting attribute. Values on the y-axis represent the level of utility corresponding to level of the attribute. The plots provide graphic insight into the relative importance of the wilderness setting attributes in determining respondents' preference for alternative wilderness settings. For example, utility (i.e., preference) drops sharply as campsites change from having "Some signs of human use" (+0.207) to "Extensive signs of human use" (-0.790) (Figure 10.1d), whereas the loss of utility is less dramatic as the opportunity to camp out of sight and sound of other groups changes from "All nights" (0.295) to "Most nights" (0.145) (Figure 10.1b).

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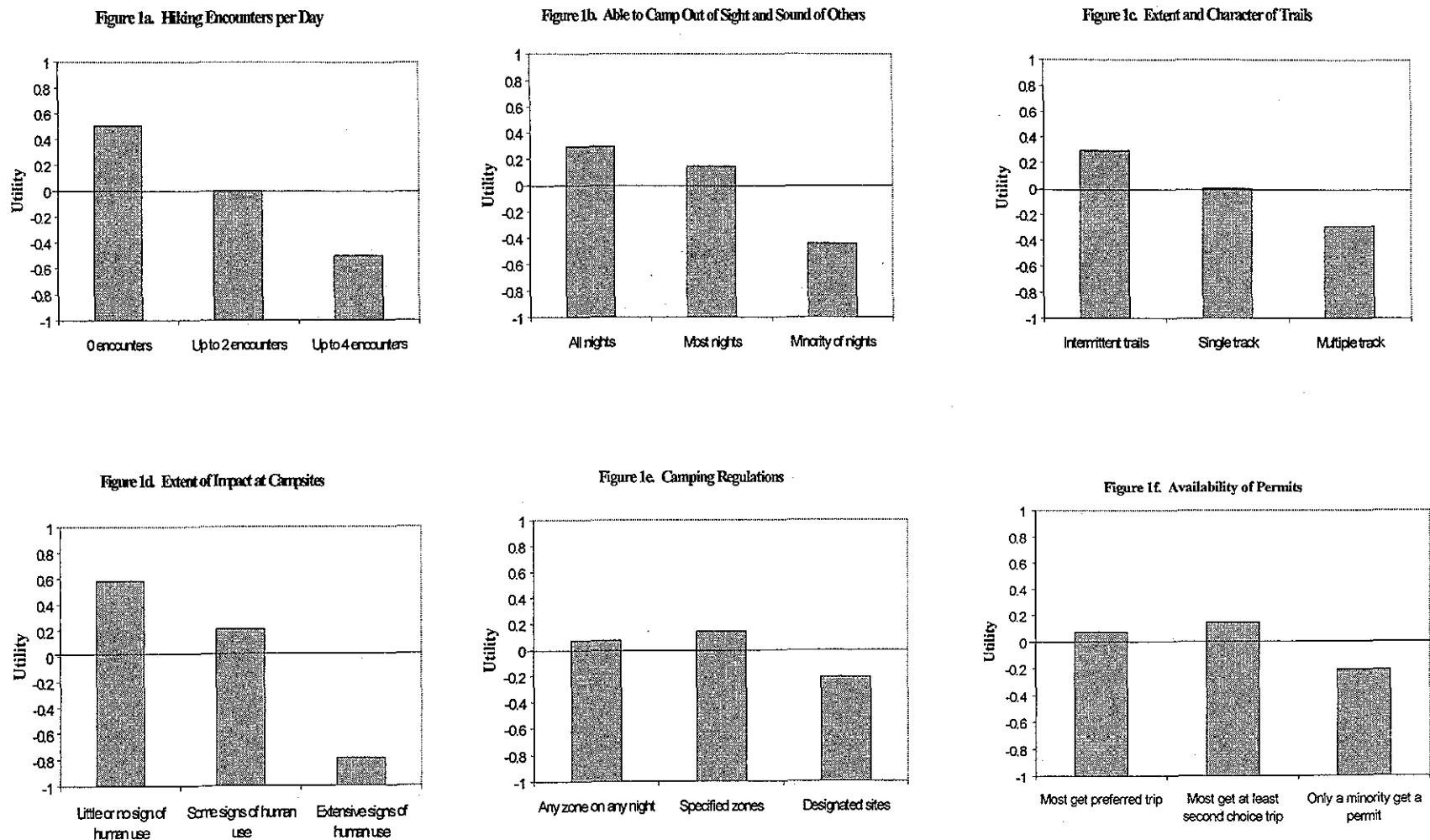
Table 10.2. Coefficient Estimates for Wilderness Setting Attributes

Variable	Coefficient	Standard Error	Wald Chi-Square	P Value
Encounters with other groups per day while hiking:				
0 other groups	0.440*	-	-	-
Up to 2 other groups	0.065	0.043	2.246	0.134
Up to 4 other groups	-0.504	0.044	132.826	<0.001
Able to camp out of sight and sound of other groups:				
All nights	0.295*	-	-	-
Most nights	0.145	0.044	11.148	<0.001
A minority of nights	-0.440	0.045	94.814	<0.001
Hiking is along:				
Intermittent, animal like trails	0.319*	-	-	-
Single track trails developed from human use	-0.028	0.044	0.403	0.526
Multiple track trails developed from human use	-0.291	0.043	46.340	<0.001
Camping sites have:				
Little or no signs of human use	0.582*	-	-	-
Some signs of human use	0.207	0.044	22.151	<0.001
Extensive signs of human use	-0.790	0.049	264.972	<0.001
Regulation of camping:				
Allowed to camp in any zone on any night	0.072*	-	-	-
Required to camp in specified zones	0.140	0.048	8.620	0.003
Required to camp in designated sites	-0.212	0.045	21.948	<0.001
Chance visitors have of receiving a permit:				
Most get a permit for their preferred trip	0.073*	-	-	-
Most get a permit for at least their second choice	0.143	0.044	10.424	0.001
Only a minority get a permit	-0.216	0.043	24.656	<0.001

*Coefficients for the excluded level of the attribute were not estimated by the statistical model. They were calculated as the negative sum of the coefficients on the other two levels of the corresponding attribute.

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Figure 10.1a-10.1f. Denali Wilderness Setting Attribute Levels and Corresponding Utility



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Predicting Visitor Preferences Using the Decision-Making Model

The regression model can serve as a decision-making model to predict visitor preferences for alternative wilderness management scenarios¹. For example, consider two hypothetical Denali wilderness management alternatives; one emphasizing “Solitude” and one emphasizing “Freedom” (see Table 10.3). Under the “Solitude Alternative”, overnight wilderness visitors would encounter zero other groups per day while hiking and be able to camp out of sight and sound of other groups all nights. However, visitors would be required to camp in designated sites and only a minority of visitors would be able to get a backcountry permit. Under the “Freedom Alternative”, overnight wilderness visitors would be able to camp in any zone on any night, and most visitors would be able to get a permit for their preferred trip. However, visitors would encounter up to four other groups per day while hiking, and they would be able to camp out of sight and sound of other groups only a minority of nights. In both alternatives, the extent of social trails and the amount of impact to campsites would be fixed at the intermediate level. At the heart of the comparison between the “Solitude Alternative” and the “Freedom Alternative” are respondents’ evaluations of the tradeoff between freedom of access to the Denali wilderness and the opportunity to experience solitude.

The model predicts that in a hypothetical referendum, 75% of respondents would choose the “Solitude Alternative” and only 25% would choose the “Freedom Alternative” (Table 10.3). This result suggests that backpackers selected to represent hiking parties would prefer to forgo some freedom from management to improve opportunities to experience solitude. These findings are suggestive of the balance respondents think ought to be struck between the conditions of social, and managerial attributes of the Denali wilderness experience.

¹ The decision-making model is only appropriate to evaluate alternative management scenarios that use the attributes and their designated levels that were included in the stated choice analysis (see Table 10.1).

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Table 10.3. Scores for Two Hypothetical Denali Wilderness Management Alternatives

	Solitude Alternative	Freedom Alternative
Hiking Encounters:	0 other groups per day	Up to 4 other groups per day
Campsite Solitude:	All nights	A minority of nights
Hiking Trails:	Single track trails	Single track trails
Campsite Impacts:	Some signs of human use	Some signs of human use
Camping Regulations:	Designated sites	Any zone on any night
Availability of permits:	Only a minority of visitors receive a permit	Most get a permit for their preferred trip
Voting Proportion	75%	25%

Discussion and Implications

RELATIVE IMPORTANCE OF WILDERNESS ATTRIBUTES

Study findings provide information about the relative importance backpackers who were selected to represent overnight Denali wilderness visitors place on the attributes of the Denali wilderness experience selected for this study. For example, study results suggest that visitors would be willing to tolerate, and in fact support, management restrictions, including use limits, to achieve desired social and resource setting attribute conditions. Managers should consider the relative importance that backpackers place on the attributes included in this study when formulating policy that prioritizes the relationships and inherent tradeoffs among these attributes.

Signs of human use at campsites influenced respondents' satisfaction more than any other wilderness setting attribute considered. Campsite conditions characterized as having "Extensive signs of human use" were evaluated less favorably than any other level of the wilderness setting attributes. Campsite conditions characterized by "Little or

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no signs of human use" were preferred more than any level of any other wilderness setting attribute included in the study.

Solitude-related attributes represented a second tier of importance to backpackers selected to represent overnight Denali wilderness visitors. While the number of encounters with other groups per day while hiking and opportunities to camp out of sight and sound of other groups were less important than campsite impacts, they demonstrated a relatively large influence on respondents' satisfaction.

The remaining attributes (i.e., extent and character of trails, regulations concerning where visitors are allowed to camp in the Denali wilderness, and the availability of backcountry permits) were less important to backpackers selected to represent overnight Denali wilderness visitors, relative to campsite impacts and solitude-related attributes of the Denali wilderness. This does not mean that these attributes of the Denali wilderness were not important to respondents, rather they were less important relative to the other wilderness attributes.

The findings suggested that backpackers selected to represent overnight Denali wilderness visitors will tolerate some level of management over where visitors may camp and a certain degree of visitor use limits. Respondents' satisfaction remained unchanged as regulations over where visitors may camp increases from "Allowed to camp in any zone on any night" to "Required to camp in specified zones". However, satisfaction decreased to its lowest point with respect to camping regulations when visitors are "Required to camp in designated sites". Respondents' satisfaction associated with overnight wilderness use limits remained the same whether use limits were at their least restrictive level (i.e., "Most get a permit for their preferred trip") or at the intermediate level (i.e., "Most get a permit for at least their second choice trip"). Use limits that result in only a minority of visitors receiving a permit led to the lowest satisfaction related to this attribute (i.e., the chance visitors have of receiving a permit). A possible explanation for these results is that Denali overnight wilderness visitors may realize that without certain management restrictions, the resource and social setting attributes are likely to deteriorate beyond acceptable conditions.

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DECISION-MAKING MODEL

The decision-making model developed in this study can be used to evaluate the attitudes of backpackers selected to represent overnight Denali wilderness visitors toward alternative management scenarios. In particular, this model can be used to predict current users' level of support for different scenarios being considered under the new wilderness management plan. As an example, two hypothetical management alternatives were evaluated using the stated choice model. The first alternative emphasized opportunities for solitude while the second alternative emphasized freedom from management restrictions.

The results of the example application of the choice model provide evidence that backpackers selected to represent overnight Denali wilderness visitors are willing to trade-off freedom from management restrictions for desired social conditions. Specifically, the results demonstrated that in a hypothetical referendum, respondents would prefer (by a margin of three to one) a wilderness setting that emphasizes solitude through relatively restrictive management actions over a more congested wilderness setting with limited management restrictions.

These results suggest that the majority of respondents support backcountry permit quotas at Denali to protect the primitive character of the wilderness. Further, the results suggest that a moderately restrictive quota system that is designed to enhance overnight wilderness visitors' opportunities to experience solitude and to maintain relatively undisturbed campsite and trail conditions would receive the greatest support from Denali overnight wilderness visitors.

The results of the example application of the choice model also suggest that there is a substantial proportion of respondents (25.0%) that place high importance on freedom from management restrictions despite reduced opportunities to experience limited contact with other groups while hiking and camping. This finding suggests that Denali overnight wilderness visitors are at least somewhat diverse in their attitudes concerning the management of the Denali wilderness. Continuing to manage the Denali wilderness using a zoning approach to provide a spectrum of opportunities for visitors may be an effective method to address this diversity. This could be achieved by managing the quota system in such a way that quotas for most zones within the Denali wilderness are set at

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levels that emphasize opportunities for visitors to experience solitude, while quotas for a few zones of the wilderness are set at levels that provide greater visitor access.

References

- Bultena, G., Albrecht, D., & Womble, P. (1981). Freedom Versus Control: A Study of Backpackers' Preferences for Wilderness Management. Leisure Sciences, 4(3), 297-310.

Appendix A: Pre-Trip Interviews

There were two different versions of the pre-trip interview as part of the information about aircraft experiment. Both versions are included in this appendix.

VERSION 1 (EXPERIMENTAL CONDITION)

Pre-interview information:

Date/Time (computer recorded)

Introduction and request to participate.

I'm working for the Cascadia Field Station of the U.S. Geological Survey. In conjunction with the National Park Service, we are doing a survey of Denali backpackers. The information we are collecting is important because it will help managers and planners maximize the quality of visitor experiences in this area. This survey is voluntary and any information you provide is confidential.

This survey has four parts because we are interested in your experiences across the course of your trip. The first part is a short interview with less than 10 questions that takes 5 minutes or less. The second part is a one-page daily experience diary that you fill out on each night of your backpacking trip. It takes about 5 minutes on the first day, and 3 minutes per day after that. The third part is another short interview that takes about 3 minutes and will be done here at the visitor center, and the last part is a questionnaire that you can take with you and mail back to us. It takes about 20 minutes. Your total time commitment is estimated to be 39 minutes.

1. Would you be willing to participate in the survey?

NO → Thank you for your time. Have a nice visit in Denali.

YES → Thank you, Here is a statement about the confidentiality of your responses. (The card will contain text concerning the Privacy Act and Paperwork Reduction Act compliance, and also a burden estimate statement.)

Appendix A: Pre-Trip Interviews

Throughout the remainder of this interview, I will be asking you about aircraft. For the purposes of this survey, the term aircraft includes jets, propeller planes, & helicopters.

1. Did you know that aircraft are sometimes heard or seen flying over Denali?

NO

YES → 1.1 How did you learn about the presence of aircraft at Denali?
(Check as many as reported. Probe by asking "Any others?" if they stop at one source.)

1. PARK WEB SITE
2. PRIOR VISITS TO DENALI
3. GENERAL KNOWLEDGE/ALASKA EXPERIENCE
4. FRIENDS OR RELATIVES
5. TRAVEL GUIDE/TOUR BOOK
6. NEWSPAPER/MAGAZINE
7. MAPS/BROCHURES
8. RADIO/TELEVISION
9. DON'T REMEMBER WHERE
10. OTHER (Please specify: _____)

2. During a typical day on this trip, how many times do you expect to hear or see aircraft?

NUMBER OF TIMES _____ Record "no expectations" if respondent gives a "couldn't say/don't know" answer and persists after a probe.

3. During a typical day on this trip, how many times would you prefer to hear or see aircraft?

NUMBER OF TIMES _____ If respondent can't provide a number, ask for differentiation between a "no preferences/don't care" answer and a "have a preference but can't provide a number answer."

Appendix A: Pre-Trip Interviews

4. When you planned this visit to Denali, did you take into consideration the possibility that you might hear or see aircraft flying over the area?

NO

YES → 4.1 Did the possibility of encountering aircraft affect any aspect of how you planned your visit to Denali?

NO

YES → 4.2 How did the possibility of encountering aircraft affect your decision to visit Denali?

(Check as many as respondent reports. Probe by asking

"Any

others?" if they stop at one effect.)

1. Came to see the aircraft?
2. Came at a different time of day than would otherwise?
3. Came on a different day of the week?
4. Planned to do different activities in Denali?
5. Planned to visit a different area of Denali?
6. Other effects not described *(Please specify below.)*
7. Don't know

The reason for asking about aircraft is because park managers are interested in backpackers' reactions to aircraft. Currently, aircraft are a common form of transportation in Alaska. They are commonly used for utilitarian and recreational activities in remote areas. Please listen to the following points that give you some information about aircraft use at Denali.

- As tourism has increased in the Denali NP area, several flightseeing companies have begun to fly visitors across the park to view Mt. McKinley. These companies use both standard airplanes and helicopters.
- In the area north of the Alaska Range, most flights originate from the area of McKinley Village or Healy, both along Highway 3 near the Riley Creek entrance area.
- Most flights fly in a corridor south of the park road and north of the crest of the Alaska Range.
- In recent years use has increased to the point that there can be dozens of flights a day passing through this corridor in good weather. Given the long day length during much of the summer, flights can be very early or very late.
- Aircraft are requested to stay 2000' Above Ground Level, but there is no requirement that they do so, and they frequently fly at less than this recommended level.
- Alaska has been excluded from any laws that would allow restrictions on air traffic over national park areas.

5. **That concludes the first part of our survey project. Here is the diary booklet you will use in the second part (write identification number on diary cover). Each page covers one day of your trip. Please fill it out each night after you make camp, and on the last day please answer the relevant questions before you return your bear canister. We will be attempting to contact you when you return your bear canister to this facility. However, in case we can not contact you at that time, there will be a box provided at the bear canister return area where you can drop off the diary.**

If we do not contact you when you drop off your bear canister, we would still like to send you the mail-back questionnaire. Would you please provide your name and address so we can send it to you by mail? This information will be confidential. It will be used only for this survey and will be destroyed after the project is completed.

Name _____
Street address _____
City _____ State _____ Zip/Postal code _____
Country _____

VERSION 2 (CONTROL CONDITION)

Pre-interview information:

Date/Time (computer recorded)

Introduction and request to participate.

I'm working for the Cascadia Field Station of the U.S. Geological Survey. In conjunction with the National Park Service, we are doing a survey of Denali backpackers. The information we are collecting is important because it will help managers and planners *maximize the quality of visitor experiences* in this area. This survey is voluntary and any information you provide is confidential.

This survey has three parts because we are interested in your experiences across the course of your trip. The first part is a one-page daily experience diary that you fill out on each night of your backpacking trip. It takes about 5 minutes on the first day, and 3 minutes per day after that. The second part is a short interview that takes about 3 minutes and will be done here at the visitor center, and the last part is a questionnaire that you can take with you and mail back to us after you fill it out. It takes about 20 minutes.

1. **Would you be willing to participate in the survey?**

NO → Thank you for your time. Have a nice visit in Denali.

YES → 1.1 Here is the diary booklet you will use in the survey (write identification number on diary cover). Each page covers one day of your trip. Please fill it out each night after you make camp, and on the last day please answer the relevant questions before you return your bear canister. We will be attempting to contact you when you return your bear canister to this facility. However, in case we can not contact you at that time, there will be a box provided at the bear canister return area where you can drop off the diary.

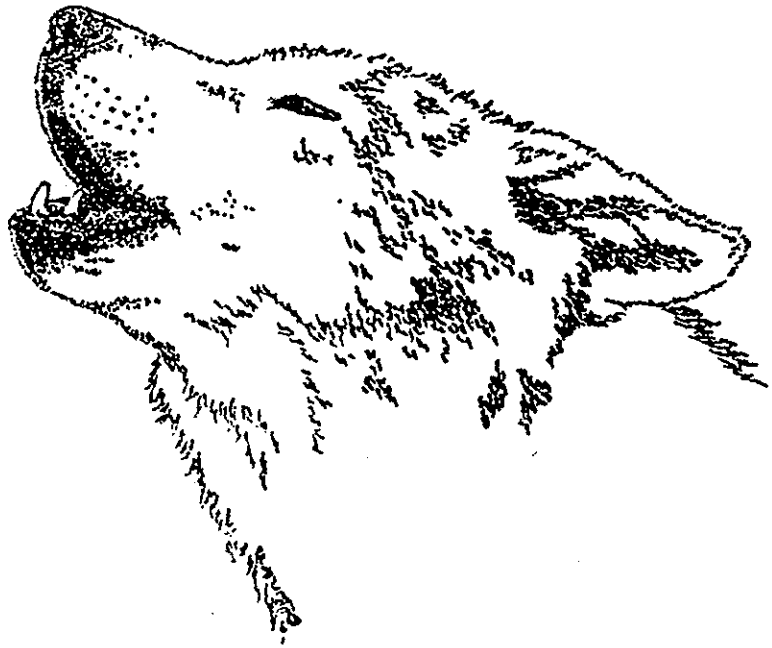
If we do not contact you when you drop off your bear canister, we would still like to send you the mail-back questionnaire. Would you please provide your name and address so we can send it to you by mail? This information will be confidential. It will be used only for this survey and will be destroyed after the project is completed.

Name _____
Street address _____
City _____ State _____ Zip/Postal code _____
Country _____

Appendix B: Diary, Version 1

Appendix B: Diary, Version 1

**Daily Experience Diary:
Denali National Park
Backpacker Survey**



Denali Backpacker Survey
Cascadia Field Station
USGS/BRD/FRESC
College of Forest Resources – Box 352100
University of Washington
Seattle, WA 98195-2100

Version 1

PRIVACY ACT and PAPERWORK REDUCTION ACT statement:

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Please do not put your name or that of any member of your group on the questionnaire. Data collected through visitor surveys may be disclosed to the Department of Justice when relevant to litigation or anticipated litigation, or to appropriate Federal, State, local or foreign agencies responsible for investigating or prosecuting a violation of law. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Burden estimate statement:

Public reporting burden for completing the Daily Experience Diary is estimated to take an average of 5 minutes on the first day, and 3 minutes per day thereafter. Direct comments regarding the burden estimate or any other aspect of this form to the Office of Information and Regulatory Affairs of OMB, Attention Desk Officer for the Interior Department, Office of Management and Budget, Washington, D.C. 20503; and to the Information Collection Clearance Officer, WASO Administrative Program Center, National Park Service, 1849 C Street, N.W., Washington, D.C. 20240.

Dear Visitor,

A variety of people visit Denali National Park and Preserve each year. They come from many different places and engage in a variety of recreational activities. As part of our effort to provide high quality recreational opportunities we have asked the Cascadia Field Station of the United States Geological Survey, Biological Resources Division to conduct a survey of backpackers.

You have been selected as part of a sample of backpackers to participate in the survey. In order that the results be truly representative of all Denali backpackers, it is important that you take the time to complete this daily experience diary as instructed.

Please do not write your name or the name of anyone in your party on this diary booklet, in order that the responses be completely anonymous.

We greatly appreciate your cooperation in this study. I hope that you enjoy your visit.

Sincerely,

Superintendent

DAILY EXPERIENCE DIARY

This booklet consists of daily reports. Please complete one as part of your routine after making camp on each evening of your trip. For example, you might complete your daily entry every evening right after dinner. Completing each report probably won't take longer than 5 minutes a day. If you miss a day, please fill in the report for that day at the earliest opportunity.

After you have boarded the bus or reached the visitor center at the end of your hike, please fill out a report for your last day. You can then return the diary booklet at the hiker information/reservation desk or put it in the box near the bear-canister return labeled "Backcountry Diaries".

Detailed Instructions/Example Report

The example shows how a backpacker might fill out each question on the daily experience diary. Detailed instructions printed in *italics* are included for most questions. Please review the example report and instructions carefully before completing your first daily report. Also, please refer back to them when completing the remaining reports as needed.

Question 1

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m.

Please indicate the date and time when you are making the report.

Question 2

2. I am reporting about the time period ending: Date 8/1 Time 9 a.m./p.m.

Please indicate the date and time for the end of the period you are describing. Ideally, this will be the same as in Question 1. However, this question allows you to let us know if for some reason you were not able to fill out a report at the end of every day.

Question 3

3. Today we hiked in Zone(s): 12 (see map)

Look at the included map to find where you were during the reported time period.

Question 4

4. Our camp tonight is in Zone: 12 (see map)

Look at the included map to find where you are camped.

Question 5	
5. How many different hiking parties did you see today?	1
<i>A hiking party consists of one or more persons who are hiking together. Hiking parties could be either backpackers or day-hikers. If you saw the same party more than once, count them only once.</i>	

Question 6	
6. How many times did you interact with hiking parties today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	1
<i>Here again, hiking parties could be groups of either backpackers or day-hikers. However, if you interacted with the same party more than once, count the total number of interactions.</i>	

Question 7	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings)	3
1. Saw too many, preferred seeing none	
2. Saw too many, preferred seeing less	
3. Saw about the right number	
4. Saw too few, preferred seeing more	
5. Saw too few, preferred seeing many more	

Question 8	
8. How many times did you hear or see aircraft today?	4
<i>Please include all types of aircraft including helicopters. If the same aircraft flew over more than once, count each overflight separately. If you saw aircraft but can't recall the number put a '?' in the box.</i>	

Question 9	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	10
<i>Please make your best estimate of the total time that aircraft were visible or audible. If you didn't hear or see any planes, answer "0" and skip to Question 12. If you can not estimate the time, put a '?' in the box.</i>	

Question 10	
10. What kind(s) of aircraft flew over? (List number of each type you identified)	1, 2
1. Propeller plane	
2. Helicopter	
3. Jet 4. Other	
<i>Please list the types of aircraft you could identify. If you could not identify any aircraft, put a '?' in the box.</i>	

Question 11	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? <i>(List number that describes the sound)</i> 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	3
<i>Please recall the loudest aircraft sound you heard. Rate the loudness of that sound using the 5-point scale.</i>	

Question 12	
12. How many hiking parties are camped within sight or sound of your camp today?	1
<i>Hiking parties might include larger groups using more than one tent. If multiple tents are pitched at the same site, count that group as a single party.</i>	

Question 13	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? <i>(List number)</i> 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	1

Remember, this booklet consists of daily reports. Please complete one as part of your routine after making camp on each evening of your trip.

PLEASE REMEMBER TO RETURN YOUR DIARY BOOKLET AT THE VISITOR CENTER DESK OR PUT IT IN THE BOX NEAR THE BEAR-CANISTER RETURN LABELED "BACKCOUNTRY DIARIES".

Please return only the diary booklet. The pencil and plastic bag are yours to keep or to dispose of properly.

Day 1

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 2

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (List number of each type you identified) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (List number that describes the sound) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 3

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 4

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 5

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 6

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Day 7

1. The date and time I am making this report is: Date _____ Time _____ a.m./p.m.
2. I am reporting about the time period ending: Date _____ Time _____ a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many hiking parties did you see today?	
6. How many hiking parties did you interact with today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many times did you hear or see aircraft today?	
9. How long was the total time that you could hear or see aircraft? (In minutes.)	
10. What kind(s) of aircraft flew over? (<i>List number of each type you identified</i>) 1. Propeller plane 3. Jet 2. Helicopter 4. Other	
11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (<i>List number that describes the sound</i>) 1. I couldn't hear the aircraft. 2. Background sound where you could still talk in a normal voice 3. Conspicuous sound where you would have to speak loudly to be heard 4. Dominant sound where you would have to shout to be heard 5. Overwhelming sound where you couldn't even hear shouting	
12. How many hiking parties are camped within sight or sound of your camp today?	
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	

Appendix C: Diary, Version 2

Appendix C: Diary, Version 2

**Daily Experience Diary:
Denali National Park
Backpacker Survey**



Denali Backpacker Survey
Cascadia Field Station
USGS/BRD/FRESC
College of Forest Resources – Box 352100
University of Washington
Seattle, WA 98195-2100

Version 2

PRIVACY ACT and PAPERWORK REDUCTION ACT statement:

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Please do not put your name or that of any member of your group on the questionnaire. Data collected through visitor surveys may be disclosed to the Department of Justice when relevant to litigation or anticipated litigation, or to appropriate Federal, State, local or foreign agencies responsible for investigating or prosecuting a violation of law. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Burden estimate statement:

Public reporting burden for completing the Daily Experience Diary is estimated to take an average of 5 minutes on the first day, and 3 minutes per day thereafter. Direct comments regarding the burden estimate or any other aspect of this form to the Office of Information and Regulatory Affairs of OMB, Attention Desk Officer for the Interior Department, Office of Management and Budget, Washington, D.C. 20503; and to the Information Collection Clearance Officer, WASO Administrative Program Center, National Park Service, 1849 C Street, N.W., Washington, D.C. 20240.

Dear Visitor,

A variety of people visit Denali National Park and Preserve each year. They come from many different places and engage in a variety of recreational activities. As part of our effort to provide high quality recreational opportunities we have asked the Cascadia Field Station of the United States Geological Survey, Biological Resources Division to conduct a survey of backpackers.

You have been selected as part of a sample of backpackers to participate in the survey. In order that the results be truly representative of all Denali backpackers, it is important that you take the time to complete this daily experience diary as instructed.

Please do not write your name or the name of anyone in your party on this diary booklet, in order that the responses be completely anonymous.

We greatly appreciate your cooperation in this study. I hope that you enjoy your visit.

Sincerely,

Superintendent

DAILY EXPERIENCE DIARY

This booklet consists of daily reports. Please complete one as part of your routine after making camp on each evening of your trip. For example, you might complete your daily entry every evening right after dinner. Completing each report probably won't take longer than 5 minutes a day. If you miss a day, please fill in the report for that day at the earliest opportunity.

After you have boarded the bus or reached the visitor center at the end of your hike, please fill out a report for your last day. You can then return the diary booklet at the hiker information/reservation desk or put it in the box near the bear-canister return labeled "Backcountry Diaries".

Detailed Instructions/Example Report

The example shows how a backpacker might fill out each question on the daily experience diary. Detailed instructions printed in *italics* are included for most questions. Please review the example report and instructions carefully before completing your first daily report. Also, please refer back to them when completing the remaining reports as needed.

Question 1

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m.

Please indicate the date and time when you are making the report.

Question 2

2. I am reporting about the time period ending: Date 8/1 Time 9 a.m./p.m.

Please indicate the date and time for the end of the period you are describing. Ideally, this will be the same as in Question 1. However, this question allows you to let us know if for some reason you were not able to fill out a report at the end of every day.

Question 3

3. Today we hiked in Zone(s): 12 (see map)

Look at the included map to find where you were during the reported time period.

Question 4

4. Our camp tonight is in Zone: 12 (see map)

Look at the included map to find where you are camped.

Question 5	
5. How many different hiking parties did you see today, including park rangers?	1
<i>A hiking party consists of one or more persons who are hiking together. Hiking parties could be either backpackers or day-hikers. If you saw the same party more than once, count them only once.</i>	

Question 6	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	1
<i>Here again, hiking parties could be groups of either backpackers or day-hikers. However, if you interacted with the same party more than once, count the total number of interactions.</i>	

Question 7	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings)	3
1. Saw too many, preferred seeing none	
2. Saw too many, preferred seeing less	
3. Saw about the right number	
4. Saw too few, preferred seeing more	
5. Saw too few, preferred seeing many more	

Question 8	
8. How many hiking parties are camped within sight or sound of your camp today?	1
<i>Hiking parties might include larger groups using more than one tent. If multiple tents are pitched at the same site, count that group as a single party.</i>	

Question 9	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number)	1
1. Saw too many, preferred seeing none	
2. Saw too many, preferred seeing less	
3. Saw about the right number	
4. Saw too few, preferred seeing more	
5. Saw too few, preferred seeing many more	

Question 10	
10. How many different park rangers did you see today?	0
<i>If you saw the same park ranger more than once, count them only once.</i>	

Question 11	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	0
<i>If you interacted with the same park ranger more than once, count the total number of interactions.</i>	

Remember, this booklet consists of daily reports. Please complete one as part of your routine after making camp on each evening of your trip.

PLEASE REMEMBER TO RETURN YOUR DIARY BOOKLET AT THE VISITOR CENTER DESK OR PUT IT IN THE BOX NEAR THE BEAR-CANISTER RETURN LABELED "BACKCOUNTRY DIARIES".

Please return only the diary booklet. The pencil and plastic bag are yours to keep or to dispose of properly.

Day 1

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 2

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) <ol style="list-style-type: none"> 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more 	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) <ol style="list-style-type: none"> 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more 	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 3

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 4

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 5

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (<i>List number that describes your feelings</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (<i>List number</i>) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 6

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

Day 7

1. The date and time I am making this report is: Date 8/1 Time 9 a.m./p.m
2. I am reporting about the time period ending: Date 7/30 Time 9 a.m./p.m.
3. Today we hiked in Zone(s): _____ (see map)
4. Our camp tonight is in Zone: _____ (see map)

If you can not recall the answer to a question, or have no opinion, put a question mark "?" in the box on the right.	Specific Answer
5. How many different hiking parties did you see today, including park rangers?	
6. How many times did you interact with hiking parties today, including park rangers? (e.g., talk to or exchange greetings, either verbal or non-verbal)	
7. Which of the following best describes how you feel about the number of hiking parties you saw today? (List number that describes your feelings) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
8. How many hiking parties are camped within sight or sound of your camp today?	
9. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (List number) 1. Saw too many, preferred seeing none 2. Saw too many, preferred seeing less 3. Saw about the right number 4. Saw too few, preferred seeing more 5. Saw too few, preferred seeing many more	
10. How many different park rangers did you see today?	
11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal)	

APPENDIX D: Post-hike Interview

It was the intention to contact all hikers upon their return from the backcountry and conduct the following interview. Some hikers, however, returned late at night when the visitor center was closed or did not stop by the survey workers. These hikers were sent a mail version of this interview which is included after the interview schedule.

INTERVIEW SCHEDULE

Pre-interview information:

Date/Time (computer recorded); Identification number from diary booklet cover.

Introduction.

Thank you for completing the daily experience diary. Now we would like to ask you just a few questions about aircraft. For the purposes of these questions, the term aircraft includes propeller planes, helicopters & jets.

Before we begin, we wish to emphasize that your responses are voluntary and confidential. If you have any concerns, this official statement is available for you to read. (Offer to hand them the laminated card). (The card will contain text concerning the Privacy Act and Paperwork Reduction Act compliance, and also a burden estimate statement—see below.)

1. During your backpacking trip did you hear and/or see any aircraft? (Circle one number.)

- 1 NO → GO TO QUESTION 5
- 2 YES → CONTINUE WITH QUESTION 2

2. Were you at all annoyed by aircraft during this hiking trip in Denali? (Circle one number.)

- 1 NO → GO TO QUESTION 3
- 2 DON'T KNOW/CAN'T REMEMBER → GO TO QUESTION 3
- 3 YES → 2.1 How annoyed would you say that you were? (Give respondent the laminated card with response scale.)

- 1 SLIGHTLY ANNOYED
- 2 MODERATELY ANNOYED
- 3 VERY ANNOYED
- 4 EXTREMELY ANNOYED

Appendix D: Post-Hike Interview

3. Will the aircraft you heard and/or saw during this trip affect your future visits to Denali? *(Circle one number.)*

- 1 NO → GO TO QUESTION 4
- 2 DON'T KNOW → GO TO QUESTION 4
- 3 YES → 3.1 How will your decisions concerning future visits be affected? *(Classify response made.)*

- 1 Will you be more likely to return to Denali
- 2 Will you come at a time when there is less aircraft activity
- 3 Will you plan to do different activities in Denali
- 4 Will you visit a different area of Denali
- 5 Will you stop visiting Denali
- 6 Other effects not described *(Please specify below.)*

7 Don't know how my decisions will be affected

4. Did aircraft overflights either add to or detract from your enjoyment of Denali on this trip? *(Circle one number.)*

- 1 NO, DIDN'T ADD OR DETRACT → GO TO QUESTION 5
- 2 YES → 4.1 How would you say that aircraft affected your trip? *(Give respondent the laminated card with response scale.)*

- 1 ADDED GREATLY
- 2 ADDED MODERATELY
- 3 ADDED SLIGHTLY

- 4 DETRACTED SLIGHTLY
- 5 DETRACTED MODERATELY
- 6 DETRACTED GREATLY

Appendix D: Post-Hike Interview

5. **Before this backpacking trip, did you know that aircraft are sometimes heard or seen flying over Denali?**

NO

YES → 5.1 **How did you learn about the presence of aircraft at Denali?**

(Check as many as reported. Probe by asking "Any others?" if they stop at one source.)

1. SURVEY WORKER
2. HEARD/SAW THEM DURING PRESENT VISIT
3. PARK WEB SITE
4. PRIOR VISITS
5. GENERAL KNOWLEDGE/ALASKA EXPERIENCE
6. FRIENDS OR RELATIVES
7. TRAVEL GUIDE/TOUR BOOK
8. NEWSPAPER/MAGAZINE
9. MAPS/BROCHURES
10. RADIO/TELEVISION
11. DON'T REMEMBER WHERE
12. OTHER *(Please specify: _____)*

Thank you for answering our questions. The last part of our survey is this questionnaire (hand them the mail questionnaire) that you can fill out at a convenient time and send back to us. A stamped return envelope is included. We would appreciate it if you could fill it out in the next few days so that your trip here is still fresh in your memory. Thanks again for participating in our survey. Your input will help the National Park Service manage Denali National Park.

Denali National Park Backpacker Survey: Post-hike Questions

We originally intended to ask you these questions at the Denali visitor center. However, because we missed you at that time, please answer the questions now and return them with your completed Mail-Back Questionnaire. To fully utilize your data, it is important that we have your responses to all parts of the survey. Thank you.

Thank you for completing the daily experience diary. Now we would like to ask you just a few questions about aircraft. For the purposes of these questions, the term aircraft includes propeller planes, helicopters & jets.

Before we begin, we wish to emphasize that your responses are voluntary and confidential. If you have any concerns, please read the official statement on the inside front cover of the Mail-Back Questionnaire.

1. During your backpacking trip did you hear and/or see any aircraft? *(Circle one number.)*

- 1 NO → GO TO QUESTION 5
- 2 YES → CONTINUE WITH QUESTION 2

2. Were you at all annoyed by aircraft during this hiking trip in Denali? *(Circle one number.)*

- 1 NO → GO TO QUESTION 3
- 2 DON'T KNOW/CAN'T REMEMBER → GO TO QUESTION 3
- 3 YES → 2.1 How annoyed would you say that you were? *(Circle one number.)*

- 1 SLIGHTLY ANNOYED
- 2 MODERATELY ANNOYED
- 3 VERY ANNOYED
- 4 EXTREMELY ANNOYED

Appendix D: Post-Hike Interview

3. Will the aircraft you heard and/or saw during this trip affect your future visits to Denali? *(Circle one number.)*

- 1 NO → GO TO QUESTION 4
- 2 DON'T KNOW → GO TO QUESTION 4
- 3 YES → 3.1 How will your decisions concerning future visits be affected? *(Circle all that apply.)*

- 1 Will you be more likely to return to Denali
- 2 Will you come at a time when there is less aircraft activity
- 3 Will you plan to do different activities in Denali
- 4 Will you visit a different area of Denali
- 5 Will you stop visiting Denali
- 6 Other effects not described *(Please specify below.)*

8 Don't know how my decisions will be affected

4. Did aircraft overflights either add to or detract from your enjoyment of Denali on this trip? *(Circle one number.)*

- 1 NO, DIDN'T ADD OR DETRACT → GO TO QUESTION 5
- 2 YES → 4.1 How would you say that aircraft affected your trip? *(Circle one number.)*

- 1 ADDED GREATLY
- 2 ADDED MODERATELY
- 3 ADDED SLIGHTLY

- 4 DETRACTED SLIGHTLY
- 5 DETRACTED MODERATELY
- 6 DETRACTED GREATLY

Appendix D: Post-Hike Interview

5. Before this backpacking trip, did you know that aircraft are sometimes heard or seen flying over Denali?

NO

YES → 5.1 How did you learn about the presence of aircraft at Denali?

(Circle all that apply.)

- 13. SURVEY WORKER
- 14. HEARD/SAW THEM DURING PRESENT VISIT
- 15. PARK WEB SITE
- 16. PRIOR VISITS
- 17. GENERAL KNOWLEDGE/ALASKA EXPERIENCE
- 18. FRIENDS OR RELATIVES
- 19. TRAVEL GUIDE/TOUR BOOK
- 20. NEWSPAPER/MAGAZINE
- 21. MAPS/BROCHURES
- 22. RADIO/TELEVISION
- 23. DON'T REMEMBER WHERE
- 24. OTHER *(Please specify: _____)*

Thank you for answering the post-hike questions. The last part of the survey is the Mail-back Questionnaire.

**PLEASE RETURN THIS FORM WITH THE MAIL-BACK QUESTIONNAIRE
IN THE POSTAGE PAID ENVELOPE**

Thanks again for participating in our survey. Your input will help the National Park Service manage Denali National Park.

