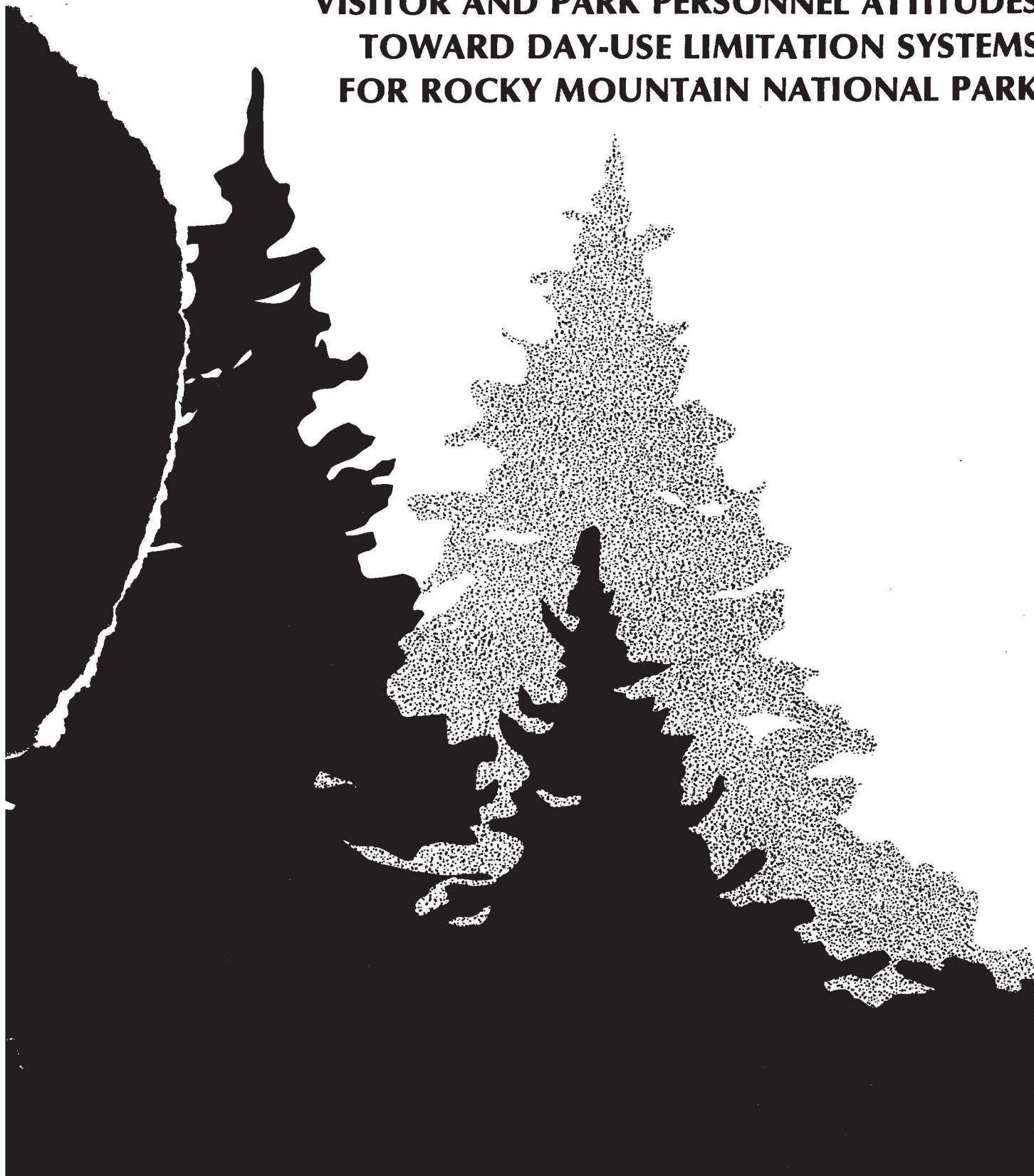


**DAY-USE LIMITATION IN NATIONAL PARKS:
VISITOR AND PARK PERSONNEL ATTITUDES
TOWARD DAY-USE LIMITATION SYSTEMS
FOR ROCKY MOUNTAIN NATIONAL PARK**



WITHDRAWN

Day-Use Limitation in National Parks:
Visitor and Park Personnel Attitudes
Toward Day-Use Limitation Systems for
Rocky Mountain National Park

Prepared for
the
United States Department of the Interior
National Park Service

by
Richard G. Trahan, Ph.D.
University of Northern Colorado

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Day-use limitation in national parks : visitor and park personnel attitudes toward

Acknowledgments

This report is the final submittal of a comprehensive study of visitor related day-use limitation issues in Rocky Mountain National Park. The study was conducted pursuant to a contract agreement between Dr. Richard G. Trahan of the University of Northern Colorado and the National Park Service.

Primary responsibility for the overall design and implementation of the study rests with Dr. Trahan. Other members of the research team participating in the research design, data collection and analysis and contributing greatly to the success of the study include: Dr. Richard K. Ormrod, University of Northern Colorado; Dr. Karen Jennison, University of Northern Colorado; Ms. Marcille F. Trahan; Ms. Joan Shearer; and Ms. Lin Harvey. Also, special thanks go to Dr. John Deitz for help with photography and Mrs. Mary Scoggins whose outstanding secretarial skills were present throughout the study culminating in this final draft.

The interest, cooperation, and assistance of the local National Park Service staff at Rocky Mountain National Park contributed significantly to many of the accomplishments of the study. We wish to express our special appreciation to David Stevens, Research Biologist; Dwight Hamilton, Chief Naturalist; and David Essex, Chief Ranger; without whose generous assistance, this study would not have been possible.

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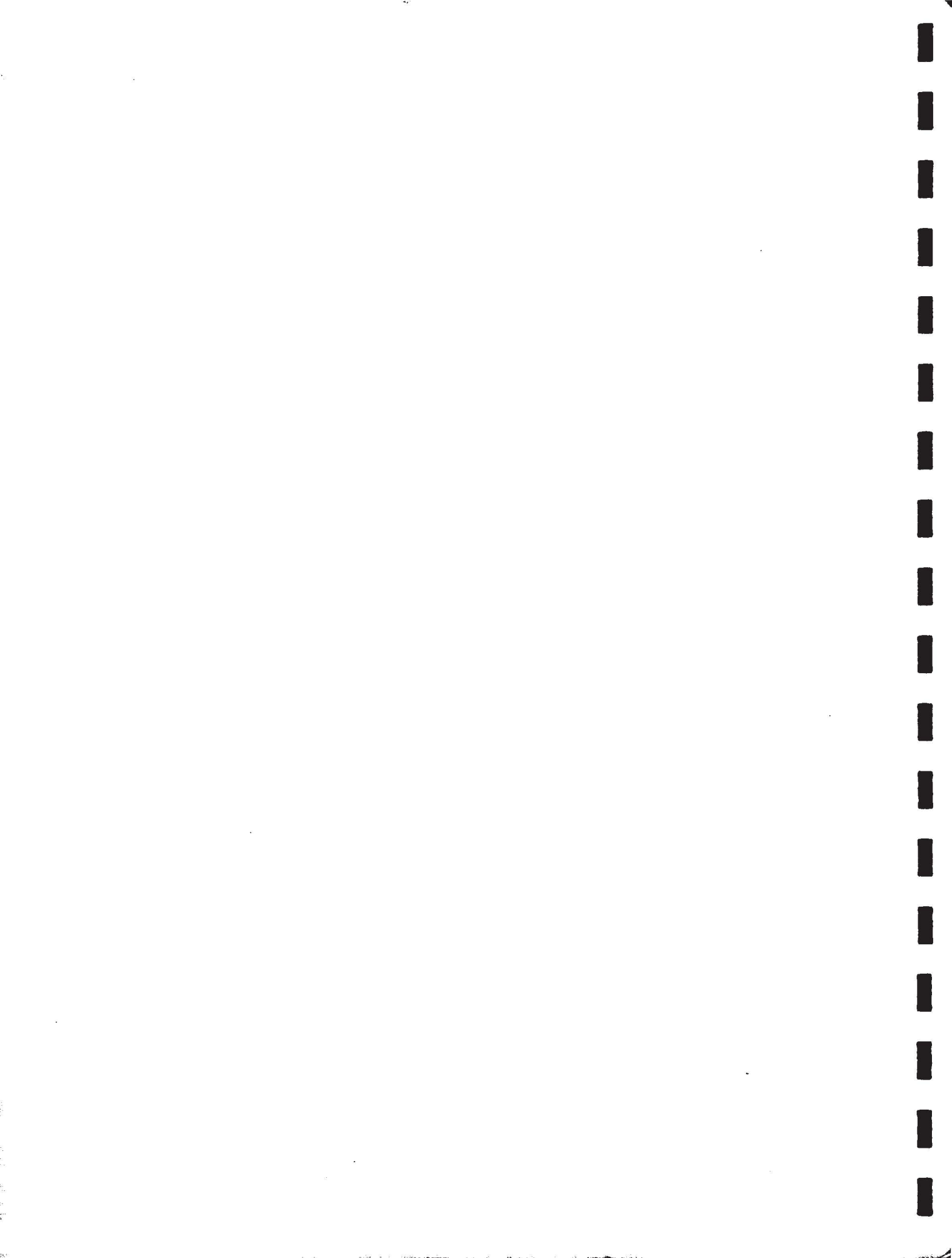
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The research undertaken at Rocky this summer concentrated on three major issues: What conditions or reasons would make day-use limitation acceptable to park visitors; what types of day-use limitation systems would be the most acceptable to the various types of park users and National Park Service Personnel; and what would be the most successful method of communicating day-use limitation to park visitors?

Research Structure

The study was conducted in Rocky Mountain National Park during the heaviest visitor months of July and August. The research project itself began in May with the construction of appropriate survey instruments and trail pre-tests conducted in the Park in June. During the months of July and August, the project director and two research assistants surveyed park visitors and local Park Service personnel.

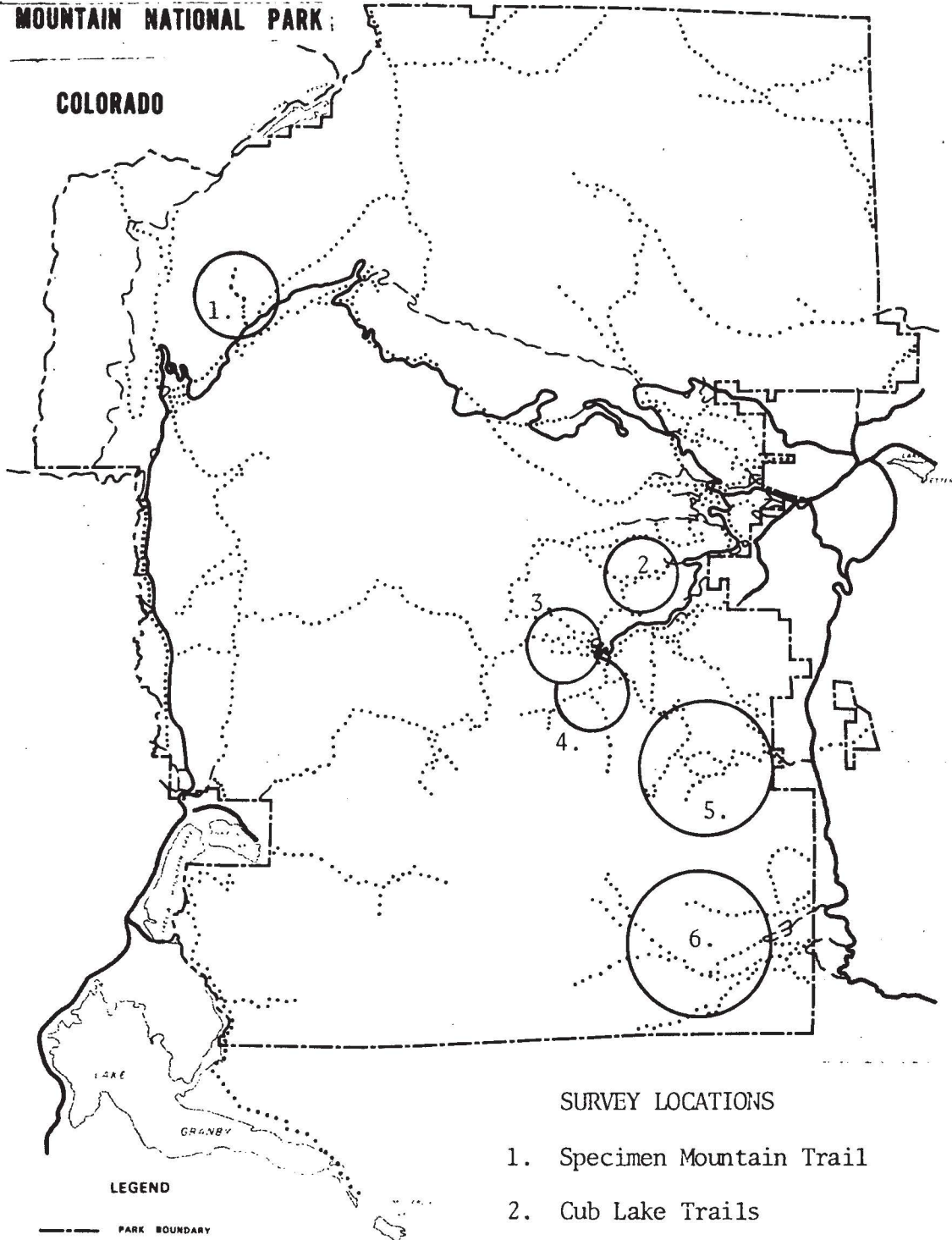
Three distinct visitor populations were surveyed. First, the major survey was focused on day hikers. Day hikers utilizing six major trail systems in the park were randomly surveyed on a different day of the week, each week, over seven weeks. These six trail systems have experienced different degrees and types of visitor impact problems. The day-hikers leaving these trails were given a seven page self-administered questionnaire to complete. The questionnaire contained approximately 80 items. The focus was on why hikers chose a particular trail for hiking, what they thought about existing trail conditions, their evaluation of various factors as possible reasons for regulating or