Appendix E: Mail Questionnaire

Appendix E: Mail Questionnaire

Denali National Park Backpacker Survey



Denali Backpacker Survey
Cascadia Field Station
USGS/BRD/FRESC
College of Forest Resources – Box 352100
University of Washington
Seattle, WA 98195-2100

PRIVACY ACT and PAPERWORK REDUCTION ACT statement:

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Your name has been requested for follow-up mailing purposes only. When analysis of the questionnaire is completed, all name and address files will be destroyed. Thus the permanent data will be anonymous. Please do not put your name or that of any member of your group on the questionnaire. Data collected through visitor surveys may be disclosed to the Department of Justice when relevant to litigation or anticipated litigation, or to appropriate Federal, State, local or foreign agencies responsible for investigating or prosecuting a violation of law. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Burden estimate statement:

Public reporting burden for this form is estimated to average 20 minutes per respondent. Direct comments regarding the burden estimate or any other aspect of this form to the Office of Information and Regulatory Affairs of OMB, Attention Desk Officer for the Interior Department, Office of Management and Budget, Washington, D.C. 20503; and to the Information Collection Clearance Officer, WASO Administrative Program Center, National Park Service, 1849 C Street, N.W., Washington, D.C. 20240.



United States Department of the Interior

NATIONAL PARK SERVICE

Denali National Park

April 16, 2002

Dear Park Visitor,

Many people visit Denali National Park each year. As part of the park's wilderness planning and management process, information is needed to understand the factors that contribute to, and detract from visitors' experiences. To this end, I have asked the Cascadia Field Station of the United States Geological Survey, Biological Resources Division to conduct a survey of backcountry visitors.

When you entered the Denali visitor center, you were selected as part of a sample of visitors to participate in the survey. Thank you for your participation thus far, and for your agreement to continue your participation in the survey. In order that the results be complete and truly representative of all backcountry visitors, it is important that you take the time to complete this questionnaire. When you have finished, please place the questionnaire in the stamped, pre-addressed envelope and drop it in the mail.

An identification number is included on the questionnaire so we may check your name off the mailing list when the questionnaire is returned. Your name will not be placed on the questionnaire. All responses will be confidential.

We greatly appreciate your cooperation in this survey. I hope that you enjoyed your visit.

Sincerely,

Superintendent

Recently, you obtained a permit for an overnight hiking trip in Denali National Park. At the park, you answered some questions and agreed to complete this mail questionnaire about your experiences during the trip. Thank you for your cooperation.

While filling out this questionnaire, please remember that **all questions ask about the trip to Denali when you were contacted for this survey**. Also, please be sure to read each question carefully before answering it.

QUESTIONS 1 TO 5 ASK YOU ABOUT SOME GENERAL ASPECTS OF YOUR TRIP TO DENALI.

1. When did you first decide to take an overnight backcountry trip in Denali? *(Please circle the appropriate number.)*

- 1 PRIOR TO LEAVING HOME FOR THIS TRIP
- 2 WHILE EN ROUTE TO DENALI FOR THIS TRIP
- 3 WHILE AT DENALI ON THIS TRIP

2. **Including this visit**, how many visits have you made to Denali National Park? *(Please enter a question mark "?" if you don't remember.)*

NUMBER OF VISITS _____

3. **Including this visit**, how many backcountry travel permits have you been issued for backpacking trips at Denali? *(Please enter a question mark "?" if you don't remember.)*

NUMBER OF VISITS _____

4. How many total **nights** did you (will you) spend in the Park and surrounding community (including overnight backcountry trips) during **this visit** to Denali?

NIGHTS AT DENALI: _____ → Of this total number of nights in the area, how many were (will be) spent camped in the backcountry?

NIGHTS IN BACKCOUNTRY: _____

5. How many **backcountry day hikes** (hikes outside the immediate vicinity of developed facilities that were not on developed trails and not part of an overnight backcountry trip) did you take during **this visit** to Denali? *(Please circle the appropriate number. Include future day hikes if you haven't finished your current visit.)*

0 1 2 3 4 5 6 7 8 9 10+

QUESTIONS 6 TO 10 ASK ABOUT YOUR EXPERIENCES WITH OTHER HIKING PARTIES DURING THE OVERNIGHT BACKCOUNTRY TRIP YOU RECORDED IN THE EXPERIENCE DIARY.

6. How did you feel about the hiking parties you saw on this backcountry trip? *Please circle the appropriate number for each of the following cases, even if no hiking parties were seen. If you did not see hiking parties, and this was your preference, circle 3. If you did not see other hiking parties, but preferred seeing some, circle 4 or 5.*

<i>The numbers are defined as follows:</i>						
1 = Saw too many, preferred seeing none	4 = Saw too few, preferred seeing a few more					
2 = Saw too many, preferred seeing less	5 = Saw too few, preferred seeing many more					
3 = Saw about the right number	6 = Did not matter one way or the other					
HOW DID YOU FEEL ABOUT...						
a. Number of hiking parties (all types) that you saw.....	1	2	3	4	5	6
HOW DID YOU FEEL ABOUT...						
b. Number of hiking parties (all types) with whom you interacted.....	1	2	3	4	5	6
HOW DID YOU FEEL ABOUT...						
c. Number of day hiking parties you saw.....	1	2	3	4	5	6
HOW DID YOU FEEL ABOUT...						
d. Number of parties camped in sight/sound.....	1	2	3	4	5	6

7. Of the hiking parties you saw on this overnight backcountry trip, about how many were **day-hiking parties**? *(Please circle the appropriate number.)*

- 1 Did not see hiking parties
- 2 Was unable to distinguish day-hiking parties from other parties
- 3 None
- 4 About one-fourth
- 5 About one-half
- 6 About three-fourths
- 7 All

8. How did the number of hiking parties (all types) you saw compare with the number you thought you would see? *(Please circle the appropriate number, even if you did not see hiking parties.)*

- 1 A LOT LESS THAN EXPECTED
- 2 LESS THAN EXPECTED
- 3 ABOUT AS EXPECTED
- 4 MORE THAN EXPECTED
- 5 A LOT MORE THAN EXPECTED
- 6 HAD NO EXPECTATIONS ABOUT THE NUMBER TO BE SEEN

9. How did the number of hiking parties (all types) you saw affect your overall enjoyment of this overnight backcountry trip? *(Please circle one number, even if you did not see hiking parties.)*

- 1 GREATLY ADDED TO ENJOYMENT
- 2 SOMEWHAT ADDED TO ENJOYMENT
- 3 HAD NO EFFECT
- 4 SOMEWHAT REDUCED ENJOYMENT
- 5 GREATLY REDUCED ENJOYMENT

10. How did the number of park rangers you saw affect your overall enjoyment of this backcountry trip? *(Please circle one number, even if you did not see park rangers.)*

- 1 GREATLY ADDED TO ENJOYMENT
- 2 SOMEWHAT ADDED TO ENJOYMENT
- 3 HAD NO EFFECT
- 4 SOMEWHAT REDUCED ENJOYMENT
- 5 GREATLY REDUCED ENJOYMENT

11a. Once you began your backcountry trip, did your party behave in such a way so as to avoid other hiking parties? *(Circle one number)*

1 NO → **GO TO QUESTION 12**

2 YES → **11b.** How did you avoid other parties? Did you.... *(Circle as many as apply.)*

- 1 Hike at particular times of day
 - 2 Hike in (or avoid) particular areas
 - 3 End your hike and leave the backcountry earlier than you would have
 - 4 Other effects not described *(Please specify below.)*
-

QUESTIONS 12 AND 13 ASK FOR YOUR JUDGEMENTS ABOUT A TYPICAL DAY DURING A BACKPACKING TRIP IN THE DENALI BACKCOUNTRY. PLEASE THINK BACK TO YOUR RECENT OVERNIGHT TRIP IN ORDER TO MAKE THESE JUDGEMENTS.

12. What is the number of hiking parties (all types) that you would **prefer** to see on a typical hiking day during a backpacking trip in the Denali backcountry? *(Please enter a number, or circle number 2 if you have no preference.)*

- 1 NUMBER OF PARTIES _____
- 2 I HAVE NO PREFERENCE

13. What is the number of hiking parties that you would **prefer** to have camped within sight and/or sound of you at a typical backcountry camp in Denali? *(Please enter a number, or circle number 2 if you have no preference.)*

- 1 NUMBER OF PARTIES CAMPED _____
- 2 I HAVE NO PREFERENCE

QUESTIONS 14 TO 16 ASK ABOUT EVIDENCE OF HUMAN USE THAT YOU MIGHT HAVE SEEN DURING YOUR OVERNIGHT BACKCOUNTRY TRIP.

14. Did you see any evidence of human use on this overnight backcountry trip? (Please circle one letter in the column "Saw evidence?" for each type of evidence of human use you observed in BACKCOUNTRY areas.)

IF YES, about how much, if at all, did this evidence of human use bother you? (Please circle one number in the column "IF YES, bothered you?" for those types of evidence of human use you saw.)

	Saw evidence?			IF YES, bothered you?		
	No	Yes		Not Bothered	Somewhat Bothered	Very Bothered
	a) Human waste.....	N		Y	→	NB
b) Toilet paper.....	N	Y	→	NB	SB	VB
c) Campfire rings.....	N	Y	→	NB	SB	VB
d) Litter.....	N	Y	→	NB	SB	VB
e) Cut bushes or trees.....	N	Y	→	NB	SB	VB
f) Hiker-made trails.....	N	Y	→	NB	SB	VB
g) Hiker-made campsites. (for example, soil compaction, vegetation trampling, moved rocks.)	N	Y	→	NB	SB	VB

15. On this overnight backcountry trip, how many nights, if any, did you camp where there was evidence of previous overnight use? (For example, fire ring, soil compaction, vegetation trampling, or moved rocks. Please circle the appropriate number, or circle 'Can't remember'.)

0 1 2 3 4 5 6 7 8 9 10+ (Can't remember)

16. How did the amount of evidence of human use you saw during this overnight backcountry trip compare with what you thought you would see? (Please circle one number even if you did not see any evidence of human use.)

- 1 A LOT MORE THAN EXPECTED
- 2 MORE THAN EXPECTED
- 3 ABOUT AS EXPECTED
- 4 LESS THAN EXPECTED
- 5 A LOT LESS THAN EXPECTED
- 6 HAD NO EXPECTATIONS ABOUT THE AMOUNT OF EVIDENCE THAT WOULD BE SEEN

QUESTIONS 17 TO 19 ASK YOU TO EVALUATE SOME ASPECTS OF YOUR OVERNIGHT BACKCOUNTRY TRIP.

17a. To what extent did you feel “crowded” during this backcountry trip? *(Circle one number.)*

<u>Not at all Crowded</u>	<u>Slightly Crowded</u>		<u>Moderately Crowded</u>		<u>Extremely Crowded</u>	
1	2	3	4	5	6	7

**GO TO
QUESTION 18**

► **17b.** IF YOU FELT CROWDED AT ALL (CIRCLED EITHER 2, 3, 4, 5, 6, OR 7), which of the following factors contributed to your feeling crowded? *(Please circle one response for each factor.)*

	<u>Did not contribute</u>	<u>Somewhat contributed</u>		<u>Greatly contributed</u>		<u>Don't know/ remember</u>
	1	2	3	4	5	DK/R
Number of hiking parties (all types) seen	1	2	3	4	5	DK/R
Number of day hiking parties seen.....	1	2	3	4	5	DK/R
Number of parties camped in sight/sound	1	2	3	4	5	DK/R
Amount of evidence of human use seen...	1	2	3	4	5	DK/R
Type of evidence of human use seen.....	1	2	3	4	5	DK/R
Other: (Specify: _____)	1	2	3	4	5	DK/R

QUESTIONS 20 TO 28 ASK ABOUT DENALI'S BACKCOUNTRY MANAGEMENT POLICIES.

20. Before arriving at Denali, were you aware of the following management policies and regulations? (Circle one response for each item)

	Was aware?	
a) That there is a shuttle bus transportation system.....	NO	YES
b) That the backcountry is divided into travel zones.....	NO	YES
c) That a permit is required for overnight travel in the backcountry.....	NO	YES
d) That only a certain number of hikers are permitted to camp in most zones on any given night.....	NO	YES
e) That day hikers are not required to have travel permits.....	NO	YES
f) That certain areas of the backcountry are permanently closed to overnight backcountry use.....	NO	YES
g) That hikers are sometimes prohibited from entering certain backcountry zones.....	NO	YES
h) That campfires are not allowed in the backcountry.....	NO	YES
i) That backcountry campsites must not be visible from the park road.....	NO	YES

21a. Generally speaking, do you agree or disagree with the present policy of allowing, on the average, about **6** hikers to **camp** in most Denali backcountry zones on any given night?
(Circle one number)

1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 22a**

2 I AGREE → **GO TO QUESTION 22a**

3 I DISAGREE → **21b.** Generally speaking, about how many hikers should be allowed to **camp** in an average backcountry zone on any given night?

(Check one blank)

_____ No overnight use should be allowed		_____ 16-21
_____ 1-2		_____ 22-27
_____ 3-5		_____ 28 or more
_____ 7-9		_____ Unlimited use should be allowed
_____ 10-15		_____ Don't know

22a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should encounter no more than **two** other **hiking parties** per day? (*Circle one number*)

1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 23a**

2 I AGREE → **GO TO QUESTION 23a**

3 I DISAGREE → **22b.** Generally speaking, what is the **maximum** number of other hiking parties that backpackers should encounter on any given day? (*Check one blank*)

_____	Backpackers should encounter no other hiking parties	_____	12-16
_____	1	_____	17-22
_____	3-4	_____	23 or more
_____	5-7	_____	Unlimited use should be allowed
_____	8-11	_____	Don't know

23a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should be able to camp out of sight and sound of **all** other hiking parties? (*Circle one number*)

1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 24**

2 I AGREE → **GO TO QUESTION 24**

3 I DISAGREE → **23b.** Generally speaking, what is the **maximum** number of other hiking parties that should be camped within sight and/or sound of a given camp? (*Check one blank*)

_____	1	_____	6-7
_____	2	_____	8-9
_____	3	_____	10 or more
_____	4	_____	Unlimited camping should be allowed
_____	5	_____	Don't know

24. What are your feelings about each of the following regulations that currently govern backcountry use in Denali National Park?

Please circle one response code for each regulation. The response codes are defined as follows:

- SS = Strongly Support
- S = Support
- N = Neutral
- O = Oppose
- SO = Strongly Oppose

a) All overnight hiking parties must obtain a backcountry travel permit.....	SS	S	N	O	SO
b) Backcountry travel permits may only be obtained in the Park	SS	S	N	O	SO
c) Backcountry travel permits may only be obtained 24 hours in advance of one's trip.....	SS	S	N	O	SO
d) Overnight hikers may only camp in the backcountry zones specified by their permit.....	SS	S	N	O	SO
e) Overnight hikers may only camp in the backcountry on the nights specified by their permit.	SS	S	N	O	SO
f) Overnight hikers may hike in zones other than those specified by their permit for camping.....	SS	S	N	O	SO
g) Day hikers do not need travel permits.....	SS	S	N	O	SO
h) Hiking parties may camp most anywhere within their scheduled backcountry zones.....	SS	S	N	O	SO
i) Backcountry campsites must not be visible from the park road.....	SS	S	N	O	SO
j) Campfires are not allowed in the backcountry.....	SS	S	N	O	SO
k) Some areas of the backcountry are permanently closed to overnight hikers in order to protect fragile wildlife habitats.....	SS	S	N	O	SO
l) Some backcountry zones are temporarily closed to hikers in order to protect hikers from unpredictable wildlife.....	SS	S	N	O	SO
m) Capacities (# of hiking parties) for backcountry zones are determined on the basis of individual hikers , rather than by hiking parties	SS	S	N	O	SO

25a. Generally speaking, do you feel there should be a maximum party size for the Denali backcountry? (Circle one number)

- 1 DON'T KNOW OR DON'T CARE → **GO TO QUESTION 26**
- 2 NO → **GO TO QUESTION 26**
- 3 YES → **25b. What should be the maximum party size?**

MAXIMUM PARTY SIZE: _____

26. Do you support or oppose each of the following possible management policies for rationing use in the Denali backcountry?

Please circle one response code for each regulation. The response codes are defined as follows:

- SS = Strongly Support
- S = Support
- N = Neutral
- O = Oppose
- SO = Strongly Oppose

- | | | | | | |
|--|----|---|---|---|----|
| a) Issue a limited number of permits on a first-come, first-served basis..... | SS | S | N | O | SO |
| b) Issue a limited number of permits on a drawing or lottery basis..... | SS | S | N | O | SO |
| c) Issue a limited number of permits through an advanced reservation system..... | SS | S | N | O | SO |
| d) Issue a limited number of permits to those who can demonstrate a certain level of knowledge and skill.. | SS | S | N | O | SO |
| e) Charge a use fee of no more than \$10 per trip for backcountry permits..... | SS | S | N | O | SO |
| f) Allow use without rationing (i.e., unlimited use).... | SS | S | N | O | SO |

27a. Generally speaking, do you agree or disagree with park managers' present objective that backpackers should encounter **park rangers** no more than **once** during a backpacking trip?
(Circle one number)

1 DON'T KNOW OR DON'T CARE → GO TO QUESTION 28

2 I AGREE →

3 I DISAGREE → 27b. Do you think **all** backpackers should encounter park rangers at some point during a backpacking trip? (Circle one number.)

1 YES → GO TO QUESTION 27d

2 NO → 27c. Do you think that backpackers should **never** encounter park rangers during a backpacking trip?
(Circle one number.)

1 YES → GO TO QUESTION 28

2 NO → 27d. What is the maximum number of park rangers that backpackers should encounter during a backpacking trip?
(Enter a question mark "?" if you don't know.)

MAXIMUM RANGER

ENCOUNTERS: _____

28. Do you support or oppose each of the following potential additions to the Denali backcountry?

Please circle one response code for each regulation. The response codes are defined as follows:

SS = Strongly Support
 S = Support
 N = Neutral
 O = Oppose
 SO = Strongly Oppose

- | | | | | | |
|---|----|---|---|---|----|
| a) Developed hiking trails..... | SS | S | N | O | SO |
| b) Designated campsites..... | SS | S | N | O | SO |
| c) Tables..... | SS | S | N | O | SO |
| d) Shelters..... | SS | S | N | O | SO |
| e) Toilets..... | SS | S | N | O | SO |
| f) Fire rings..... | SS | S | N | O | SO |
| g) Bridges over rivers..... | SS | S | N | O | SO |
| h) Interpretive signs..... | SS | S | N | O | SO |
| i) Food caches for bear protection..... | SS | S | N | O | SO |

QUESTIONS 29 AND 30 ASK ABOUT A VARIETY OF REASONS WHY YOU MIGHT MAKE OVERNIGHT HIKING TRIPS IN DENALI'S BACKCOUNTRY.

29. Below are 12 reasons that people might make overnight hiking trips in the Denali backcountry. To the right of each reason is a scale of how important each reason was in motivating your visit.

On your overnight trip in the Denali backcountry, how IMPORTANT was it for you to...
(Circle one response for each reason. Circle 'Not Important' if a reason is not relevant to you.)

Example:

a Relaxing physically	NOT IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
-----------------------	------------------	-----------------------	-------------------------	-------------------	------------------------

For this person, relaxing physically was a somewhat important reason why they chose to visit.

- | | | | | | |
|---|------------------|-----------------------|-------------------------|-------------------|------------------------|
| a Develop your skills and abilities | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| b Do something with your family | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| c Observe other people in the area | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| d Bring your family closer together | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| e Experience new and different things | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| f Learn more about nature | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| g Get away from the usual demands of life | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| h Be with others who enjoy the same things you do | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| i Talk to new and varied people | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| j Be with friends | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| k Experience tranquility | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |
| l Learn what you are capable of | NOT
IMPORTANT | SOMEWHAT
IMPORTANT | MODERATELY
IMPORTANT | VERY
IMPORTANT | EXTREMELY
IMPORTANT |

30. Below are the same 12 reasons that people might take overnight hikes in Denali, but this time the scale on the right concerns how much opportunity there was to satisfy each reason for the trip.

On your overnight trip in the Denali backcountry, how much OPPORTUNITY was there for you to...
(Circle one response for each reason. If a reason is not relevant to you, indicate the general opportunity available.)

Example:

a	Relaxing physically	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
---	---------------------	-------------------	---------------------	---------------------	--------------------------	--------------------------

This person felt that on their trip they had a good opportunity to relax physically.

a	Develop your skills and abilities	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
b	Do something with your family	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
c	Observe other people in the area	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
d	Bring your family closer together	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
e	Experience new and different things	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
f	Learn more about nature	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
g	Get away from the usual demands of life	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
h	Be with others who enjoy the same things you do	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
i	Talk to new and varied people	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
j	Be with friends	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
k	Experience tranquility	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY
l	Learn what you are capable of	NO OPPORTUNITY	POOR OPPORTUNITY	GOOD OPPORTUNITY	VERY GOOD OPPORTUNITY	EXCELLENT OPPORTUNITY

FINALLY, WE WOULD LIKE TO ASK A FEW BACKGROUND QUESTIONS. THE INFORMATION PROVIDED WILL BE USED FOR STATISTICAL PURPOSES ONLY.

31. Are you: *(Circle one number.)*

- 1 FEMALE
- 2 MALE

32. What year were you born?

19 _____

33. What is the highest level of formal schooling you have completed?
(Circle the appropriate number.)

YEARS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24+
(Elementary thru High School) (College/Vocational) (Graduate/Professional)

34. Which of the following best describes your current employment status? *(Circle the appropriate number.)*

- 1 STUDENT
- 2 HOMEMAKER
- 3 RETIRED
- 4 MILITARY
- 5 EMPLOYED
- 6 UNEMPLOYED

35. What is your home Zip code? *(Enter country if you reside outside the United States.)*

36. In what ethnicity and race would you place yourself? *(Circle your answers.)*

Ethnicity:

- 1 HISPANIC OR LATINO
- 2 NOT HISPANIC OR LATINO

Race:

- 1 AMERICAN INDIAN OR ALASKA NATIVE
- 2 ASIAN
- 3 BLACK OR AFRICAN AMERICAN
- 4 HISPANIC OR LATINO
- 5 NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
- 6 WHITE
- 7 DO NOT WISH TO ANSWER

37. Please use the space below to write any other comments you care to make about the positive or negative aspects of your trip to Denali, or about National Park Service management of the area.

**Thank You Very Much For Your Time
And Consideration In Completing This Survey**

APPENDIX F: HOW TO USE THIS REPORT

This section is a brief introduction to the basic statistical methods included in this report. It defines some key terms and illustrates the ways in which the statistical tables and graphs have been prepared.

The main tool used in statistics is data--those observations and measurements that are recorded in a study. As commonly used, the word "data" is plural. For example, all of the visitors' ages comprise data. A single unit of data -- for example, the age of a single visitor -- is a datum.

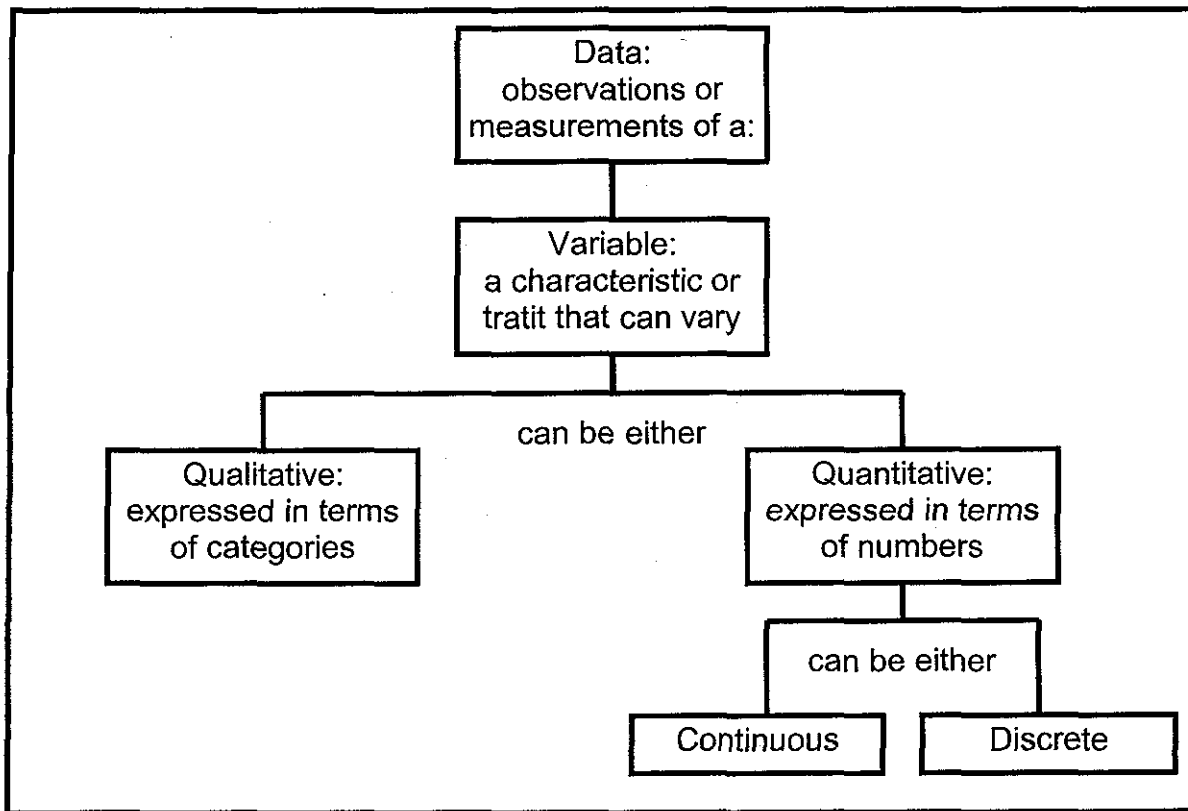
Data are collected about relevant variables. A variable is simply a characteristic or trait of interest that can vary. For example, the ages of visitors, their party characteristics, or their satisfaction with wildlife sightings at MORA can all be considered variables: Each of these traits or characteristics varies from person to person in the study sample.

Variables can be of two types: Qualitative variables are expressed in terms of categories, such as whether or not a visitor has been to the Visitor Center. Quantitative variables are expressed in terms of numbers, such as the size of a visitor party.

Discrete quantitative variables have distinct and separate units. There are no values possible between the units of a discrete variable. For example, the number of visitors in a single party consists only of whole numbers of people. One cannot talk about a party of 1 1/2 persons.

Figure D.1 illustrates these concepts.

FIGURE D.1. FLOW CHART OF STATISTICAL CONCEPTS AND TERMINOLOGY



Often data for more than one variable are collected. The data for the unit of analysis under consideration (an individual visitor, a single party, a specific park) are a case. Statistical analyses are done on groups of cases to form a data set. The number of cases in a data set is usually referred to as "n." For example, if 1000 visitors answered a question, $n = 1000$.

In many instances, respondents do not answer all of the questions in a survey. They either inadvertently skip a question or are asked to skip question because it does not apply to them. When a respondent does not answer a question that they should have answered, he/she is a "missing case" for that question. If the number of missing cases exceeds 10 percent of those who should have answered the question, a corresponding footnote or statement in the text will indicate this fact.

Data can be collected for all of the possible cases such as on every visitor to MORA. This is a census. Alternately, data can be collected for a sample of the total

Appendix F: How To Use This Report

population. There are many ways to choose a sample. One common approach is a random probability sample, in which each individual has an equal chance of being included in the data set. In the strictest mathematical sense, the WTVS sample is not random due to the possibility of bias through non-response. However, the authors believe that the potential bias is so minimal that, for ordinary management purposes, the sample can be considered random and therefore, representative of the population of visitors to the studied wilderness trails.

The data from this survey are reported as descriptive statistics. Descriptive statistics are used to summarize a large group of numbers and to describe general characteristics of the data set. For example, there might be a long list of each visitor's age. Descriptive statistics can be used to quickly summarize this long list. The average (mean) age would be the total of all the cases' ages divided by the number of cases. The modal age (mode) would be the most frequently reported age. The range would be the spread of ages from the youngest to the oldest.

In addition to descriptive statistics, inferential statistical procedures have been used to determine the likelihood that observed relationships among the different variables are due to chance. The smaller the likelihood that an observed effect is due to chance the more confident one can be that the effect is due to systematic variation. The p-value is the probability of obtaining the observed result due to chance alone and is directly related to the results of the statistical test. By convention, when the probability of obtaining a result due to chance is very small ($p < .05$), then it is concluded that the observed effect is due to systematic variation or a "real" effect. Results with p-values less than .05 are also referred to as significant. In this report, you will see the value of the statistic and its corresponding p-value (e.g., $\chi^2(1)=3.44, p < .01$). The important thing to remember is that effects that have p-values less than .05 are considered real effects.

The most common statistical procedure used in this report is the chi-square test for independence. This statistical test determines if the pattern of responses for one categorical variable differs across different categories of the second categorical variable. For example, suppose a chi-square test examining the relationship between sex of respondent and day of week contacted was significant. This means that the proportion of

Appendix F: How To Use This Report

males and females among respondents contacted on weekdays (e.g., 50% males, 50% females) differed significantly from that of respondents contacted on the weekend (e.g., 60% males, 40% females).

When one of the variables are measured on a continuous (e.g., age) rather than categorical (e.g., gender) basis, the statistical procedure used to examine differences across groups is Analysis of Variance (F-test). A significant F-value indicates that there is a significant difference among the groups. If there are more than 2 groups, follow-up tests (e.g., post hoc Tukey tests) can be performed to determine which groups differ from each other. Additional statistical procedures used in this report are explained briefly either in the text or a footnote when they are first introduced.

Statistics can be presented in several formats. Tables simply organize the data into horizontal and vertical columns and sometimes include brief explanations. Graphs or figures illustrate the data through a visual presentation. All of these formats are present in this report.

Appendix G: Encounters with Hiking Parties

Three questions filled out daily in both versions of the diary asked backpackers to report on the number of other hiking parties they saw, how they felt about the number of other hiking parties they saw, and the number of other hiking parties with which they interacted (the questions are reproduced later in this appendix). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent data from the number of hiking parties seen question and the number of hiking parties interacted with question and four summary figures represent data from the feeling question.

Number of Hiking Parties Seen Per Day:

- The *Average per Trip Day* represents the total number of hiking parties seen reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties seen per full hiking day.
- The *Maximum Daily Number per Trip* represents the number of hiking parties seen reported on the day when the most hiking parties were seen. For example, if a party on a three-day hiking trip reported seeing 2, 0, and 1 hiking parties on each day, the maximum daily number of hiking parties seen would be 2.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest hiking parties were seen (i.e., in the example above, the minimum daily number of hiking parties would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of hiking parties seen reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, hikers seen reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).
- The *Total Number per Trip* is simply the total number of hiking parties seen during a trip.

Appendix G: Encounters with Hiking Parties

Feelings about the Number of Hiking Parties Seen Today:

- The *Average Feeling Rating about Number of Hiking Parties Seen per Trip Day* represents the sum of the feeling ratings of the number of hiking parties seen each day divided by the number of trip days for a respondent selected to represent a party. Days may include partial hiking days from the first and/or last day of the diary.
- The *Most Negative Feeling Rating about Number of Hiking Parties Seen per Trip Day* represents the day that had the most negative rating for number of hiking parties seen for a respondent selected to represent a party. For example, if a party on a three-day hiking trip reported feeling a 2, 3, and 4 for each of the days, the most negative rating feeling rating would be 2 (Saw too many, preferred seeing less).
- The *Most Positive Feeling Rating about Number of Hiking Parties Seen per Trip Day* represents the day that had the most positive rating for number of hiking parties seen for a respondent selected to represent a party. In the above example, the most positive feeling rating would be 4 (Saw too few, preferred seeing more).
- The *Standard Deviation of Feeling Ratings about the Number of Hiking Parties Seen per Trip Day* represents the variability in the daily feeling ratings for the number of hiking parties seen across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, feeling ratings for multiple trip days) vary around the mean of that group (in this case, the Average Feeling Rating per Trip Day).

Number of Hiking Parties Interacted with Each Day:

- The *Average Number of Hiking Parties Interacted with per Trip Day* represents the total number of hiking parties interacted with reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties interacted with per full hiking day.
- The *Maximum Daily Number of Hiking Parties Interacted with per Trip* represents the day on which the hiking party interacted with the most other hiking parties. For example,

Appendix G: Encounters with Hiking Parties

if a party on a three-day hiking trip reported interacting with 2, 0, and 1 hiking parties on each day, the maximum daily number of hiking parties interacted with would be 2.

- The *Minimum Daily Number of Hiking Parties Interacted with per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest hiking parties were interacted with (i.e., in the example above, the minimum daily number of hikers would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of hiking parties interacted with reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, hiking parties interacted with reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).
- The *Total Number per Trip* is simply the total number of hiking parties interacted with during a trip.

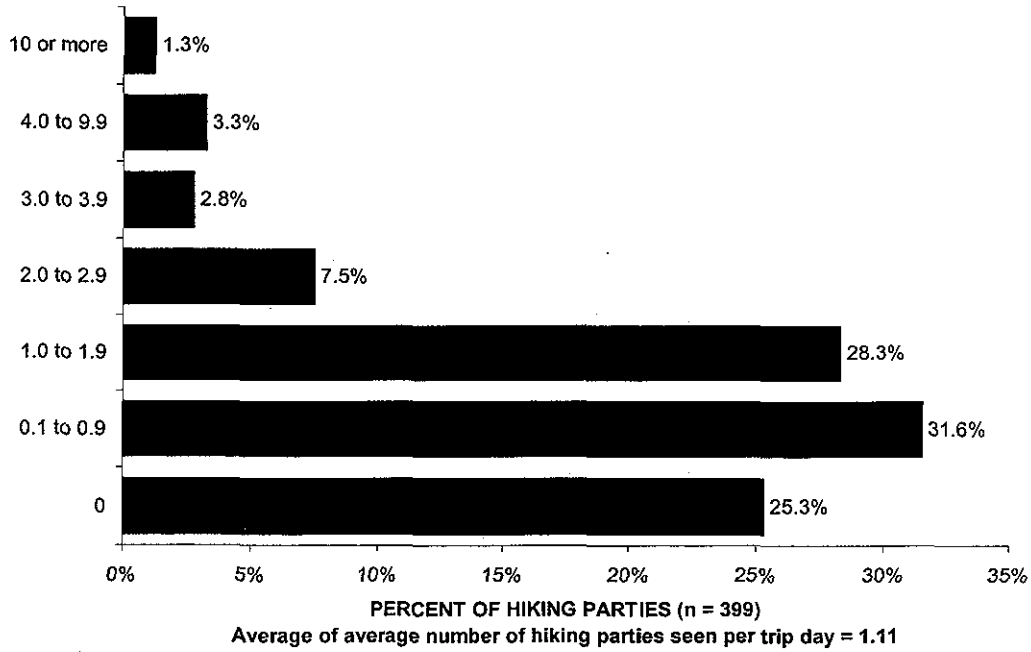
Number of Hiking Parties Seen Per Day

Diary, Versions 1 & 2

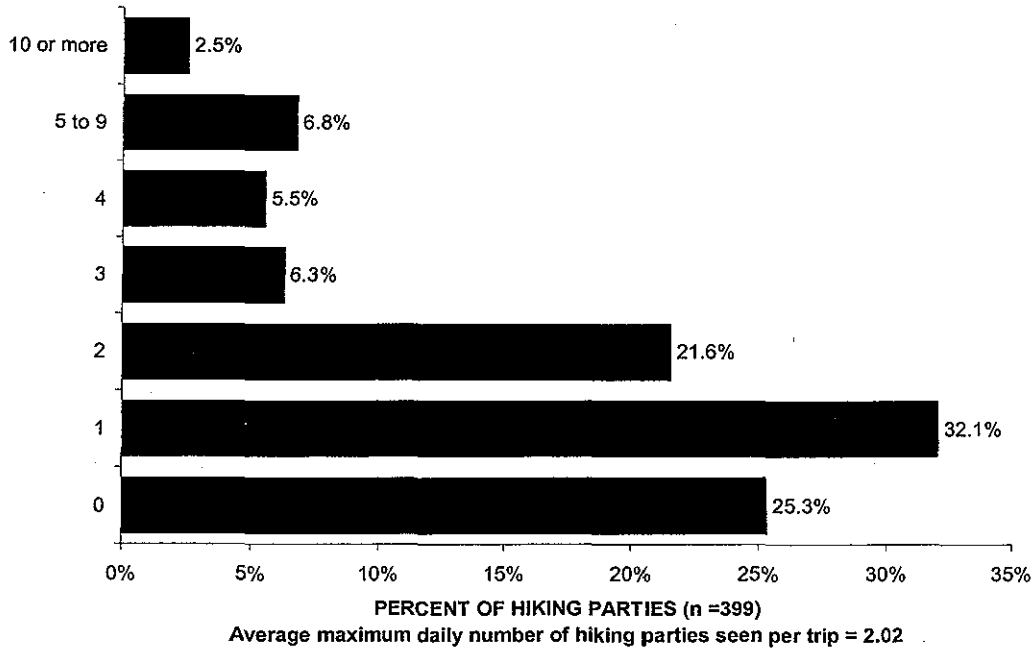
5. How many different hiking parties did you see today? _____

Appendix G: Encounters with Hiking Parties

**FIGURE G.1: Diary (aggregated), Q-5
AVERAGE NUMBER OF HIKING PARTIES SEEN PER TRIP DAY**

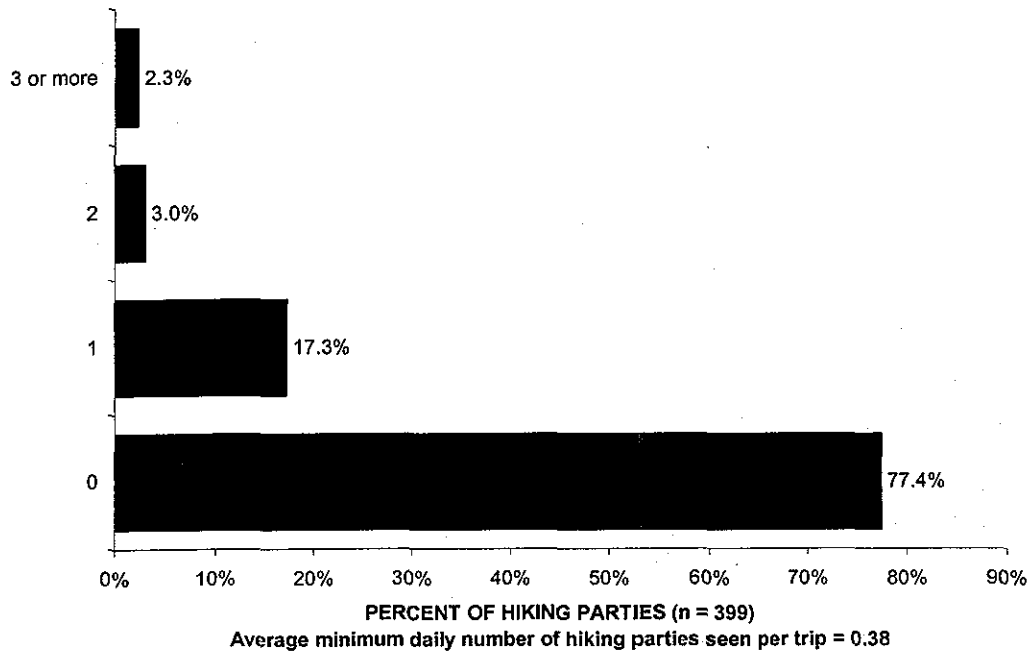


**FIGURE G.2: Diary (aggregated), Q-5
MAXIMUM DAILY NUMBER OF HIKING PARTIES SEEN PER TRIP**

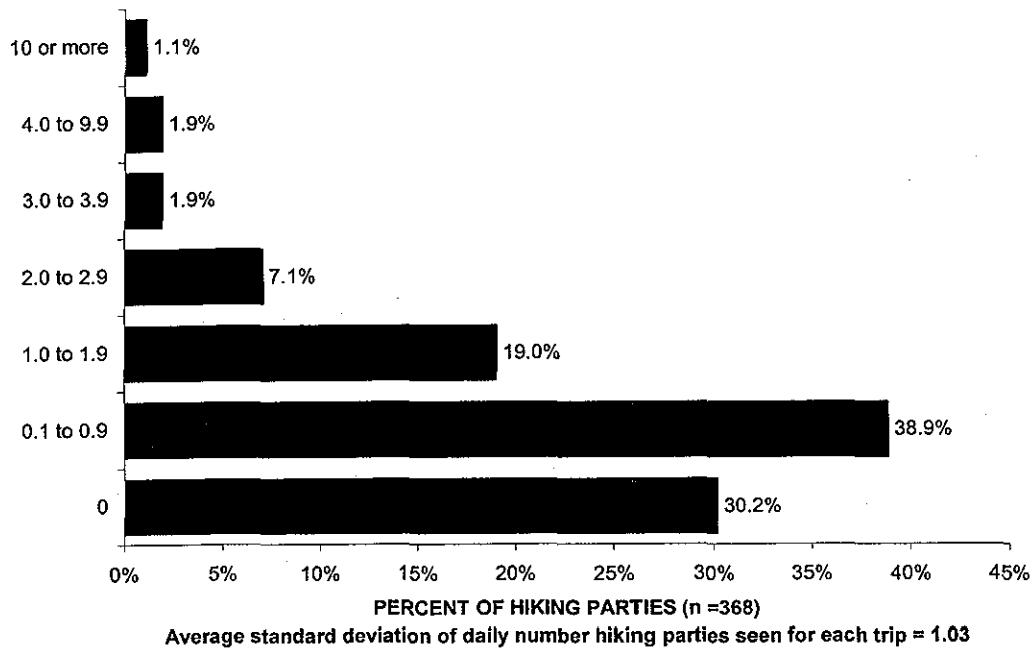


Appendix G: Encounters with Hiking Parties

**FIGURE G.3: Diary (aggregated), Q-5
MINIMUM DAILY NUMBER OF HIKING PARTIES SEEN PER TRIP**

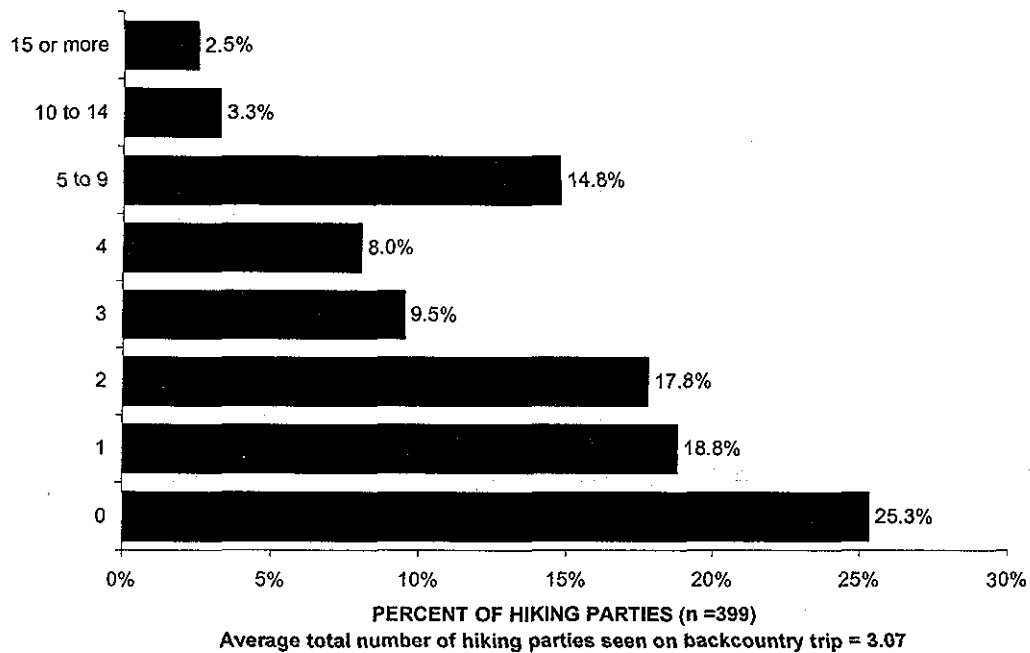


**FIGURE G.4: Diary (aggregated), Q-5
STANDARD DEVIATION OF DAILY NUMBER OF HIKING PARTIES SEEN FOR EACH TRIP**



Appendix G: Encounters with Hiking Parties

FIGURE G.5: Diary (aggregated), Q-5
TOTAL NUMBER OF HIKING PARTIES SEEN ON BACKCOUNTRY TRIP



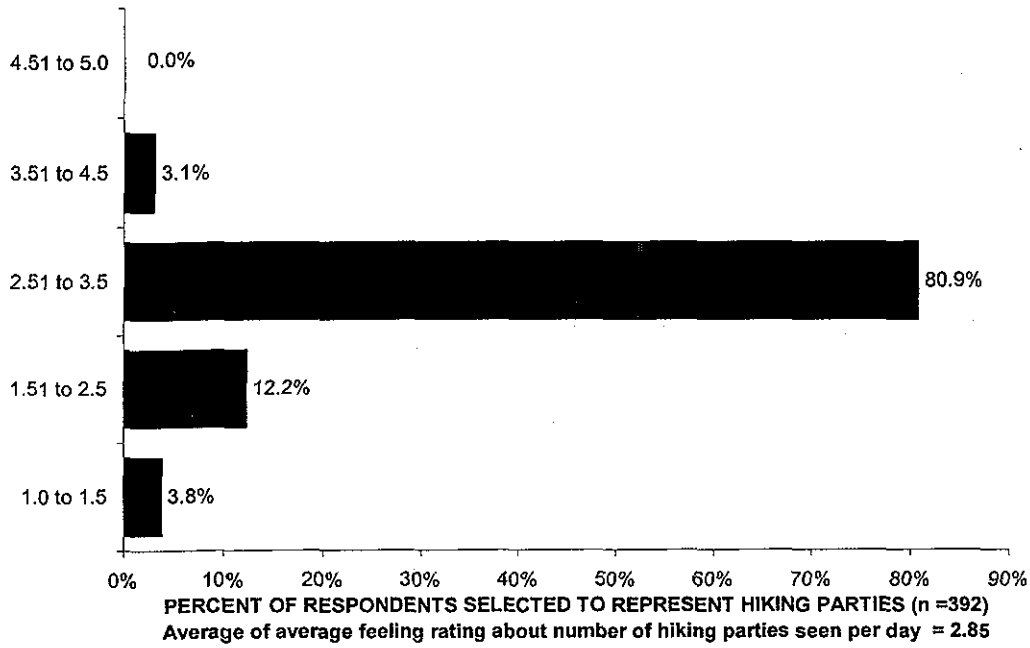
Feelings about Number of Hiking Parties Seen Today

Diary, Versions 1 & 2

7. Which of the following best describes how you feel about the number of hiking parties you saw today? (*List number that describes your feelings*)
1. Saw too many, preferred seeing none
 2. Saw too many, preferred seeing less
 3. Saw about the right number
 4. Saw too few, preferred seeing more
 5. Saw too few, preferred seeing many more

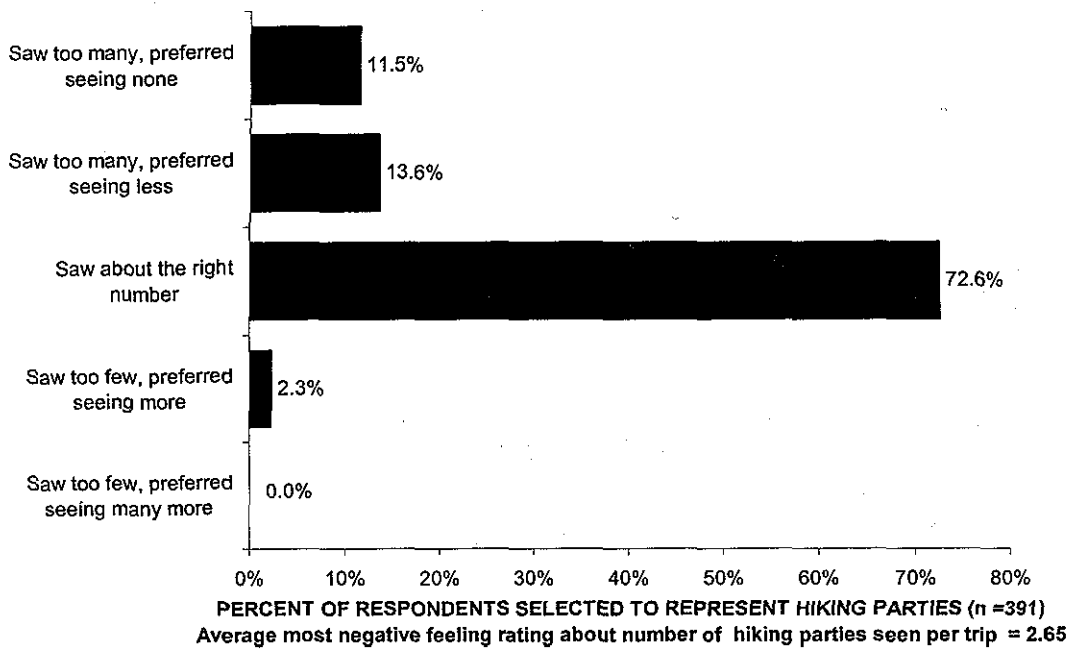
Appendix G: Encounters with Hiking Parties

FIGURE G.6: Diary (aggregated), Q-7
AVERAGE FEELING RATING ABOUT NUMBER OF HIKING PARTIES SEEN PER TRIP DAY *

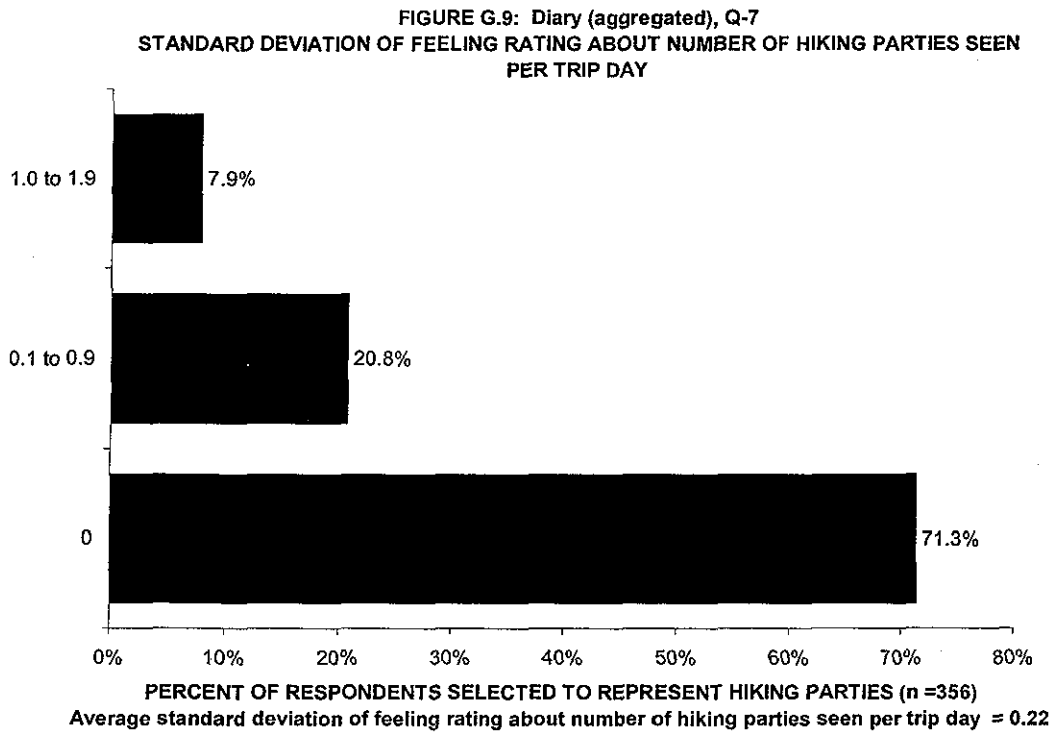
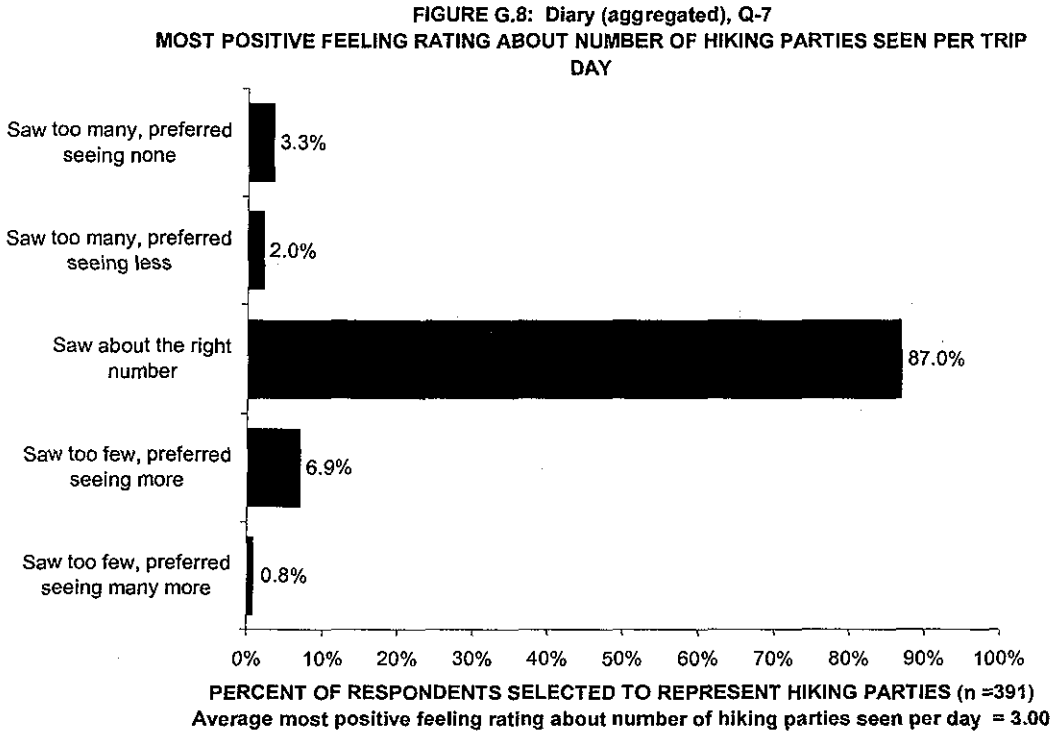


*Taking the average results in values that fall between the response options

FIGURE G.7: Diary (aggregated), Q-7
MOST NEGATIVE FEELING RATING ABOUT NUMBER OF HIKING PARTIES SEEN PER TRIP



Appendix G: Encounters with Hiking Parties



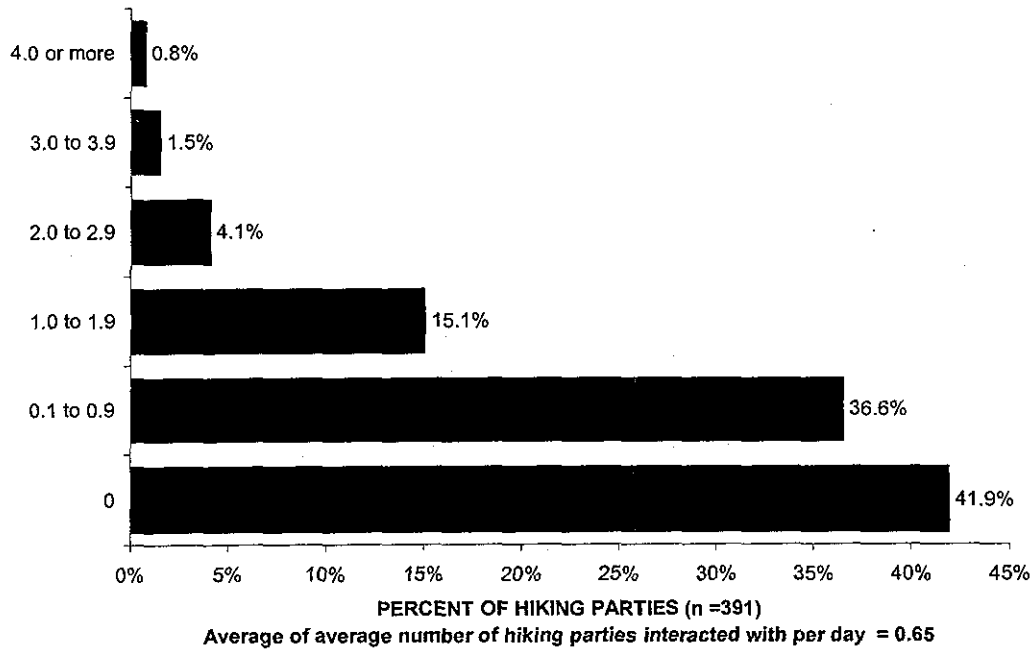
Appendix G: Encounters with Hiking Parties

Number of Hiking Parties Interacted with Each Day

Diary, Versions 1 & 2

6. How many times did you interact with hiking parties today? (e.g., talk to or exchange greetings, either verbal or non-verbal). _____

FIGURE G.10: Diary (aggregated), Q-6
AVERAGE NUMBER OF HIKING PARTIES INTERACTED WITH PER TRIP DAY



Appendix G: Encounters with Hiking Parties

FIGURE G.11: Diary (aggregated), Q-6
MAXIMUM DAILY NUMBER OF HIKING PARTIES INTERACTED WITH PER TRIP

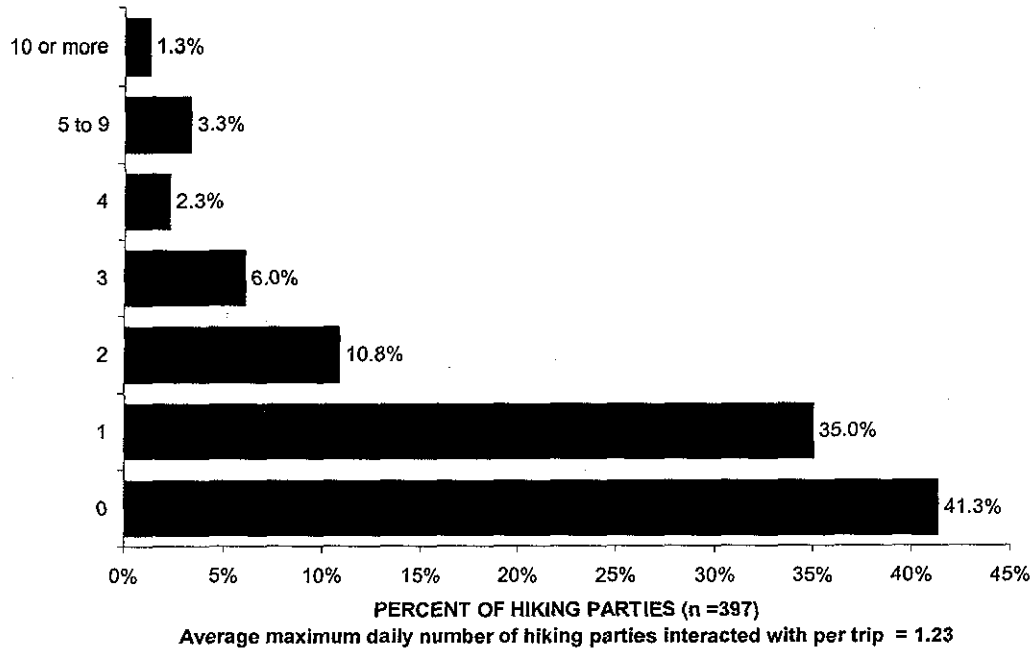
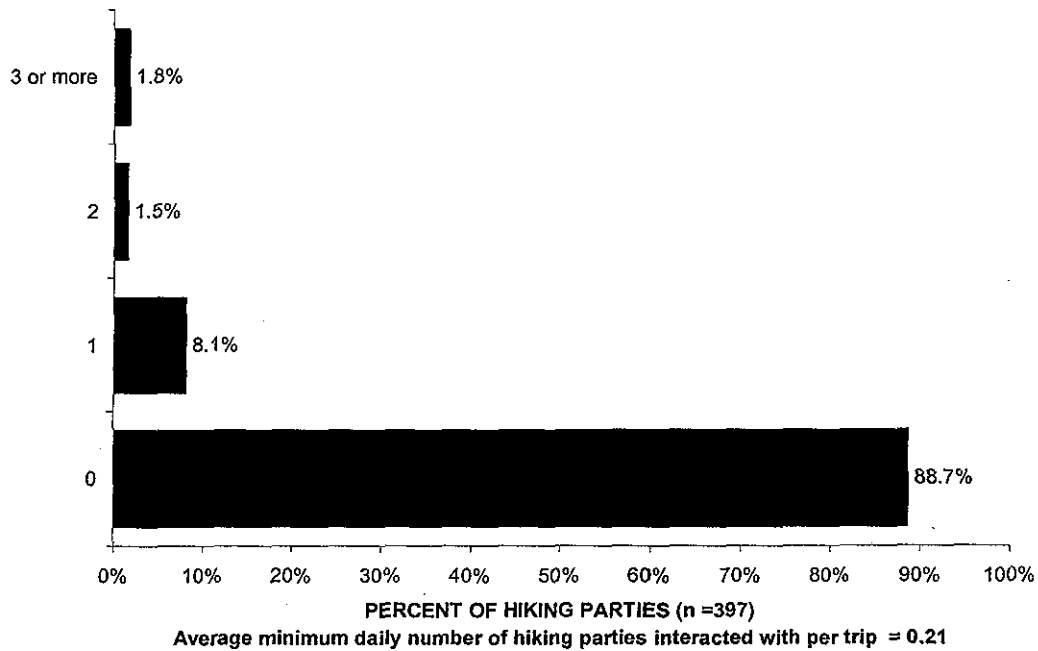


FIGURE G.12: Diary (aggregated), Q-6
MINIMUM DAILY NUMBER OF HIKING PARTIES INTERACTED WITH PER TRIP



Appendix G: Encounters with Hiking Parties

FIGURE G.13: Diary (aggregated), Q-6
 STANDARD DEVIATION OF DAILY NUMBER HIKING PARTIES INTERACTED WITH ON EACH TRIP

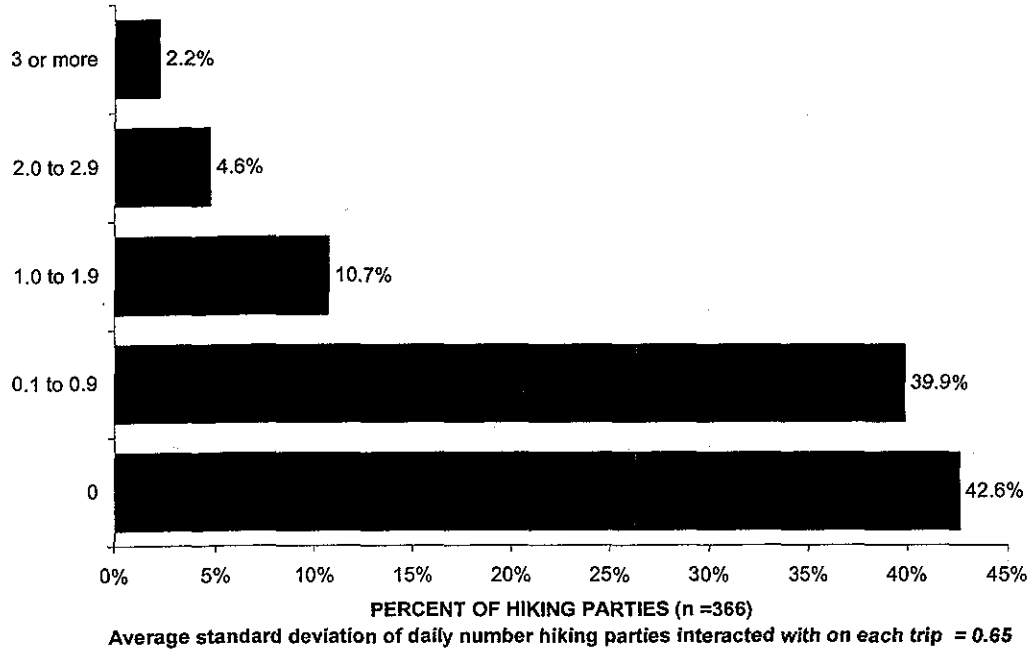
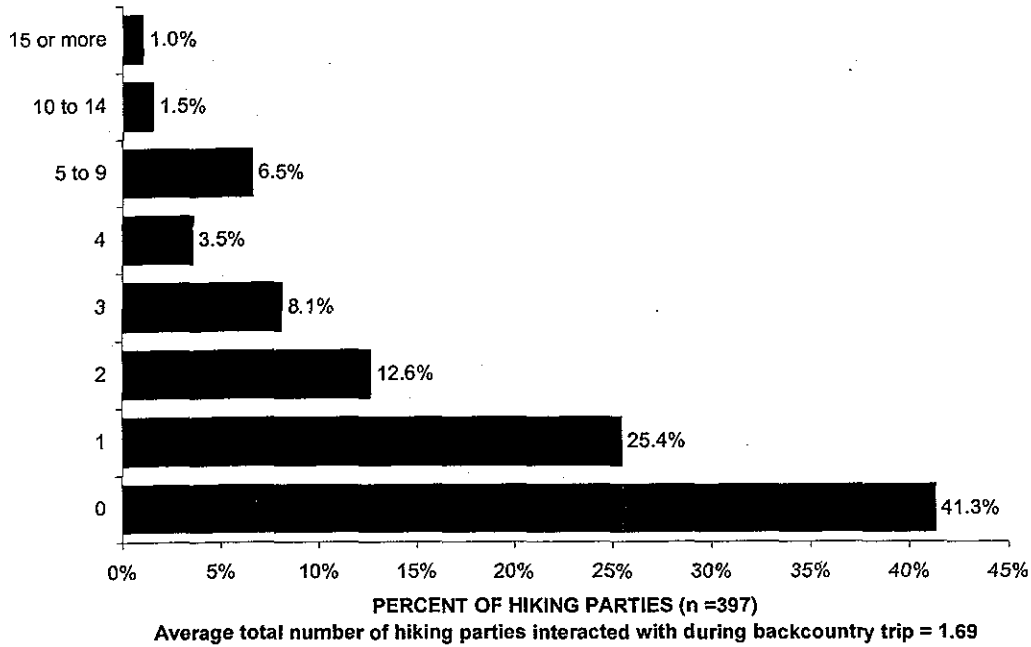


FIGURE G.14: Diary (aggregated), Q-6
 TOTAL NUMBER OF HIKING PARTIES INTERACTED WITH DURING BACKCOUNTRY TRIP



Appendix H: Encounters with Hiking Parties Camped Nearby

Two questions filled out daily in both versions of the diary asked backpackers to report on the number of hiking parties camped within sight and/or sound and how they felt about the number of hiking parties camped within sight and/or sound (the questions are reproduced later in this appendix). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent data from the number of hiking parties camped nearby question and four summary figures represent data from the feeling question.

Number of Hiking Parties Camped within Sight and/or Sound per Day:

- The *Average per Trip Day* represents the total number of hiking parties camped within sight/sound reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of hiking parties camped within sight/sound per full hiking day.
- The *Maximum Daily Number per Trip* represents the number of hiking parties camped within sight/sound reported on the day when the most hiking parties were camped nearby. For example, if a party on a three-day hiking trip reported seeing 2, 0, and 1 hiking parties camped nearby on each day, the maximum daily number of hiking parties camped nearby would be 2.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest hiking parties were camped nearby (i.e., in the example above, the minimum daily number of hiking parties camped nearby would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of hiking parties camped nearby reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, hikers camped nearby reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).

Appendix H: Encounters with Hiking Parties Camped Nearby

- The *Total Number per Trip* is simply the total number of hiking parties camped nearby during a trip.

Feelings about the Number of Hiking Parties Camped within Sight/Sound per Day:

- The *Average Feeling Rating about Number of Hiking Parties Camped Nearby per Trip Day* represents the sum of the feeling ratings of the number of hiking parties camped nearby each day divided by the number of trip days for a respondent selected to represent a party. Days may include partial hiking days from the first and/or last day of the diary.
- The *Most Negative Feeling Rating about Number of Hiking Parties Camped within Sight/Sound per Trip Day* represents the day that had the most negative rating for number of hiking parties camped within sight/sound for a respondent selected to represent a party. For example, if a party on a three-day hiking trip reported feeling a 2, 3, and 4 for each of the days, the most negative rating feeling rating would be 2 (Saw too many, preferred seeing less).
- The *Most Positive Feeling Rating about Number of Hiking Parties Camped within Sight/Sound per Trip Day* represents the day that had the most positive rating for number of hiking parties camped within sight/sound for a respondent selected to represent a party. In the above example, the most positive feeling rating would be 4 (Saw too few, preferred seeing more).
- The *Standard Deviation of Feeling Ratings about the Number of Hiking Parties Camped within Sight/Sound per Trip Day* represents the variability in the daily feeling ratings for the number of hiking parties camped within sight/sound across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, feeling ratings for multiple trip days) vary around the mean of that group (in this case, the Average Feeling Rating per Trip Day).

Number of Hiking Parties Camped within Sight and/or Sound per Day

Diary, Versions 1 & 2

12. How many hiking parties are camped within sight or sound of your camp today? (If you did not camp, write "NA" for Q-12 and for Q-13.) _____

Appendix H: Encounters with Hiking Parties Camped Nearby

FIGURE H.1: Diary (aggregated), Q-12
AVERAGE NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND

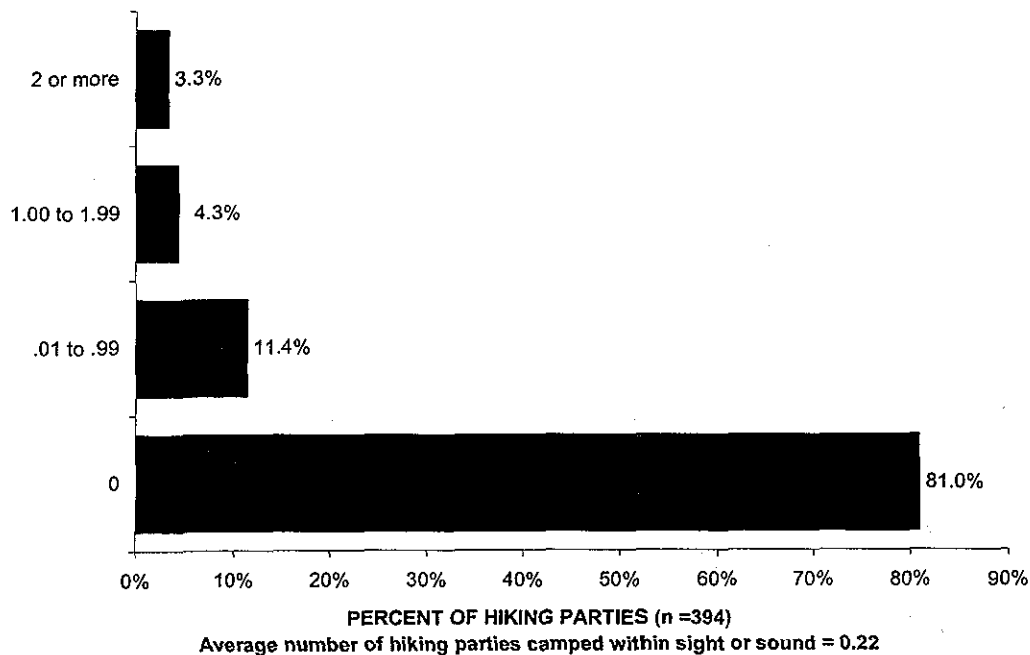
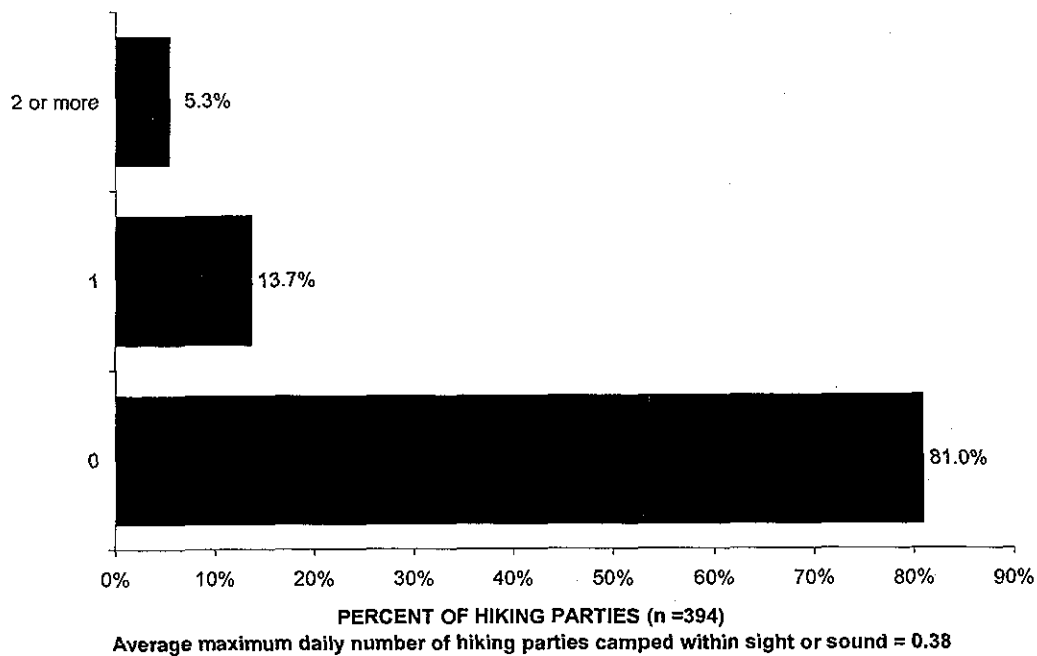


FIGURE H.2: Diary (aggregated), Q-12
MAXIMUM DAILY NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND



Appendix H: Encounters with Hiking Parties Camped Nearby

FIGURE H.3: Diary (aggregated), Q-12
MINIMUM DAILY NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND

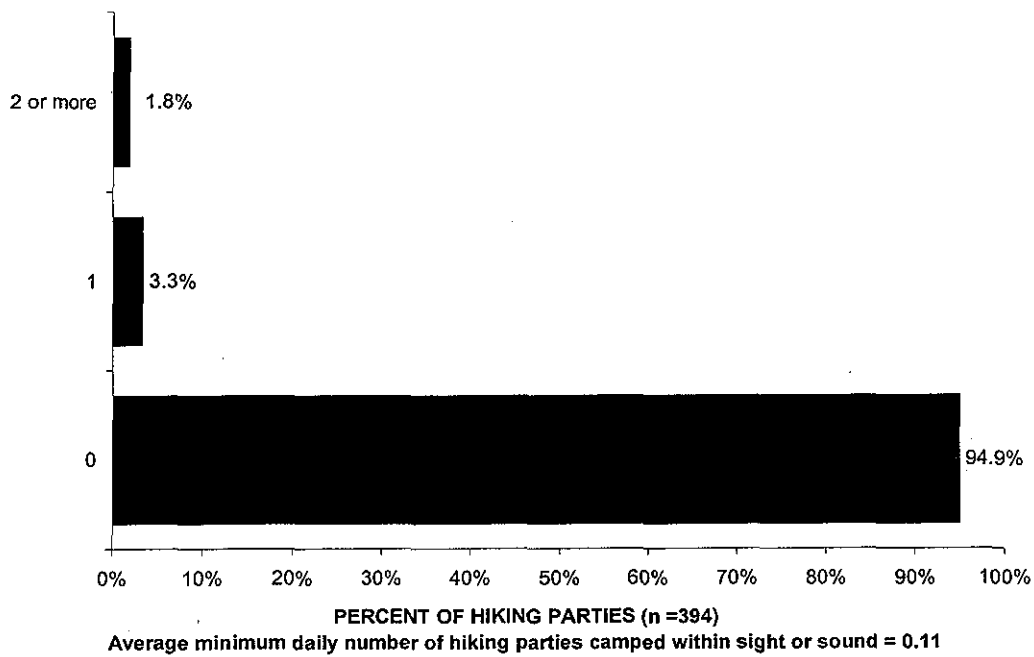
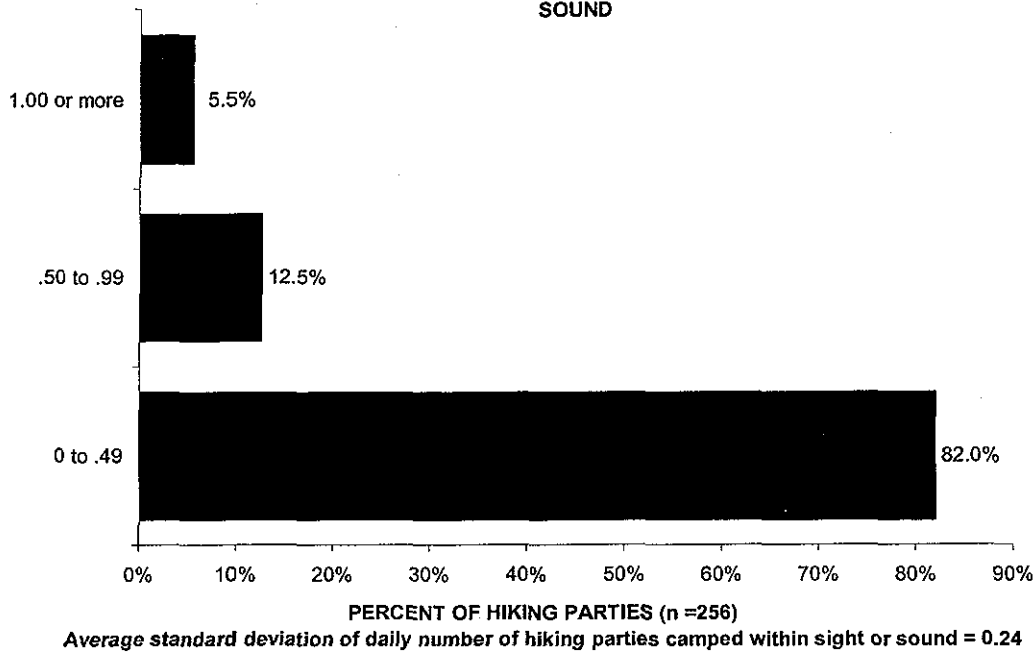
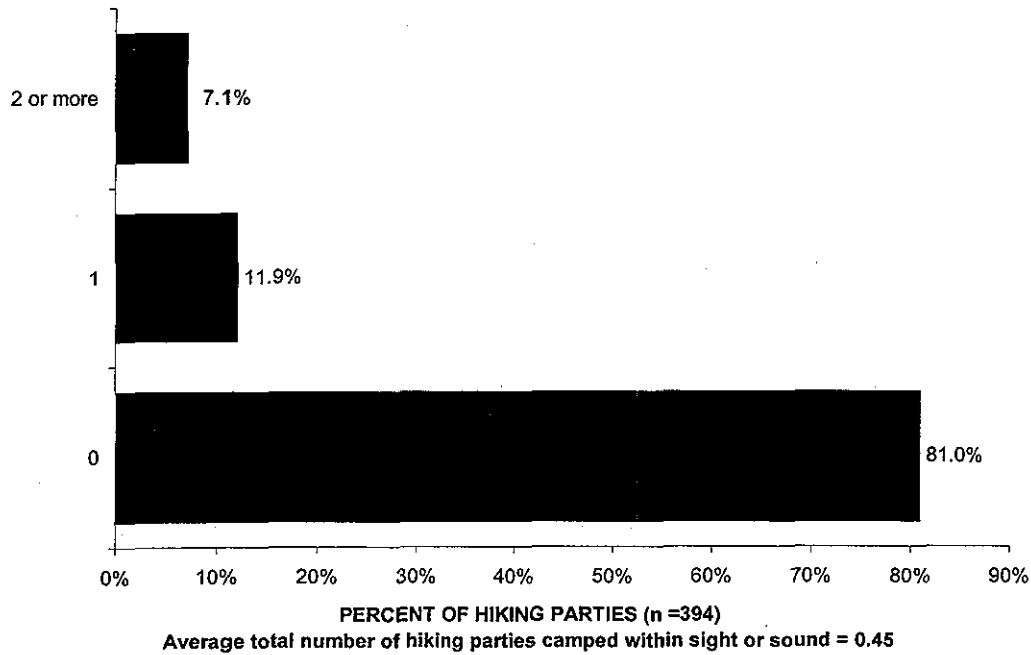


FIGURE H.4: Diary (aggregated), Q-12
STANDARD DEVIATION OF DAILY NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND



Appendix H: Encounters with Hiking Parties Camped Nearby

FIGURE H.5: Diary (aggregated), Q-12
TOTAL NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND

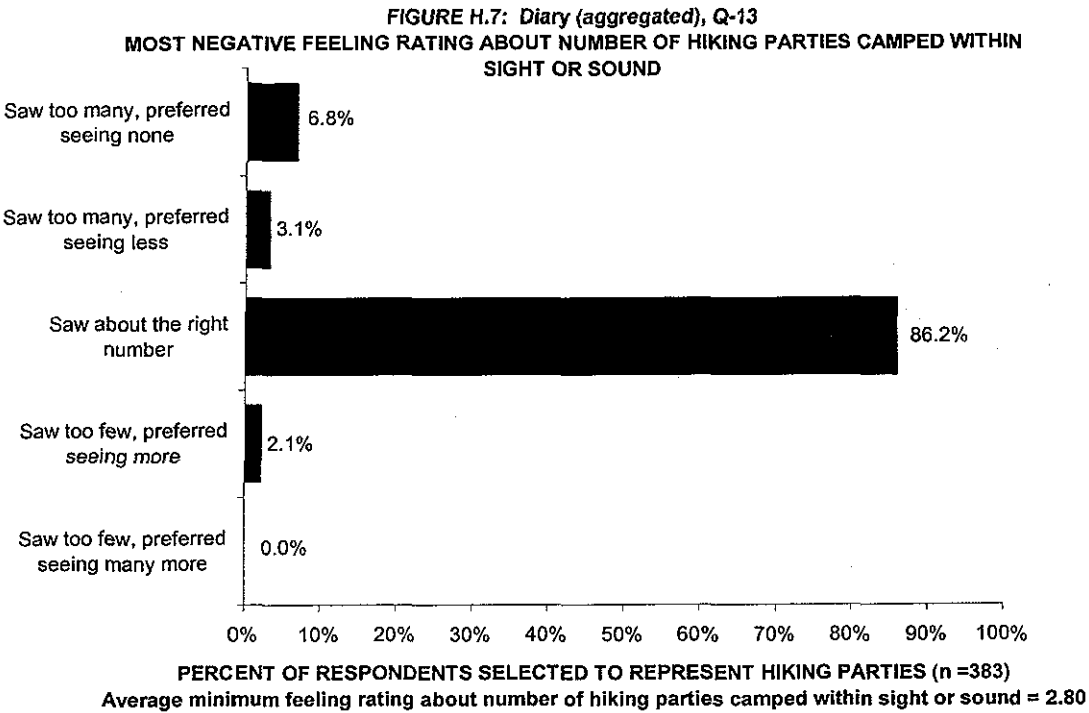
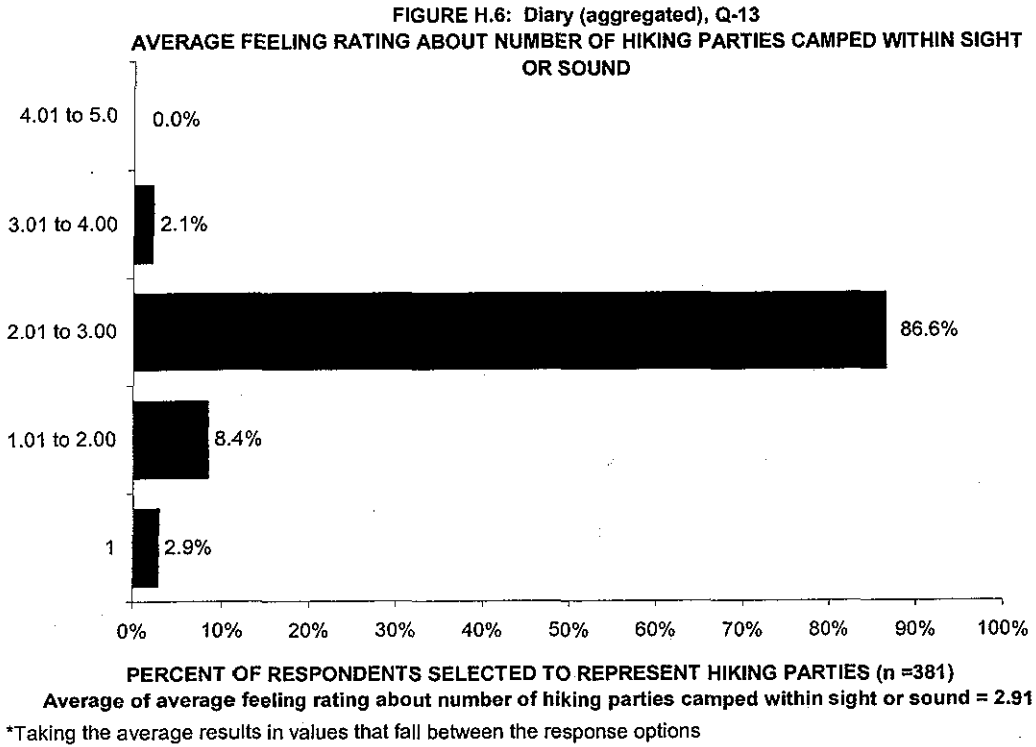


Feelings about the Number of Hiking Parties Camped within Sight and/or Sound per Day

Diary, Versions 1 & 2

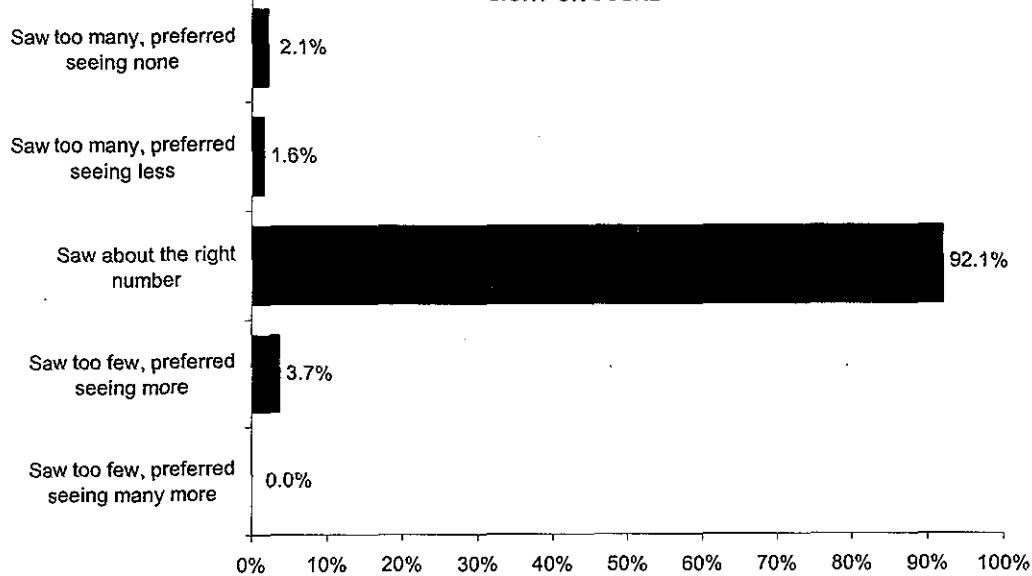
13. Which of the following best describes how you feel about the number of hiking parties camped within sight or sound of your camp? (*List number*)
1. Saw too many, preferred seeing none
 2. Saw too many, preferred seeing less
 3. Saw about the right number
 4. Saw too few, preferred seeing more
 5. Saw too few, preferred seeing many more

Appendix H: Encounters with Hiking Parties Camped Nearby



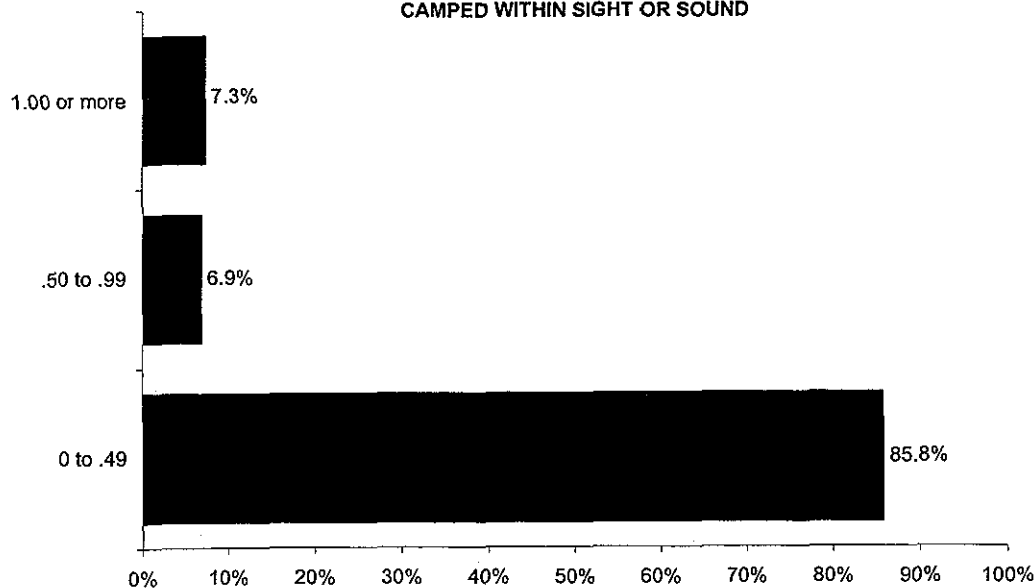
Appendix H: Encounters with Hiking Parties Camped Nearby

FIGURE H.8: Diary (aggregated), Q-13
MOST POSITIVE FEELING RATING ABOUT NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND



PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n =381)
 Average most positive feeling rating about number of hiking parties camped within sight or sound = 2.97

FIGURE H.9: Diary (aggregated), Q-13
STANDARD DEVIATION OF FEELING RATING ABOUT NUMBER OF HIKING PARTIES CAMPED WITHIN SIGHT OR SOUND



PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n =247)
 Average standard deviation of feeling rating about number of hiking parties camped within sight or sound = 0.15

Appendix I: Encounters with Park Rangers

Two questions filled out daily in Version 2 of the diary asked backpackers to report on the number of park rangers seen and the number of park rangers with which they interacted (the questions are reproduced later in this appendix). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent data from the number of park rangers seen question and the number of park rangers interacted with question.

Number of Park Rangers Seen Today:

- The *Average per Trip Day* represents the total number of park rangers seen reported during a trip divided by the number of trip days. Because partial hiking days could be reported on the first and/or last day of the diary, the presented averages are low estimates of park rangers seen per full hiking day.
- The *Maximum Daily Number per Trip* represents the number of park rangers seen reported on the day when the most park rangers were seen. For example, if a party on a three-day hiking trip reported seeing 2, 0, and 1 park rangers on each day, the maximum daily number of park rangers seen would be 2.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest park rangers were seen (i.e., in the example above, the minimum daily number of park rangers would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of park rangers seen reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, park rangers seen reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).
- The *Total Number per Trip* is simply the total number of park rangers seen during a trip.

Number of Interactions with Park Rangers Today:

- The *Average per Trip Day* represents the total number of interactions with park rangers reported divided by the number of trip days. Because partial hiking days could be

Appendix I: Encounters with Park Rangers

reported on the first and/or last day of the diary, the presented averages are low estimates of interactions with park rangers per full hiking day.

- The *Maximum Daily Number per Trip* represents the number of interactions with park rangers reported on the day when the hiking party interacted with the most park rangers. For example, if a party on a three-day hiking trip reported interacting with 2, 0, and 1 park rangers on each day, the maximum daily number of park rangers interacted with would be 2.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the hiking party interacted with the fewest park rangers (i.e., in the example above, the minimum daily number of park rangers interacted with would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of interactions with park rangers across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, interactions with park rangers reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).
- The *Total Number per Trip* is simply the total number of interactions with park rangers during a trip.

Number of Park Rangers Seen per Day

Diary, Version 2

10. How many different park rangers did you see today? _____

Appendix I: Encounters with Park Rangers

FIGURE I.1: Diary (aggregated), Q-10
AVERAGE NUMBER OF PARK RANGERS SEEN PER TRIP DAY

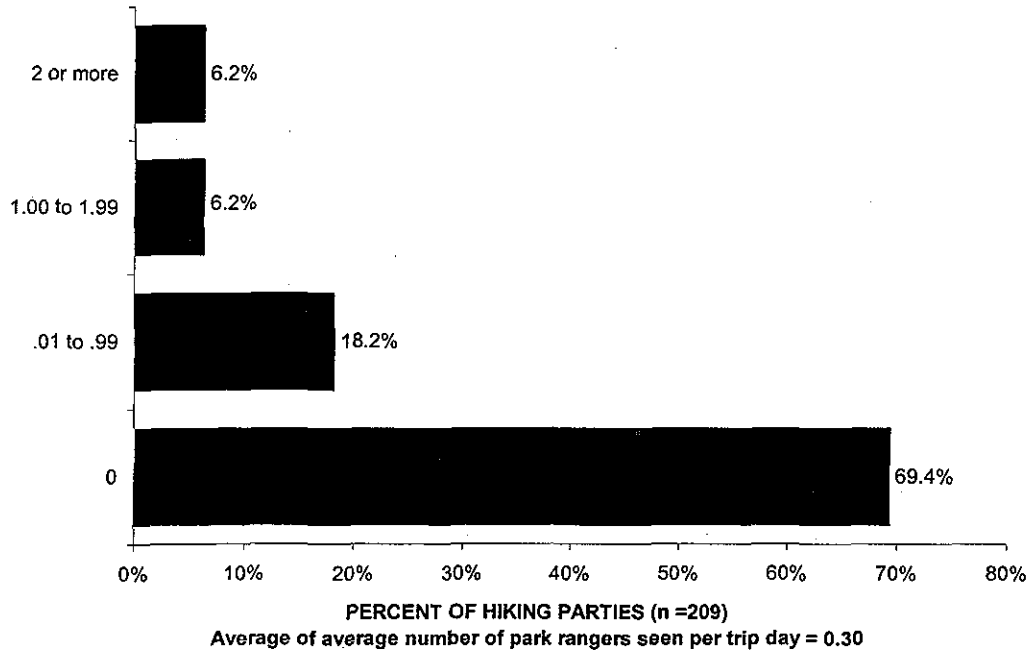
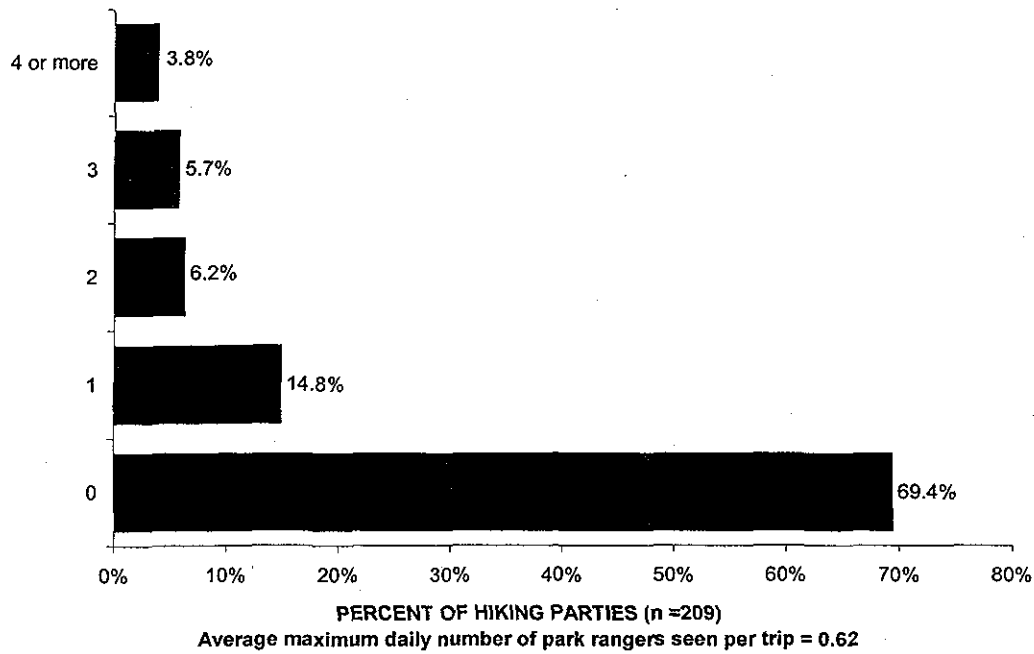


FIGURE I.2: Diary (aggregated), Q-10
MAXIMUM DAILY NUMBER PARK RANGERS SEEN PER TRIP



Appendix I: Encounters with Park Rangers

FIGURE I.3: Diary (aggregated), Q-10
MINIMUM DAILY NUMBER PARK RANGERS SEEN PER TRIP

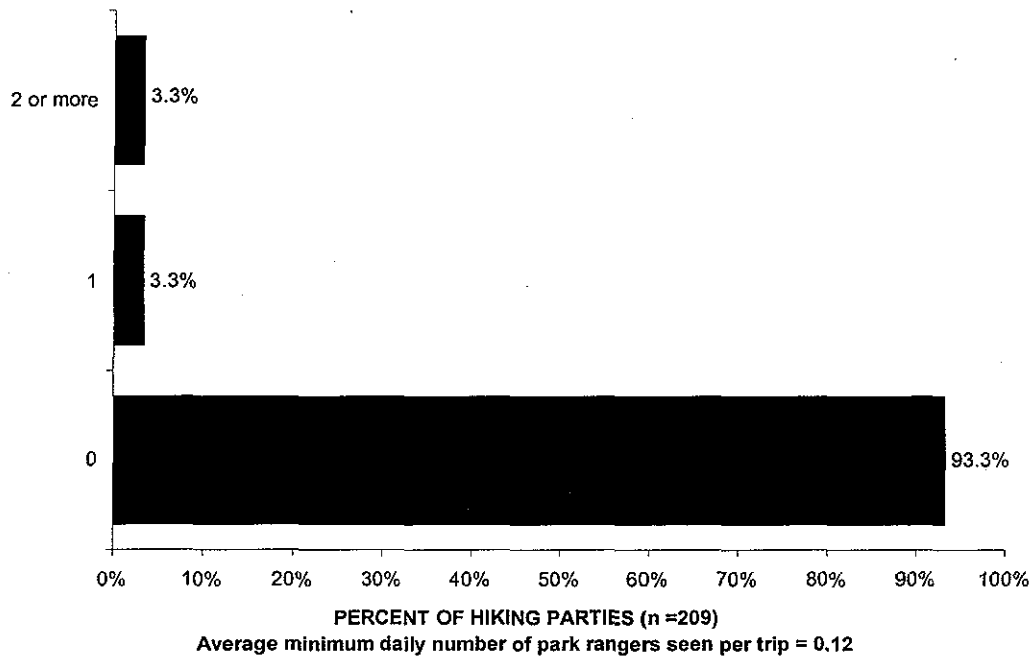
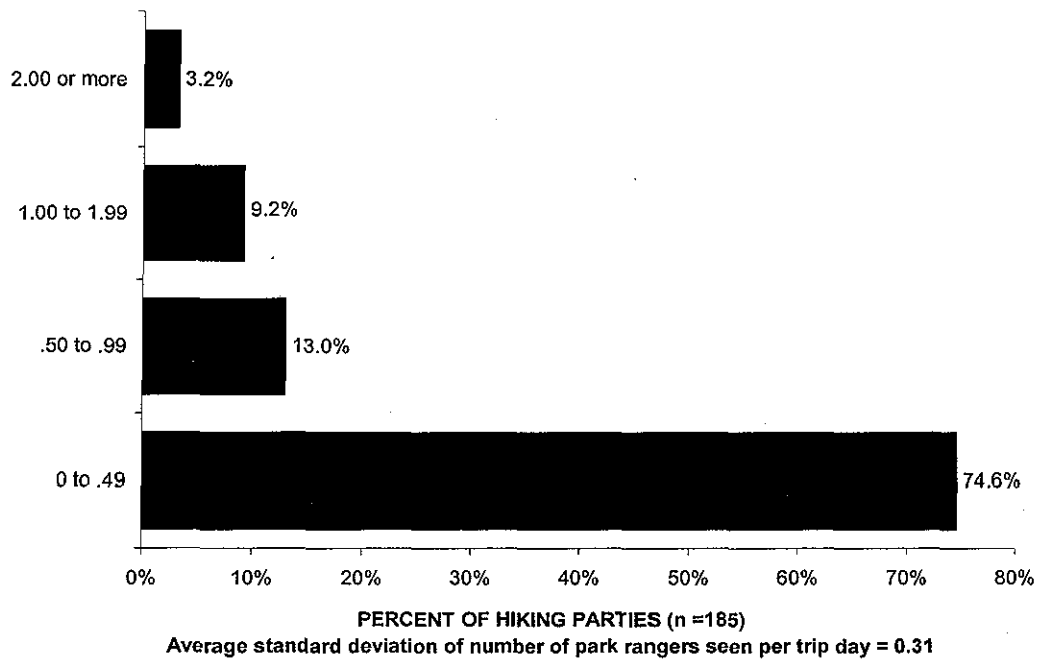
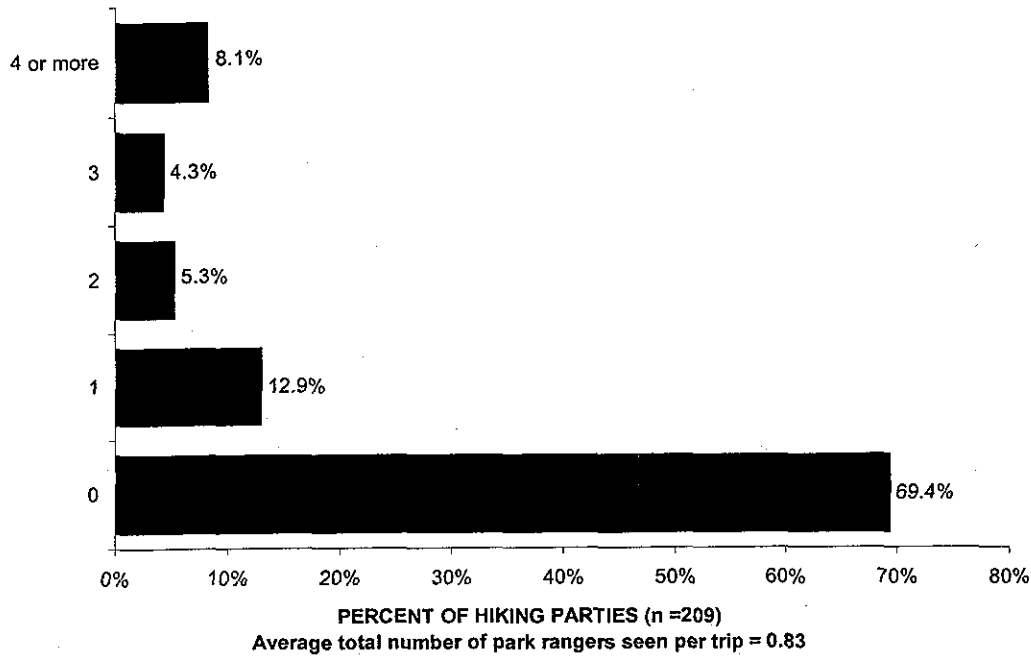


FIGURE I.4: Diary (aggregated), Q-10
STANDARD DEVIATION OF NUMBER OF PARK RANGERS SEEN PER TRIP DAY



Appendix I: Encounters with Park Rangers

FIGURE I.5: Diary (aggregated), Q-10
TOTAL NUMBER PARK RANGERS SEEN PER TRIP



Number of Interactions with Park Rangers per Day

Diary, Version 2

11. How many times did you interact with park rangers today? (e.g., talk to or exchange greetings, either verbal or non-verbal) _____

Appendix I: Encounters with Park Rangers

FIGURE I.6: Diary (aggregated), Q-11
AVERAGE NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP DAY

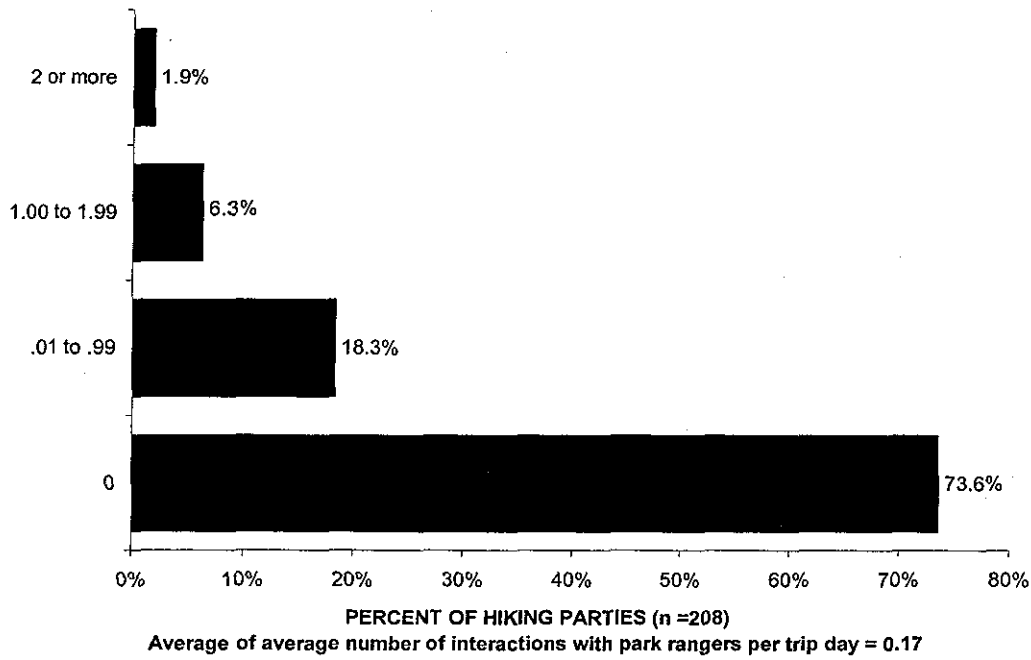
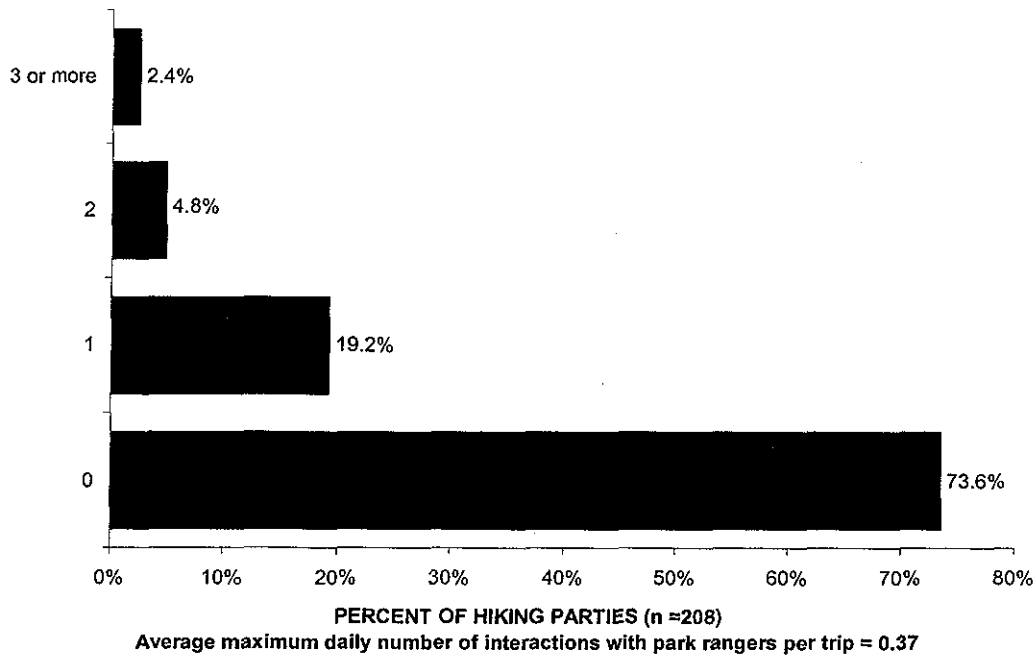


FIGURE I.7: Diary (aggregated), Q-11
MAXIMUM DAILY NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP



Appendix I: Encounters with Park Rangers

FIGURE I.8: Diary (aggregated), Q-11
MINIMUM DAILY NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP

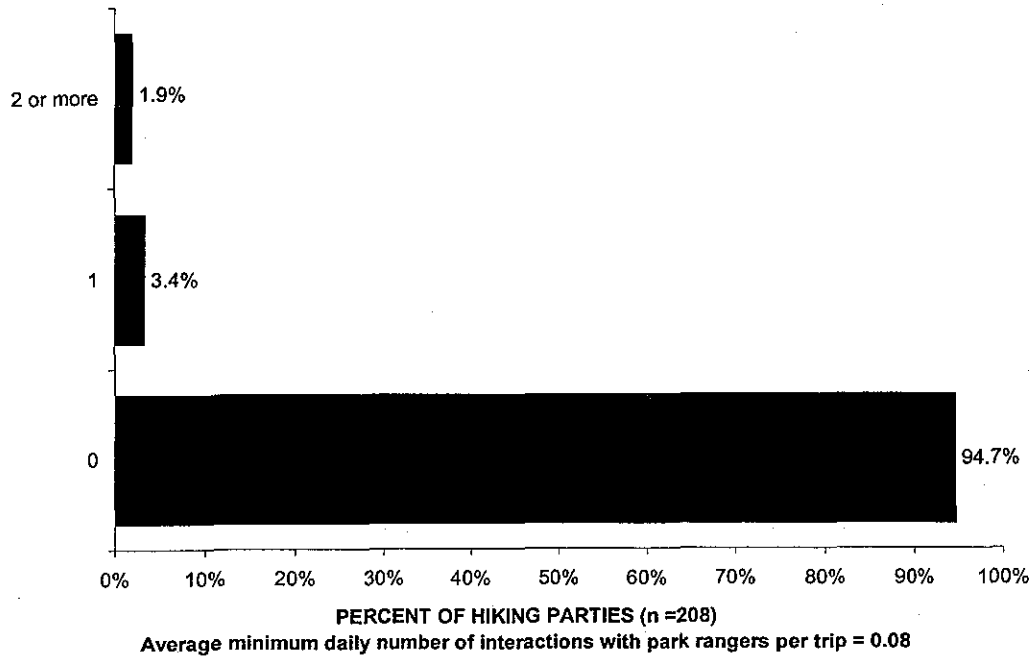
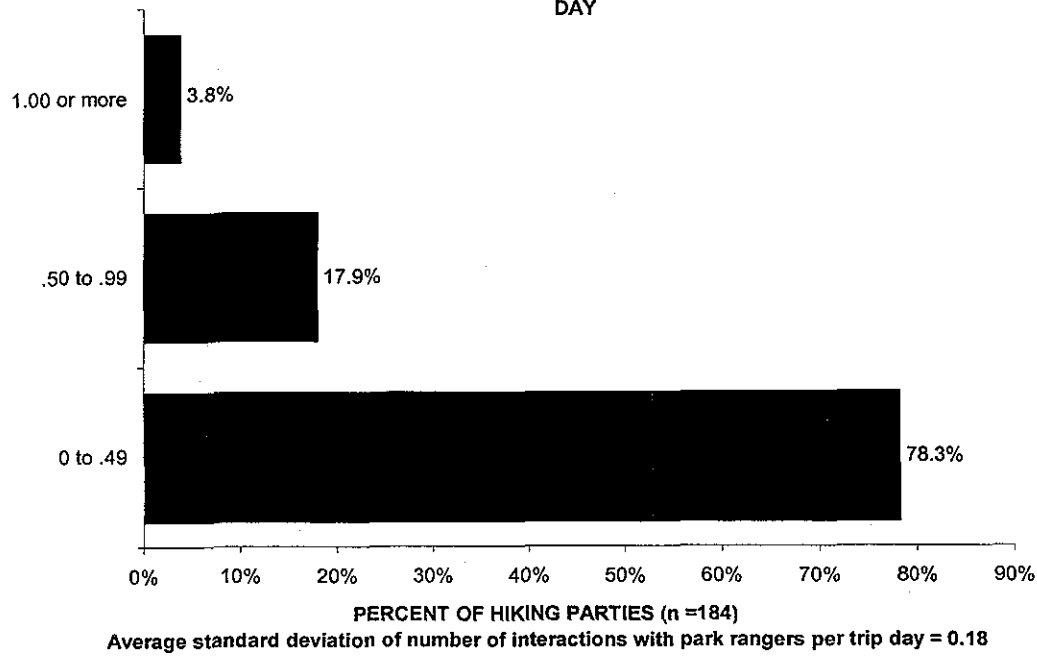
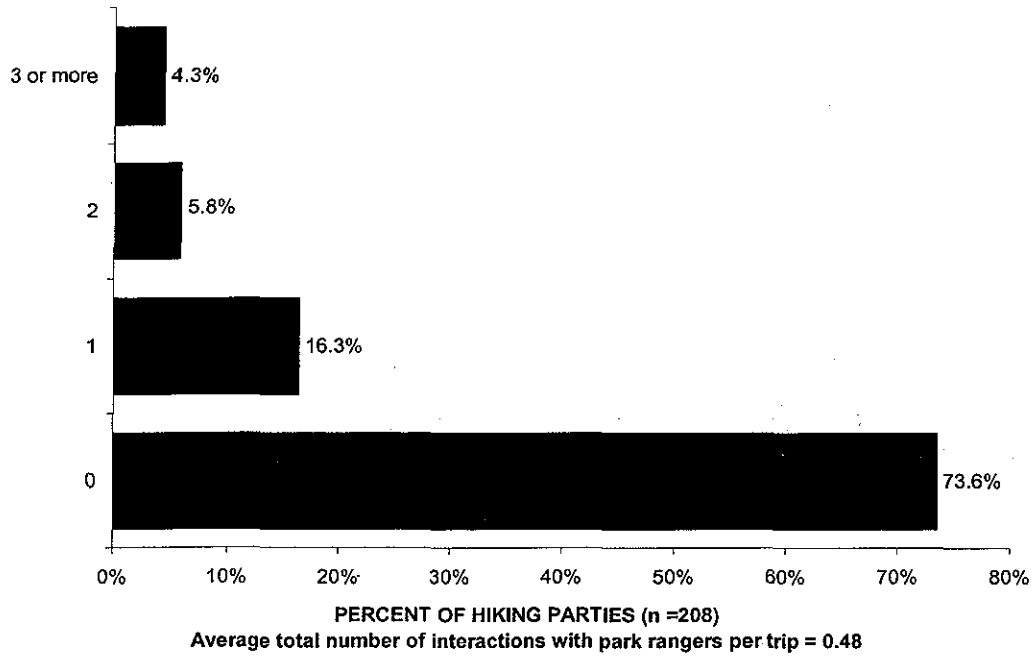


FIGURE I.9: Diary (aggregated), Q-11
STANDARD DEVIATION OF NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP DAY



Appendix I: Encounters with Park Rangers

FIGURE I.10: Diary (aggregated), Q-11
TOTAL NUMBER OF INTERACTIONS WITH PARK RANGERS PER TRIP



Appendix J: Encounters With Various Types of Aircraft During Backpackers' Trips

Two questions filled out daily in Version 1 of the trip diary asked backpacking parties to report the number of aircraft they heard or saw (each question is reproduced below). The first question asked about aircraft in general, whereas the second question¹ asked specifically about the number of propeller planes, helicopters, jets, and other aircraft². Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, six summary figures represent the data from each question or sub-question in the diary:

- The *Average per Trip Day* represents the total number of aircraft (of a particular type) reported during a trip divided by the number of trip days. Because partial hiking days could be recorded on the first and/or last day of the diary, the presented averages are low estimates of aircraft encounters per full hiking day.
- The *Maximum Daily Number per Trip* represents the number of aircraft (of a particular type) reported on the day when the most aircraft (of that type) were heard or seen. For example, if a party on a three-day hiking trip reported seeing 4, 0, and 2 propeller planes, the Maximum Daily Number of Propeller Planes would be 4.
- The *Minimum Daily Number per Trip* is calculated in the same manner as the Maximum Daily Number, except that it represents the trip day when the fewest aircraft (of a particular type) were heard or seen (i.e., in the example, the Minimum Daily Number of Propeller Planes would be 0).
- The *Standard Deviation per Trip Day* represents the variability in the daily number of aircraft (of a particular type) reported across the days of each trip. The standard deviation is the conventional way of describing how much a group of

¹ These two questions were not contiguous in the diary but are reported together in this appendix to improve the logical flow of the information.

² The "Other Aircraft" category was almost always used for aircraft that were not specifically classified as prop planes, helicopters, or jets.

Appendix J: Encounters with Various Types of Aircraft

scores (in this case, aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the Average per Trip Day).

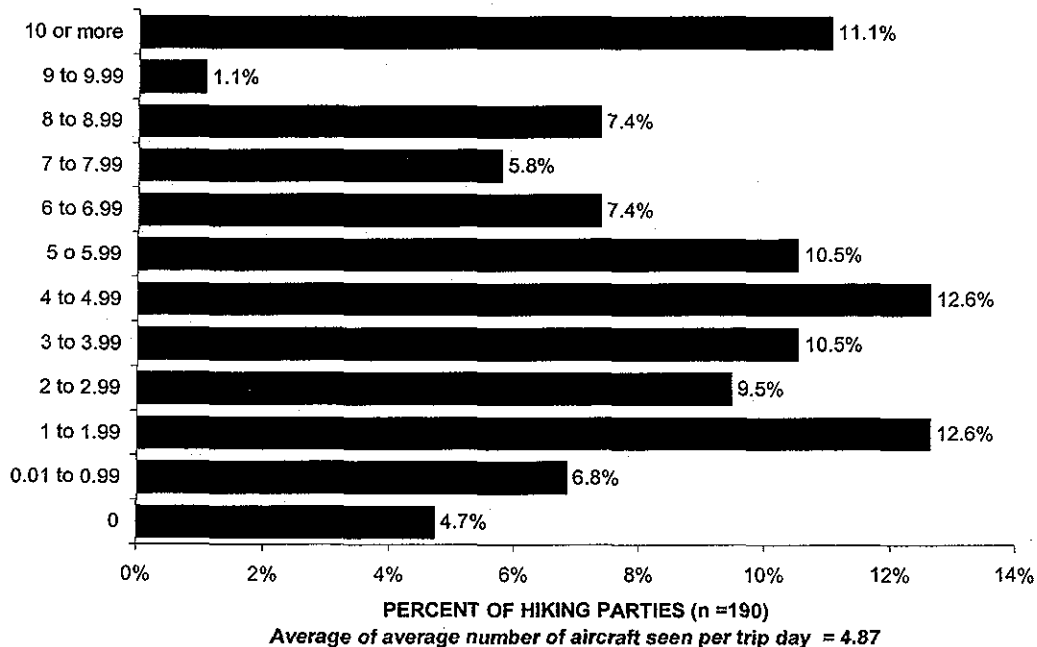
- The *Total Number per Trip* is simply the total number of aircraft (of a particular type) reported during a trip.
- The *Percentage of Trip Days that Respondents Saw/Heard Aircraft* represents the number of trip days for which the total number of aircraft (of a particular type) reported was more than zero divided by the total number of trip days.