TRAIL SYSTEMS

1-4

ROCKY MOUNTAIN NATIONAL PARK

COLORADO



LEGEND

- PARK BOUNDARY
- MAJOR ROAD
- - - SECONDARY ROAD
- TRAIL



SCALE 0 1 2 3 4 MILES

SURVEY LOCATIONS

1. Specimen Mountain Trail
2. Cub Lake Trails
3. Bear Lake Trails
4. Glacier Gorge Trails
5. Long's Peak Trail
6. Wild Basin Trails



CHAPTER 1

Introduction

Background

Between 1960 and 1975, visitation to the National Park System tripled, from 79 million to 239 million visits annually. Even though the Park System increased in size during this period, the acreage was increased less than a third. As a consequence, the annual visitor day-use per acre more than doubled across the park system and for many of the older established parks the increase was even greater. This trend of increased usage of the National Park System will likely continue into the future.

Modern mobility coupled with greater leisure time argues that there will continue to be a heavy demand on the National Parks.

National Parks experiencing greater visitor use without corresponding increases in staff and acreage have to determine acceptable levels and types of utilization for the various user groups. Effective park management will depend on learning more about expectations and perceptions regarding park use by visitors. Major issues of public concern must be identified as a basis for predicting public reaction to alternative management schemes. For example, many parks will eventually be forced to develop day-use limitation plans to avoid deterioration in the environmental and social qualities of the park recreation experience. But creation and implementation of day-use limitation systems will be difficult, and probably ineffective, without adequate research on visitor concerns and reactions to such limitations.

This study was designed to investigate the possible creation and implementation of day-use limitation systems, based, in large part, on park visitor and park personnel input. The focus was on acceptable and workable day-use limitation strategies for Rocky Mountain National Park. Since 1968, the visitation rate has tripled in Rocky and the staff has lost ten park-wide positions. The staff must deal with over one-half million day hikers per summer and they have faced a 700 percent increase in back country use since 1965. The recommendations and data from this research are designed to assist the National Park Service at Rocky Mountain National Park in more effectively controlling visitor impact on the environmental and social quality of the recreational experience.

limiting day-use; their evaluation of the acceptability of various methods of limiting-day use; and their sources of information about a particular trail. We obtained a total of 1001 completed questionnaires from this survey. (See Appendix A)

A second visitor group surveyed was those who utilized the park's three major visitor centers---Park Headquarters, Moraine Park Visitor Center, and Alpine Visitor Center. Visitors were randomly interviewed as they left a particular visitor center. The focus of the interview was on their reason for using the visitor center; what they actually did in the visitor center; some background on what activities they planned to pursue in the park; and if these plans were affected by their visit to the visitor center. We interviewed a total of 147 respondents. (See Appendix B).

The third group of park visitors that were surveyed were campers in the Park campgrounds. Questionnaires were given out on two separate occasions on each of the Park's east side campgrounds. The focus of this questionnaire was on what kind of activities the visitors had engaged in and planned to engage in while at Rocky. Also, they were asked about types and sources of information they had obtained about the Park. A total of 92 completed questionnaires was obtained from this survey. (See Appendix C)

In addition to these three visitor groups, National Park Service Personnel in administrative positions and in the field were interviewed. The focus of these interviews was on their perceptions about day-use problems and how to control visitor impact.

As the early data results were received, it became apparent that there was a trend toward day hikers preferring non-coercive forms of day-use limitation (systems that let them make decisions about day-use versus systems in which they had no control). For example, about 80% of the day hikers seemed to favor the use of signs to identify heavily used trails so hikers could avoid them. This led us to conduct a small experiment to see if signs that make a trail sound attractive or unattractive in terms of crowding would have an affect on visitor use. Using electronic trail counters, normal traffic patterns were established for a one week period at the junction between two trails. A sign was then placed for a week at the more lightly used trail which made the trail sound attractive in terms of less crowding. Then, for another week a sign was placed describing the more heavily used trail as crowded. Finally, a combination of both signs was used for a week. In addition to trail counter measurements, short interviews were utilized to ask hikers on these trails if they noticed the signs and if the signs affected their decision on which trail they hiked.

Also, at the request of Dwight Hamilton, Chief Naturalist at Rocky Mountain National Park, a small pilot study was undertaken. The purpose of the study was to discover specifically why a majority of day hikers object to sharing trails with horseback riders. An Environmental Studies student from the University of Northern Colorado, under our direction, interviewed hikers who had met horses on a number of park trails used jointly by hikers and horses. These hikers were asked a number of specific and open-ended questions about their reaction to horse use of park trails.

Finally, a short post-Labor day sample was taken in the Bear Lake, Glacier Gorge areas. The purpose of the study was to see if day hikers on these trails would respond to our day-hiker questionnaire in significantly different ways than those surveyed over the more crowded summer months.

Applicability of the Study

As previously mentioned, this study was designed to investigate the possible creation and implementation of day-use limitation systems based, in large part, on park visitor input. The focus was on acceptable and workable day-use limitation strategies for Rocky Mountain National Park along with the investigation of some specific issues of concern to the National Park Service. As such, this report has been written in a manner to present specific and useful management related information to the local staff at Rocky Mountain National Park. This report is not intended as a general discussion of possible day-use limitation strategies for all National Parks. Certainly, some of this information can be generalized to other park contexts. But, we believe that each park is basically unique and while many types of visitor related problems are common to many parks, the solution to those problems demands some form of individualized research.



PART I

VISITOR PERCEPTION OF DAY-USE LIMITATION

Chapter 2

The Bear Lake Trail System

Introduction

Bear Lake serves as a major trailhead for day hikers in Rocky Mountain National Park. The road to Bear Lake is a spur that winds nine miles from the Beaver Meadows entrance to dead-end at Bear Lake. There

is a large 200 car parking lot at Bear Lake which is typically full from 10:00 A.M. to 3:00 P.M. daily during the summer months. The day-use of the Bear Lake trail system is extremely heavy. The park visitor often has difficulty finding a place to park and will typically encounter crowds of other hikers on the trails. Physically, the trails are well developed with the trail from Bear Lake to Nymph Lake paved. Concern with congestion has led the Park's Final Master Plan to recommend the use of public transportation into the Bear Lake Area. Only buses would then use the Bear Lake Road and a portion of the present parking lot would be turned into day-use picnic facilities.

This proposed system of public transportation for the Bear Lake area will help resolve parking congestion but it may not significantly reduce the large numbers of people hiking on the surrounding trails. Continued heavy hiker use not only means continuing heavy impact on a fragile high altitude environment, but also a certain impact on the overall visitor experience. What do park visitors think about hiking in the Bear Lake area? What do they think about day-use limitation for the area? These and other questions were the focus of our survey research in this area. The Bear Lake trail system was the first of six trail systems surveyed.

The Research Procedure

Day hikers using trails in the Bear Lake area were randomly surveyed on a different day of the week each week, over a seven week period. One

questionnaire was given to one member of a hiking party or to a single hiker. Never was more than one member of a particular hiking party surveyed. Hikers were surveyed in the Nymph Lake area as they were hiking back toward the Bear Lake parking lot. This means that the majority of hikers surveyed were returning from Nymph Lake, Dream Lake, Emerald Lake or Lake Hiayaha. We obtained a total of 235 completed useful questionnaires with 41 refusals. The majority of these refusals were the result of poor weather with hikers reluctant to fill out a 7 page questionnaire in the rain. Also, there were a number of refusals from parties with small children who were impatient to return to their car.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day: How long hiking; how many and who hiking with; destination; and distance. Over 80 percent of the sample reported that they had been hiking between 1 to 4 hours, with the largest single group (29.8 percent) indicating they had been hiking for 2 to 3 hours. Also, 60 percent of the respondents reported that they had been hiking with one other person or just 2 or 3 other persons. (see Table 1 below).

TABLE 1

Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By Myself	16	6.8%
One other person	70	29.8%
Two or three other people	71	30.2%
Four or five other people	39	16.6%
Six or seven other people	17	7.2%
Eight or more people	22	9.4%
Total	235	100.0%

Over 50 percent of the respondents reported they were hiking with family members. The next largest category of hiking parties (20 percent) was composed of friends. The majority of the respondents who listed a destination chose Emerald Lake (see Table 2 below).

TABLE 2
Destination of Hike

Destination	Number	Percentage
No destination	37	15.7%
Nymph Lake	12	5.1%
Dream Lake	46	19.6%
Lake Hiayaha	30	12.8%
Emerald Lake	101	43.0%
Tyndall Glacier	2	0.9%
Mills Lake	2	0.9%
The Loch	0	0.0%
Other	5	2.1%
Total	235	100.0%

In terms of distance to destination, over 60 percent of the respondents indicated they were hiking in from the trailhead between 1 to 2.5 miles. Also, 80 percent of our sample indicated that they had reached their destination.

The next section of the questionnaire was concerned with why day hikers chose this particular Bear Lake area trail for hiking. The respondents were asked to evaluate a variety of possible reasons for their choice of this particular trail. Those possible reasons included

the difficulty of the trail, quality of the trail, length of the trail, safety of the trail, ease of parking at the trail head, etc. Some of the more significant results from these questions are included in Table 3 below. The appeal of mountain scenery seems to have the strongest attraction for hikers.

TABLE 3

Evaluation of Reasons for Choosing a Bear Lake Trail for Hiking

Reason for Choosing a Trail	Very Important	Important	Minor Importance	Not Important	Does Not Apply
Decision Made by Fellow Hikers	10.2%	27.9%	14.5%	12.8%	24.7%
Lakes on Trail	27.9%	50.2%	8.5%	1.3%	2.1%
Mountain Scenery	66.0%	31.1%	0.4%	0.4%	2.1%
Forest and/or Wild Flowers	31.9%	47.7%	14.5%	3.4%	2.6%
Variety of Attrac- tions Available	36.2%	49.4%	10.6%	0.9%	3.0%
Trail Recommended	9.8%	22.6%	26.0%	10.2%	31.5%
Wanted to Try New Trail	6.8%	30.2%	21.3%	10.6%	31.1%
Read Description of Trail	7.2%	26.0%	16.2%	13.3%	37.4%

Percentages are based on a total of 235 responses.

For almost 60 percent of the hikers, hiking on that particular Bear Lake Trail was a first time experience. Less than 15 percent of our sample had hiked on that trail three or more times in the past. We asked those who had hiked on that particular trail before to evaluate the present quality of the trail based on their past experiences. The majority of the respondents reported the quality of the area was about the same as in the past. Not only were there very few repeat hikers, comparatively speaking, on the Bear Lake trails, but most hikers reported having little hiking experience elsewhere in the park. For example, 34.5 percent of the respondents indicated that they had not hiked on any other trail in Rocky Mountain National Park and another 28.9 percent reported that they had only hiked on 1 or 2 other trails in the park.

The focus of the next section of the questionnaire was on questions about the quality of hiking experience a hiker preferred and what kind of quality of experience the Bear Lake trails seem to provide. For example, hikers were asked what types of trail they usually preferred to hike on, with 41.3 percent indicating they preferred "primitive trails with little improvement and often rough." Another 37.9 percent responded that they preferred "developed trails with railings and bridges where needed." Less than 5 percent of our sample wanted "very developed trails that are paved." Being concerned about not only the physical quality of the trail but also social qualities, we asked: "when you are hiking on the trail in Rocky Mountain National Park, how many other hikers do you prefer to meet?" Over 60 percent of the respondents reported they

prefer to meet no other hikers on the trail (9.8 percent) or a small number of hikers on the trail (51.5 percent). Only 2.6 percent of the hikers indicated they like to meet "a lot of hikers" on the trail.

In a similar question we asked hikers to evaluate the quality of a variety of factors related to their hiking experience on the Bear Lake trails. The quality of most conditions was evaluated as "excellent" or "good" by 80 to 90 percent of the hikers, except for the number of other hikers on the trail (see Table 4 below).

TABLE 4
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	61.7%	32.3%	3.8%	0.0%	2.1%
Cleanliness of Trail (litter)	73.2%	23.0%	0.9%	0.0%	3.0%
Environmental Condi- tions along Trail (erosion, etc.)	48.1%	40.0%	5.5%	1.3%	5.1%
Directional Signs and Information Along Trail	38.3%	40.9%	15.7%	2.6%	2.6%
Number of Other Hikers on Trail	10.2%	34.5%	31.5%	18.7%	5.1%
Noise Levels Along Trail (other hikers)	27.7%	37.4%	24.3%	7.7%	3.0%

Percentages are based on a total of 235 responses.

Other evidence that hikers are sensitive to the numbers of other people on the trail came from another question where we asked: "In your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Over three quarters of the total respondents said "Yes".

When hikers were asked about their sources of information on the trail system they were using, they reported that maps and park literature played a major role in providing trail information. Talking with other people they met in or near the park seemed to provide the least amount of information (see Table 5 below).

TABLE 5
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	14.9%	20.0%	19.1%	46.0%
Description from Family Member or Friend	13.2%	21.7%	24.7%	40.4%
Park Handout at Gate	9.8%	27.7%	24.7%	37.9%
A Map or Maps	22.1%	40.9%	17.9%	19.1%
National Park Literature	21.3%	42.1%	15.7%	20.9%
People Met in or Near the Park	4.3%	14.0%	26.4%	55.3%
Purchased Trail Guide	10.6%	17.0%	21.3%	51.1%
Talking with Park Personnel	16.2%	30.6%	21.3%	31.9%
Roadsigns in Park	15.7%	31.9%	25.1%	27.2%
Signs Describing Trail	17.9%	33.6%	21.3%	27.2%
Park Information Center	20.0%	35.3%	17.0%	27.7%
Park Newspaper	14.5%	23.0%	26.0%	36.6%

Percentages are based on a total of 235 responses.

Of central concern to our study was hike evaluation of various possible factors for the National Park Service to use as reasons

for limiting day-use. We had believed that many hikers would not be overly sympathetic to various reasons for limiting day-use. This did not prove to be true as most hikers turned out to be very protective of the park environment (see Table 6 below).

TABLE 6
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limiting Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	68.5%	23.8%	3.8%	0.9%	3.0%
Damage to Vegetation	64.7%	26.4%	5.5%	0.9%	2.6%
Damage to Water Quality	68.1%	23.4%	5.1%	0.9%	2.6%
Damage to Geological Formations	64.3%	23.0%	8.5%	1.3%	3.0%
Damage to Quality of Trail	37.0%	42.6%	15.7%	1.7%	3.0%
Danger to Hikers	43.0%	31.1%	15.7%	6.0%	4.3%

Percentages are based on a total of 235 responses

Another important question for this study was the hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the

park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day-use limitation that would impinge the least on their personal freedoms (see Table 7 below).

TABLE 7

Acceptability of Different Ways of Limiting Day-Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	17.4%	29.8%	22.6%	20.4%	9.8%
Reservation System	12.8%	24.7%	16.6%	30.6%	15.3%
Alternate Day-Trail Usage	6.8%	17.9%	21.7%	38.7%	14.9%
Limitations on Park- ing at Trail Head	11.1%	30.6%	26.8%	23.0%	8.5%
Lottery Drawing	0.9%	0.4%	14.9%	48.1%	35.7%
Signs Identifying Heavily Used Trails	38.3%	44.7%	11.9%	3.8%	1.3%
Block Off Trail Access so Hike Becomes Longer	6.0%	15.7%	31.1%	34.5%	12.8%
Set Number of Hikers Allowed Per Hour	11.9%	34.5%	20.4%	23.8%	9.4%
Tickets to Use the Trail	5.5%	22.6%	23.8%	34.5%	13.6%
More Routes	29.8%	35.7%	16.6%	12.3%	5.5%
Advertise Lightly Used Trails	33.6%	40.4%	14.5%	7.2%	4.3%

Percentages are based on a total of 235 responses.

In terms of demographic characteristics the largest percentage (28.1 percent) of respondents were camping inside the park (see Table 8 below).

TABLE 8

Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentage
Not in Park Area	19	8.1%
In a Cabin	44	18.7%
In a Motel	45	19.1%
Camping Outside the Park	24	10.2%
Camping Inside the Park	66	28.1%
Summer Residence	10	4.3%
Year-round Residence	9	3.8%
Other	18	7.7%
Total	235	100.0%

Also, it is important to note that most of the day-hikers were from out of state. The region of the U.S. with the greatest representation in day hikers was the Great Lakes Region (see Table 9 below).

TABLE 9
Day Hiker's Permanent Residence

Place of Permanent Residence	Number	Percentage
No Answer	1	0.4%
Colorado	22	9.4%
Mountain States	2	0.9%
West Coast	20	8.5%
South West	24	10.2%
Great Plains	58	24.7%
Great Lakes	61	26.0%
South	19	8.1%
North East	24	10.2%
Foreign Country	4	1.7%
Total	235	100.0%

Summary of Observations and Findings

In terms of the data collected, it is possible to make some generalizations about hikers on the Bear Lake trail system. For example, for most hikers it is their first experience hiking in the Bear Lake area. In fact, they have done little previous hiking in Rocky Mountain National Park. They are likely to be hiking with one to three people who are family members. The vast majority of hikers are visiting the park from out of

state and are camping or staying in a motel or cabin. Visitors are attracted to Bear Lake because it is an obvious place to drive to. Most of their information about the trails in the area comes from looking at maps and National Park literature. They see Bear Lake as an attractive area that offers spectacular scenery. Not only are the trails perceived as scenic but a significant number of hikers are attracted by the possibility of viewing a number of beautiful high mountain lakes.

For most hikers, the quality of their hiking experience in the Bear Lake area is a good one. For example, when asked to indicate their overall satisfaction with their total hiking experience, 74 percent indicated that they were "very satisfied," 23 percent reported that they were "satisfied" and no one responded that they were "dissatisfied or "very dissatisfied." In the evaluation of specific factors that are related to the quality of their hiking experience most respondents rated conditions as excellent or good. Only in relation to the numbers of hikers on the trail did significant numbers of people seem concerned about a lack of quality experience.

Day hikers in this area proved to be well educated, with over half of them college graduates. This high educational level was, no doubt, reflected in the fact that hikers were very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day-use; most hikers seemed to prefer non-coercive forms of day-use limitation. Also, if day-use was to be restricted, hikers preferred systems like "first come, first serve" instead of lottery systems that

2-16

took all control of day-use out of their hands.



Chapter 3

The Glacier Gorge Trail System

Introduction

The Glacier Gorge junction serves as a major trailhead for day hikers in Rocky Mountain National Park. The trailhead is located on a spur that winds 9 miles from the Beaver Meadows entrance to deadend at Bear Lake. There is a small parking lot placed inside a sharp 90° turn on the road to Bear Lake. During the summer months, this parking lot is normally filled from about 9:00 A.M. to 3:30 P.M. Hikers have to cross the road from the parking lot to hike on the trails. The

combination of people seeking parking spaces and hikers crossing the road works to create considerable traffic congestion. The Glacier Gorge trail system is very popular and many hikers are forced to be dropped off by friends or family at the trail head or park a considerable distance away to walk to the trail head. The immediate road areas around Glacier Gorge junction are marked with "no parking" and "tow away zone" signs which are not always effective in preventing roadside parking.

Day-use of the Glacier Gorge trail system is quite heavy. The park visitor will typically encounter crowds of other hikers on the trails. Physically, the trails are well developed with railings and bridges where needed. Like the Bear Lake trail system, Glacier Gorge trails will be affected by the proposed system of public transportation recommended in the Park's Master Plan. Restricted parking at present serves to limit some day use impact. With the future possibility of being able to reach Glacier Gorge junction by frequently running buses, day-use may increase. In addition, the Glacier Gorge trail system faces some problems that are not experienced by the Bear Lake trail system. The most conspicuous example would be commercial horseback riding. Unlike the Bear Lake trails, which are closed to horseback riding, a commercial livery based at Sprague Lake conducts daily rides to Loch Vale. This creates a whole new set of environmental and social problems such as increased erosion and hiker/rider conflicts. Continued heavy hiker use not only means a continuing heavy impact on a fragile high altitude environment, but also a certain impact on the overall visitor

experience. What is the visitor experience like for hikers in the Glacier Gorge area? What do they think about day-use limitation for the area? These and other questions were the focus of our survey research in this part of the Park. The Glacier Gorge trail system was the second of six trail systems surveyed.

The Research Procedure

Day hikers using trails in the Glacier Gorge area were randomly surveyed on a different day of the week, each week, over a seven week period. A questionnaire was given to one member of a hiking party or to a single hiker. Never was more than one member of a particular hiking party surveyed. Hikers were surveyed about one quarter mile in on the main trail. They were stopped on their return from hiking, walking toward the parking lot at Glacier Gorge junction. We obtained a total of 227 completed useful questionnaires with 40 refusals. The majority of these refusals were the result of poor weather conditions with hikers reluctant to fill out a seven page self-administered questionnaire in the rain. Also, there were a number of refusals from parties with small children who were impatient to return to their car.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike that particular day: How long hiking; how many and who hiking with; destination; and distance. Over three quarters of the sample reported that they had been hiking between 1 to 5 hours with the largest single group (26.4 percent) indicating

they had been hiking for 3 to 4 hours. Also, over 50 percent of the respondents reported that they had been hiking with one other person or just 2 or 3 other persons (see table 1 below)

Table 1
How Many People the Respondents Hiked With

Number in Hiking Party	Number	Percentage
By Myself	15	6.6%
One Other Person	70	30.8%
Two or Three Other People	60	26.4%
Four or Five Other People	37	16.3%
Six or Seven Other People	16	7.0%
Eight or More People	29	12.8%
Total	227	100.0%

Over 50 percent of the respondents reported that they were hiking with family members. The next largest category of hiking parties (twenty percent) was composed of friends. The majority of the respondents that listed a destination chose Alberta Falls (see Table 2 below)

TABLE 2
Destination of Hike

Destination	Number	Percentage
No destination	27	11.9%
Alberta Falls	58	25.6%
Glacier Falls	1	0.4%
Mills Lake	26	11.5%
Loch Vale	47	20.7%
Timberline Falls	0	0.0%
Glass Lake	2	0.9%
Sky Pond	15	6.6%
Andrews Glacier	5	2.2%
Other	46	20.3%
Total	<u>227</u>	<u>100.0%</u>

In terms of distance to destination, the Glacier Gorge day-hikers were spread out over a variety of distances. The largest single category (20.7 percent of the hikers) reported hiking 4 or more miles. Also, 83.7 percent of our sample reported that they had reached their destination.

The next section of the questionnaire was concerned with why day-hikers chose the Glacier Gorge area to hike in? The respondents were asked to evaluate a variety of possible reasons for their choice of this particular trail. Those possible reasons included the difficulty of the

trail, quality of the trail, length of the trail, safety of the trail, ease of parking at the trail head, etc. Some of the more significant results from these questions are included in Table 3 below.