Encounters with Aircraft in General

Diary, Version 1

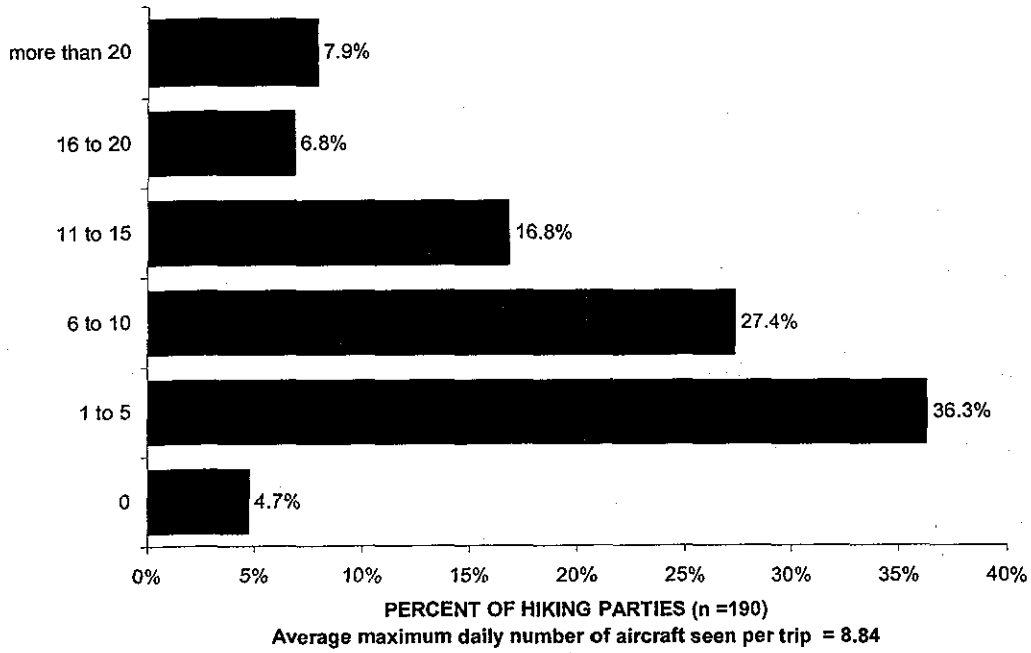
8. How many times did you hear or see aircraft today? (If none, write "0" and skip to question 12)

FIGURE J.1: Diary, v1 (aggregated), Q-8
AVERAGE NUMBER OF AIRCRAFT SEEN PER TRIP DAY

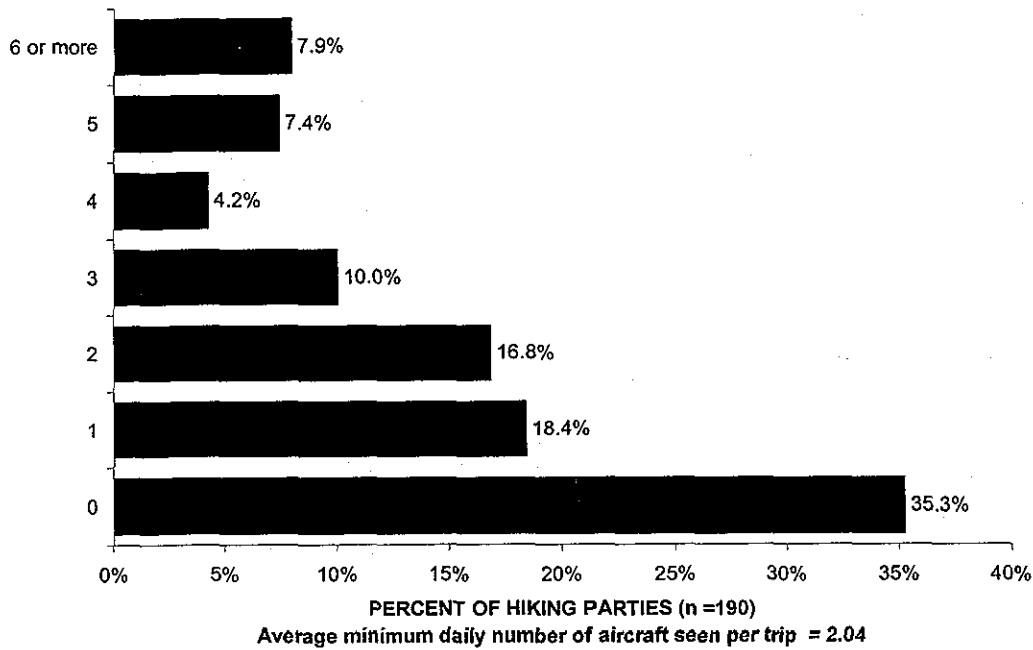


Appendix J: Encounters with Various Types of Aircraft

**FIGURE J.2: Diary, v1 (aggregated), Q-8
MAXIMUM DAILY NUMBER OF AIRCRAFT SEEN PER TRIP**



**FIGURE J.3: Diary, v1 (aggregated), Q-8
MINIMUM DAILY NUMBER OF AIRCRAFT SEEN PER TRIP**



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.4: Diary, v1 (aggregated), Q-8
STANDARD DEVIATION OF NUMBER OF AIRCRAFT SEEN PER TRIP DAY

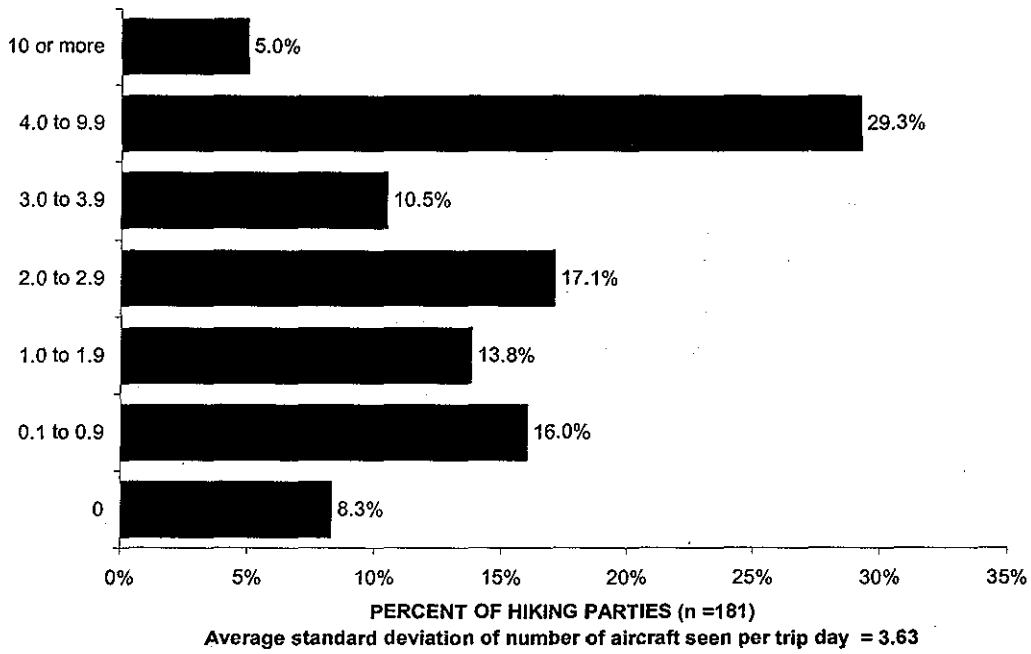
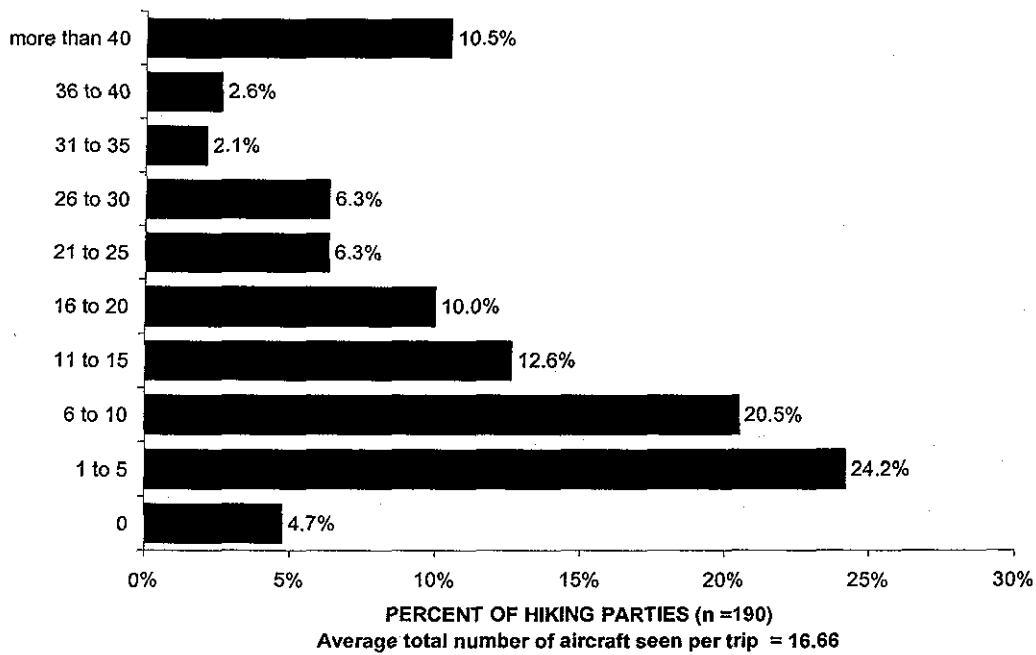


FIGURE J.5: Diary, v1 (aggregated), Q-8
TOTAL NUMBER OF AIRCRAFT SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

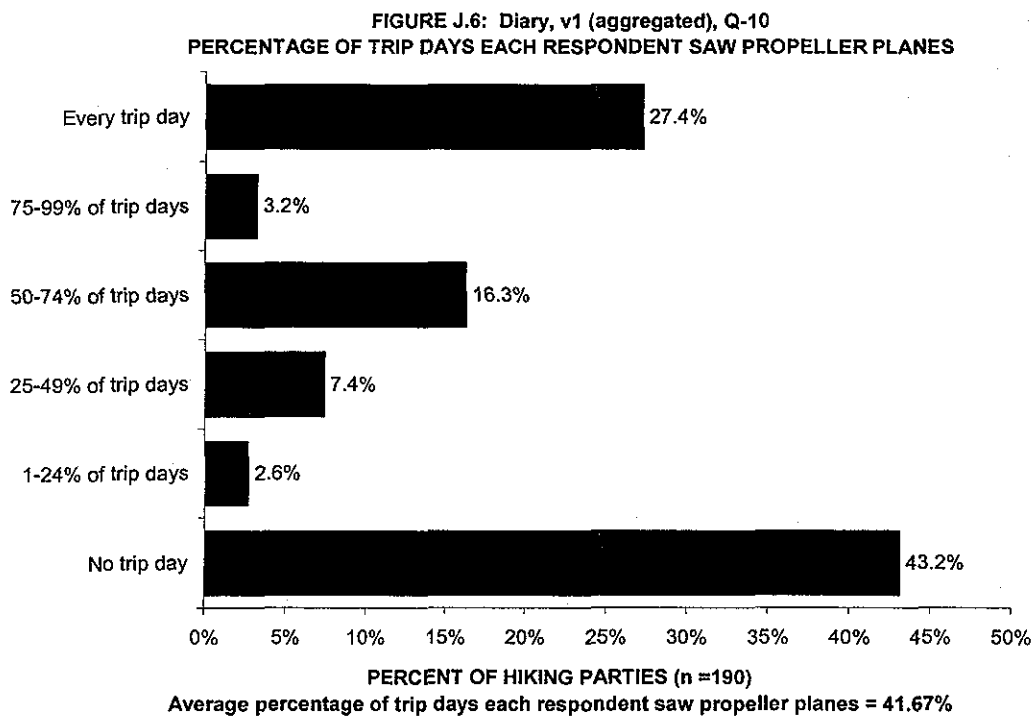
Encounters with Specific Kinds of Aircraft

Diary, Version 1

10. What kind(s) of aircraft flew over? (Circle each type you identified and write the number of each type seen in the blank following)

- | | |
|--------------------------|----------------|
| 1. Propeller plane _____ | 3. Jet _____ |
| 2. Helicopter _____ | 4. Other _____ |

Propeller Planes



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.7: Diary, v1 (aggregated), Q-10
AVERAGE NUMBER OF PROPELLER PLANES SEEN PER TRIP DAY

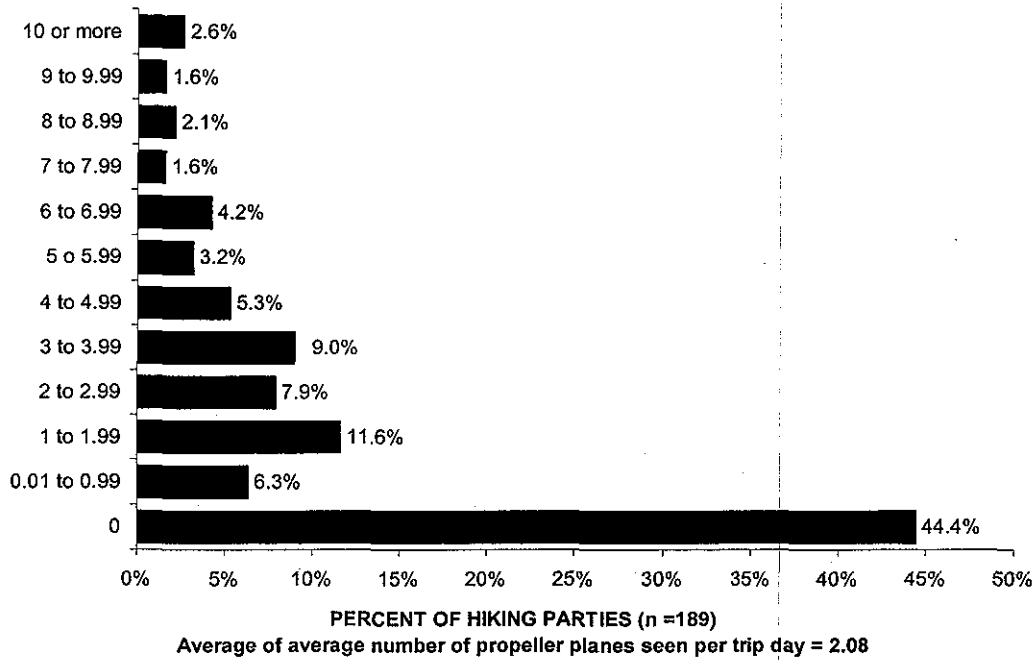
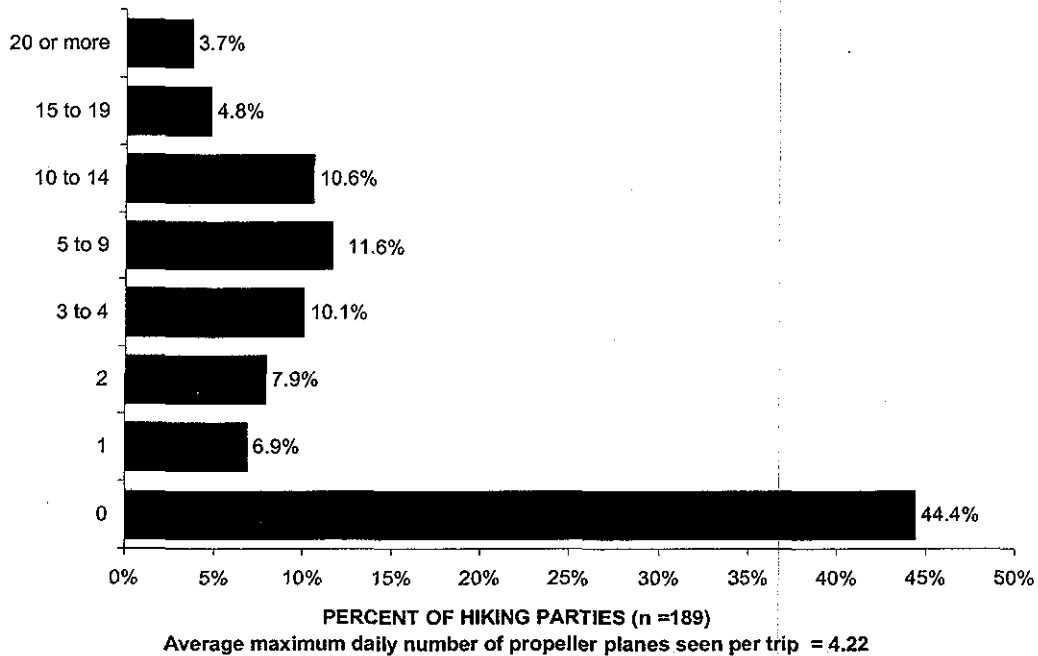


FIGURE J.8: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OF PROPELLER PLANES SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.9: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OF PROPELLER PLANES SEEN PER TRIP

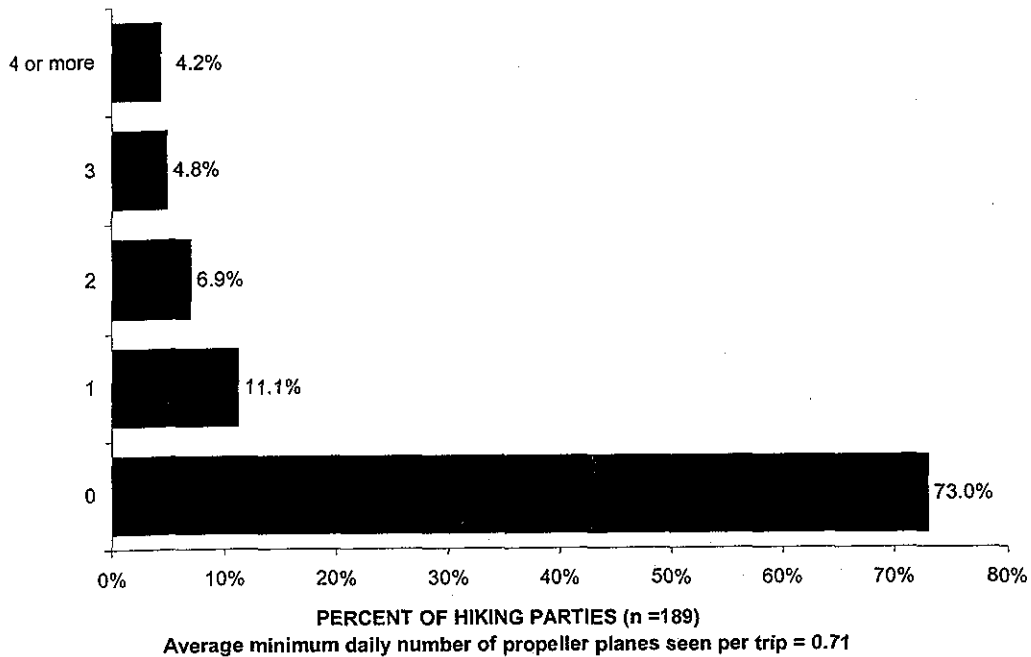
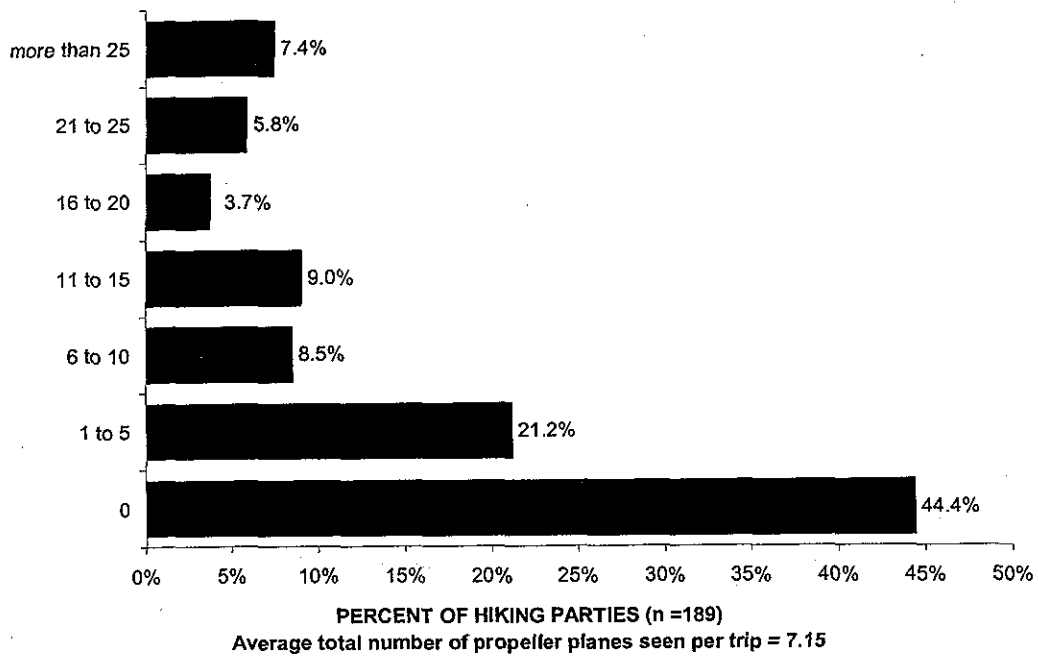


FIGURE J.10: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OF PROPELLER PLANES SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

Helicopters

FIGURE J.11: Diary, v1 (aggregated), Q-10
PERCENTAGE OF TRIP DAYS EACH RESPONDENT SAW HELICOPTERS

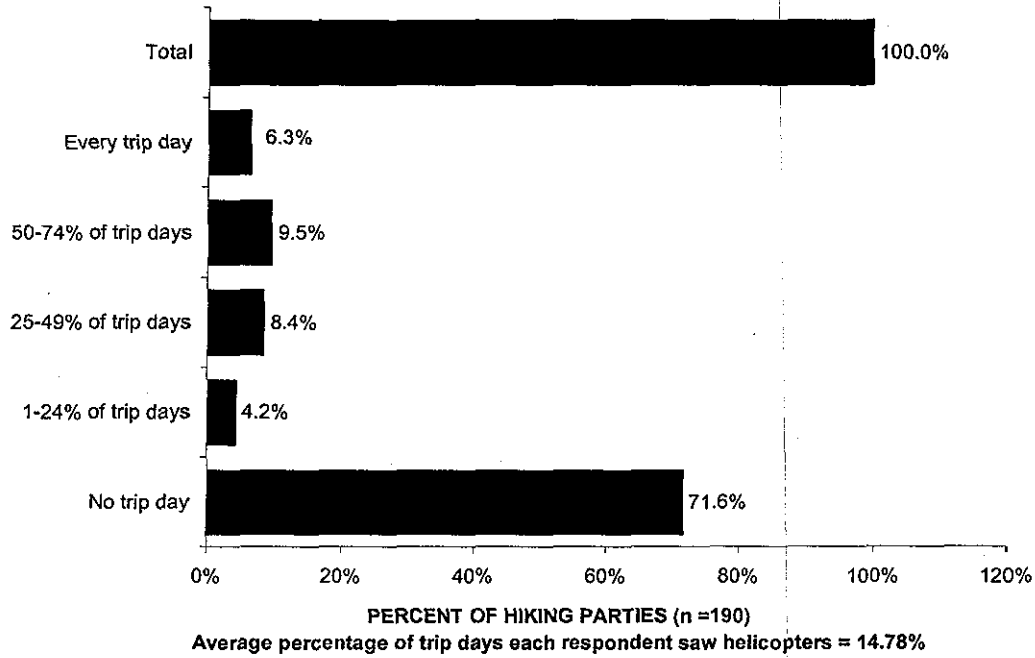
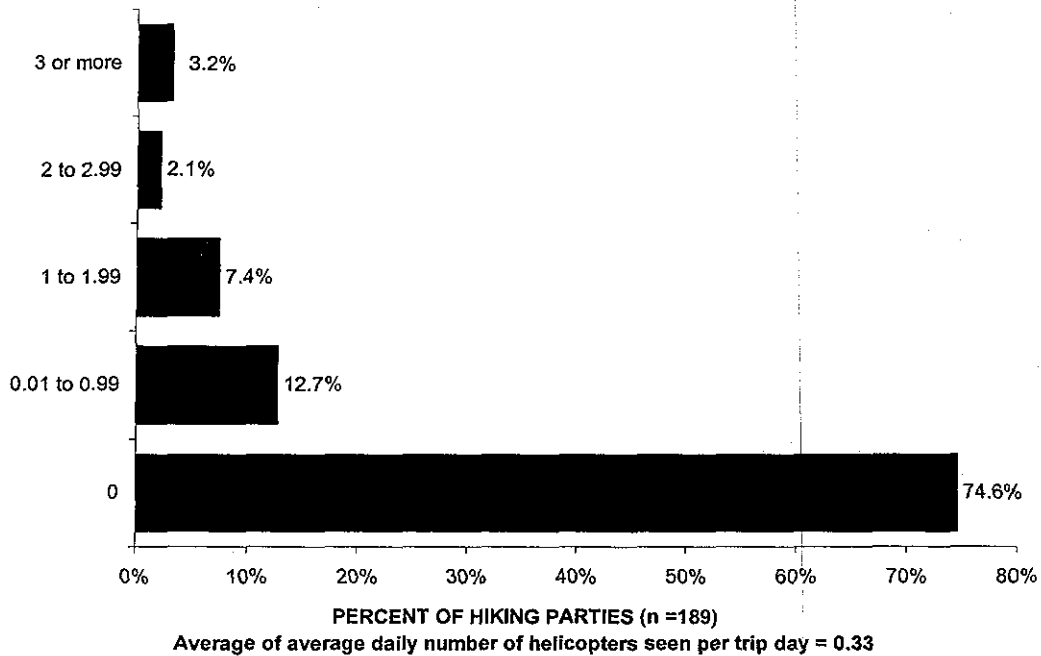
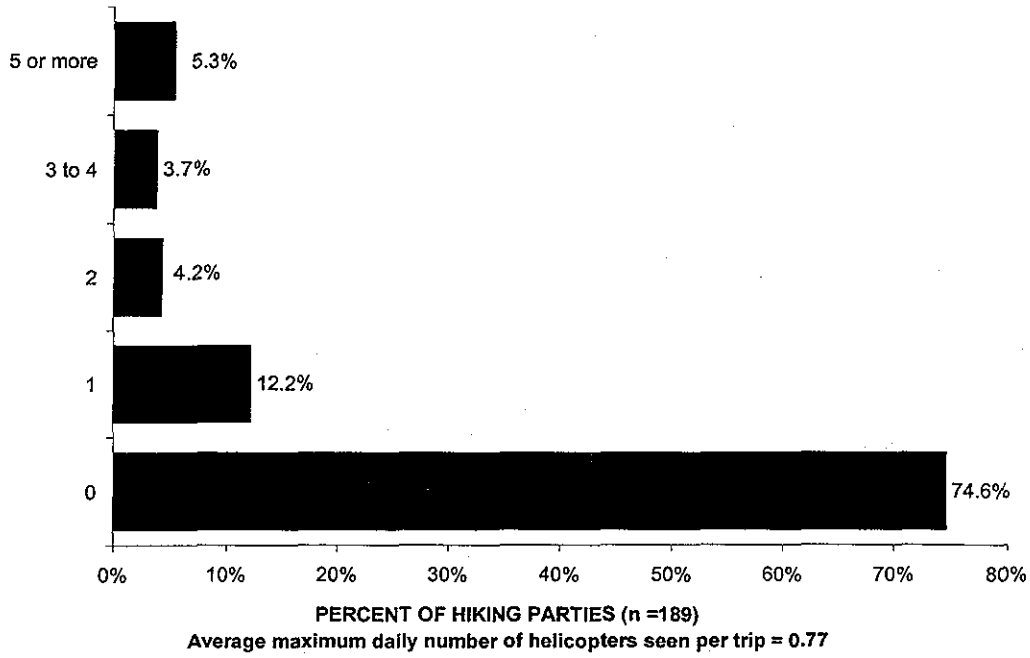


FIGURE J.12: Diary, v1 (aggregated), Q-10
AVERAGE DAILY NUMBER OF HELICOPTERS SEEN PER TRIP DAY

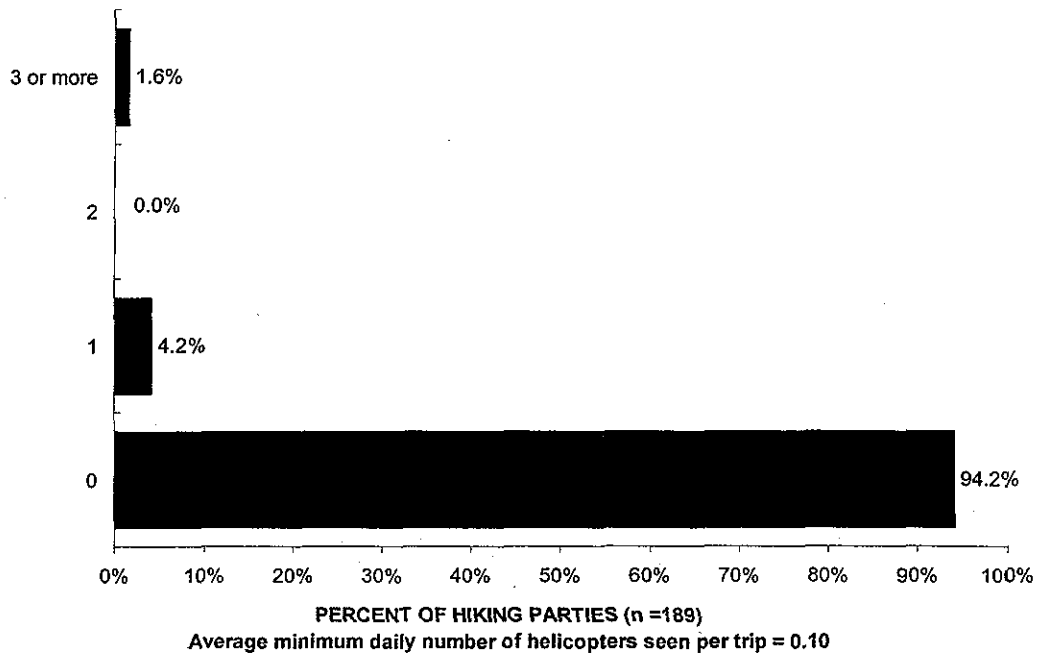


Appendix J: Encounters with Various Types of Aircraft

**FIGURE J.13: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OF HELICOPTERS SEEN PER TRIP**

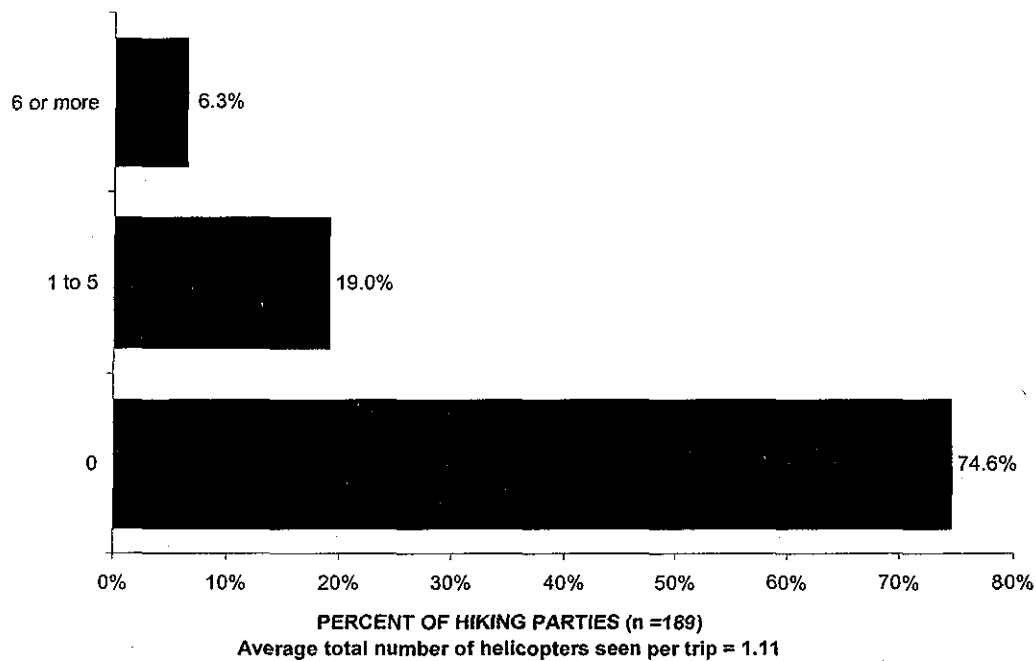


**FIGURE J.14: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OF HELICOPTERS SEEN PER TRIP**



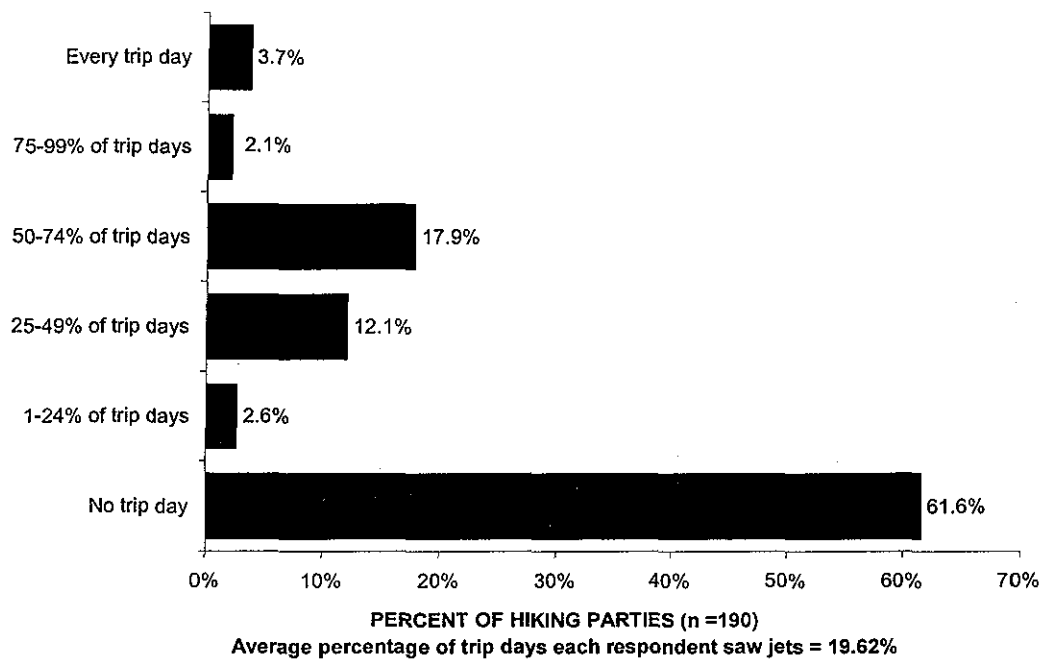
Appendix J: Encounters with Various Types of Aircraft

FIGURE J.15: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OF HELICOPTERS SEEN PER TRIP



Jets

FIGURE J.16: Diary, v1 (aggregated), Q-10
PERCENTAGE OF TRIP DAYS EACH RESPONDENT SAW JETS



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.17: Diary, v1 (aggregated), Q-10
AVERAGE NUMBER OF JETS SEEN PER TRIP DAY

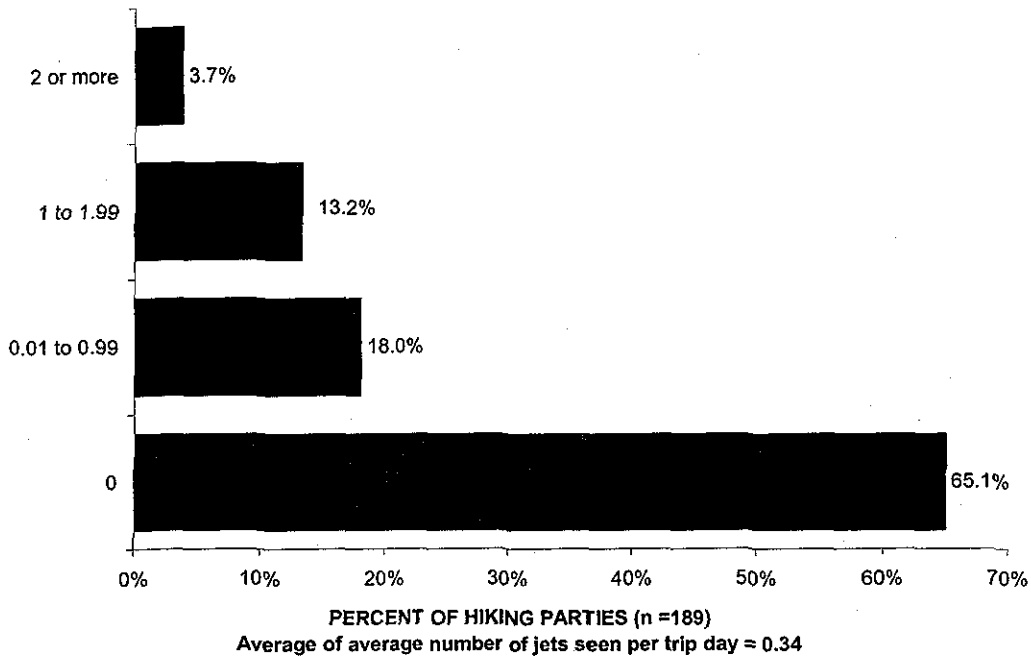
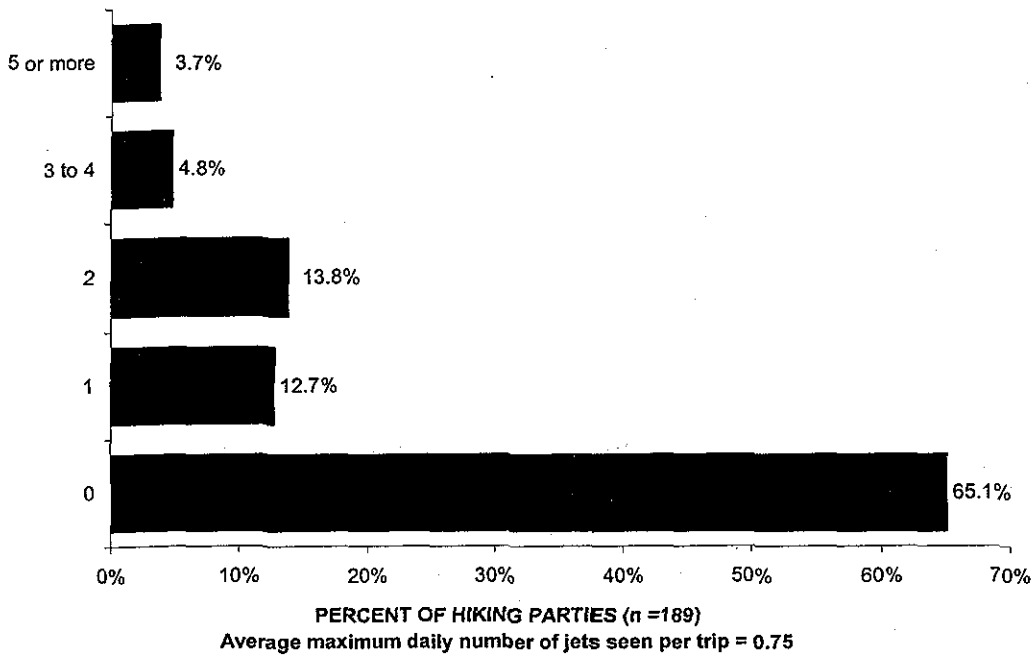
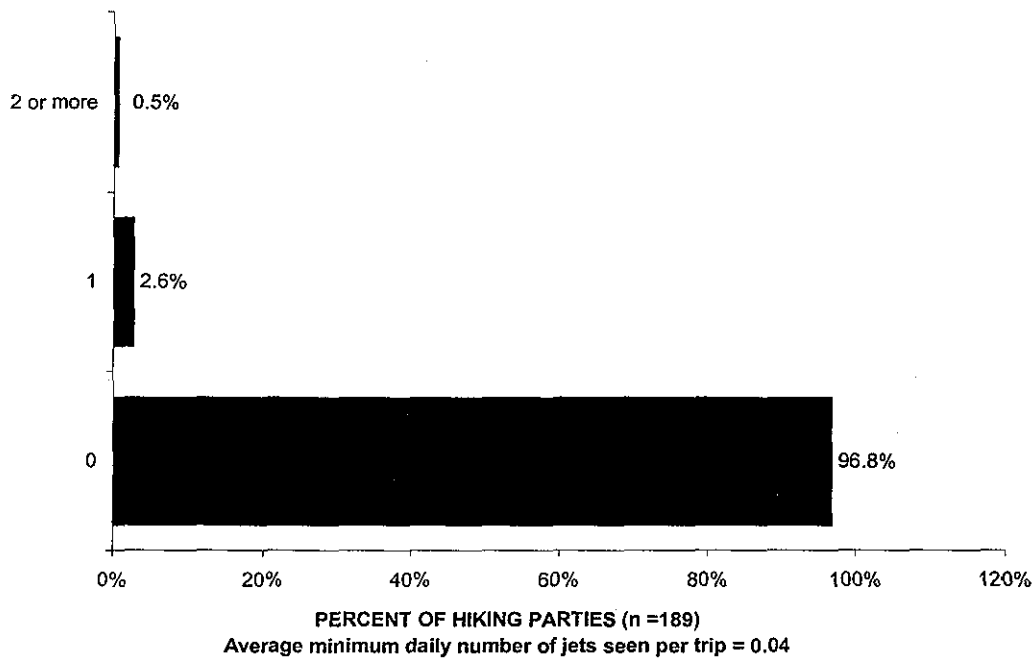


FIGURE J.18: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OF JETS SEEN PER TRIP

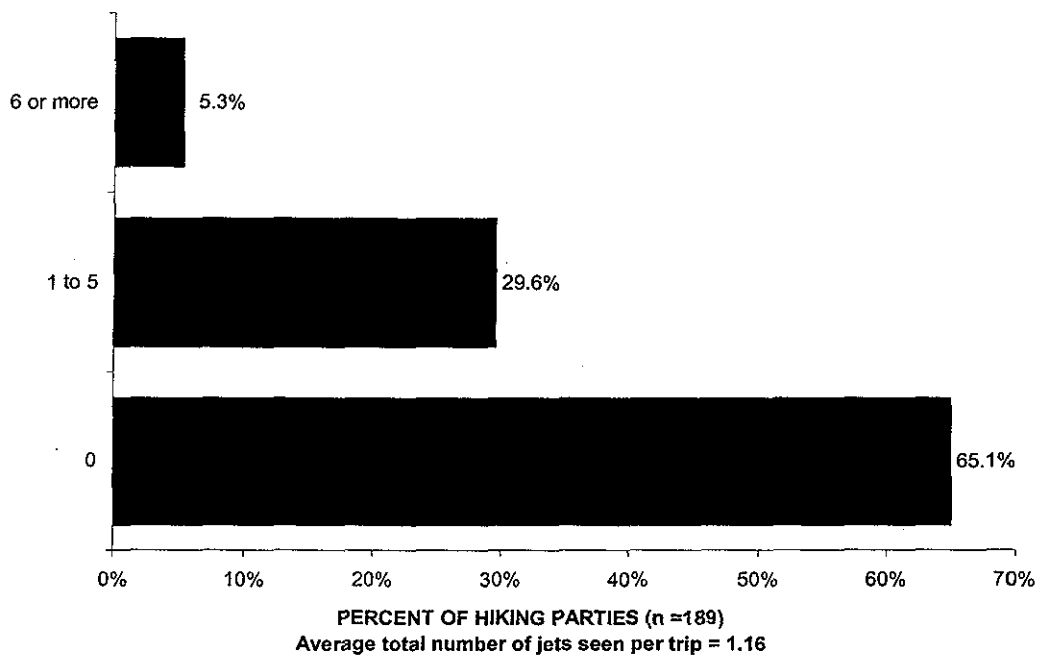


Appendix J: Encounters with Various Types of Aircraft

**FIGURE J.19: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OF JETS SEEN PER TRIP**



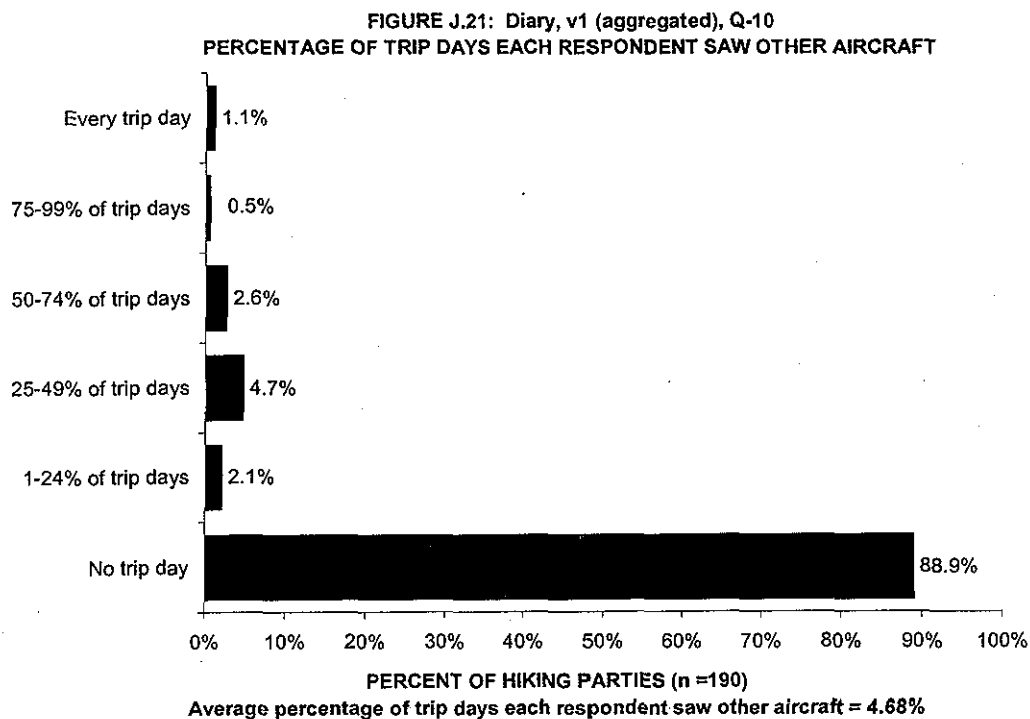
**FIGURE J.20: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OF JETS SEEN PER TRIP**



Appendix J: Encounters with Various Types of Aircraft

Other Aircraft

The "Other Aircraft" category was most commonly used for aircraft that were not specifically classified as prop planes, helicopters, or jets.