TABLE 3
Evaluation of Reasons for Choosing the Glacier
Gorge Area for Hiking

Reason for Choosing a Trail	Very Important	Important	Minor Importance	Not Important	Does Not Apply
Mountain Scenery	59.0%	36.1%	4.0%	0.4%	0.4%
Lakes on Trail	45.4%	38.3%	10.1%	3.5%	2.1%
Variety of Attractions Available	36.1%	50.7%	9.3%	3.1%	0.9%
Forest and/or Wild Flowers	32.6%	42.3%	18.9%	4.8%	1.3%
Length of Trail	26.9%	48.9%	16.3%	6.6%	1.3%
Waterfalls	34.8%	35.2%	22.0%	6.6%	1.3%
Wanted to Try New Trail	12.8%	34.4%	15.4%	11.9%	25.6%
Trail Recommended	10.1%	21.6%	21.1%	14.5%	32.6%
Read Description of Trail	11.9%	24.2%	16.3%	14.1%	33.5%

Percentages are based on a total of 227 responses.

For over 70 percent of the hikers, hiking on that particular Glacier Gorge trail was a first time experience. We asked those who had previously hiked on the trail to evaluate the present quality of the trail based on their past experiences. The majority of the repeat hikers reported the quality

of the area was about the same as in the past. Not only were there very few repeat hikers, comparatively speaking, on the Glacier Gorge trails, but most hikers reported having limited hiking experience elsewhere in the park. For example, 22.8 percent of the respondents indicated that they had not hiked on any other trails in Rocky Mountain National Park and another 32.2 percent reported that they had only hiked on one or two other trails in the park.

The focus of the next section of the questionnaire was questions about the quality of hiking experience a hiker preferred and what kind of experience the Glacier Gorge trails seemed to provide. For example, hikers were asked what types of trail they usually preferred to hike on, with 40.5 percent indicating they preferred "primitive trails with little improvement and often rough." Another 36.6 percent responded that they preferred "developed trails with railings and bridges where needed." Less than 2 percent of our sample preferred "very developed trails that are paved."

Being concerned about not only the physical quality of the trail but also social qualities we asked: "When you are hiking on the trails in Rocky Mountain National Park, how many other hikers do you prefer to meet?" Over 60 percent of the respondents reported they prefer to meet no other hikers on the trail (11.9 percent) or a small number of hikers on the trail (52.9 percent). Only 15.4 percent indicated they prefer to meet moderate numbers of hikers on the trail and 1.3 percent of respondents reported that they like to meet lots of hikers on the trail.

Focusing on their immediate experience we asked hikers to evaluate the quality of a variety of factors related to their hiking experience on the Glacier Gorge area trails. The quality of most conditions were evaluated as "excellent" or "good" by 80 to 90 percent of the hikers except for "direction signs and information along trail" and the "number of other hikers on the trail (see Table 4 below).

Table 4
Evaluation of Various Factors Related to
The Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail itself.	50.2%	44.5%	4.4%	0.0%	0.9%
Cleanliness of the Trail (litter)	63.4%	26.4%	6.6%	3.1%	0.4%
Environmental Conditions Along Trail (erosion, etc.)	43.2%	44.9%	10.6%	0.9%	0.4%
Directional Signs and Information Along Trail	29.9%	41.9%	23.3%	6.2%	1.8%
Number of Other Hikers	8.4%	44.1%	30.8%	11.5%	5.3%
Noise Levels Along Trail (other hikers)	39.6%	41.4%	14.5%	4.0%	0.4%

Percentages are based on a total of 227 responses

Additional evidence that hikers are sensitive to the number of other people on the trail comes from another question where we asked: "In

your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Over 80 percent of the total respondents answered "Yes." Also, a majority of hikers disapproved of commercial horse use on park trails with 32.6 percent indicating that they "strongly disapprove."

When hikers were asked about their sources of information on the trail system they were using, they reported that maps played a major role in providing trail information. Park newspapers or talking with other people they met in or near the park seemed to provide the least amount of information (see Table 5 below).

TABLE 5
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	11.5%	20.3%	19.4%	48.9%
Description from Family Member or Friend	11.5%	26.0%	17.2%	45.4%
Park Handout at Gate	10.1%	28.2%	24.7%	37.0%
A Map or Maps	27.3%	44.1%	13.2%	15.4%
National Park Literature	18.5%	42.7%	17.6%	21.1%
People Met in or Near Park	4.0%	22.0%	25.6%	48.5%
Purchased Trail Guide	11.0%	17.6%	19.8%	51.5%
Talking with Park Personnel	13.2%	30.0%	16.3%	40.5%
Roadsigns in Park	13.2%	30.8%	19.8%	36.1%
Signs Describing Trail	15.4%	30.0%	17.6%	37.0%
Park Information Center	15.9%	31.3%	18.9%	33.9%
Park Newspaper	8.4%	17.2%	22.9%	51.5%

Percentages are based on a total of 227 responses.

Of central concern to our study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting day-use. Here at Glacier Gorge, as well as on other trails, most hikers turned out to be very protective of the park environment (see Table 6 below).

Table 6
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limiting Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	68.7%	24.2%	4.4%	1.3%	1.3%
Damage to Vegetation	62.1%	27.8%	7.0%	1.3%	1.8%
Damage to Water Quality	66.5%	22.9%	8.4%	0.4%	1.8%
Damage to Geological Formations	52.0%	32.6%	12.8%	1.3%	1.3%
Damage to Quality of Trail	38.3%	36.6%	22.0%	1.3%	1.8%
Dangers to Hikers	41.9%	26.9%	22.5%	7.0%	1.8%

Percentages are based on a total of 227 responses.

Another important question for this study was the day hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in

terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day-use limitation that would impinge the least on their personal freedoms (see Table 7 below).

Table 7

Acceptability of Different Systems of Limiting Day-Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	16.7%	33.0%	24.2%	17.6%	8.4%
Reservation System	14.1%	22.9%	18.9%	28.6%	15.4%
Alternate Day Trail Usage	8.4%	17.6%	28.6%	33.9%	11.5%
Limitations on Parking at Trail Head	12.3%	30.8%	24.7%	20.7%	11.5%
Lottery Drawing	0.0%	0.9%	12.8%	47.6%	38.8%
Signs Identifying Heavi- ly Used Trails	41.9%	41.9%	9.7%	4.8%	1.8%
Block off Trail Access so Hike Becomes Longer	7.5%	18.5%	27.8%	32.6%	13.7%
Set Number of Hikers Allowed per Hour	5.7%	32.6%	30.8%	24.2%	6.6%
Tickets to Use Trail	5.7%	21.1%	21.1%	37.9%	14.1
More Routes	27.3%	38.8%	13.7%	15.0%	5.3%
Advertise Lightly Used Trails	31.7%	41.0%	13.2%	7.9%	6.2%

Percentages are based on a total of 227 responses.

In terms of demographic characteristics, the largest single percentage (39.2 percent) of the respondents were camping inside the park (see Table 8 below).

Table 8
Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentage
Not in Park Area	13	5.7%
In a Cabin	35	15.4%
In a Motel	29	12.8%
Camping Outside the Park	30	13.2%
Camping Inside the Park	89	39.2%
Summer Residence	6	2.6%
Year-Round Residence	14	6.2%
Other	10	4.4%
Total	<u>227</u>	<u>100.0%</u>

Also, it is interesting to note that most of the day hikers were from out of state. The region of the U.S. with the greatest representation was the Great Lakes region. (see Table 9 below).

Table 9
Day Hikers Permanent Residence

Location of Permanent Residence	Number	Percentage
No Answer	3	1.3%
Colorado	30	13.2%
Mountain States	5	2.2%
West Coast	4	1.8%
South West	17	7.5%
Great Plains	35	15.4%
Great Lakes	76	33.5%
South	18	7.9%
North East	37	16.3%
Foreign Country	<u>2</u>	<u>0.9%</u>
Total	227	100.0%

Summary of Observations and Findings

In terms of the data collected, it is possible to make some generalizations about hikers on the Glacier Gorge trail system. For example, for most people, it is their first experience hiking in the Glacier Gorge area. They are likely to be hiking with one to three other people who are family members. The majority of hikers are from out of state and a significant number of them are camping in the park. Visitors are attracted to Glacier Gorge, in large part, due to information presented on maps and National Park literature. They see Glacier Gorge as an

attractive area that offers spectacular mountain scenery. The trails are seen as possessing a variety of attractions, especially high mountain lakes.

For most hikers, the quality of their hiking experience in the Glacier Gorge area was a good one. For example, when asked to indicate their overall satisfaction with their total hiking experience, 68 percent indicated that they were "very satisfied", 29 percent reported that they were "satisfied", and no one responded that they were dissatisfied or very dissatisfied. In the evaluation of specific factors that are related to the quality of their hiking experience, most respondents rated conditions as excellent or good. Only in relation to the numbers of hikers on the trail and commercial horse use of trails did significant numbers of people sound concerned about the lack of a quality experience.

Day hikers in this area proved to be well educated, with over half of them college graduates. This high educational level was, no doubt, reflected in the fact that hikers were alert to environmental problems and protective of the park environment. Most common environmental problems were seen as good reasons for limiting day-use. When it came to evaluating possible ways of limiting day use, most hikers seemed to prefer non-coercive forms of day-use limitation. Also, if day-use was to be restricted, hikers preferred systems like first come-first serve over systems like a lottery that would give them little or no active role in day use limitation.



Chapter 4

The Wild Basin Trail System

Introduction

Wild Basin is located in the southeast corner of Rocky Mountain National Park. It is essentially a drainage for the north fork of the St. Vrain River. It is a pleasant and comparatively level place to hike. The trail head is reached by driving into the park on a narrow dirt road which dead ends at the trail head. For most of the park's history this area has not been heavily utilized by hikers. But, in recent years, the level of use has increased dramatically. While this area has not experienced as heavy a visitor impact and resulting environmental problems as

other sections of the park, increased use has led to some concern. The Wild Basin Trail system was the third of six trail systems surveyed.

The Research Procedure

Day hikers using trails in the Wild Basin area were randomly surveyed on a different day of the week, each week, over a seven week period. A questionnaire was given to one member of a hiking party or to a single hiker. Hikers were surveyed about one quarter mile to a half mile in from the trail head. They were interviewed as they returned from hiking, walking toward the trail head. We obtained a total of 196 completed useful questionnaires with 55 refusals. The majority of these refusals were the result of poor weather conditions with hikers reluctant to fill out a seven page self-administered questionnaire in the rain.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day: How long hiking; how many and who hiking with; destination; and distance. Most of the respondents reported that they had been hiking from 1 to 5 hours. Also, approximately 67 percent of the respondents reported that they had been hiking with one other person or just 2 to 3 other persons (see Table 1 below).

Table 1
Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By myself	12	6.1%
One Other Person	74	37.8%
Two or Three Other People	57	29.1%
Four or Five Other People	24	12.2%
Six or Seven Other People	17	8.7%
Eight or More People	12	6.1%
Total	<u>196</u>	<u>100.0%</u>

Forty six percent of the respondents reported that they were hiking with family members and 25 percent indicated that they were hiking with friends. The most popular destination (for hikers that listed a destination) was Ouzel Falls (see Table 2 below).

Table 2
Destination of Hike

Destination	Number	Percentage
No Destination	30	15.3%
Ouzel Falls	71	36.2%
Ouzel Lake	16	8.2%
Bluebird Lake	4	2.0%
Thunder Lake	21	10.7%
Lion Lake, No. 1	0	0.0%
Castle Lakes	0	0.0%
Other	54	27.5%
Total	196	100.0%

Unfortunately, through an oversight, we had not arranged to code Calypso Cascades as a destination option. The majority of the "others" in the table above had Calypso Cascades listed as a destination. In terms of distance to destination- a great range of distances were listed with 2.5 to 3 miles being the most popular.

The next section of the questionnaire was concerned with why day hikers chose Wild Basin for hiking. The respondents were asked to evaluate a variety of possible reasons for their choice of this area. Those possible reasons included the difficulty of the trail, quality of the trail, ease of parking at the trail head, etc. Some of the more significant results from these questions are included in Table 3 below.

TABLE 3

Evaluation of Reasons for Choosing Wild Basin for Hiking

Reason for Choosing a Trail	Very Important	Important	Minor Important	Nor Important	Does Not Apply
Mountain Scenery	39.8%	51.5%	7.1%	0.5%	1.0%
Variety of Attractions	31.1%	54.6%	10.2%	2.6%	1.5%
Forest and/or Wild Flowers	33.2%	48.0%	16.3%	1.5%	1.0%
Possibility of Viewing Wildlife on Trail	33.7%	40.3%	20.4%	4.1%	1.5%
Waterfalls	29.6%	49.0%	12.2%	7.1%	2.0%
Trail Recommended	11.7%	32.1%	19.4%	9.7%	27.0%
Wanted to Try New Trail	10.2%	27.6%	23.0%	10.2%	29.1%
Read Description of Trail	6.6%	22.4%	18.9%	8.7%	43.4%

Percentages were based on a total of 196 responses.

For over 50 percent of the hikers, hiking in Wild Basin was a first time experience. We asked those who had hiked it before to evaluate the quality of the trail based on their past experiences. A clear majority of the repeat hikers reported the quality of the area was about the same as in the past. Unlike the Bear Lake and Glacier Gorge samples, the Wild Basin hikers reported hiking on other trails in Rocky Mountain National Park. Twenty-six percent of the respondents indicated that they had hiked on more than eight different trails in the park.

The focus of the next section of the questionnaire concerned the quality of hiking experience a hiker preferred and what kind

of experience Wild Basin trails seemed to provide. For example, hikers were asked what types of trail they usually preferred to hike on, with 41.8 percent indicating they preferred "primitive trails with little improvement and often rough." Another 36.7 percent responded that they preferred "developed trails with railings and bridges where needed." None of the respondents indicated that they preferred "very developed trails that are paved." Being concerned about not only the physical quality of the trail but also the social qualities we asked: "When you are hiking on the trails in Rocky Mountain National Park, how many other hikers do you prefer to meet?" A majority of hikers reported that they preferred to meet a small number of hikers on the trail. None of the respondents indicated that they would like to meet "a lot of hikers" on the trail.

We asked our sample to evaluate the quality of a variety of factors related to their hiking experience on Wild Basin trails. The quality of most conditions were evaluated as "excellent" or "good" by 80 to 90 percent of the hikers except for the number of other hikers on the trail (see Table 4 below).

Table 4
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	54.1%	42.3%	3.1%	0.0%	0.5%
Cleanliness of Trail (litter)	64.3%	27.6%	6.6%	1.5%	0.0%
Environmental Conditions Along Trail (erosion, etc.)	48.5%	38.8%	10.2%	1.0%	1.5%
Directional Signs and Information Along Trail	33.7%	41.8%	19.9%	3.1%	1.5%
Number of Other Hikers on Trail	9.7%	47.4%	28.1%	9.2%	5.6%
Noise Levels Along Trail (other hikers)	37.8%	44.9%	11.2%	1.0%	5.1%

Percentages are based on a total of 196 responses.

Additional evidence that hikers are sensitive to the number of other people on the trail comes from another question where we asked: "In your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Over 80 percent of the respondents answered, "Yes". Also, a majority of hikers disapproved of commercial horse use on park trails.

When hikers were asked about their sources of information on the trails they were using, they reported that, as with other trail systems,

maps played a major role in providing information about the trails (see Table 5 below).

Table 5
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	23.5%	18.9%	19.9%	37.8%
Description From Family Member of Friend	17.3%	36.7%	12.8%	33.2%
Park Handout at Gate	6.1%	16.8%	20.4%	56.6%
A Map or Maps	20.9%	37.2%	15.8%	26.0%
National Park Literature	11.7%	28.6%	26.5%	33.2%
People Met in or Near the Park	8.2%	13.8%	22.4%	55.6%
Purchased Trail Guide	8.7%	11.2%	17.9%	62.2%
Talking with Park Personnel	13.3%	19.4%	16.8%	50.5%
Roadsigns in Park	11.7%	22.4%	20.4%	45.4%
Signs Describing Trail	10.2%	23.0%	17.9%	49.0%
Park Information Center	11.2%	27.6%	16.3%	44.9%
Park Newspaper	6.1%	10.2%	20.9%	62.8%

Percentages are based on a total of 196 responses.

Of central concern to our study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting

day-use. Here at Wild Basin, as well as on other trails, most hikers turned out to be very protective of the Park environment (see Table 6 below).

Table 6
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limit- ing Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	71.4%	23.0%	2.6%	0.5%	2.6%
Damage to Vegetation	63.8%	30.1%	3.1%	0.5%	2.6%
Damage to Water Quality	71.9%	20.9%	4.1%	0.5%	2.6%
Damage to Geological Formations	52.0%	33.2%	10.2%	1.5%	3.1%
Damage to Quality of Trail	42.9%	34.2%	17.3%	2.6%	3.1%
Danger to Hikers	44.9%	23.5%	19.4%	7.1%	5.1%

Percentages are based on a total of 196 respondents.

Another important question for this study was the day-hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day-use

limitation that would impinge the least on their personal freedoms
(see Table 7 below).

Table 7
Acceptability of Different Systems of Limiting Day-Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First come, first serve	14.3%	33.7%	20.9%	23.0%	8.2%
Reservation System	15.8%	23.5%	18.9%	29.6%	12.2%
Alternate Day Trail Usage	4.6%	17.9%	31.1%	33.2%	13.3%
Limitations on Parking at Trail Head	8.2%	31.1%	35.2%	19.4%	6.1%
Lottery Drawing	1.5%	1.5%	14.3%	51.0%	31.6%
Signs Identifying Heavi- ly Used Trails	33.7%	44.4%	14.8%	6.1%	1.0%
Block Off Trail Access so Hike Become Longer	10.2%	13.8%	23.5%	39.3%	13.3%
Set Number of Hikers Allowed per Hour	6.1%	24.5%	29.6%	30.1%	9.7%
Tickets to Use the Trail	3.6%	11.2%	31.1%	39.3%	14.8%
More Routes	27.0%	39.3%	14.3%	15.8%	3.6%
Advertise Lightly Used Trails	25.0%	37.2%	17.9%	13.3%	6.6%

Percentages are based on a total of 196 responses.

In terms of demographic characteristics, the largest single percentage (24 percent) of respondents reported that they were staying in a cabin. If the people who reported that they were not staying in the park area are combined with year-round residents we find another group (24 percent) equal to the number staying in cabins (see Table 8 below).

Table 8
Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentage
Not in Park Area	22	11.2%
In a Cabin	47	24.0%
In a Motel	13	6.6%
Camping Outside the Park	30	15.3%
Camping Inside the Park	17	8.7%
Summer Residence	23	11.7%
Year-Round Residence	26	13.3%
Other	18	9.2%
Total	196	100.0%

Also, it is interesting to note that the largest single percentage of day hikers were from Colorado (35 percent). This means that even though there are still more out-of-state hikers than in-state, Colorado has a better representation than any other region of the country (see Table 9 below).

Table 9
Day Hikers Permanent Residence

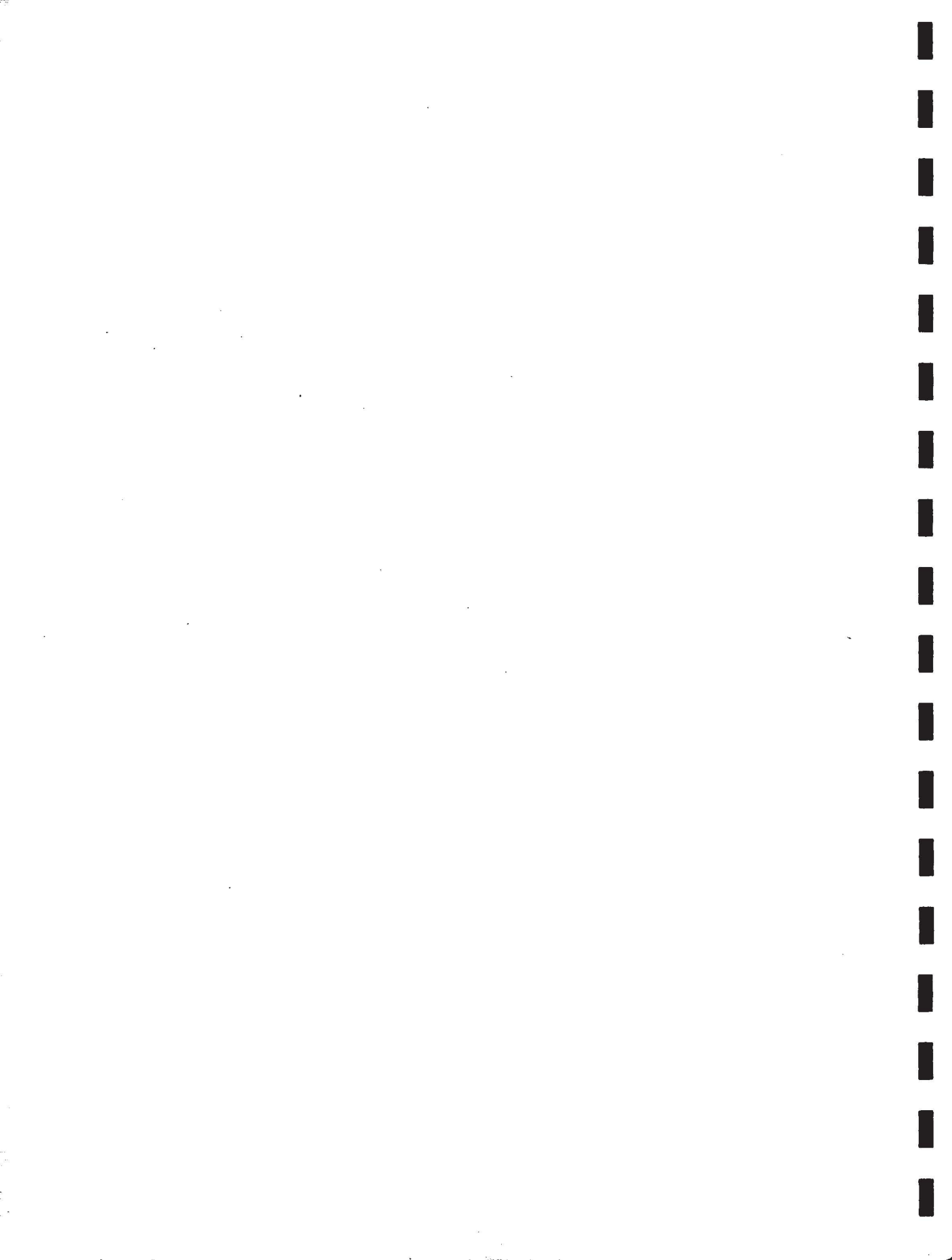
Location of Permanent Residence	Number	Percentage
No Answer	3	1.5%
Colorado	69	35.2%
Mountain States	0	0.0%
West Coast	5	2.6%
South West	18	9.2%
Great Plains	32	16.3%
Great Lakes	37	18.9%
South	13	6.6%
North East	19	9.7%
Foreign Country	0	0.0%
Total	196	100.0%

Summary of Observations and Findings

In terms of the data collected, it is possible to make some generalizations about hikers at Wild Basin. For example, they are likely to be hiking with one to three other people who are family members or friends. A significant minority of hikers are local Colorado people and for everyone, Ouzel Falls appears to be the most popular destination. People are attracted to the area by its beautiful scenery, variety of attractions, and lush growth of forest and flowers.

For most hikers the quality of their hiking experience in Wild Basin is a good one. For example, when asked to indicate their overall satisfaction with their total hiking experience, 70 percent indicated that they were "very satisfied"; 26 percent reported that they were "satisfied" and no one responded that they were "dissatisfied" or "very dissatisfied". In the evaluation of specific factors that are related to the quality of their hiking experience most respondents rates conditions as excellent or good. Only in relation to the numbers of hikers on the trail and horse use did significant numbers of people seem concerned about a lack of a quality experience.

Day hikers in Wild Basin, like other hiking areas of the park, proved to be well educated with over half of them college graduates. This high educational level was no doubt reflected in the fact that hikers were alert to environmental issues and were very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day-use. When it came to evaluating possible ways of limiting day-use, most hikers seemed to prefer non-coercive forms of day-use limitation. Also, if day-use was to be restricted, hikers preferred systems like first come, first serve over systems like a lottery that would give them little or no active role in day-use limitation systems.