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.22: Diary, v1 (aggregated), Q-10
AVERAGE NUMBER OTHER AIRCRAFT SEEN PER TRIP DAY

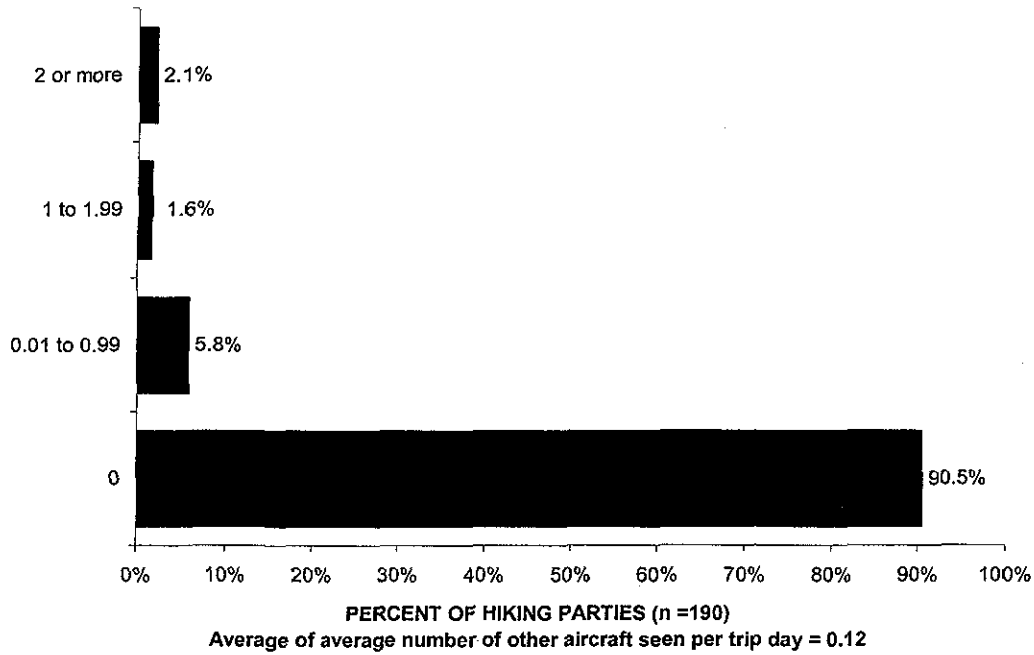
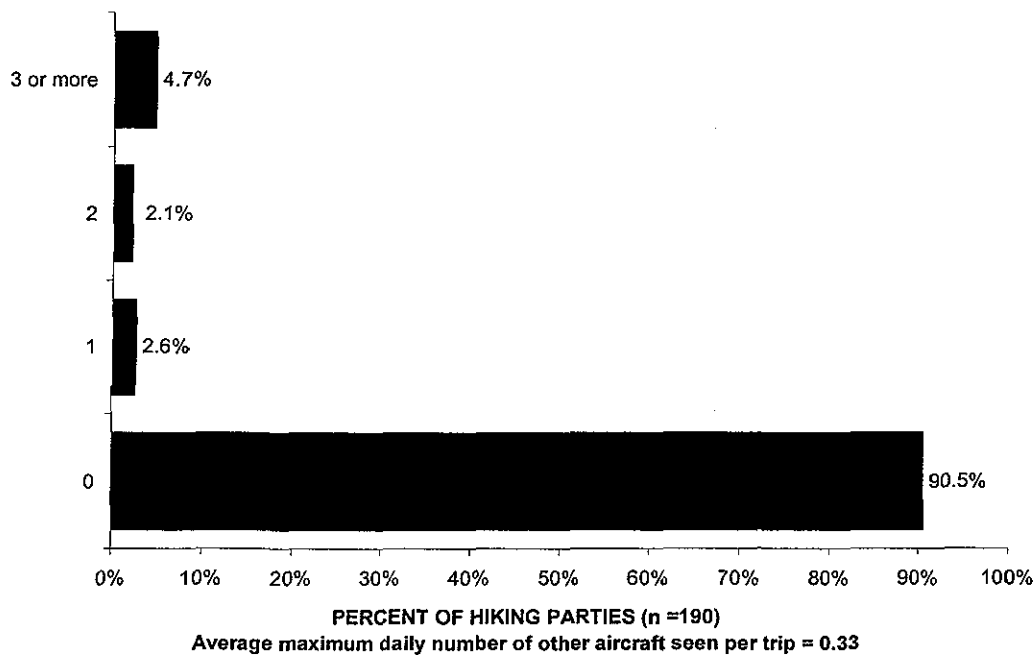


FIGURE J.23: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OTHER AIRCRAFT SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.24: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OTHER AIRCRAFT SEEN PER TRIP

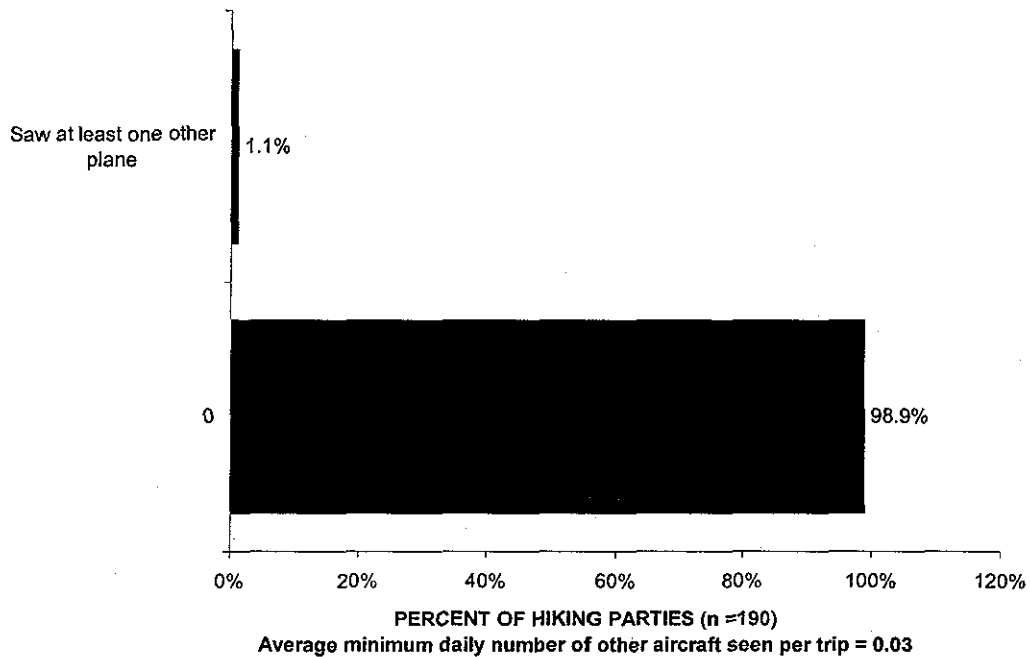
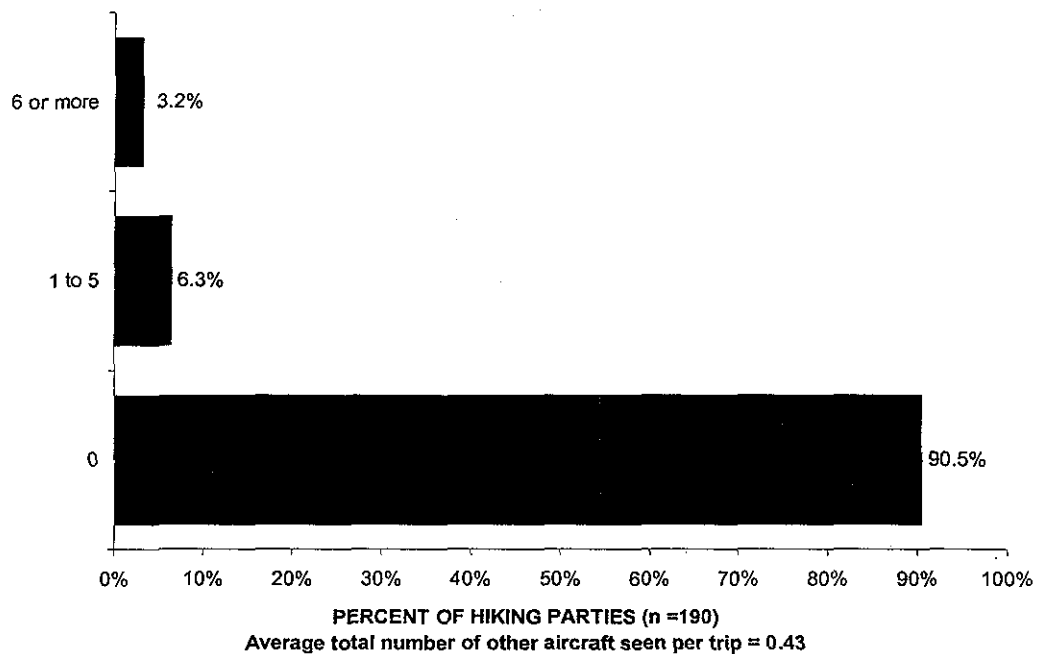


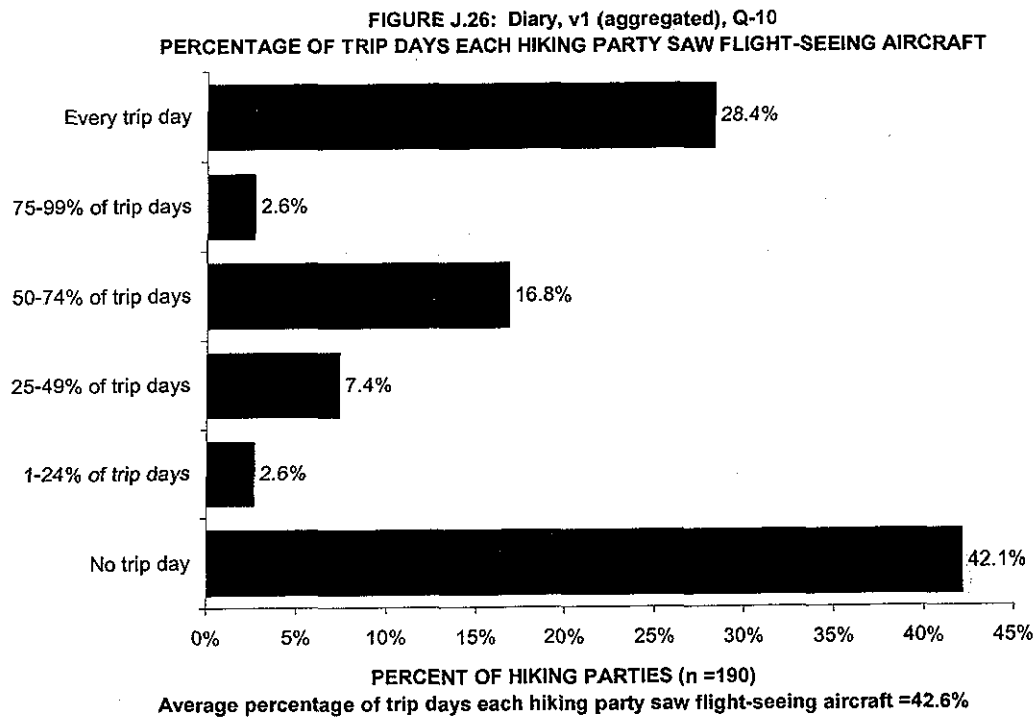
FIGURE J.25: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OTHER AIRCRAFT SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

Flight-seeing Aircraft

Both propeller planes and helicopters are used for commercial flight-seeing trips in DENA. In order to represent backpackers' experience with this general class of aircraft, data for propeller planes and helicopters were combined and presented in the charts below.



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.27: Diary, v1 (aggregated), Q-10
AVERAGE NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP DAY

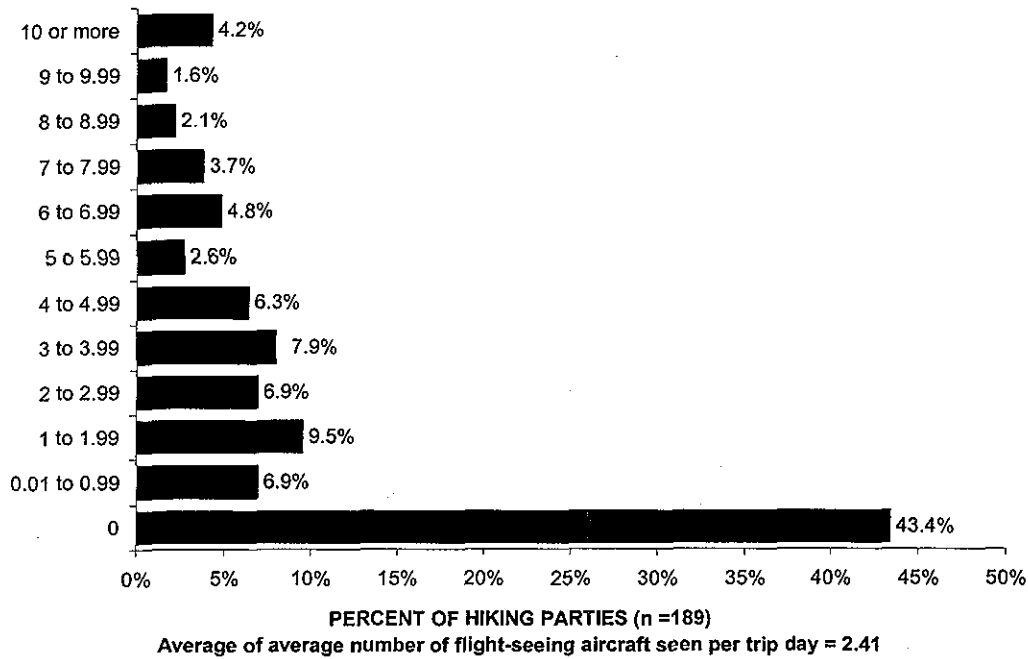
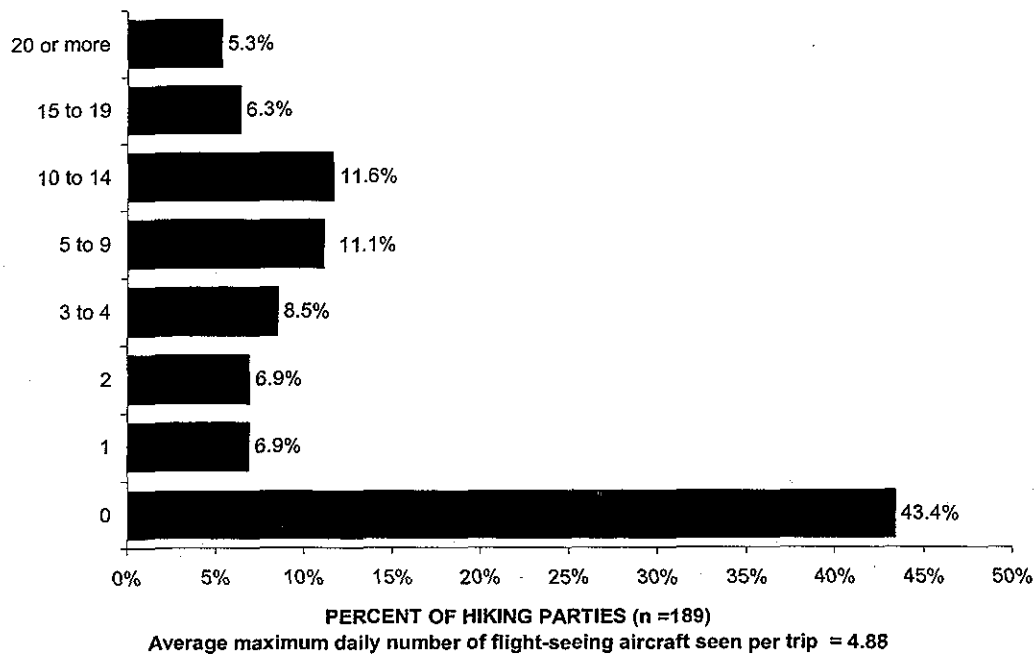


FIGURE J.28: Diary, v1 (aggregated), Q-10
MAXIMUM DAILY NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP



Appendix J: Encounters with Various Types of Aircraft

FIGURE J.29: Diary, v1 (aggregated), Q-10
MINIMUM DAILY NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP

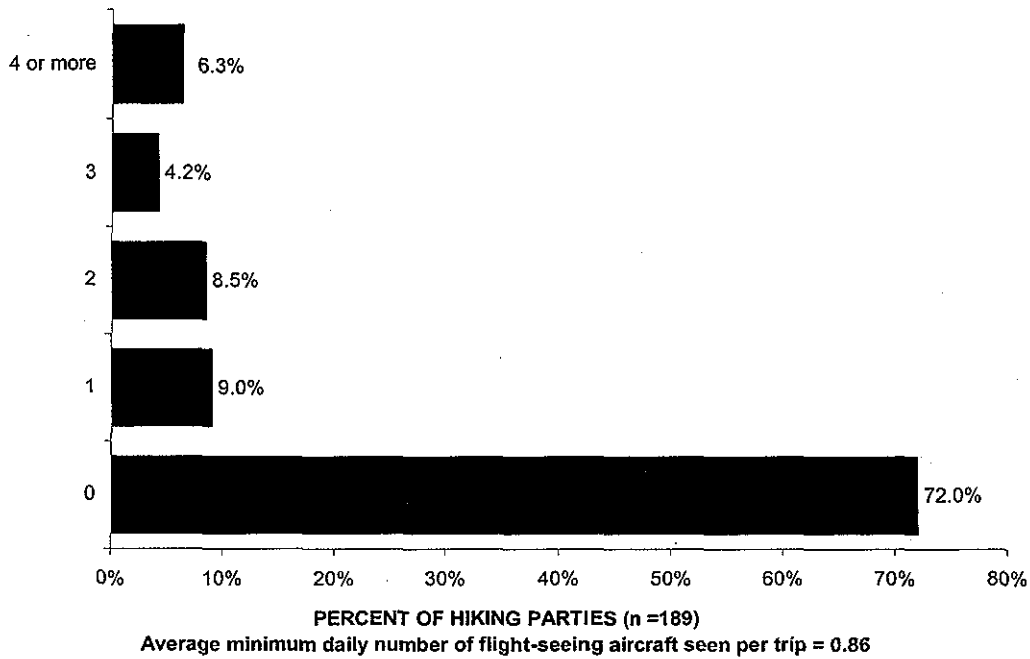
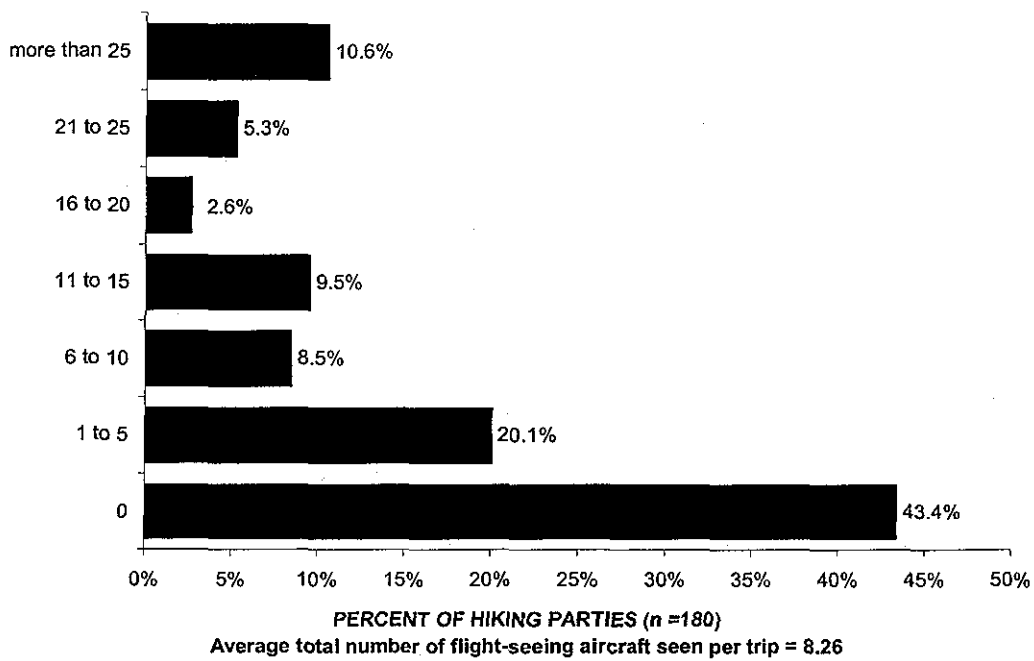


FIGURE J.30: Diary, v1 (aggregated), Q-10
TOTAL NUMBER OF FLIGHT-SEEING AIRCRAFT SEEN PER TRIP



Appendix K: Characteristics of Aircraft Encounters

Questions filled out daily in Version 1 of the trip diary asked backpackers to report the total time that aircraft could be seen/heard, and requested a loudness rating for the loudest aircraft heard (the questions are reproduced later in this appendix). Because data were collected on a daily basis and then aggregated to represent each backpacking party's trip, five summary figures represent the data from the duration question and four summary figures represent the loudness question.

Duration:

- The *Average Time per Trip Day* represents the total time that aircraft were reported as present during a trip divided by the number of trip days. Because partial hiking days could be recorded on the first and/or last day of the diary, the presented averages are low estimates of the time that aircraft are heard/seen per full hiking day.
- The *Maximum Daily Time per Trip* represents the number of minutes that aircraft were reported as present on the day when aircraft were heard/seen for the longest time. For example, if a party on a three-day hiking trip reported hearing/seeing aircraft for 3, 1, and 2 minutes, the Maximum Daily Time would be 3 minutes.
- The *Minimum Daily Time per Trip* is calculated in the same manner as the Maximum Daily Time, except that it represents the trip day when aircraft were heard/seen for the shortest time (i.e., in the example, the Minimum Daily Time would be 1).
- The *Standard Deviation per Trip Day* represents the variability in the daily time aircraft were reported as present across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, daily time of aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the Average Time per Trip Day).
- The *Total Time per Trip* is simply the total time that aircraft were reported as present during a trip.

Appendix K: Characteristics of Aircraft Encounters

Loudness:

- The *Average Loudest Aircraft per Trip Day* represents the sum of the loudness ratings of the loudest aircraft reported on each trip day divided by the number of trip days.
- The *Maximum Loudest Aircraft per Trip* represents the loudness rating of the loudest aircraft reported during a trip.
- The *Minimum Loudest Aircraft per Trip* represents the rating of the loudest aircraft encountered on the trip day when the loudness rating was lowest. For example, if a party on a three-day hiking trip reported maximum daily loudness ratings of 3, 1, and 3, the Minimum Loudest Aircraft would be 1.
- The *Standard Deviation of Loudest Aircraft per Trip Day* represents the variability in the daily time aircraft were reported as present across the days of each trip. The standard deviation is the conventional way of describing how much a group of scores (in this case, daily time of aircraft encounters reported across multiple trip days) vary around the mean of that group (in this case, the Average Loudest Aircraft per Trip Day).

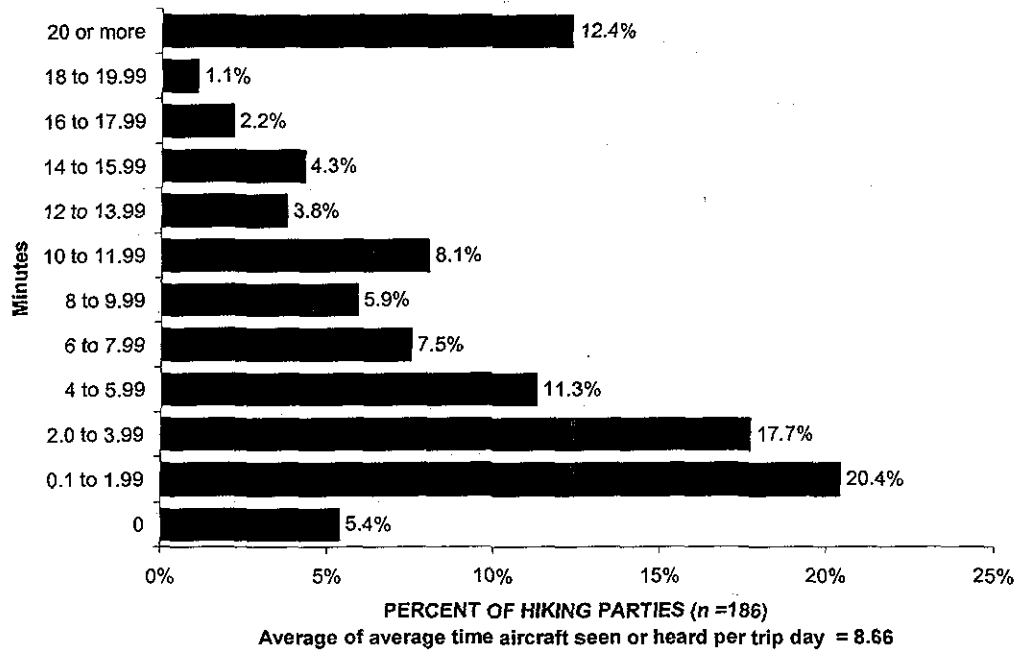
Appendix K: Characteristics of Aircraft Encounters

Duration of Aircraft Encounters

Diary, Version 1

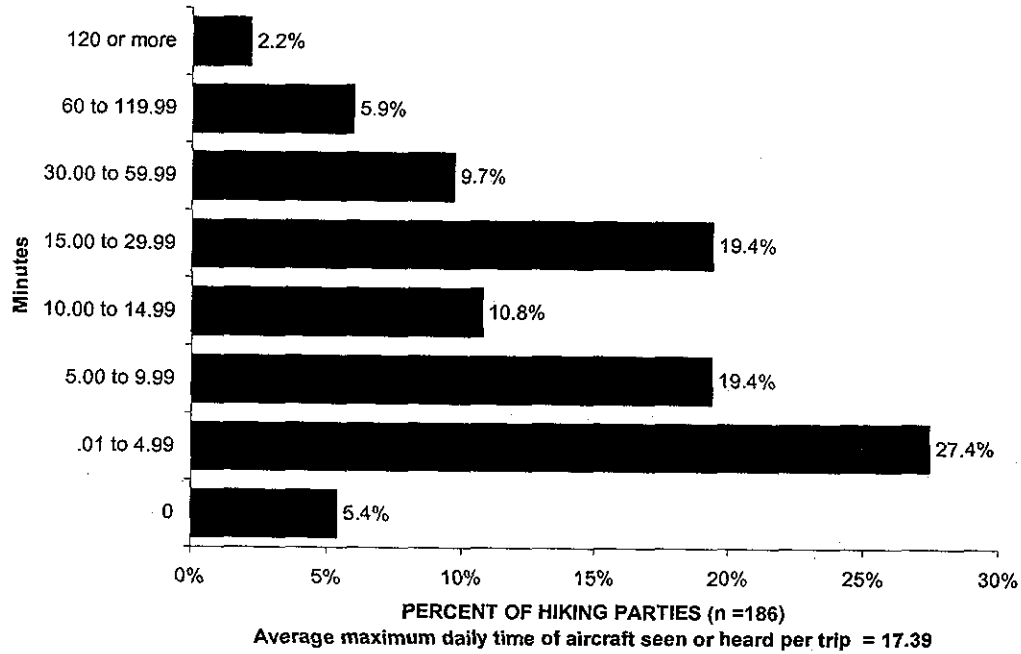
9. How long was the total time that you could hear or see aircraft? (In minutes.)

FIGURE K.1: Diary, v1 (aggregated), Q-9
AVERAGE TIME AIRCRAFT SEEN OR HEARD PER TRIP DAY

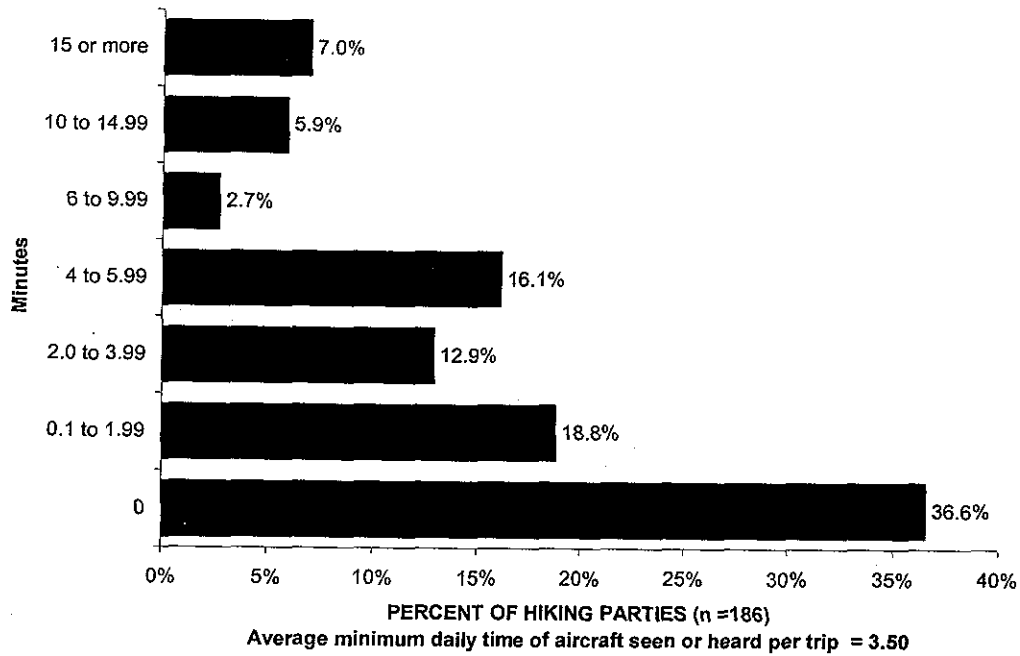


Appendix K: Characteristics of Aircraft Encounters

**FIGURE K.2: Diary, v1 (aggregated), Q-9
MAXIMUM DAILY TIME AIRCRAFT SEEN OR HEARD PER TRIP**

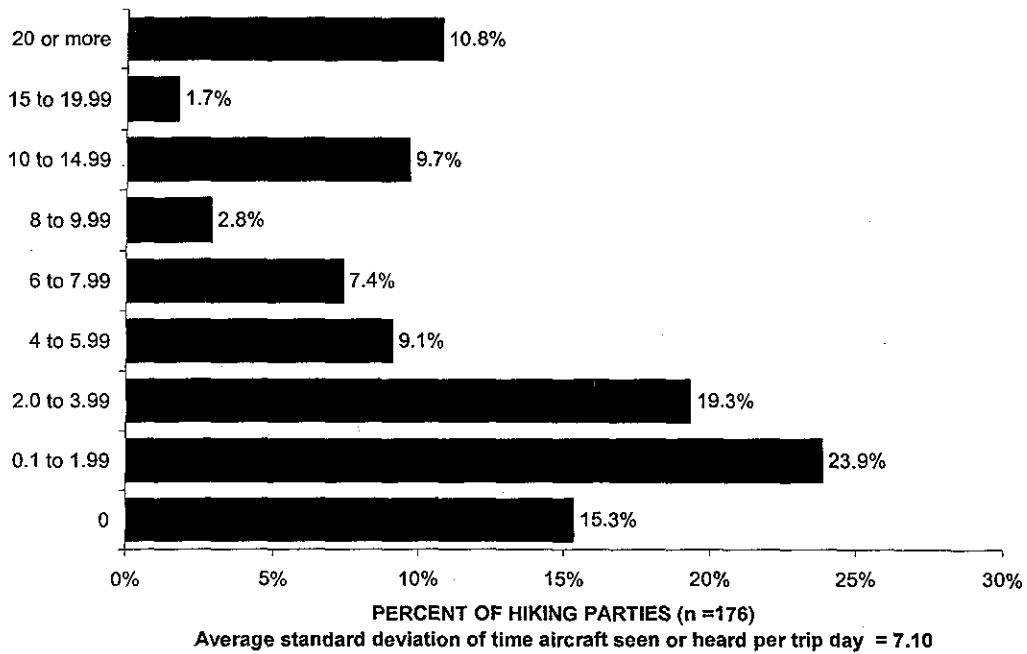


**FIGURE K.3: Diary, v1 (aggregated), Q-9
MINIMUM DAILY TIME AIRCRAFT SEEN OR HEARD PER TRIP**

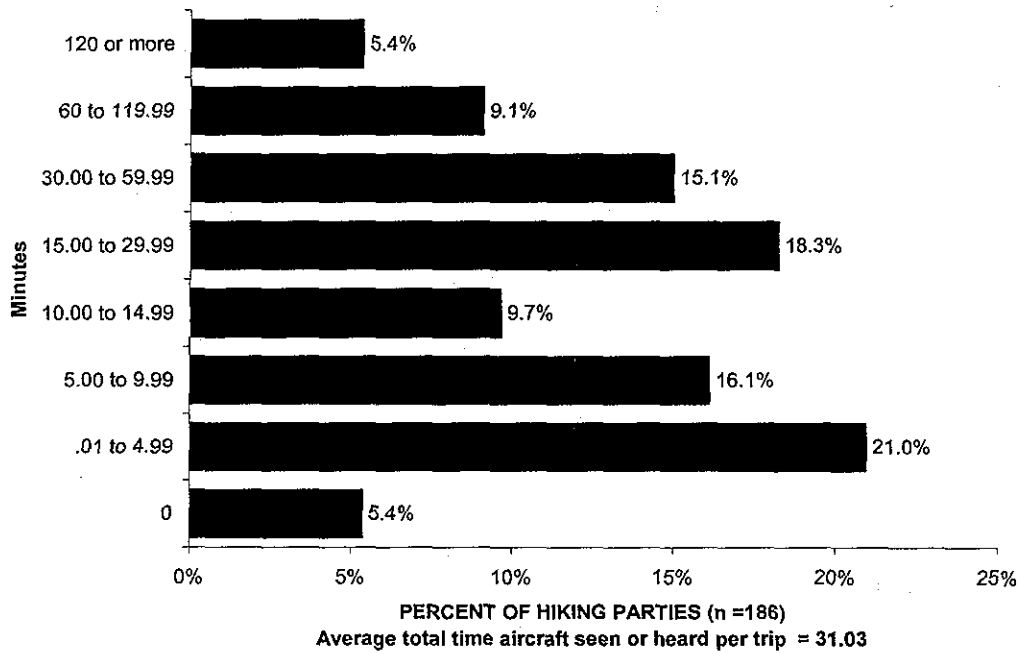


Appendix K: Characteristics of Aircraft Encounters

**FIGURE K.4: Diary, v1 (aggregated), Q-9
STANDARD DEVIATION OF TIME AIRCRAFT SEEN OR HEARD PER TRIP DAY**



**FIGURE K.5: Diary, v1 (aggregated), Q-9
TOTAL TIME AIRCRAFT SEEN OR HEARD PER TRIP**

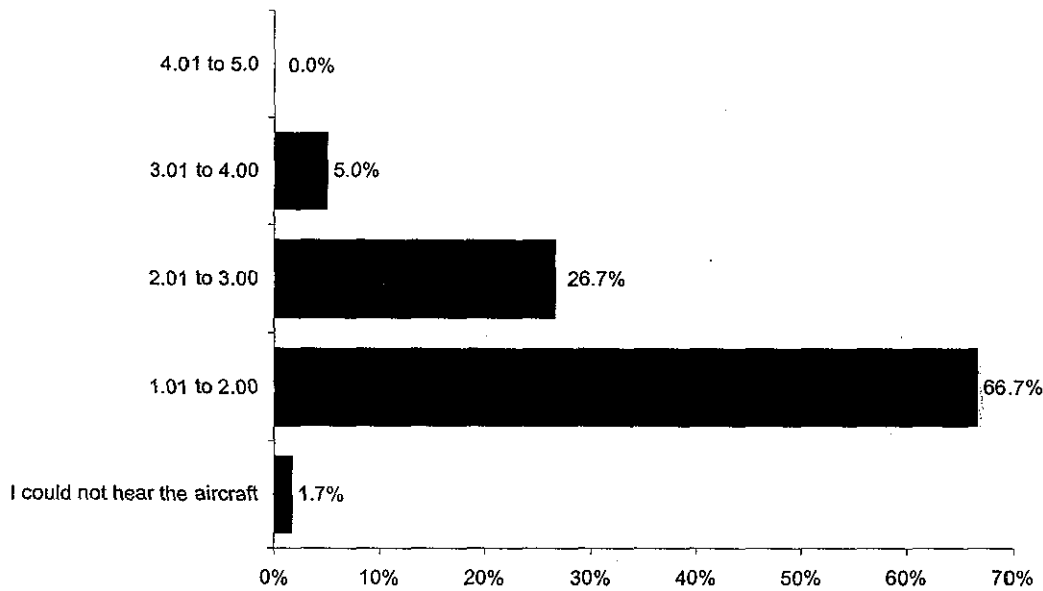


Loudness of Aircraft Encounters

Diary, Version 1

11. Which of the following best describes how loud the sound of the aircraft was at its loudest point? (List number that describes the sound)
1. I couldn't hear the aircraft.
 2. Background sound where you could still talk in a normal voice
 3. Conspicuous sound where you would have to speak loudly to be heard
 4. Dominant sound where you would have to shout to be heard
 5. Overwhelming sound where you couldn't even hear shouting

FIGURE K.6: Diary, v1 (aggregated), Q-11
AVERAGE OF LOUDEST AIRCRAFT PER TRIP DAY

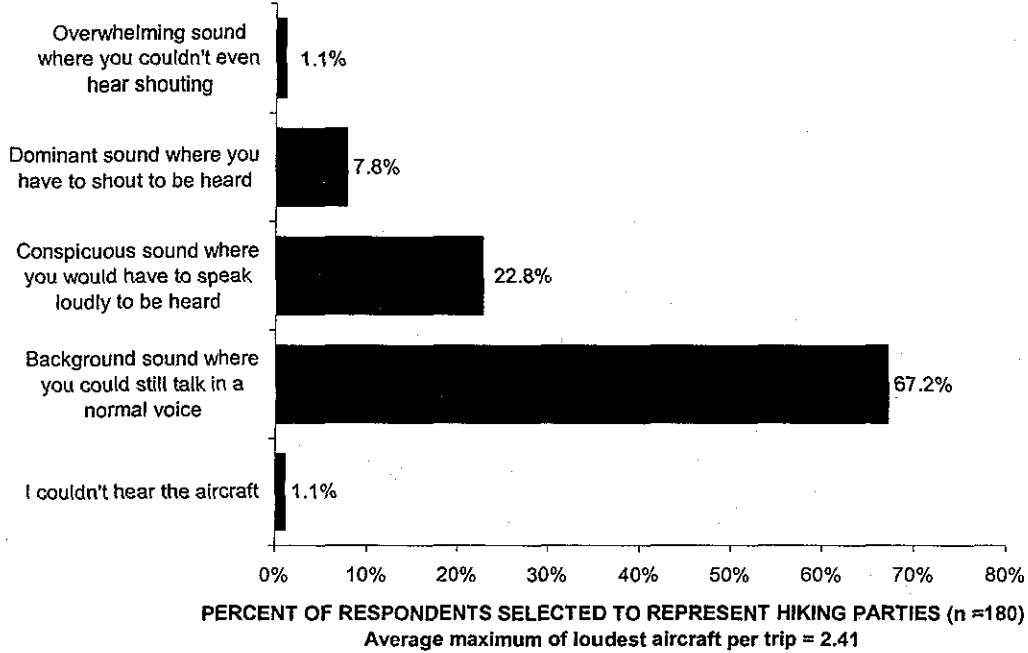


PERCENT OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES (n =180)
Average of average of loudest aircraft per trip day = 2.21

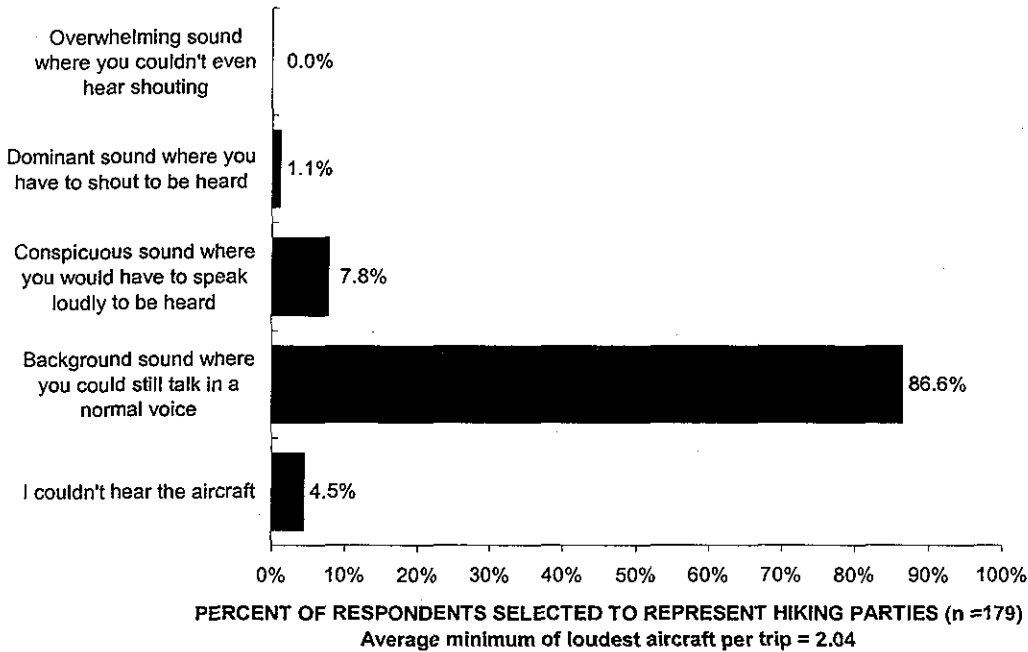
*Taking the average results in values that fall between the response options

Appendix K: Characteristics of Aircraft Encounters

**FIGURE K.7: Diary, v1 (aggregated), Q-11
MAXIMUM OF LOUDEST AIRCRAFT PER TRIP**

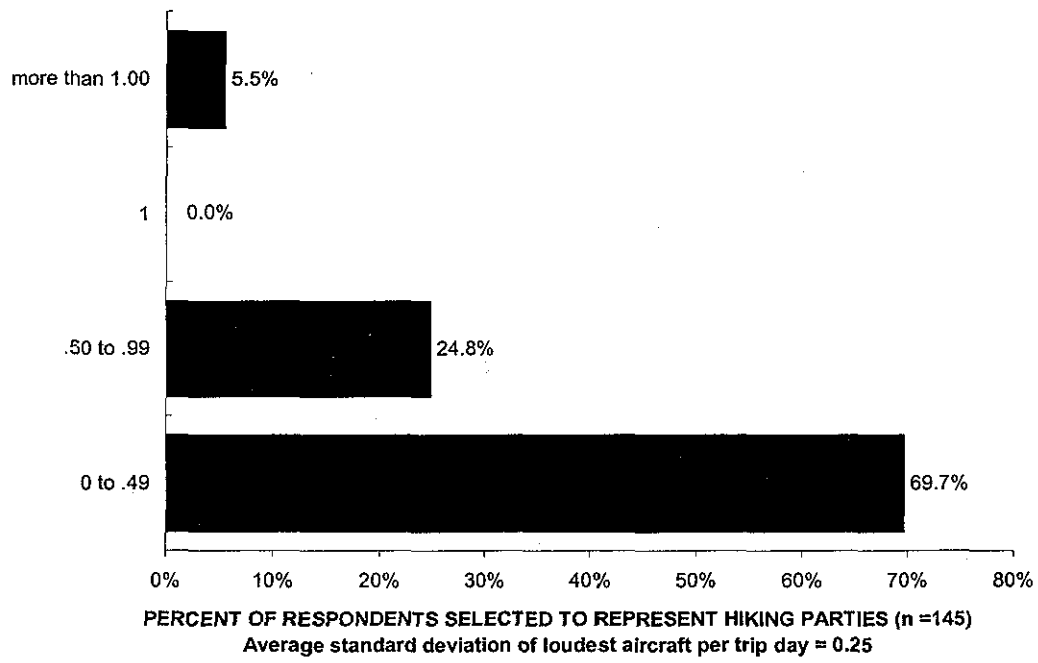


**FIGURE K.8: Diary, v1 (aggregated), Q-11
MINIMUM OF LOUDEST AIRCRAFT PER TRIP**



Appendix K: Characteristics of Aircraft Encounters

FIGURE K.9: Diary, v1 (aggregated), Q-11
STANDARD DEVIATION OF LOUDEST AIRCRAFT PER TRIP DAY



Appendix L: Visitor Comments from the Mail Survey

The last question of the mail survey provided respondents with an opportunity to comment on any positive or negative aspect of their trip to DENA or NPS management of the area. All of these general comments were coded to reflect the main themes of the comments and it is not uncommon for a comment to have multiple codes. If a comment had multiple codes, the first code represents either the main theme (if one stood out) or the first theme (if no main theme was apparent). Below we present these general comments sorted by the first code (e.g., main theme).

In addition to general comments, a fair number of respondents wrote comments by specific questions. These comments were not coded, but they are presented after the general comments. It is recommended that readers review the mail questionnaire included in Appendix E.

General Comments

Code Legend

- a Advanced reservations, permit process, & zone comments
- b Bear comments
- c Cache or containers
- d Park development
- e Environment
- f Fly overs
- g Group size
- h Hiker concerns
- i Information
- m Management
- r Rangers & staff
- s Survey
- t Transportation
- u User fees
- v Visit again
- w Weather
- x Great experience

- a It should be possible to make a CG or backcountry reservation ahead. The way it went now people lose too many days while waiting for a permit. It's getting too expensive staying in the area. Things are getting too touristy.

Appendix L: Visitor Comments from the Mail Survey

- a It was difficult to obtain overnight permits for the areas we wanted to go to. I would support advance reservations of areas
- a I like that you issue limited permits per day. Not doing so would be a mistake. Not only would it increase use (and possible abuse) of the land, it would detract from every users overall experience. I appreciate how well you educate users before they are allowed to use the backcountry. (you could use a new video however!) Thanks.
- a We support the current procedure to obtain a permit. The advantage of the procedure is to have to plan in detail your backcountry hike or place and be aware what situations you encounter within the park. (wildlife, day hiking distance, traversing rivers.)
- a Inability to get certain permits strongly interfered with my exploration of the Denali backcountry, and restricted me from meeting goals I've set for my trip. I am pissed.
- a Some things about the park are a little frustrating. Things like not being able to get a certain spot until the day before, but I think that it is all extremely necessary.
- a Overall, very pleased with the backcountry permit system. Was glad to see that only a certain number of people were allowed into units. Good shuttle/ camper bus system. Would have liked a fire one or two chilly nights. Perhaps one could purchase a fire permit and it could be recorded under purchaser's name and signature to certain do's and don'ts? Would hate to see the backcountry overcrowded!! Perfect as is- didn't see anyone....
- a There were no backcountry partners available. I was relieved to find little evidence of human use in our backcountry area beyond a mile from the road. Despite pressures to make "backcountry Denali" more accessible to more people. I cannot now, nor ever, support more volume than present policy permits! My wonderful experience at Denali will propel me into activism to prohibit increased usage levels which would/could turn into a Yellowstone or Grand Canyon for a dollar.
- a It was very difficult to plan a trip Denali without knowing if a permit could be obtained especially since lodging/campground reservation are tough. I had to spend significant money to line up a "back up" plan for campgrounds and a bus ticket. However I didn't want to see anyone else once we got "out there" so I can't claim that the process should be changed.
- a This was a very positive experience. The slight downfall is not being able to get into desired b/c areas if you're only there a few days. But the guides were helpful. We were very happy with our experience. I think a reservation system would encourage people to reserve desired spots and then they might change their travel plans, leaving others to miss out. That's what we saw at Wonder Lake.
- a It was overwhelming trying to figure out our trip, but cannot think of suggestions on how to streamline the process. We spent 2 days in one zone then scheduled two more days in two different zones. We wished we could day hike into other zones, but didn't want to get caught by ranger....
- a It was difficult to get a backcountry permit. Maybe in the more popular areas i.e. around Mt. McKinley and the lake more people should be allowed access but keep some more remote areas with lower numbers of people who don't want to see other hikers. Buses should be cheaper for getting to the other end of the park. If you aren't working the prices are very high.
- a Referring to question 26, I would support an issuing policy that incorporated all 4 systems. 50% first come/first serve and the other 50% divided between the other three somehow.

Appendix L: Visitor Comments from the Mail Survey

- a We felt the wording of the method of obtaining wilderness permits was a bit confusing. It says you can only obtain permits 24 hours in advance of going into the backcountry. That gave us the impression that we had to be at the visitor center the day before we actually go out backpacking. The reality though was that we could reserve by phone to camp at Wonder Lake for a week and then come and get permits for hiking out in the backcountry from Wonder Lake. We didn't actually have to be in the V.C. 24 hours prior to going backpacking but that was the impression we were given.
- ab Have done backpacking in lower 48. This was definitely a different experience. I like the backcountry rules and permits. Found the park video about grizzly bear caution very scary. Was very nervous about running into bears and crossing the braided rivers. Luckily everything went well. Saw few if any people. Compared to other backcountry trips I felt much more in "wild nature". Due to lack of people, trails, bridges, and some sightings of bear and caribou. It is one of my most memorable trips and a place that is on the top of my list to revisit.
- ad Backcountry in this area was something I had never experienced before and made a very enjoyable and memorable trip. My only complaint about the trip was that there was no way you could "know" what to expect in the different zones. But, that is also one of the aspects that made this trip great. Keep the areas a "preserve" so when I come back, I can enjoy the same pristine beauty. Thanks.
- ag The process of obtaining permit takes too much time. Allowing only 6 people per zone may be too restrictive- try a more "fuzzy" approach, i.e. if two people try to reach a certain zone but have to cross one zone which only allows one person to stay overnight, one could for this case increase the limit to 7 people. In this way there are mostly max. 6 people per zone, but in exceptional cases a few more (1 or 2) people are allowed to simplify travel plans. Otherwise, it's hard to plan hike because only a few- often completely out of the range of each other- zones are available for parties of more than one person. Also, the whole running back and forth to get campground tickets, backcountry permits and then again a camper bus ticket is very stressful (at least it does not help to increase the positive experience "Denali").
- agd Negative- not able to reserve backcountry permit before arrival-unable to stay in original unit we wanted to (limited hikers was also hard for a group of 6-but also I feel there should be a limited number) Positive- the experience we wanted was to be the only ones with the nature-this was achieved, due to limited number of backpackers and no trails.
- ai Permit staff should do a better job explaining permit procedure. Mandatory video/orientation could be made shorter. I didn't find the permit staff to be very friendly or helpful. The bus system is a hassle to deal with and highly overpriced, which detracts from the overall park experience. You should be able to get permit and a bus ticket in same place instead of having to wait in two places. Bigger visitor center would be helpful.
- aih I felt that the permit system was useful for my Denali experience, as it resulted in a great, secluded trip. My party felt that more advice on the hiking difficulty would have been helpful.
- am Lots of Red Tape to go through before you get to enjoy your visit. But a visit enjoyed once you learn the ropes. Maybe give more information on the backcountry permit process before park arrival (i.e. website).
- am We were very happy with the entire process. We were told before we came to the park that the process would be difficult and that we would be lucky to get a permit. Actually it was very easy and the process went quickly. We would be disappointed if the park changed to require camping in specific areas and hiking on trails. The best part about Denali is going where you want to go, setting up camp where you want to, and not seeing other people (aside from the wildlife and nature).

Appendix L: Visitor Comments from the Mail Survey

- am Thought the reservation system a bit complicated to figure out but once get it, work out great. All employees pretty friendly and knowledgeable, pleasant. Strongly support NPS management to keep backcountry as backcountry. Surprised at how many cars were actually on the road. Keep the bus system- it works! Had a fabulous time-so beautiful! Video for backcountry was very helpful and informative. Good info which we put to use.
- am Like the park backcountry permit and management system the way it is. A limited amount of people in each zone is acceptable. I noted that I saw litter, but it was limited to one small piece of paper and a sock that someone had forgotten. I would say that all visitors (to the backcountry) seem to respect the park and practice minimum impact camping. The small traces of human use that I saw are inevitable, non-threatening to the environment, and did not detract from my wilderness experience. I have enjoyed backcountry travel in Denali for the past 15 summers, and hope to continue for another 15. Excellent system of backcountry management.
- am I have been visiting Denali for the past 15 years usually once or twice or more a year. I have been taking backpacking trips on the average of 2 per year with my children for the past 7 years. This has been an extremely important part of our family. But it is extremely difficult to get into the park for backpacking in certain areas (some of the best areas like units 8, 9, 10, etc.) The units fill up and the camper buses fill up before anyone from outside the Denali area can get there. My observation is that it is filled by employees of the local hotels and such. I'm glad they get an opportunity to examine the park but the rest of us who live in the state year round don't get an opportunity to experience the level of Alaska unless you take off of work and take a gamble that you can get in. There should be a place in Anchorage to reserve a unit and watch the video and get the safety briefing and get reservations for a camper bus. Also children 14 and under should not be considered in the number of individuals for each unit. The park should be promoting family groups since this experience greatly increases youngsters awareness of nature and teaches them leave no trace skills.
- amt I was very impressed with the Park management. It seemed to me a great deal of thought and careful assessment of the wilderness has gone into the rules and regulations set out for its use. I understand and appreciate that our wild places are disappearing and stringent methods must be employed to save them. While the permit process was a little daunting at first, it began to make sense after being with it a while. It should all be done in person and with no advance reservations. It's important for people to come to the park and choose their sections; even accepting that second choices can sometimes add up to an unexpected pleasure. I did feel that there were too many buses going back and forth. At times it felt like a freeway during rush hour. I am not sure what you can do about it. I cancelled a planned flyover of McKinley after completing the first part of this survey because I didn't want to contribute to the plane noise. This is something I only became aware of after being in the park. I am from California where there are beautiful National Parks (Yosemite in particular), but they have not been so carefully or thoughtfully managed, and they are now like city parks. There is very little "wilderness" left in them, and this is very sad to me. I feel that as many people as possible should be educated and come in contact with "nature", but only after they earned the right to get there. I.E.: they walked a long way, been exposed to ideas of managing wilderness, or other methods designed to weed out people who don't understand how precious and fragile it all is. I am writing a lot here, but it is because your survey has stirred up intense feelings I've always had about our Earth and it's special places. Denali has become incredibly special to me as a result of this visit. I'm very glad you're doing this survey to keep the park as positive as possible. Thanks for your efforts.

Appendix L: Visitor Comments from the Mail Survey

- at Most everything helped to create a positive experience. However, the logistics of obtaining a backcountry permit were ridiculous. We had to stay in a designated campground the first night because no units were available for three people, two consecutive days. We wanted to reserve ahead of time so our time (limited) together was spent as we wished. The availability of the shuttles and cost was outrageous. After spending the evening next to the RV's we waited for 7 buses in inclement weather to reach our designated section. The return trip was the same. I vote for section limitations based on groups with maximum number of members and a shuttle service that factors people already in the park into their availability equation.
- at I thought the park was great. I was disappointed that I had a backpack in a zone that wasn't that great. However it did rain the whole time so that greatly affected the hike. The shuttle buses are inconvenient, but it makes the park less like a city or Yosemite or Yellowstone so it is the greatest idea ever! All in all it was great.
- atd In 1997 I was confused by the process of getting a backcountry permit, shuttle, crowd at the backcountry desk- I didn't do my homework. I understand now and agree with the rules and regulations set in place now. Keep the park as wild as nature intended. I saw grizzlies, caribou, fox, dall sheep, in the backcountry- just me alone! What a fine thing to experience.
- b Awesome unforgettable experience (highlight of our trip) of seeing a grizzly while backpacking on the tundra and heard wolves howl!!! Frustrating experience setting up a campsite.. Couldn't find a flatspace for our tent (high, thick alders in our zone) Could see our tent from road SORRY... We did not feel that we had any other option due to time/weater/riverxin. Learned we needed better rain gear (snowed and rained during trip).
- bi The most amazing aspect of my trip to Denali was encountering a grizzly bear while in backcountry within twenty yards! Fortunately we spotted his approach well in advance which afforded us time to remember and discuss the valuable information that was provided to us prior to our excursion. Calmly we took the necessary steps while encountering a bear in back country and our experience was a highlight and not a negative incident. Thanks to the wonderful park rangers and the time they take to truly prepare visitors of the backcountry my experiences there will not soon be forgotten.
- br I was very pleased with the organization of the backcountry section of Denali, particularly the BRFC's being provided free of charge and the huge amount of pre-trip education provided. When I actually did encounter a bear and 2 cubs, I felt extremely confident about handling the situation. The rangers were inarguably helpful and knowledgeable, as were the bus drivers and other members of park staff. An excellent experience overall!
- c Thanks for providing the backpaker's cache to protect our food from the bears.
- d I think we all have ideas on how we could change the park. But the main concern should always be to keep the park as natural as possible for the wild life that live there. Changes in the park should never be about money. I seen only a little of the park and the little I seen of it I was happy with it.
- d I was really moved when I realized the fact that Denali National Park hasn't been altered since life formed on earth. Because I think it is a privilege to enjoy their nature as well as an obligation to preserve it, we should keep it as natural as possible. No new hotels, roads, campsites, etc. When offering the wilderness, the more natural it is the more beautiful it gets. Please keep up the good work.

Appendix L: Visitor Comments from the Mail Survey

- d Enjoyed the scenery, I do wish there were a few more developed trails to aid in getting to some areas of the backcountry even 1 or so per unit. I think that a large portion is not being enjoyed because it is too difficult to access. Would enjoy going again but would probably not make it very far off the stream corridors.
- d No new buildings, trails, or roads. Keep it wilderness, just as it is! I am counting on you guys not to let Denali become Disneyland.
- d I think the future of Denali's future plans should be to preserve the natural aspects that already exist. The experience of the visitor is not as important as the quality of life of the animals and plants that LIVE THERE. No more development inside the park: signs, trails, garbage cans, outhouses, campgrounds, shelters, etc...are all excessive and unnecessary. Minimize people and air and road traffic. Denali is the most special place I have been to in Alaska.
- d Denali is one of the few National Parks where people can truly experience wilderness and wildlife. Let's keep it that way.
- d A limited number of trails near road access may be useful but very important to limit this development and maintain "trail-less wilderness" for the majority of the park. Bad weather may be factor in number we didn't see.
- d Q28 Not opposed to trails in high use areas (right where bus drops you off, or around dangerous obstacles). Shelters should not be obvious easily seen structures if used.
- d I wish there could be better access across rivers-- At least a crude footbridge. Other than that it was the best nature experience of my life.
- d Denali is one of the most amazing parks I've ever been too. I do not think other roads should be developed in it and I think that the policies on letting few hikers should remain the same. The natural beauty of Denali should be preserved. We should not develop any more facilities for human convenience, being a backpacker is about getting away from all of that. Thanks.
- dh The Denali backcountry system is superior to any I have seen. You may want to place trails and backcountry campsites in a few sectors for inexperienced backpackers.
- dhb I love Denali and I hope it never changes. The only small change I might make is increase the numbers of campers per zone per night by just a few people. The only negative experience came at the end of the trip when we went to the road wet and tired. A few buses passed and some of the seats were empty. Is this to protect those tourists from being with wet, stinky backcountry hikers? I think this was extremely inconsiderate.
- dm Too many stops on the buses and too much noise from trucks, traffic and construction. Too many people everywhere. In the future I will pick a more remote, quieter, less touristy spot.
- dm No more roads through Denali except for those that exist. The management is perfect now and should not be made into another Yellowstone
- dt Denali has the finest backcountry I've encountered in America. I am in favor of anything that preserves the ecosystem found here. I like that here is only one dirt road into the park and I support the bus system. I hope those in charge will continue to keep impact to a minimum.
- du I didn't like the surrounding areas of the park entrance with the gift shops, RV parks, and adventure companies etc. The price for the reservation of a campground in the park was very high. The bus drivers are great!!! Is there some other weather than rain in the park.

Appendix L: Visitor Comments from the Mail Survey

- e Beautiful country.
- e It is nice to see wildlife in backcountry zones or where the specific animals are predominant. It would be nice to receive more info on where to select the right campsite in order for sufficient protection from inclement weather as well as minimizing impact on backcountry areas.
- ea In my opinion, the best point of Denali is the backcountry trip making opportunity. As long as people respect the environment and the wildlife they should keep this a possibility to be true.
- ed Denali is a beautiful place I like that you are very environmentally focused and are trying to protect the park from the human impact. Get rid of tourists and make it backcountry only. This would reduce impact and mean the wildlife are not just a commodity. This would mean more respect for this amazing place.
- f The number of low-flying aircraft is troublesome. Developments for tourists should be kept to minimum. The park is still beautiful and hope it remains the same for my great-grandchildren! Thanks for all your hard work.
- f I had a wonderful time, and everything was reasonable acceptable except for the air traffic. Fifteen minutes couldn't go by without us hearing an airplane or something overhead, and we were pretty far into the park. Our objective of "getting away from civilization was therefore ruined. It was disappointing.
- f I did not like all the over flights. That was the only thing that detracted from the trip.
- f The air traffic was horrible. I lived in Alaska for 9 years previous and was so saddened to see and hear the planes The planes were seen and heard multiple times each day. Each person in the party was dismayed by this. A substantial reduction in air traffic is needed. Backcountry trips let us get back to -tap into- our wild natural self. Implore you- please make recommendations/suggestions to reduce the air traffic over/in the park. Thank you for the opportunity to participate in this study!
- f There was aircraft that flew over area 35 going to Mt. McKinley. This was disturbing to the tranquility. We were upset when a US Air Force aircraft flew over. Was this necessary? Your work is great. Go on like that.
- f Overall, the trip was enjoyable. The only negative experience was the airplane and helicopter tours on those days when the weather was clear. On two days of a six day backcountry trip, I saw planes and helicopters all day long. Very amazing.
- f Denali is our favorite National Park and we cherish the opportunity it provides to experience true wilderness. We are disheartened by the presence of so many aircraft and strongly support any initiatives to ban all air traffic over the park. Thank you for doing this research! It is greatly needed!
- f Have planes fly on the west end of the park only. Denali is the greatest park ever.
- f As mentioned earlier, the number of aircraft overflights was annoying and I suggest flight corridors on the south side of the range. I rarely encounter other backcountry travelers while overnighiting in the park and doubling the number of people allowed in backcountry units would probably not be a problem.

Appendix L: Visitor Comments from the Mail Survey

- f The number of aircraft really took away from a wilderness experience as did the number of human tracks. Twenty-seven aircraft in one day was horrible! If people can't hike or climb into the backcountry, then they shouldn't go. Preserve this paradise!
- f Overall, NPS management is doing a great job. I would love to have fewer planes flying overhead on the rare clear days though even fairly high altitude flights are loud and sound rebounds in the valley.
- f I support the manner in which the Denali Backcountry is managed. While I would like to have had no encounters with others, I also appreciate that I am not alone in wanting to experience Denali. The single greatest negative factor in my experience was the frequency and low altitude of aircraft flying overhead: 5-10 x/day at less than 3000' AGL 1 helicopter at less than 500' AGL 1 beachcraft twin radials at less than 700' AGL Overall we enjoyed our visit very much, I do believe the management strategy in place is good. Keep it up! Nonetheless, If I do another backpack in Alaska, it will be outside the park, significantly because of aircraft.
- f Saw quite a few planes and helicopters overhead. Were somewhat distracting, yet at the same time they were somewhat of a relief since I was a first time backcountry hiker and was nervous about contacting help if needed.
- f Too many planes and helicopters overhead!!! They fly too low and makes lots of noise; disturbs backpackers and probably animals.
- f Too many planes too low too loud.
- f I felt everything is being done very well in the park. Two things I would like to see changed. A few more developed trail in the entrance area (only there). And lastly limit or not allow air traffic over the backcountry areas. It is hard to have a wilderness experience when planes and helicopters are buzzing over you.
- f Too many airplanes. I had a great time and I would like to thank the people working the backcountry permits for the friendly advice and concern for our safety as well as the animals.
- f I was quite surprised by the allowance of (commercial) planes in and over the wilderness area. Once I realized this, I was quite displeased/annoyed- it definitely detracted from the backcountry experience, as much or more than any encounter with other hikers/rangers would have. I would support a ban on commercial flights over the wilderness area-make them fly a different route, and a lot less, (or not all?)
- f Too many airplanes! They fly over again and again till your peaceful feelings you try to get is gone.
- fa Need an advanced reservation system for backcountry permits on first come first serve basis. Airplane noise is a part of the Denali experience and is necessary. The rich, movers and shakers take the planes and helicopters and also have influence in environmental and NPS policy in Washington. So hearing aircraft noise is a small price to pay for continued NP funding. Overall, backcountry program is very well managed.

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- fa On trips to the backcountry desk to get permits there always seemed to be at least one group or individual camper that seemed pretty confused about the procedure. Rangers used a lot of time explaining the basic procedure and seemed rushed to help others choose the right place or answer specific questions. Overall my experiences with rangers at the park were above my expectations. The only thing that was very negative about my trips were air traffic. Everyday out in the backcountry there was noise from airplanes (small and large) and or helicopters. One sunny day in area 6, four different helicopters flew through the valley and returned. My companions and I were very disgusted to see an aircraft so close (they could have easily seen us through the windows) having to listen to it repeatedly.
- fal 1. Aircraft restrictions should specify flight corridors, altitudes and times. These should be given to backcountry travelers ahead of their permit application so they can run around it. 2. As frustrating as the permit issue process is, I think it is a good compromise. It is difficult to plan too far in advance because of changing conditions leading to closures. 3. Orientation should include desired method of disposing of human waste: bury or spread around?
- fe The darting and collaring of animals for research I strongly oppose. If researchers need more info, put on the old hikers and observe. Also would like to see and hear less or no aircraft.
- fg Too much air traffic. It is just as annoying as large groups of people would be. The number of flights and altitude of the flight paths should be restrictive with the backpackers, climbers and wildlife in mind.
- fm The only negative part of my experience was the number of airplanes I saw and heard. Other than that, I think Denali has the best management practices of any National Park I've been to (and I've been to a lot).
- fm I like the system that limited the entrance to the park, because it takes care about the nature! I hate the possibility of flying sightseeing tourists over the park! Stop the flying tourists!!! Thanks
- fm Too many airplanes. Impressive nature. Well organized system (information, permits, buses, etc.)
- fm As a nine year Denali concessionaire employee, I am a regular backcountry user. I cherish the wilderness opportunities in Denali's backcountry and strongly support current policies and use levels. Overhead flights are the greatest hindrance to my wildlife experiences. On this trip they were not much of a problem as it stormed. But on a prior trip this season I counted 52 flights during a two night trip.
- fm Overall, I was very pleased with how well the NPS manages this park. I would change very little of this management style-with one exception. The NPS has gone to all this trouble to ensure a solitary wilderness experience, but what about those damn airplanes and helicopters flying tourists up to McKinley? At one point, I observed and heard 3 aircraft at one time. I had walked 10 miles from the road to gain some solitude, only to be (almost) constantly reminded that the NPS allows tourist flights to fly all day long. Why? Why not follow the lead of the Grand Canyon National Park and go to court to stop these overflights. Those companies only care about the making a quick buck. It cheapens the Denali experience! Thanks!
- fme The area we visited seemed pristine and fragile. We hope it means that the Park's managing/lessening impact in the fragile tundra ecosystem of Denali. The air traffic seemed to be at a maximum level of tolerability and it really detracts from the wilderness experience and needs to be limited if it is on the increase. I would've liked more advice/suggestions at the visitors center about areas to go and fragile areas to avoid.

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- fr I found the park rangers very helpful and a good transportation system in place. The only issue I had with the aircraft far too many. To some extent that detracted from my backcountry experience. From my experience in Maine please keep the snowmobiles out of Denali Park.
- fs The fact that you talked to me about aircraft before my backcountry experience made me notice a lot more about aircraft. Long survey.
- fs Questions about airtraffic may skew results as I listened for them on purpose, may not have noticed otherwise.
- ft 16 fixed wing and 4 helicopter overflights in 1 and 6 hour periods of hiking. This is a much larger problem than encountering other parties on the ground. Great camper bus driver! The impact of hiking on parkland has grown significantly in the past 10 years I see more signs of it.
- ft Heard far too many planes. It should be possible to make reservations and getting a permit separately. Got permit at 1:30 but could only make use of a shuttle bus at 1500. Could walk only a few hours first day. Didn't have a chance to penetrate the park far enough (always had the road in our vision). More backpacker shuttle buses in the morning! We were there (visitors center) the night before to make reservations but we were only too late for a complete backpackers instruction. So we came for nothing.
- fw This particular trip of mine into the park was short and I camped in units close to the road. Had it been a longer trip where I intended to get deeper into the wilderness I would have been a lot more disturbed by the noise of low-flying aircrafts. Furthermore, during this trip the weather was cloudy, rainy, and snowy so there were probably far fewer plane sight seeing tours than during clear weather. I feel very strongly that the park should be managed for natural wilderness qualities first and that recreational and sight seeing interests should be regulated in such a way that they do not adversely impact those natural values.
- fx I go to Denali to hike and camp in a protected wilderness realm and enjoy it as a hikers world. I had an outstanding experience with everything I expected. The only drawback was the recurrent interruption by airtraffic. I am extremely disappointed by this. If there is something I can do to change that I will.
- g Truly one of the last great places on earth, but seriously consider going on a group number rather than individual number into zones
- g Designated campsites for larger parties, 6 or more, in various areas, but you already have them. I just went for a long bike ride with an overnight stay in between... I didn't really get into the backcountry enough to reliably answer these questions.
- g Staff were very friendly and helpful- especially considering the number of people they must be dealing with. Congratulations on a very well managed park!! Visitor management was excellent.
- g I would support some amount of determining the capacity of a zone based on the number of parties as well as the number of hikers. For example, no more than 6 people or two parties. The zone I was in had all of the portion along the road closed off because of bear habitat. Thus, There were really only 2 routes possible to get to the zone to camp by evening. Not surprisingly, one of these routes had a social trail and we bumped into two other parties along this route. So maybe the party number could depend on the zone and the amount of the zone closed off.

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- gm I fully support the limiting of backcountry usage in Denali, Though I was disappointed that I was unable to use "prime areas" such as Polychrome and Wonder Lake. To do so I would've had to plan a ten day trip, something time didn't allow. I oppose a lottery and phone reservation system, as that limits or destroys spontaneity- an essential ingredient to getting outdoors. Primarily, I am a roadtripper. This means I show up at National Parks unannounced and without a schedule-spontaneously. A reservation system would not allow this freedom and would force those like me to plan with a calendar and watch, greatly reducing the feeling of liberation. While backpacking, I saw no other hikers, which was extremely nice and somewhat unexpected. Having no figures or research, I am unable to provide you with an answer to the question asking for appropriate backcountry usage. It is a difficult decision to put a cap on usage. Now that I'm more familiar with the procedures. I feel I'll be able to make better plans in the future. I wholeheartedly plan to backpack in Denali again - and land a coveted permit to some prime units. My senses were overwhelmed by the amount of wilderness and it is nice to know firsthand that places like Denali exist. I grew up in Massachusetts and love the fact that Denali NP and Preserve is larger than my home state, containing only one primarily dirt, road. Such a special place! Thanks for conducting this survey. Are you going to keep us participants posted of the results. I would be very interested in learning your discoveries. Happy Trails!
- h Denali is a great place and the hikers do not spoil it. Keep the non-hiking tourists in the buses.
- h Mt. Eielson Visitor Center had no place to warm up for backpackers wet clothes. Also a room for backpackers should be established.
- had I personally didn't have the skills to hike as many days as I'd have liked backcountry without trails and therefore my backcountry trip was cut short. I bet this happens to a lot of people, which is why I support giving out permits only 24 hours in advance otherwise I think people who don't know what they're in for may monopolize permits they'll never have the opportunity to use. However, I oppose creating too many trails in the backcountry, because I think this is one of the few places for people who want to and can hike without trails and I would hate for that to not be available, as it is so different from hiking with trails. Perhaps more 1-day length trails for overnights, and then leave everything else untouched would be cool, but I don't know, even that might ruin what you have in Denali
- hb The area proved to be a great hiking adventure as always. The only disagreeable part was the lack of laundry facilities for a backpacker, they seem to be a valuable type of tourist. The bear caches were useful but awkward.
- hbt Information about backcountry zones not sufficient. The shape of the backcountry zones are questionable. The bear policy outside the park is hypocritical. The bus drivers speak too much and ruin the silence.
- hit The bus driver was extremely helpful. He knew his stuff. It could be helpful if the backcountry desk matched skills of hikers to sites. There should be more descriptive pamphlets on the backcountry sites. At present there is a book which describes 5 or 6 of the units which means that hikers will know about these in advance, but not others.
- hiz It would be helpful if rangers had general information about areas and provided it, especially when asked. For example: What has been the relative depth of McKinley Bar for crossing? (knowing it can change with weather) Also, that a route is 2 solid days of difficult bushwhacking. Yes we want to "discover" but some information would be helpful for planning and choosing safety issues, endurance, etc... It might be helpful management wise to split some of the large areas into smaller ones.

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- hwr When I was in Denali, the weather was terrible. My party was backpacking in conditions that I felt were very dangerous. I would have felt much safer if I had seen a ranger once in a while.
- hx We almost died in Denali, but it was cool.
- I A bit more info needs to be given to spell out the system and how to use it. Instead of saying no you have to be in the park to book a backcountry spot.
- I I would love to see coffee at Eielson. I also think people should be better warned of the weather. Even though in AK, I didn't expect to see snow at 3300' in the middle of August.
- I I did not receive any recommendation about the zone I could choose. Taking into account the limits per zone I would consider positive that staff in permit booths gave some recommendation to hikers about the possible zone.
- I I was disappointed at the lack of wildlife when compared to advertising material, and thought that hours spent looking for, reading about, and the amount of warning signs regarding the dangerous wildlife was far too great. I came to Denali to experience wild Alaska and become a part of the ecosystem, not bubble wrapped and protected from it.
- I Protecting the Denali ecosystem is most important. Convenience of access is not a priority. Backcountry rangers are not consistent in their information/advice/interpretation of rules-training needs improvement. Trails could be OK to limit impact in high volume routes. Some campsites at all campgrounds should be held out of reservation system for booking same day/next day at visitor's center.
- I More information about why particular areas are closed to entry.
- I I would like to have more information about each backcountry zone in order to select which zone to visit overnight. "The backcountry companion" does not give me enough information I want to.
- I It would be more worthwhile to have more detailed maps for each section (or groups of sections). The current map is on too large a scale to confidently orient oneself.
- I I was very disappointed to find they did not have the necessary topo maps available once I had gotten my backcountry permit, and that there was nowhere else to get them. It would have been nice if the following information was brought up to us: 1) Bus schedule would change during the time covered by our backcountry permit. 2) The opinions of the locals or lodges around Kantishna as to regulations regarding use in the surrounding zone 42. It would be nice to have some sort of day-use warming or drying shelters along the road, so that it is possible to dry gear without having to come out of the park.
- I I would support current rules/objectives; some way of getting to most popular areas would be better. Have made two trips without getting to camp in preferred areas (and cannot extend length). -Keep the backcountry pure and clean.
- I One thing that I think should have been covered in the cautionary information is care about interactions with moose. They weren't mentioned at all, which could have led to people thinking they weren't dangerous and left them unable to deal with them.
- I Excellent bus system. Reservation board and information could be made easier to understand. Use of a map and zone number not just the zone number.

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- I I am impressed with the professional help. I feel the pictorial and verbal description of all areas need to be expanded on to allow campers to better assess their skills prior to entry to a specific area.
- ia BRFC's are great. Rangers at desk very nice. Instructional video was cool and useful. Might be cool to be able to call two or three days in advance to reserve backcountry permit. No campfires- where would wood come from? If wood was waiting there brought in by rangers it would be great. If there were a couple of stones for firerings- it would be fun, but not that important.
- ia I need more information about the wonderful park in travel agencies even outside of Alaska and the USA. Change the system on getting a permit or at least some help in 2nd and 3rd languages. Getting a drivers license is easier.
- ib Great trip. My biggest suggestion would be to include some info or stats on how rare bear attacks are and how seeing a bear doesn't mean that you're going to die. There was a bit too much of a fear factor induced in the prep process, that detracted from our ability to really relax and enjoy the surroundings.
- id Our group found the hiking in zones 4 and 5 extremely demanding and were not given helpful guidance from the rangers issuing the permits. I believe that Denali's backcountry could be made more accessible without destroying it's beauty as a wilderness.
- id Incredible experience. Two additional remarks. If possible I would find it interesting to have a more thorough description of the zones. In addition, because it had too many people we used no well-developed trails. Our topographic map reading is poor. Perhaps a video or cd rom can be developed and freely used to increase these important skills prior to starting the backcountry trip.
- ih I was disappointed with the descriptions of the terrain for the section we entered.
- ih 1. Consider testing hiker's knowledge before allowing them into backcountry. 2. Allow less hikers in each zone. 3. Allow no vehicles (except buses and professional photographers) more than one mile into the park. Leave the campsite further in the park to those on foot or on bike. The less vehicles, the better.
- ihba Info on river crossing and bear encounter tactics was extremely helpful and relevant. Some spaces reserved for backcountry permits would be ideal for groups with schedules/itineraries.
- im This was my first trip to Denali and it was a great experience. I liked how informative employees were about the wildlife and backpacking. Keep the park preserved so people can enjoy it for many generations.
- ir The person responsible for having USGS topographic maps available at the visitor's center failed us. We were only able to purchase 1 of 9 maps we needed. Our rangers were giving out copies but the quality was poor.
- is There is very little incentive to do this survey. Bear containers are great- Thanks!! Park rangers are too vague about different areas of the park- when come in... have no idea where to go. Perhaps list 10 or so different length, types of hikes that are popular. Brain is fried!! (Hope you could read my writing-enjoy putting the rest of these entries into the computer.)