Chapter 5

The Longs Peak Trail System

Introduction

The Longs Peak trail head is the starting point for many hikers and for the majority of mountain climbers in Rocky Mountain National Park. Climbing the park's only 14,000 foot mountain has been a popular pastime ever since the park was first created. The approximately 16 mile round trip hike to the top of Longs Peak attracts thousands of hikers each year creating certain environmental and social concerns.

For example, a major physical problem has been the removal of human waste from the high altitude environment. At present a helicopter is

used to ferry out drums of human waste from portable toilets in the Longs Peak area. A social issue of concern is the quality of the hiking experience in relation to the numbers of other hikers. During the summer months, it often becomes difficult to find a place to park at the trail head parking lot at 6:00 A.M. It is not unusual for hikers to be waiting in line to ascend or descend the Trough and upper peak areas of Longs Peak. Finally, when a hiker reaches the summit he is often greeted with not only a spectacular view, but also crowds of other hikers. Our survey, in part, attempted to discover what hikers think about their hiking experience and if they would be willing to consider day-use limitation systems. The Longs Peak trail system was the fourth of six trail systems surveyed.

The Research Procedure

Day hikers using trails in the Longs Peak area were randomly surveyed on a different day of the week, each week, over a period of seven weeks. One questionnaire was given to one member of a hiking party or to a single hiker. Hikers were surveyed returning from their hike. Typically, they were surveyed about a mile in from the trail head. Unfortunately, this meant that anyone hiking to the Eugenia Mine was missed. We obtained a total of 156 completed useful questionnaires with 45 refusals. The majority of these refusals were the result of poor weather conditions or hikers being so exhausted from attempting Longs Peak that all they could think of was getting off the trail.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day: How long hiking; how many and who hiking with; destination; and distance. Over 40 percent of our sample reported hiking 6 hours or more with few people reporting short hikes. Also, 65 percent of hikers reported hiking with one to three other people. (see Table 1 below).

Table 1
Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By myself	20	12.8%
One other person	55	35.3%
Two or three other people	47	30.1%
Four or five other people	13	8.3%
Six or seven other people	5	3.2%
Eight or more people	16	10.3%
Total	156	100.0%

Unlike the other trails previously surveyed, there were as many people who were hiking with friends (32.1 percent) as people hiking with family members (32.1 percent). The most popular destination was Longs Peak with Chasm Lake a close runner-up (see Table 2 below).

TABLE 2
Destination of Hike

Destination	Number	Percentage
No Destination	8	5.1%
Eugenia Mine	0	0.0%
Jim's Grove	5	3.2%
Chasm Lake	47	30.1%
The Boulder Field	18	11.5%
The Keyhole	4	2.6%
Longs Peak	56	35.9%
Boulder Brook	0	0.0%
Other	18	11.5%
Total	156	100.0%

In terms of distance to destination, 77 percent of the respondents reported that it was 4 or more miles. Also, 83.3 percent of our sample reported that they had reached their destination.

The next section of the questionnaire was concerned with why these hikers chose to hike in the Longs Peak area. The respondents were asked to evaluate a variety of possible reasons for their choice of this particular trail. Those possible reasons included the difficulty of the trail, quality of the trail, length of the trail, safety, ease of parking at trail head, etc. Some of the more significant results from the questions are included in Table 3 below.

TABLE 3

Evaluation of Reasons for Choosing a Long Peak Trail for Hiking

Reasons for Choosing A Trail	Very Important	Important	Minor Importance	Not Important	Does Not Apply
Mountain Scenery	60.3%	35.9%	3.2%	0.6%	0.0%
Forest and/or Wild Flowers	39.1%	37.2%	19.2%	3.8%	0.6%
Rocks, Cliffs, or Geological Formations	36.5%	43.6%	17.3%	1.9%	0.6%
Variety of Attractions Available	30.1%	53.8%	9.0%	4.5%	2.6%
Trail Recommended	13.5%	27.6%	21.2%	14.7%	23.1%
Wanted to Try New Trail	10.3%	31.4%	21.8%	12.8%	23.7%
Read Description of Trail	7.7%	26.3%	16.7%	15.4%	34.0%

Percentages are based on a total of 156 responses.

The above series of evaluation questions were a weak or inadequate measure of reasons for hiking in the Longs Peak area. The questions were designed for the average type of trail in the park, and, as such, did not reflect reasons related to a rugged physical experience like climbing Longs Peak. Evidence that hikers felt that there were other reasons for hiking in the Longs Peak area came from an open-ended question that asked "Were there other important reasons for choosing this trail that were not identified?" Sixty hikers replied "Yes," 38.5 percent of the total sample.

Unlike the situation on other park trails surveyed, the majority of hikers were repeat hikers. In fact, 10 people, 6.4 percent of the sample

reported hiking in the Longs Peak area nine or more times before. We asked those who had hiked in the area before to evaluate the present quality of the trail system based on past experiences. The majority of these repeat hikers reported that the quality of the area was about the same as in the past. Not only did the majority of these hikers have previous experience on the Longs Peak trails, but over 86 percent of them had experience hiking on other park trails, in fact, over one quarter of the hikers reported as having hiked on more than eight different trails in the park.

The focus of the next section of the questionnaire dealt with the quality of hiking experience a hiker preferred and what kind of experience the Longs Peak trails seemed to provide. For example, hikers were asked what types of trails they usually preferred to hike on, with approximately 50 percent indicating that they preferred "primitive trails with little improvement and often rough." Another 24.4 percent responded that they preferred "developed trails with railing and bridges where needed." None of our sample preferred "very developed trails that are paved" Being concerned about not only the physical quality of the trail but also social qualities, we asked: "When you are hiking on trails in Rocky Mountain National Park, how many other hikers do you prefer to meet?" Over 50 percent (53.2) of the respondents reported that they prefer to meet a small number of hikers on the trail. Another 14 percent indicated they preferred to meet a moderate number of hikers on the trail and none reported that they preferred to meet a lot of hikers on the trail.

In asking about their immediate experience, we asked hikers to evaluate the quality of a variety of factors related to their hiking experience on the Longs Peak trails. The quality of most conditions were evaluated as "excellent" or "good" by 80 to 90 percent of the hikers except for the number of other hikers on the trail. Close to 50 percent (48.1) of the respondents rated as "fair" or "poor" the quality of their trail experience in relation to the number of hikers on the trail (see Table 4 below).

TABLE 4
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	42.6%	50.0%	1.9%	0.0%	1.9%
Cleanliness of Trail (litter)	58.3%	30.1%	7.1%	4.5%	0.0%
Environmental Conditions along Trail (erosion, etc.)	32.1%	44.2%	17.3%	4.5%	1.9%
Directional Signs and Information Along Trail	34.6%	50.6%	12.2%	2.6%	0.0%
Number of Other Hikers on Trail	6.4%	38.5%	26.3%	21.8%	7.1%
Noise Levels Along Trail (other hikers)	31.4%	44.9%	13.5%	7.1%	3.2%

Percentages are based on a total of 156 responses.

Additional evidence that hikers were sensitive to the number of other people on the trail comes from another question where we asked: "In your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Eighty-five percent of the total respondents answered, "Yes". In addition, when asked about commercial horse use of park trails over 60 percent of our sample disapproved or strongly disapproved.

When hikers were asked about their sources of information on the trails they were using they reported that maps and park literature, as well as having hiked on the trail before, were important sources of information (see Table 5 below).

TABLE 5
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	23.7%	23.7%	18.6%	34.0%
Description from Family Member or Friend	13.5%	35.9%	16.7%	34.0%
Park Handout at Gate	4.5%	22.4%	26.9%	46.2%
A Map or Maps	21.8%	42.9%	19.9%	15.4%
National Park Literature	11.5%	42.3%	20.5%	25.6%
People Met in or Near the Park	3.2%	19.9%	30.8%	46.2%
Purchased Trail Guide	9.0%	23.1%	23.1%	44.9%
Talking with Park Personnel	17.3%	28.8%	21.2%	32.7%
Roadsigns in Park	5.8%	28.8%	24.4%	41.0%
Signs Describing Trail	9.6%	22.4%	28.8%	39.1%
Park Information Center	12.8%	35.3%	18.6%	33.3%
Park Newspaper	4.5%	12.8%	20.5%	62.2%

Percentages are based on a total of 156 responses.

Of central concern to our study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting day-use. Here at Longs Peak, as well as on other trails, most hikers turned out to be very protective of the park environment (see Table 6 below).

TABLE 6
Evaluation of Possible Reasons for Regulating
of Limiting Day-Use

Reasons for Limit- ing Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	74.4%	18.6%	5.1%	0.6%	1.3%
Damage to Vegetation	66.0%	30.1%	3.2%	0.6%	0.0%
Damage to Water Quality	69.2%	25.6%	3.2%	1.3%	0.6%
Damage to Geological Formations	54.5%	33.3%	8.3%	2.6%	1.3%
Damage to Quality of Trail	30.1%	38.5%	25.6%	3.8%	1.9%
Danger to Hikers	35.9%	28.8%	20.5%	12.8%	1.9%

Percentages are based on a total of 156 responses.

Another important question for this study was the day hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day-use limitation that would impinge the least on their personal freedoms (see Table 7 below).

TABLE 7

Acceptability of Different Systems of Limiting Day-Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	13.5%	37.8%	19.2%	25.0%	4.5%
Reservation System	14.1%	35.9%	14.1%	26.3%	9.6%
Alternate Day-Trail Usage	2.6%	17.3%	28.2%	39.1%	12.8%
Limitations on Park- ing at Trail Head	7.1%	27.6%	30.8%	29.5%	5.1%
Lottery Drawing	1.9%	3.8%	15.4%	49.4%	29.5%
Signs Identifying Heavily Used Trails	30.1%	41.7%	19.2%	6.4%	2.6%
Block Off Trail Access so Hike Be- comes Longer	12.2%	12.2%	28.2%	37.2%	10.3%
Set Number of Hikers Allowed per Hour	4.5%	32.7%	23.7%	33.3%	5.8%
Tickets to Use the Trail	1.3%	9.6%	28.8%	46.2%	14.1%
More Routes	21.8%	33.3%	17.3%	19.2%	8.3%
Advertise Lightly Used Trails	30.1%	34.6%	15.2%	13.5%	6.4%

Percentages are based on a total of 156 responses.

In terms of demographic characteristics, the largest single percentage (26.9 percent) of respondents were camping inside the park (see Table 8 below).

TABLE 8

Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentages
Not in Park Area	28	17.9%
In a Cabin	29	18.6%
In a Motel	9	5.8%
Camping Outside the Park	16	10.3%
Camping Inside the Park	42	26.9%
Summer Residence	7	4.5%
Year-round Residence	18	11.5%
Other	7	4.5%
Total	<u>156</u>	<u>100.0%</u>

Also, it is interesting to note that most of the day hikers were from out of state, but the biggest single category of hikers (38.5 percent) were from Colorado (see Table 9 below).

TABLE 9

Day Hiker's Permanent Residence

Place of Permanent Residence	Number	Percentage
No Answer	2	1.3%
Colorado	60	38.5%
Mountain States	2	1.3%
West Coast	2	1.3%
South West	7	4.5%
Great Plains	26	16.7%
Great Lakes	35	22.4%
South	4	2.6%
North East	17	10.9%
Foreign Country	1	0.6%
Total	156	100.0%

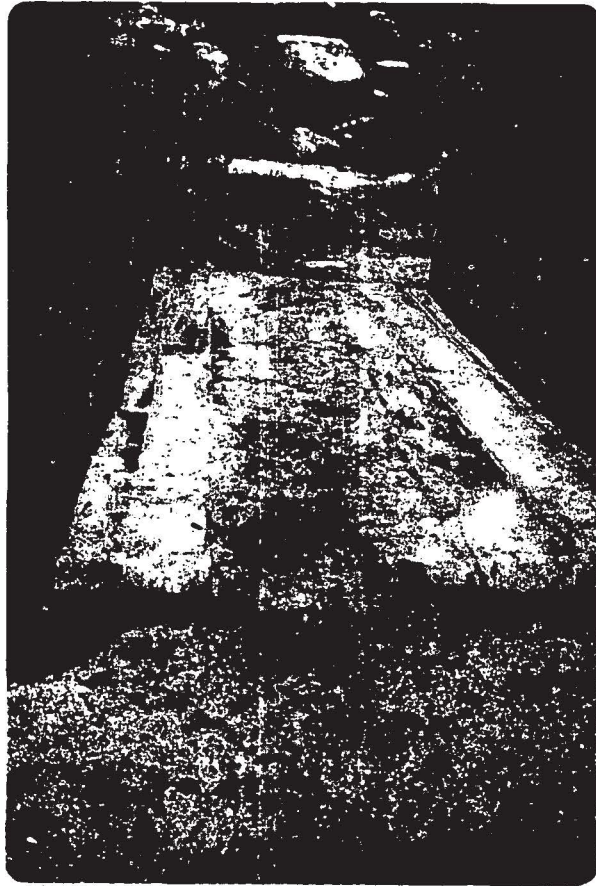
Summary of Observations and Findings

In terms of the data collected it is possible to make some generalizations about hikers on the Longs Peak trail system. For example, there is a significant number of repeat hikers and hikers with experience hiking on other park trails. Most hikers were hiking with one other person or a small number of other persons. Visitors are attracted to the area because of its rugged scenic appeal.

For most hikers, the quality of their hiking experience in the Longs Peak area is a good one. For example, when asked to indicate their overall satisfaction with their total hiking experience almost 70 percent indicated that they were "very satisfied" and 27 percent reported that they were "satisfied." Only one person reported being "dissatisfied" and no one reported being "very dissatisfied". In the evaluation of specific factors that are related to the quality of their hiking experience, most respondents rated conditions as excellent or good. Only in relation to the numbers of hikers on the trail did significant numbers of people seem concerned about a lack of a quality experience.

Day hikers in this area proved to be well educated with over half of them college graduates. This high educational level was, no doubt, reflected in the fact that hikers were alert to environmental issues and very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day use. When it came to evaluating possible ways of limiting day-use, most hikers seemed to prefer non-coercive forms of day-use limitation. Also, if day-use was to be restricted, hikers preferred limitation systems that would give them

some choice or input.



Chapter 6

The Cub Lake Trail System

Introduction

The Cub Lake trail head is located in Moraine Park along a short deadend road which runs west off of the road from the Beaver Meadows area to Bear Lake. There is a visitor center, campground and livery all based in the same locale. Much of the immediate vicinity is composed of glacial valleys with meadows and streams running through them. Day hiker use of trails in this area does not appear to be as heavy as on

some of the other trail systems surveyed. Yet, at the same time, the area faces some important environmental problems. The major problem for this trail system is heavy commercial horse use.

Horse use damage to the trails is considerable in this part of the park. Both wet and dry meadows are easily damaged and slow to recover. When a string of horses goes through a wet area they create a muddy mess which most hikers attempt to walk around resulting in as many as three or four trails going through a meadow. Some of the trails are loaded with horse manure and horse-caused erosion is plainly visible. Once again, we attempted to discover what park visitors think about hiking in this area and what they think about day-use limitation issues. The Cub Lake trail system was the fifth of six trail systems surveyed.

The Research Procedure

Day hikers using the trails in the Cub Lake area were randomly surveyed on a different day of the week, each week, over a seven week period. A questionnaire was given to one member of a hiking party or to a single hiker. Hikers were surveyed on the Cub Lake trail about a quarter mile in from the trail head. They were stopped as they were leaving the trail, walking toward the trail head parking lot. This meant that the majority of hikers were returning from Cub Lake or had been walking the loop from the end of the road, to the pool, to Cub Lake and back out to the road. We obtained a total of 112 completed useful questionnaires with 7 refusals.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day: How long hiking; how many and who hiking with; destination; and distance. Almost 80 percent of the sample reported that they had been hiking between 1 to 4 hours, with the largest group (32.1 percent) indicating they had been hiking 3 to 4 hours. Also, 70 percent of the respondents reported that they had been hiking with one other person or 2 to 3 other persons (see Table 1 below).

TABLE 1

Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By myself	5	4.5%
One other person	43	38.4%
Two or three other people	36	32.1%
Four or five other people	16	14.3%
Six or seven other people	4	3.6%
Eight or more people	8	7.1%
Total	112	100.0%

Over 50 percent of the respondents reported that they were hiking with family members. The majority of the respondents that listed a destination chose Cub Lake (see Table 2 below).

TABLE 2
Destination of Hike

Destination	Number	Percentage
No Destination	24	21.4%
Cub Lake	66	58.9%
The Pool	1	0.9%
Fern Falls	0	0.0%
Fern Lake	0	0.0%
Odessa Lake	2	1.8%
Lake Helene	0	0.0%
The Loop (The Pool and Cub Lake in a circular route)	11	9.8%
Windy Gulch	0	0.0%
Other	8	7.1%
Total	112	100.0%

In terms of distance to destination, the most popular choice was 2 to 2.5 miles reported by 33.9 percent of the hikers. Also, 76 percent of our sample indicated that they had reached their destination.

The next section of the questionnaire was concerned with why day hikers chose the Cub Lake trails for hiking. The respondents were asked to evaluate a variety of possible reasons for their choice of this particular trail. Those possible reasons included the difficulty of the trail, quality of trail, length of trail, safety, ease of parking at trail head, etc. Some of the more significant results from these questions are included in table 3 below.

TABLE 3

Evaluation of Reasons For Choosing Cub Lake Trail for Hiking

Reasons for Choosing a Trail	Very Important	Important	Minor Importance	Not Important	Does not Apply
Possibility of Viewing wildlife on trail	37.5%	47.3%	10.7%	3.6%	0.9%
Mountain Scenery	34.8%	51.8%	8.9%	1.8%	2.7%
Forest and/or wild flowers	30.4%	44.6%	16.1%	7.1%	1.8%
Quality of Trail	5.4%	31.3%	36.6%	18.8%	8.0%
Wanted to Try New Trail	5.4%	29.9%	25.0%	9.8%	30.4%
Trail Recommended	5.4%	19.6%	20.5%	19.6%	34.8%
Read Description of Trail	4.5%	17.9%	25.0%	14.3%	38.4%

Percentages are based on a total of 112 responses.

For approximately 68 percent of the hikers, hiking on the Cub Lake trails was a first time experience. We asked those who had hiked on that particular trail before to evaluate the quality of the trail based on their past experiences. The majority of the repeat hikers reported the quality of the area was the same as in the past with about one third indicating that it was "getting worse". None of the respondents reported the trail quality as "getting better." It was also interesting to note that over 80 percent of all the Cub Lake trails hikers surveyed had hiked other trails in the park. Hiking at Cub was not as likely to be a first time Rocky Mountain National Park hiking experience as was hiking at Bear Lake.

The focus of the next section of the questionnaire was on the quality of the hiking experience preferred and what kind of experience the Cub Lake trails seemed to provide. For example, hikers were asked what type of trail they usually preferred to hike on, with 51.8 percent indicating they preferred "primitive trails with little improvement and often rough." Another 30 percent responded that they preferred "developed trails with railings and bridges where needed." Only one person indicated that very developed trails were preferred. Being concerned about not only the physical quality of the trail but also social qualities, we asked: "When you are hiking on the trail in Rocky Mountain National Park, how many other hikers do you prefer to meet?" Over 50 percent of the respondents reported that they preferred to meet a small number of hikers on the trail. Only two hikers out of 112 surveyed indicated that they like to meet lots of hikers on the trail.

Concerning their immediate experience, we asked hikers to evaluate the quality of a variety of factors related to their hiking on Cub Lake trails. The quality of most factors were evaluated as excellent or good by a majority of the hikers with approximately 30 percent showing some concern about directional signs and the number of other hikers on the trail. Approximately 20 percent of the sample indicated some concern about environmental conditions along the trail (see Table 4 below).

TABLE 4
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	42.9%	49.1%	6.3%	0.9%	0.9%
Cleanliness of Trail (Litter)	55.4%	29.5%	8.9%	6.3%	0.0%
Environmental Conditions Along Trail (erosion, etc.)	23.2%	55.4%	19.6%	1.8%	0.0%
Directional Signs and Information Along Trail	27.7%	33.0%	18.8%	15.2%	5.4%
Number of Other Hikers on Trail	17.9%	43.8%	25.0%	5.4%	8.0%
Noise Levels Along Trail (other hikers)	49.1%	39.3%	7.1%	3.6%	0.9%

Percentages are based on a total of 112 responses.

When asked if too many people in hiking areas of the park detract from the enjoyment of those areas, 85 percent of the total respondents answered "yes." Also, a majority of hikers disapproved of commercial horse use on park trails with 29.5 percent indicating that they "strongly disapprove" versus 5.4 percent that "strongly approved."

Cub Lake area hikers were also asked about their sources of information on the trail system they were using. They reported that maps, park literature and park information centers all contributed to their knowledge of the area. People met in or near the park seemed to contribute about the least to their trail information (see Table 5 below).



TABLE 5
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	10.7%	17.9%	23.2%	48.2%
Description from Family Member or Friend	8.9%	20.5%	23.2%	47.3%
Park Handout at Gate	7.1%	20.5%	28.6%	43.8%
A Map or Maps	26.8%	37.5%	20.5%	15.2%
National Park Literature	14.3%	40.2%	21.4%	24.1%
People Met in or Near the Park	2.7%	24.1%	28.6%	44.6%
Purchased Trail Guide	9.8%	19.6%	18.8%	51.8%
Talking with Park Personnel	16.1%	19.6%	18.8%	45.5%
Roadsigns in Park	12.5%	28.6%	24.1%	34.8%
Signs Describing Trail	8.0%	26.8%	23.2%	42.0%
Park Information Center	18.8%	29.5%	18.8%	33.0%
Park Newspaper	11.6%	20.5%	21.4%	46.4%

Percentages were based on a total of 112 responses.

Of central concern to our study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting day-use. Here on the Cub Lake trails, as on other trails, most hikers turned out to be very protective of the park environment (see Table 6 below).

TABLE 6
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limit- ing Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	71.4%	23.2%	2.7%	0.9%	1.8%
Damage to Vegetation	67.9%	25.9%	2.7%	0.9%	2.7%
Damage to Water Quality	68.8%	22.3%	6.3%	0.9%	1.8%
Damage to Geological Formations	50.9%	33.9%	10.7%	2.7%	1.8%
Damage to Quality of Trail	33.9%	45.5%	15.2%	0.9%	4.5%
Danger to Hikers	46.4%	34.8%	10.7%	6.3%	1.8%

Percentages are based on a total of 112 responses.

Another important question for this study was the day hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day use limitation that would impinge the least on their personal freedoms (see Table 7 below).

TABLE 7

Acceptability of Different Systems of Limiting Day-Use

Possible Day Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	17.9%	43.8%	21.4%	9.8%	7.1%
Reservation System	11.6%	27.7%	15.2%	35.7%	9.8%
Alternate Day-Trail Usage	5.4%	19.6%	37.5%	30.4%	7.1%
Limitations on Park- ing at Trail Head	15.2%	35.7%	25.0%	18.8%	5.4%
Lottery Drawing	0.0%	3.6%	16.1%	51.8%	28.6%
Signs Identifying Heavily Used Trails	39.3%	42.0%	15.2%	2.7%	0.9%
Block off Trail Access so Hike Be- comes Longer	6.3%	18.8%	29.5%	35.7%	9.8%
Set Number of Hikers Allowed Per Hour	8.9%	37.5%	23.2%	25.0%	5.4%
Tickets to use the Trail	8.0%	25.9%	18.8%	35.7%	11.6%
More Routes	27.7%	42.0%	15.2%	6.3%	8.9%
Advertise Lightly Used Trails	23.2%	42.9%	14.3%	11.6%	8.0%

Percentages are based on a total of 112 responses.

In terms of demographic characteristics, over 50 percent of the respondents were camping inside the park. The smallest single percentage of hikers were camping outside the park (see Table 8 below).

TABLE 8
Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentage
Not in Park Area	6	5.4%
In a Cabin	13	11.6%
In a Motel	10	8.9%
Camping Outside the Park	3	2.7%
Camping Inside the Park	57	50.9%
Summer Residence	6	5.4%
Year-round Residence	5	4.5%
Other	12	10.7%
Total	<u>112</u>	<u>100.0%</u>

While most hikers on the Cub Lake sample were from the Great Plains or the Great Lakes regions, a significant number of hikers were from Colorado (see Table 9 below).