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- it Absolutely unique and inspirational beauty to be found in the backcountry. Fortunate to see bears, pack of wolves, and moose. Too many buses. Unit 30 is awfully difficult without advice on where to camp. Video (prior to departure) failed to distinguish difference between grizzly and black bear temperament and how to react. Overall amazing place.
- iu 1. A good map- must be provided to the hikers (free of charge). 2. There should be no fee for the camper bus (if you can't reserve in advance the backcountry then it's not fair that there is a \$ fee for the bus). 3. I enjoyed it very much-thanks!
- iw No information was given to my party about the vegetations for walking conditions. The majority of our walking was done in a bog. It would have been nice to know. The weather was treacherous, it rained everyday we were in the backcountry. Yet it was a great experience, I learned things about myself and learned that I can handle bad conditions.
- iw You need to stress to all visitors to immediately attend the "Intro to Park" presentation at the visitor center, so the shuttle system and other opportunities are explained during the beginning of visit.
- iw A positive experience in all respects. However, more description of a unit's terrain and hiking conditions (re-local weather, wet/dry soil conditions, seasonal variations) should be available. Also, instead of blanket permits a questionnaire should be used to reflect an individuals backcountry experience and help the park personal recommend specific units based on difficulty level and topography.
- iw I felt that more up to date snow level/condition advisories could have been given.
- iz Excellent Experience! Permit process was good, but it would have been helpful to have an overview of backcountry areas to help narrow down choices. E.g. Tundra hikes- zones x, y, z, River walks- zones a, b, c, Park climbs- zones k, l, m etc. This survey took a considerable time to complete and I hope it is helpful. Perhaps a small token (Denali souvenir.) would be helpful in getting complete and full participation.
- m My husband and I felt that Denali was very well managed overall. Our number one concern is that wildlife and habitat are given the highest protection possible- even if this imposes strong restrictions on human use. Denali offers a rare opportunity to experience true wilderness-let's keep it that way. Thank you.
- m As a student of biology, I can tell that much effort is spent in trying to balance preserving the wilderness status of the backcountry and maintaining public access to the backcountry. I think that Denali does an excellent job of maintaining this balance in favor of keeping the backcountry a true wilderness.
- m Eielson Visitors Center was very crowded and areas surrounding were heavily impacted.
- m If wildlife and nature needs an organization like this now, let's go. But isn't it sad?
- m The park is very well managed. You never feel as though you are competing with a crowd.
- m Organizing nature does not appeal. Denali is extremely organized and I was amazed at how enjoyable it was. For the sheer number of people that use the park it is the only way. I encountered very few people on my trip and no evidence of humans (something I have never experienced before). All I can say is very good effort to all you and I hope it stays as organized as it is. I had a wonderful time. Many thanks.

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- m Congratulations! The park is managed in an excellent way. You just have to do something about the weather.
- m Denali is a beautiful example of a wilderness that once existed in the whole country. My only concern is preserving it and all our national forests and parks.
- m I enjoyed my visit to Denali backcountry tremendously. I feel that it is important that it remains the unspoiled place that it is.
- m The park is very professionally run and organized.
- m The management seems to be doing a great job at a most incredible park.
- m Keep up the good work.
- m I returned to Denali every year for a backcountry experience that I can find in no other National Park in the lower 48. The lack of hikers in the backcountry or signs of man-made structures such as trails or bridges add to the challenge and appeal of this park. This park is not for the unprepared backcountry traveler, there are other parks better suited for their ability. I believe the current management are very successful in maintaining a "Wild Park". Especially the bear canister program is a model that un-natural parks like Yellowstone and Glacier should adopt. To Denali I say stick with what has worked and don't change a thing!! Thanks.
- m Keep the park wild for my children and others.
- m Make different types of zones. Heavy use zones for popular areas and for people who don't mind seeing other peoples.
- m Denali's current policy of low policing, low number of permits issued, trail, or other amenities is well suited for the seasoned backpacker. Denali's remote location and fragile terrain are well suited for this type of adventuring. It is not a family funhouse. The tourbus can serve that purpose. Given the number of opportunities and locations for the kind of solo wilderness experience I sought and obtained. Denali's land and hiker management seem well done.
- m You guys are doing an awesome job. Keep it up.
- m I was very satisfied on my trip. The bus system, capacity of hikers and campers system is good. I might not see parties more than usual, but capacity is so important to enjoy the wildlife in Denali.
- m I love the fact that Denali is complete wilderness with no trails on the campgrounds in the backcountry.
- m It is frustrating to arrive in the park with the intention of hiking in a certain area, but to find it full. However, I would suggest no change to the present system. On an extended visit like mine this is a minor issue. But for others, the ability to get a permit ahead of time would be a great benefit. A change in the present system could indeed affect my own future visits though.
- m Absolutely nothing negative was experienced other than the beginning social trail of section 16 there was no trace of other human visitations. The staff at the visitor center were beyond pleasant to prepare the necessities for backcountry. This was my first experience not running into other hiking parties while backcountry for 3 days, very memorable.
- m I think the management was great. It appears the rangers are very much in tune as to what is happening with the plants and animals in the park. Keep up the good work.

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- m Campsites like Igloo Creek ought to have. Can something be done about the mosquitoes?
- m Park service management was great.
- m I am satisfied with the present backcountry management practices. The numbers of people and permit process is good. I also feel that any necessary closures to benefit critical habitat areas are well justified. Thanks and keep up the good work!
- m Thanks for a great season!
- m Don't change much, if anything.
- m The park is beautiful and I appreciate all the efforts to preserve its original beauty. I felt that backcountry camping was not a good experience, however. We were too close to the road, saw far too many others, and did not feel as though we were alone or even secluded from the rest of the world.
- m I was very satisfied with my experience. I found the park stunning and I thought the backcountry management process was smooth and very necessary. I want to go back!
- m Unit 42 and perhaps 43 should be removed for backcountry trips. Too many private residences, camping, parties, etc.
- m The best part about my trip was to experience the wilderness of the park. To be out and not see/hear people and machines is a rare and beautiful experience.
- m Considering the visitor pressure the park endures, I feel that the current management plan being implemented in the park reaches a good balance between preservation of the backcountry, while still allowing limited numbers of visitors to enjoy the area and its unique environment.
- m 1 I don't believe nor support the closing of parts of the park to those who would enjoy it's use. For example: snow machines or people who use airplanes. 2. I believe people are more important than animals and should be allowed to protect themselves against possible bear attacks. 3. I believe in a system of user's fees to pay for all uses of park.
- ma I love your backcountry management. The only change I would suggest is an advanced reservation system for 1/2 spots available. There should always be some 240 spots. The park should consider dog sled trips in winter. Keep up the good work!
- mb My Denali experience was very positive. I applaud Denali's policies regarding backcountry use and bear management. Other parks could learn from these policies and keep land pristine and their animals wild. I wasn't quite sure what to expect but experiencing the backcountry was everything I could have imagined. I feel that I learned a lot more about the wildlife and how best to coexist with it than could have otherwise have been possible. This is what makes the Denali experience so special and unique. I can't wait to come back.
- mb I really like the restrictions on the number of people in the park and the bus system. Also the treatment of animals, especially bears. People who dayhike in the park should also watch the video about bears, river crossings etc.
- md Maintain the status quo of the Park. The appeal of Denali over the national parks is the underdeveloped wilderness.

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- md I have never had a more amazing trip than Denali. I am all for the way it is run. Only one road into the park with buses is the best idea I have seen for National Parks. They should all be like that. I had a great time and will be returning!
- md I have headed up to DNP for the last 3 summers, due to the fact that the park is so well preserved both by the rangers and the "type" of people that visit/use the backcountry. The main "reason" that I traveled from Iowa all the way up to Alaska (particularly Denali) is because the park is so undeveloped and without signs of man, and man's buildings. The park is tranquil as it stands now, so are the animals and wildlife within the park. In my own opinion, any more development or any more signs of man made products in the park would in itself destroy the park, and the whole concept of trying to Preserve Denali National Park as a unique refuge. I think DNP is perfect as it is!
- mdb Legal snaring and hunting of migratory wildlife in the Preserve is at odds with the Park's aims, and unnecessary given Alaska's vast hunting opportunities. Limited roads and restricted traffic are very positive and distinctive aspects of a Denali visit. I don't understand why campers are required to use bear resistant food containers, but day hikers are not. Are day hikers immune to bear interactions? Won't bears learn that scaring hikers leads to easy food? Alternatively, we campers who bring only granola a threat to bear habits? Essential that some backcountry permits remain on a first serve basis (not reservable). Fantastic well-managed park.
- mh Overall, we had an excellent experience in the backcountry and the park service did an excellent job. One criticism is that the park service should make better efforts to examine the individuals ability or experience hiking/camping and inform the individual about the strenuous conditions in Denali. I think they should stress a conservative hiking camping route rather than the more intense route, unless the individual has prior Denali experience.
- mi (+): We encountered only 2 parties on a 5-day backpacking trip. (-): Please restructure Park safety Education component. Do not play video assuming that visitors will know they are doing. Please have a ranger personally instruct groups of backpackers instead. I feel the NPS should take more responsibility for Denali Backpackers' safety education. More advanced river crossing techniques should be taught. We had to use a book! Thanks.
- ml I agree with the regulations set up at Denali and in fact feel those restrictions make a better backcountry experience- since you see fewer (if any) people. I also appreciate that you have emphasized the pack-it-out approach- and I hope other national parks will pick up on that.
- mr I feel the present management is satisfactory. I would've like to have seen at least one park ranger to let me know sometimes that there would be a trained person there.
- mr Doing a good job, enjoyed my experience and had relatively little difficulties obtain permits- They weren't necessarily my first choice but I enjoyed it all the same. Park rangers at the Visitor centers were informative and friendly.
- mt I thought the backcountry was managed quite well. The only problem I had was getting to my area at a late time -8:40- which made finding a camping place out of the view of the road quite difficult.
- mt The only truly negative aspect of this trip into the backcountry was weather, which the NPS obviously has no control over. Think the way the park is managed now is excellent. The backcountry desk has been helpful and enjoyable to work with, as have nearly all of the bus drivers we encountered up and down the road.

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- mt I was very impressed with the conscious effort to preserve all aspects of Denali. I enjoyed the limited access to the park with respect to cars and RVs. National parks such as Yosemite and Yellowstone are overrun and that's a shame. Thanks.
- mt Backpacking here is awesome. Regulations are strict, but allow for an experience like no other place I have been to. Buses/transportation services were great. Visitor center needs vending machines/concessions.
- mti An additional staff member at the permit desk might speed the process. Might be able to shorten the orientation video a little. Overall, park appears very well managed. Why so much vehicle traffic besides the shuttle buses? *The orientation video could be shortened.* Overall the park was well managed. I wonder why there was so much traffic besides the shuttle bus.
- mu If the weather was fine, it will be one of the most beautiful parks in North America, at least! Sometimes I got the feeling that everything in park is based on money! Too many people, on the road in the park!
- mz Skipping around from area to area because *the return was very frustrating.* I didn't realize that crossing from one area to another without returning to the road would be so difficult (impossible). Given the travel necessary to get from the road to a "legal" campsite (in areas 12,11,10,9). My inability to spend several nights in one area precluded much real depth and punctuation. If the permit system were based on entry to an area rather the length of time you can stay, that might help.
- r *The ranger could have been more helpful when we were selecting our zones.*
- r Positive: The careful and sensitive manner in which the wildlife is treated. To me it seems that this is possible through the limitations of visitors. The way visitors are instructed by the information center and rangers appear to be a good possibility to prepare people for any encounters with bears. I think it's great that through all of your policies (containers for food,...) the bears in the park are kept able to live their natural lives and don't associate visitors with any *source of food.* Please keep going like this! I'm looking forward to returning to the park!
- r Found that park employees were extremely friendly as well as helpful.
- r Fantastic trip- One problem we encountered was one guy behind backcountry desk, not a ranger, perhaps a trainee? Not helpful in picking zones. I realize that's our responsibility, but the more knowledgeable those behind that desk, the better informed the travelers will be (planning a trip in a park so large is a bit overwhelming).
- r Very nice ranger. Shelter at sanctuary campground would be good. Good organization, backcountry.

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- rf NPS Lost and Found: I've worked the front desk at McKinley Village this summer 5/18-9/19. We've had several guests lose items on the buses. Each time they've lost something I can retrieve the item before it goes to NPS. But once it goes to NPS, it seems the item is never seen again! A couple of times a DPR employee will have reported seeing and sending the item to NPS. I'll call NPS and they claim never to have seen it. Once, an NPS employee let me know she had the item in front of her, only to have a male employee tell me he didn't have it when the guest called from her home state. He refused to go look for it and said he didn't see it on "the log". He told me, "Ma'am, we deal with emergencies, here!" (Fine then please have someone else do lost and found!) I wouldn't doubt that 99% of your lost and found items guests actually attempted to claim! Ban the "Black Hole!" 2. Planes: As an experienced backpacker, I enjoyed the challenges of the Denali Wilderness area. The only downfall for us were the ubiquitous sightseeing flights. Perhaps someday the wilderness area will be off limits to sightseeing flights? (that would be nice, but those folks probably have more \$ than us backpacker type folk?) Thanks (comment #1 made by respondent's partner.)
- ri Our trip was absolutely amazing and the ranger who planned our trip, Michael Sheehan was awesome. The only negative experience was the absence of maps. Since we didn't know where we could be camping we couldn't buy maps beforehand and once we got to the ranger station they didn't have any and we were forced to use black and white photocopies which was difficult.
- ri We found that one ranger/staff member at the backcountry office was not very helpful under the auspice of "protecting the lands" I think that you can be helpful- without giving out too much information. I respect the goal of a trail-less wilderness-but books and other means of preparation only give a limited amount of information. Esp. about current river conditions-snow-mud-availability of finding places to camp etc. Most people were very helpful- in the park service style. One staff member soured the experience by answering questions by saying "you'll have to figure it out yourself". Her name was _____ although all others were more than helpful- while respecting the cause! Kudos overall!
- rim I thought the rangers at the visitor center were very precise and accurate in the information they gave and where else to teach a proper approach to wilderness and wilderness and wild without frightening working people at work. I liked the freedom and independence that you are given.
- rm We were very impressed with the rangers and the regulations that were in effect for the park. Unfortunately, we only had one night to spend as we were short on time. We plan to return for an extended backcountry visit. It is impressive that this land hasn't been touched by expensive building of trails and campsites. Keep it as wilderness as possible.
- rm The park seems to be very well managed. I was very impressed. But many staff in the main visitors' center were poorly informed and gave wrong answers to questions. _____ and another young man were very good, however.
- rs I didn't like the attitude of the rangers in the backcountry booth at the station... (cocky and unapproachable for questions) Glad to have the opportunity for a survey i.e. you are interested in our opinions. There is some ambiguity in this portion of the survey. Distinguishing objectives versus rules, etc.
- rt There was great access of information and informative rangers. Also there was a great shuttle system that reduces impact on the park.
- rt Although I can appreciate the objective of "each hiker experiencing the backcountry for himself" I disliked not receiving help from the ranger at the permit desk with respect to where to get off the bus and enter our zone (33). It was very difficult to find a way into the thick brush.

Appendix L: Visitor Comments from the Mail Survey

- rw I feel that the personnel at the visitor center are professional, and able to make the registration process relatively painless. It would probably be a great idea to further emphasize the quick weather changes in the park. Although my party was fairly well equipped to deal with snowfall, which surprised us, I'm sure that some would not be. The park is great and I'll be back!!
- rx The rangers did great by insisting the following of standard procedures at the visitors center. Denali was the best wild experience I had so far.
- s While obtaining a backcountry permit it was presented that this survey was mandatory. Also, I have received letters and additional booklets since I returned. I am professional and travel frequently. I did not appreciate the fact I was given very little time to complete the booklet.
- s The trip was great, but I am tired of these questionnaires.
- s The questionnaire was a big task. I hope others were as conscientious as me.
- s Acoustically speaking, there is no tranquility in Denali anymore. I hope your surveyors take the time to sort your data out well. You must get some sort of handle on the next (quantitative) number of aircraft departures daily to compare with visitors perceived experience (each day) - otherwise your study is junk. I was in the park for six days with few aircraft only because it rained heavily each day. Rain also reduced the overall numbers of backpackers and dayhikers... so maybe you should compare weather with some of these other factors. Strongly oppose reservation system, lottery system and permits by perceived degree of skill and ability. Denali's present system is sound and needs to be preserved. If you try to reduce this park to the least common denominator by providing "additions" you're going to lose what this park really has to offer- an easily accessible yet relatively pristine wild area. The park needs no more improvements. Lets keep Denali from becoming a 6 million acre eco-Disneyland theme park... NPS has quite enough of them already.
- s Oh my god! (so much paper work) God save the queen!
- s The questions in the survey were interesting and OK. But we couldn't understand the sense of the question about ethnicity with two possibilities to the answer. Aren't there much more ethnicities?
- sa You didn't give very good information on what this survey is used for and what the decisions will be made from it. You should give two days to apply for a permit just like a bus service.
- sh We had a shorter and more difficult experience than we intended as a result of 4 days of rain. Thus this survey may reflect our disappointment.
- smu Be careful about wasting paper. Wilds are supposed to be wild and not handicapped friendly or catering only to the rich. The fees should be voluntary.
- sx Denali, for me was one of the most amazing experiences I have had the opportunity to enjoy. I think however, that this survey could be shorter and more to the point.
- t Didn't see the Denali, but great organization of bus shuttle and drivers.
- t I love the use of buses. Yellowstone has become a tragedy.
- t We really like the informative shuttle drivers. We were displeased with having to pay for the shuttle twice because we left the park for one night. I am glad we did not have to sit around waiting for a permit.

Appendix L: Visitor Comments from the Mail Survey

- t My only suggestion might be smaller tour buses which stop more frequently, but still retain the express camper buses.
- t It should be expressed that although you can catch any bus, there may not be room and you can end up waiting a long time (90 minutes). Also that the pack counts as a second seat and may prevent one from getting on. There appeared to be different interpretations of the rules for riding. Knowing this in advance and have all drivers following the same guidelines would help. That aside, the park is great. It was a memorable trip.
- t Ability to reserve bus space ahead of time was very helpful. We navigated bus/permit process well because of wife's familiarity with Denali National Park. However, this process could be very confusing for a newcomer. Number of overflights was terrible! Over 20 one day and some were around 9pm. Made us feel we were in a bad WW2 movie being dive-bombed- This was the one disappointing aspect of our wilderness experience.
- t Very good organization! Very fine to be able to go by car to Savage River also good that no further (Bus shuttle very good). I want more smaller tent places (campgrounds) just for a 1 person tent for example at Riley Creek- for visitors who comes by train or bus or backpack (ex.. for the first night. A big place in forest (Grass, no gravel) only for tents (no cars, or RV).
- t Denali was amazing. I've never seen anything so beautiful. I am actually planning to come to college at APU in Anchorage next fall and plan on being back in Denali. My sister and I love to hike and camp so this was an amazing opportunity. The only problem was on the trip back we were told we could come on the road and be picked up by a camper bus but we walked for an hour and half seeing buses go the opposite way. We were finally picked up by a truck. Nonetheless, it was amazing. Thanks.
- t Please change the buses with the better ones.
- t Car camping was very limited, difficult to obtain. Access to shuttles at park entrance seems as if it could be streamlined.
- t Too much traffic on the road. Shuttle bus non day use too expensive. Bearbox should have loop for straps.
- t I tremendously like the camper bus service. I also find the rangers at the backcountry desk at the park entrance and at Eielson v.c. to be very knowledgeable, friendly and helpful.
- t RV's should not be let into the park past the Savage River bridge it is unfair to all of the other visitors of the park.
- t There are very few eastbound vts (green buses). The earliest eastbound bus at sanctuary campground leaves at 11:00 am, and it all the way from Wonder Lake. Maybe an EB bus could congregate at Eielson? Or leave Wonder Lake earlier?
- t Overall, there were too many tourists and too many buses. The aircraft was *not* the problem but the number of buses most certainly was.
- te I love the bus system in Denali. Visitor access needs to be restricted for the benefit of the Denali wilderness. Maintaining wilderness areas for the future is very important and should be a National Priority. Thanks for asking our opinion about these matters!

Appendix L: Visitor Comments from the Mail Survey

- ti I took the camper bus out to Wonder Lake, and then caught another green bus (non-camper) back to my drop off point, which was supposed to be Grassy Pass, to enter zone 34. After hiking for several hours in terrain that did not match up with my map, I got my camp. Next morning, I gained elevation and realized from the topography that the bus had dropped me about 3.5 miles too far to the west. The bus drivers drive that road everyday. Every driver of a green bus should have to know that road well, so that someone can point to a spot on the road on the map and actually get dropped off there.
- ti We came in late one night to Wonder Lake and had a very difficult time finding a campsite since there are no campsite markers along the main path. At 10pm who wants to walk through everybody's campsites to find one for yourself. Put markers along the path! Also shuttle service is inadequate. We had to wait for hours to catch a bus on our way out of the park in wet clothes. Also at Wonder Lake people are told (via notes on picnic tables) where to store food, but it is not clear where one should cook food. Please make these signs more clear.
- ti Too many tour buses! All (from what I saw) negative impact was due to the people from these buses. The tour bus/RV should also go through an introductory/informative program similar to backcountry hikers. This is an all too familiar sight through national parks. Please tell them to clean up after themselves and respect the park signs.
- tm There were few camper buses and most green buses were full. It took us 1.5 hours before we could find space on a bus from zone 11. Great way of managing a national park.
- tm I think NPS is doing a good job of managing Denali, considering the high demand for tourist concessions here. Other parks would be well advised to consider a similar shuttle system. I think it greatly reduces impact and enhances wildlife enjoyment opportunities. I violently oppose increased concessions in the park, however. It already requires a great deal of work to get away from the crowds along the roadway, and increasing trails, picnic tables, etc.. would destroy all opportunity for the solitude, nature observance, and maintaining an undisturbed wildlife habitat in this incredible preserve. P.S. We did not come here, as the survey implies, to people watch!
- tm Well managed and knowledgeable bus drivers. Good idea to keep private cars out of the park. Great opportunity to watch wildlife from the bus. We had a great time.
- tw Had a great trip, rained on us everyday, but still loved it. Great bus system, could have seen less car/motorhome traffic on the road through Denali; wasn't able to see the mountain, maybe next time. I'll be back.
- tx The magnificent experience was the opportunity to observe the diverse wildlife from the hiker bus. Due to extremely wet and cold weather we ended our backcountry experience one day early and rode the bus further along the road and back out. I agree with no other traffic on roads and the hiker bus was perfect to interact with people of similar respect for Denali.
- tx Great overall experience! Better information about road closures and earlier transportation to warm buses would have made the experience even better.
- u The bus is pretty expensive. If the purpose of the bus system is to protect the environment, you shouldn't make a business about it. You should just cover the costs of running the bus system. That because you are forcing the people to take the buses if they want to go there. At least give discount for students and under 25 years old people.
- u Bus fee too high.

Appendix L: Visitor Comments from the Mail Survey

- uat Overall a great trip, but we felt it could be "shared" with a few others, in hopes that we might get our choice zone that might, which we did not get this trip (wanted 20; took 5 and 6); Bus reservations should not be subject to \$6 change fee, but on a space available basis for changes (b.c. zone and correct camper bus and campground space to start trip all lead to a very extensive schedule one must piece together): campground cancellations should be announced (e.g. we wanted Wonder Lake camp but closed/full then met party that got 2 nights at Wonder Lake after our inquiry): Evening camper bus was 12 minutes early causing us to miss our evening bus "tour" : Bus driver next day told us it "was a hassle" to drop us off 1 mile up road.
- uf The buses were very expensive! Please stop or not as many overflights!
- v I want to come back to Denali National Park
- vw Denali lived up to my dreams even if it rained and snowed the whole trip. Denali is the holy grail of hiking destinations in this country and it's been a dream of mine to go there. My friend complained the whole time, but I loved every minute and can't wait to return.
- w The weather was horrible when we camped!!!! You should rent raincoats since it rains so much!
- w The weather was rather interesting. 6 days out of 8 with heavy rain, but it added to the experience of a fantastic trip.
- w It rains a lot. It is the most time I spent in my tent.
- w Except for the weather I really enjoyed my stay in Denali and definitely will come back.
- w Fall temperature changes were dramatic.
- w Loved the park, except the never-ending rain during our stay. Overall, we believe your management policies make a lot of sense.
- w Please do something about the weather, and make a sunshine park policy.
- w We had a backcountry permit for 3 nights but didn't camp in the backcountry at all because of the weather. Rain/snow are not enjoyable conditions. Would have been a lot better if the weather was nicer. The last day we couldn't even get to our site because the buses weren't going in that far, but we weren't prepared for snow anyhow so we got out of Denali and saw other parts of Alaska.
- w Lack of enjoyment was caused by consistent rain. We cut short a 5 night trip after 2 nights. As a lack of bad weather is an important factor to us in backcountry trips, I did not like having to reserve backcountry camp zones in advance. On realizing the high popularity of the park, I accepted that there is little choice. The rain never stopped anyway. We like to see wilderness scenery, so without the reservation system, we probably would not have started a backcountry trip in the rain. The existence of the system caused us to make reservations we did not use. (We did cancel as soon as we could)
- w Because of the amount of rain and inclement weather it would be nice to have a sheltered area near the parking lot to pack and prepare for the backcountry trip.
- wr I hiked Denali alone. After the summer had ended and serious snow began. Therefore, being alone-24 hours a day-felt somewhat unsafe, as it would take forever to find me, should I break a leg. Realizing the best way to see wildlife was from the bus was disappointing.

Appendix L: Visitor Comments from the Mail Survey

- ws It is interesting that weather is an ignored factor for the part of the survey concerning aircraft. Denali was wonderful in the sun, rain, hail, and snow.
- wx We had a great trip. Less rain and less bushwhacking would have been nice... We were extremely pleased with the amount of wildlife we saw. Beautiful place!!!
- x Denali is an awesome place.
- x I had an excellent trip.
- x Your country is one of the most beautiful countries I've ever seen. I enjoyed time spending at Denali. I really had a great time and do not remember anything I should have complained about. Hopefully I'll have another opportunity to return to this place.
- x I had a wonderful time and plan to be back soon.
- x I really enjoyed backpacking in Denali! It was a great experience.
- x Great place to be! Thank you! To Denali for all the good positive energy I brought back with me!
- x We had an amazing time. Eight days was not enough time to enjoy the power of nature and all the wild life.
- x All went well and we thoroughly enjoyed our stay. "The Mt. Denali" was out!
- x Do not change it. I liked the way it is.
- x We enjoyed our Denali experience. Look forward to doing it again.
- xb It was an interesting experience. I believe that I been better prepared for the never ending rain (better equipment, different equipment) and the encounter with bears (we had 3) I think I would have enjoyed myself more. I think I would like to return in future, better prepared with lessons learned!
- xm I had a great overall experience. I thought it was managed well. My only comment would be for me to bring my dog. I know not everyone should be allowed to bring dogs but all national parks should have a field test so that responsible owners can be rewarded allowed to bring their pets.
- xm Overall, my Denali backcountry experience was a life changing opportunity which was realized. You are doing a great job, so keep it up.

Comments on Specific Questions in Mail Survey

- Q2 I lived in park.
- Q3 Do you mean one permit per zone? Or per trip? Or per night? Clarify the question.
- Q4 Summer employee.
- Q8 They should keep cars out of Denali because of the gas fumes. It smells bad for the environment.

Appendix L: Visitor Comments from the Mail Survey

- Q9 Did not see other hiking parties.
- Q10 They were very friendly.
- Q11 a Went directly to ridges and out of sight.
- Q12 The number of parties did not matter so long as they were respectful of the environment and space of others.
- I would like to see no people on a one night trip or see one or two if there for more nights.
- Q14 I saw a piece of sheet metal (about 5 square feet in area) laying in the ground. It was apparently covering something. I did not disturb it. Otherwise, I saw no evidence of human use. This metal did bother me somewhat.
- Packet of lolloes was found--obviously accidentally dropped (did not bother me at all) not litter!! As such.
- Q17 b Too many buses packed with tourons.
- Proximity to road and number of buses seen and heard in the distance.
- Didn't see other people, but lots of footprints and knew we were close to a campground.
- Ability to see road from a long distance and we heard the buses even when out of site of road and three miles away!
- Number of buses on road.
- Q18 More information on the type of hiking in one area.
- Q18 a I was exhausted and frazzled by frenzied bus, backcountry permit, and campgrounds before others took our chosen zones. It took two and a half hours for the whole show. That is too long.
- Helpful but took a long time
- Q18 b Dropped me off at the wrong spot.
- Buses back to Visitor Center overcrowded.
- Except camper bus was late.
- Very crowded once new schedule came out (had to wait long time to get picked up on way out-buses were full.
- Q18 e Video did not distinguish between brown bears and black bears.
- Too much info on the video which should be optional.
- We needed a zone map and they were unavailable.
- Seemed like someone was always looking over my shoulder. Lack of independent thought.

Appendix L: Visitor Comments from the Mail Survey

- Who the hell would feed a bear anyway?
- Video needs to be updated and clearer.
- No info on moose.
- Q18f Drags on...
- Q19 It rained. My parka leaked. I became hypothermic. I lived.
It would have been better if the weather were better.
- Q20b That is a pain in the bumb!
- Q20h I thought fires were allowed in certain backcountry areas.
- Q21 a 6-8 max so 3-4 hiking groups like if the max number was 6 for a zone and you and 2 friends wanted to go to zone x but there were only 2 spots left then they say ok sure then close the zone rather than say well 2 can camp there but one of you has to go 5 zones away because that's all there's room for. If you get to 6 fine close it but if 1 maybe 2 more for a group want to go let them!
- I didn't really have any idea what an ideal number is for unit usage. I would have liked to have been able to get a permit for a prized unit without having to take a 10 day trip, something time did not allow. I oppose a lottery and phone reservation system, as that limits or destroys spontaneity- an essential ingredient to getting outdoors. Primarily, I am a road tripper. This means I show up at a National Park unannounced and without a schedule - spontaneously. A reservation system would not allow this freedom and would force those like me to plan with a calendar and watch, greatly reducing the feeling of liberation. While backpacking I saw no other hikers, which was extremely nice and unexpected. Having no figures or research, I am unable to answer the question asking for appropriate backcountry usage. *It is a difficult decision to put a cap on usage.* Now that I am more familiar with the procedures I feel I'll be able to make better plans in the future. I wholeheartedly plan to backpack in Denali again and land a coveted permit to some prime units. My senses were overwhelmed by the amount of wilderness and it is nice to know firsthand that places like Denali exist. I grew up in Massachusetts and love the fact that Denali National Park and Preserve is larger than my home state, containing only one, primarily dirt, road. Such a special place! Thanks for conducting this survey. Are you going to keep us participants posted of the results. I would be very interested in learning of your discoveries. Happy Trails!
- It should be more dependant on topography and vegetation in a zone.
- I understand the policy and I think it is great, but it is a bummer when you get stuck with a zone that isn't the best.
- Q24 No maps were available, and had to use photocopy.

The weather should be expected to alter plan.

I was traveling in a group of four which made it difficult to find open zones on our desired nights.

Safety comes first. *Depends on source of fuel. Overkill.*
- Q24c This is not true. If you are going several places, you can book in advance.

Appendix L: Visitor Comments from the Mail Survey

- Need to be in Park.
- Q24 de Stupid questions.
- If it is snowing and visibility is low and the other zone can't be reached then it's ok to break the permit.
- Q24 def If some "flexibility" is allowed for "error", necessary changes
- Q24 g They get new instructions on how to behave.
- Q24 i It is very difficult in zone 9.
- Some areas are hard to be hidden from the road.
- Q24 l More info needed.
- Advisories should be adequate.
- Maybe there could be warnings.
- Q24 m Limit maximum number per hiking parties.
- Q25 a The party size should be set by the number allowed in the zone.
- Backcountry in this area was something I had never experienced before and made a very enjoyable and memorable trip. My only complaint about the trip was that there was no way you could "know" what to expect in the different zones. But, that is also one of the aspects that made this trip great. Keep the areas a preserve so when I come back, I can enjoy the same pristine beauty.
- Depends on party's backcountry ethics.
- But there should be a strong suggestion to keep them between 2-3.
- ? Not bigger than now. (60 buses a day!!!)
- The individual zone capacity.
- Party size greater than 6 may be allowed in a few designated zones only.
- Q26 c No more than one week.
- Maybe 2 out of 6 spots per region by reservation.
- For travelers without limited time this would be useful.
- Q26 d Depends on level of expertise expected.
- Keep it open to all; hiking is not a club, too many people know how to bullshit anyway.

Appendix L: Visitor Comments from the Mail Survey

- Did not answer as the question is not really clear enough. I agree that unprepared (both with experience and gear) Hikers should not be allowed in some areas during certain times of the year.
- Q26 e Per person or party.
Cost 3 of us \$55 for one night.
Do you need more money?
Fee could be higher.
- Q27 a Depends on length, where, number of individuals in party.
- Q27 c The rangers need to make random checks to ensure low impact camping is being done.
- Q27 d I think rangers should keep an eye on hikers for evaluation, but I wouldn't want to see them everywhere.
The patrols of rangers should be on a daily basis if not on foot, then by air. This is to keep an eye on poachers, miners, etc.
I like present random system.
In other words there is a chance you will encounter a ranger.
"Encounters" with park rangers can be beneficial with suggestions and other knowledge and are not always a bad thing.
The number of times park rangers should be seen should be independent of hikers preference. Park rangers' actions should depend on maintaining backcountry sufficiently enough to ensure proper preservation of Denali.
When being instructed about park rules at V.C.
Are we turning into a "police state"? Better to have unwritten laws that respect nature rather than enforcement.
- Q28 Perhaps very limited extent.
I traveled all the way to Alaska to do backcountry camping. If I wanted to camp in a "site" I'd just drive down the road. Keep the backcountry areas backcountry but having the few campgrounds existing is all right,
There are enough interpretive signs and food caches currently.
Limited amount.
This is backcountry not an amusement park or campground.
Limit old people tours!

Appendix L: Visitor Comments from the Mail Survey

NB- Through bushbashing or on the side of a cliff, people will follow these.- And I suspect so would the rangers if the time required it.

Could use these in some places, but still maintain wilderness untouched in others so you can choose.

Q28 a Developed trails would be good for beginners, but overall a trail-less wilderness is most appealing.

In high traffic areas only.

Only in certain zones with lots of brush.

Some places they are needed.

Q28 ab In some places.

Q28 abe I oppose these unless they are necessary for less impact for humans on the tundra.

Q28 d Emergency shelters.

Q28 f Where do you get wood?

Q28 g Only on big rivers.

A small wooden foot bridge for safety reasons.

Q28 i What are the bear proof containers for? Why would we need caches as they're working with no casualties.

Stationary garbage cans opposed to hiking canisters is what I strongly agree with.

Packable bear food caches are great.

Portable containers seem like a good solution.

Carry containers are better.

No, people will start camping near and the area will get worn.

Note BRFC's work great! No need for caches.

Q29 k Limit old person bus tours and airtours. Cut out the damn noise.

Q29 l This is a stupid question.

Q36 Should have mixed race option (or other write in).

Appendix M: Stated Choice Survey

Appendix M: Stated Choice Survey

OMB Approval #1024-0224 (NPS00-020)
Expiration Date: 03/31/01

Denali National Park Backcountry Visitor Survey



Appendix M: Stated Choice Survey

Detailed Instructions/Example Question

Backcountry experiences in Denali National Park can be influenced by the resource conditions experienced (for example, the amount of human impact at camping sites), the social conditions experienced (for example, the number of other groups encountered), and the management conditions imposed (for example, the number of backcountry permits issued). Decisions about how to manage the backcountry in Denali involve potential tradeoffs among these conditions. For example, the number of backcountry permits issued could be increased to allow more public access, but this might result in more resource impacts and encounters among groups. Conversely, reducing the number of backcountry permits issued might reduce resource impacts and encounters among groups, but would allow fewer people to enjoy the backcountry.

To help guide decisions about backcountry management in Denali, we would like to know how you feel about potential tradeoffs among backcountry conditions. We would like you to answer a series of questions that deal with such tradeoffs. Each question describes two backcountry settings. For each question, we would like to know which backcountry setting you would prefer in Denali National Park. We would also like to know how strongly you would prefer the backcountry setting you choose.

Please turn to the next page to view an example of how a respondent might complete a question.

EXAMPLE

Backcountry Setting A

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Required to camp at *designated sites*.
- Only a minority of visitors are able to get a backcountry permit.

Backcountry Setting B

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along continuous, *single track* trails developed from prior human use
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Allowed to camp in *any zone on any night*.
- Most visitors are able to get a backcountry permit for their *preferred* trip.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
	Strongly Prefer A		Moderately Prefer A			Moderately Prefer B		Strongly Prefer B	

By circling the number 4 on the left side of the scale in this example, the respondent indicated that he/she strongly prefers backcountry setting A to backcountry setting B.

Appendix M: Stated Choice Survey

For each of the following questions:

Circle one number on the left side of the scale from 1 (moderately prefer backcountry setting A) to 5 (strongly prefer backcountry setting A) if you prefer backcountry setting A to backcountry setting B.

OR

Circle one number on the right side of the scale from 1 (moderately prefer backcountry setting B) to 5 (strongly prefer backcountry setting B) if you prefer backcountry setting B to backcountry setting A.

Compare only the two backcountry settings presented in the question. Please do not compare backcountry settings in one question to backcountry settings in a different question.

Please turn to the next page to begin the questionnaire.

Appendix M: Stated Choice Survey

1.

Backcountry Setting A

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Required to camp in *specified zones*.
- Most visitors are able to get a backcountry permit for their *preferred* trip.

Backcountry Setting B

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Allowed to camp in *any zone on any night*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trip.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B			Strongly Prefer B

Appendix M: Stated Choice Survey

2.

Backcountry Setting A

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *little or no* signs of human use.
- Required to camp at *designated sites*.
- Most visitors are able to get a backcountry permit for their *preferred* trip

Backcountry Setting B

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking
- Allowed to camp in *any zone on any night*.
- Only a minority of visitors are able to get a backcountry permit.

PLEASE CIRCLE ONE NUMBER

5 4 3 2 1 1 2 3 4 5

Strongly
Prefer A

Moderately
Prefer A

Moderately
Prefer B

Strongly
Prefer B

Appendix M: Stated Choice Survey

3.

Backcountry Setting A

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Required to camp at *designated sites*.
- Most visitors are able to get a backcountry permit for their *preferred* trip

Backcountry Setting B

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *little or no* signs of human use.
- Required to camp in *specified zones*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trip.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B		Strongly Prefer B	

Appendix M: Stated Choice Survey

4.

Backcountry Setting A

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Allowed to camp in *any zone on any night*.
- Only a minority of visitors are able to get a backcountry permit.

Backcountry Setting B

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *little or no* signs of human use.
- Required to camp in *specified zones*.
- Only a minority of visitors are able to get a backcountry permit

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A		Moderately Prefer A		Moderately Prefer B		Strongly Prefer B			

Appendix M: Stated Choice Survey

5.

Backcountry Setting A

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *little or no* signs of human use.
- Required to camp in *specified zones*.
- Only a minority of visitors are able to get a backcountry permit.

Backcountry Setting B

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Required to camp at *designated sites*.
- Only a minority of visitors are able to get a backcountry permit.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B			Strongly Prefer B

Appendix M: Stated Choice Survey

6.

Backcountry Setting A

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Required to camp in *specified zones*.
- Only a minority of visitors are able to get a backcountry permit.

Backcountry Setting B

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Required to camp in *specified zones*.
- Most visitors are able to get a backcountry permit for their *preferred* trip.

PLEASE CIRCLE ONE NUMBER

5 4 3 2 1 1 2 3 4 5

Strongly
Prefer A

Moderately
Prefer A

Moderately
Prefer B

Strongly
Prefer B

Appendix M: Stated Choice Survey

7.

Backcountry Setting A

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *little or no* signs of human use.
- Required to camp at *designated sites*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trip.

Backcountry Setting B

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Required to camp at *designated sites*.
- Most visitors are able to get a backcountry permit for their *preferred* trip.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B			Strongly Prefer B

Appendix M: Stated Choice Survey

8.

Backcountry Setting A

- Encounter 0 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along continuous, *single track* trails developed from prior human use.
- Camping sites have *extensive* signs of human use – bare soil, many rocks moved for wind protection and cooking.
- Allowed to camp in *any zone on any night*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trip.

Backcountry Setting B

- Encounter up to 4 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *most* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *little or no* signs of human use.
- Required to camp at *designated sites*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trip.

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B		Strongly Prefer B	

Appendix M: Stated Choice Survey

9.

Backcountry Setting A

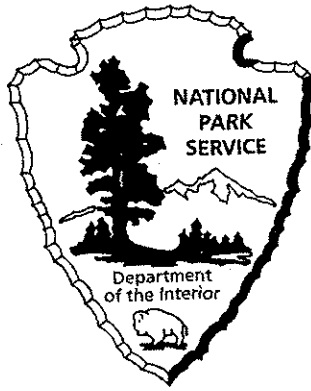
- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups a *minority* of nights.
- Hiking is along intermittent, animal-like trails.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Allowed to camp in *any zone on any night*.
- Most visitors are able to get a backcountry permit for at least their *second choice* trail

Backcountry Setting B

- Encounter up to 2 other groups per day while hiking.
- Able to camp out of sight and sound of other groups *all* nights.
- Hiking is along continuous trails with *multiple tracks* developed from prior human use.
- Camping sites have *some* signs of human use – light vegetation damage, a few moved rocks.
- Allowed to camp in *any zone on any night*.
- Most visitors are able to get a backcountry permit for their *preferred* trail

PLEASE CIRCLE ONE NUMBER

5	4	3	2	1	1	2	3	4	5
Strongly Prefer A			Moderately Prefer A			Moderately Prefer B			Strongly Prefer B



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environment and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interest of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.

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