TABLE 9
Day Hiker's Permanent Residence

Place of Permanent Residence	Number	Percentage
Colorado	22	19.6%
Mountain States	0	0.0%
West Coast	8	7.1%
South West	8	7.1%
Great Plains	24	21.4%
Great Lakes	24	21.4%
South	5	4.5%
North East	21	18.8%
Foreign Country	0	0.0%
Total	112	100.0%

Summary of Observations and Findings

In terms of the data collected, it is possible to make some generalizations about hikers on Cub Lake trails. For example, most people are hiking in this area for the first time, and are hiking to Cub Lake with one or two other family members. Cub Lake is not the first trail in Rocky Mountain National Park these people have hiked on, but, in fact, a trail system that they try after they have hiked on some other trails. The majority of these hikers are camping inside the park.

Of the hikers that have previously hiked on Cub Lake trails, the majority found the quality of the area about the same as in the past, with a significant minority (approximately 30 percent) feeling that the

quality of the area was getting worse. In the evaluation of specific factors that are related to the quality of their hiking experience, most respondents rated conditions as excellent or good. Only in relation to horse use of trails did a clear majority of hikers on the trail seem concerned about the lack of a quality experience.

Day hikers in this area, like hikers surveyed on other trails, proved to be well educated with over half of them college graduates. This high educational level was, no doubt, reflected in the fact that hikers were alert to environmental issues and very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day use. When it came to evaluating possible ways of limiting day use, most hikers seem to prefer the non-coercive forms of day-use limitation.



Chapter 7

The Specimen Mountain Trail

Introduction

Specimen Mountain trail is located in the northwest corner of Rocky Mountain National Park. The trail head is situated to the west of Poudre Lake and Trail Ridge Road, just to the east of the Continental Divide. The trail winds up from the trail head approximately three miles to the summit of Specimen Mountain at 12,489 feet. This area is of special geological interest with the "crater" of

Specimen Mountain exposing geological material of relatively recent volcanic activity. It is also an important wildlife habitat and maintains a high density of summer elk population which significantly affects the ecology of the area. Bighorn sheep utilize the area most of the year while many deer summer near treeline. Of particular importance to many animals are the natural salt licks in the crater that are visited periodically by many different species.

Even though the number of hikers here is much lower than on many other park trails, continual disturbance of bighorn sheep in this area has caused the National Park Service to close the trail to hikers until July. An additional concern besides hiker impact on bighorn sheep has been the increased erosion of fragile tundra. Enough damage has been done that the National Park Service has removed the Specimen Mountain trail from recent park maps distributed to visitors. At the present time the park service is considering closing the trail completely. Once again, we attempted to discover why hikers were utilizing this locale and what they thought about possible day-use limitation. The Specimen Mountain trail was the sixth of six trail systems surveyed in this study.

The Research Procedure

Day hikers using Specimen Mountain trail were surveyed on a different day of the week, each week, over a seven week period. One questionnaire was given to one member of a hiking party or to a single

hiker. Hikers were surveyed about three quarters of a mile in on the trail near the treeline as they were hiking back toward the trail head. This meant that the majority of the hikers surveyed were returning from the summit or the crater. We obtained a total of 75 completed useful questionnaires with 11 refusals. The majority of these refusals were the result of poor weather with hikers reluctant to fill out a seven page self-administered questionnaire in the rain.

Survey Results

The first section of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day: How long hiking; how many and who hiking with; and distance? Over three quarters of the sample reported that they had been hiking between 2 to 5 hours. Short hikes did not seem to be the rule at Specimen as only 8 percent of the hikers indicated that they had been hiking 1 to 2 hours or less. Also, most hikers were hiking with someone else. (see Table 1 below).

TABLE 1
Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By myself	5	6.7%
One other person	24	32.0%
Two or three other people	17	22.7%
Four or five other people	18	24.0%
Six or seven other people	2	2.7%
Eight or more people	9	12.0%
Total	75	100.0%

Forty-five percent of the respondents reported that they were hiking with family members. The next largest category of hiking party was one composed of friends (33.3 percent). The majority of respondents that listed a destination chose the summit (see Table 2 below).

TABLE 2
Destination of Hike

Destination	Number	Percentage
No destination	11	14.7%
The crater	11	14.7%
The summit	53	70.7%
Total	75	100.0%

In terms of distance to destination, 37 percent of the respondents listed 3 to 3.5 miles. Also, 82 percent of our sample reported that they had reached their destination.

The next section of the questionnaire was concerned with why day hikers chose the Specimen Mountain trail for hiking. The respondents were asked to evaluate a variety of possible reasons for their choice of this particular trail. Those possibilities included the difficulty of the trail, the possibility of viewing wildlife, length of trail, ease of parking at trail head, etc. It is important to note that the most important reason for choosing to hike on the Specimen Mountain trail was the possibility of viewing wildlife. Some of the more significant results from these questions are included in Table 3 below.

TABLE 3

Evaluation of Reasons for Choosing Specimen Mountain Trail for Hiking

Reason for Choosing a Trail	Very Important	Important	Minor Importance	Not Important	Does Not Apply
Possibility of View- ing Wildlife on Trail	65.3%	25.3%	8.0%	1.3%	0.0%
Mountain Scenery	61.3%	26.7%	6.7%	4.0%	1.3%
Variety of Attractions	44.0%	37.3%	12.2%	5.3%	1.3%
Forest and/or Wild Flowers	42.7%	37.3%	13.3%	6.7%	0.0%
Alpine Vegetation	44.0%	33.3%	14.7%	4.0%	4.0%
Quality of Trail	5.3%	29.3%	29.3%	26.7%	9.3%
Wanted to Try New Trail	12.0%	32.0%	17.3%	12.0%	26.7%

Percentages are based on a total of 75 responses.

Sixty-six percent of the hikers hiking on the Specimen Mountain trail had not hiked there before. We asked those who had hiked there previously to evaluate the quality of the trail based on their past experience. The majority of the repeat hikers reported the quality of the trail was about the same as in the past. Also, more than 85 percent of the hikers had previously hiked on other trails in the park. The Specimen Mountain area did not serve as a first time Rocky Mountain hiking experience for most hikers, but one that occurred after hiking other trails.

The focus of the next section of the questionnaire concerned the quality of hiking experience preferred and what kind of experience the Specimen Mountain trail seemed to provide. For example, hikers were asked what type of trail they usually preferred to hike on, with 64 percent of the sample indicating that they preferred "primitive trails with very little improvement and often rough." None of the hikers preferred "very developed" trails. Being concerned about not only the physical quality of the trail but also social qualities, we asked: "When you are hiking on trails in Rocky Mountain National Park, how many other hikers do you prefer to meet?" Fifty-two percent of the respondents reported that they preferred to meet a small number of hikers on the trail and a very significant 20 percent indicated that they prefer to meet no other hikers. Only one person responded that they like to meet a lot of hikers on the trail.

We also asked hikers to evaluate the quality of a variety of factors related to hiking on the Specimen Mountain trail. The quality of most conditions were evaluated as "excellent" or "good" by 80 to 90 percent of the hikers although there was some concern over erosion and

the number of other hikers on the trail. It is important to note that compared to many other trails in the park and especially the other trails surveyed in this study, the volume of traffic on the Specimen Mountain trail is quite low. Yet, approximately 30 percent of the hikers rated as only "fair" or "poor" the quality of the trail in relation to the number of hikers on it (see Table 4 below).

TABLE 4
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	48.0%	44.0%	8.0%	0.0%	0.0%
Cleanliness of Trail (Litter)	74.7%	25.3%	0.0%	0.0%	0.0%
Environmental Conditions Along Trail (erosion)	36.0%	44.0%	14.7%	5.3%	0.0%
Directional Signs and Information Along Trail	29.3%	44.0%	16.0%	2.7%	8.0%
Number of Other Hikers on Trail	24.0%	42.7%	20.0%	9.3%	4.0%
Noise Levels Along Trail (other hikers)	38.7%	46.7%	6.7%	6.7%	1.3%

Percentages are based on a total of 75 responses.

Additional evidence that hikers were sensitive to the numbers of people on the trail comes from another question where we asked: "In your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Eighty four percent of the total respondents answered, "Yes". When we asked Specimen Mountain hikers about commercial horse use of park trails, over 45 percent of them "strongly disapproved" and another 28 percent "disapproved".

When hikers were asked to evaluate sources of information for the trail they were using they reported that maps and park literature played a major role in providing trail information. Talking with other people they met in or near the park seemed to provide the least amount of information (see Table 5 below).

TABLE 5

Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	13.3%	17.3%	16.0%	53.3%
Description from Family Member or Friend	18.7%	20.0%	26.7%	34.7%
Park Handout at Gate	2.7%	21.3%	26.7%	49.3%
A Map or Maps	26.7%	37.3%	14.7%	21.3%
National Park Literature	24.0%	32.0%	17.3%	26.7%
People Met in or Near the Park	9.3%	5.3%	25.3%	60.0%
Purchased Trail Guide	20.0%	17.3%	20.0%	42.7%
Talking with Park Personnel	16.0%	20.0%	18.7%	45.3%
Roadsigns in Park	5.3%	22.7%	28.0%	44.0%
Signs Describing Trail	5.3%	18.7%	25.3%	50.7%
Park Information Center	8.0%	25.3%	22.7%	44.0%
Park Newspaper	4.0%	8.0%	36.0%	52.0%

Percentages are based on a total of 75 responses.

Of central concern to our study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting day use. Here on the Specimen Mountain trail, as on other park trails, most hikers turned out to be very protective of the park environment. Damage to quality of trail and damage to hikers were of least concern to hikers. (see Table 6 below).

TABLE 6
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limit- ing Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	74.7%	21.3%	1.3%	1.3%	1.3%
Damage to Vegetation	62.7%	33.3%	1.3%	1.3%	1.3%
Damage to Water Quality	61.3%	28.0%	8.0%	1.3%	1.3%
Damage to Geological Formations	49.3%	36.0%	8.0%	4.0%	2.7%
Damage to Quality of Trail	28.0%	42.7%	18.7%	5.3%	5.3%
Danger to Hikers	34.7%	33.3%	21.3%	6.7%	4.0%

Percentages are based on a total of 75 responses.

Another important question for this study was the day hiker evaluation of the acceptability of various schemes of limiting day use in Rocky Mountain National Park. The questionnaire asked: "If the National Park system found it necessary to limit day use in particular areas of

the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results indicate that most respondents seem to favor non-coercive forms or systems of day use limitation that would impinge the least on their personal freedoms (see Table 7 below).

TABLE 7

Acceptability of Different Systems of Limiting Day Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	30.7%	28.0%	22.7%	10.7%	8.0%
Reservation System	17.3%	25.3%	26.7%	25.3%	5.3%
Alternate Day-Trail Usage	16.0%	20.0%	33.3%	25.3%	5.3%
Limitations on Park- ing at Trail Head	10.7%	41.3%	26.7%	16.0%	5.3%
Lottery Drawing	0.0%	4.0%	20.0%	53.3%	22.7%
Signs Identifying Heavily Used Trails	28.0%	50.7%	12.0%	9.3%	0.0%
Block Off Trail Access So Hike Becomes Longer	12.0%	17.3%	30.7%	29.3%	10.7%
Set Number of Hikers Allowed Per Hour	18.7%	33.3%	29.3%	16.0%	2.7%
Tickets to Use the Trail	6.7%	17.3%	34.7%	29.3%	12.0%
More Routes	12.0%	36.0%	21.3%	18.7%	12.0%
Advertise Lightly Used Trails	18.7%	40.0%	16.0%	17.3%	8.0%

Percentages are based on a total of 75 responses.

In terms of demographic characteristics the largest single percentage (21.3 percent) of respondents were camping inside the park (see Table 8 below).

TABLE 8
Where Hikers are Staying While Visiting the Park

Where Staying	Number	Percentage
ot in Park Area	4	5.3%
In a Cabin	9	12.0%
In a Motel	5	6.7%
Camping Outside the Park	13	17.3%
Camping Inside the Park	16	21.3%
Summer Residence	9	12.0%
Year-round Residence	8	10.7%
Other	11	14.7%
Total	<u>75</u>	<u>100.0%</u>

Also, it is interesting to note that while the largest single category of day hikers (28 percent) are from the Great Lakes region, Colorado is second with 22.7 percent. In other words, the percentage of Colorado hikers is more than twice what we found on trails like Bear Lake (see Table 9 below).

TABLE 9

Day Hiker's Permanent Residence

Place of Permanent Residence	Number	Percentage
Colorado	17	22.7%
Mountain States	0	0.0%
West Coast	0	0.0%
South West	6	8.0%
Great Plains	15	20.0%
Great Lakes	21	28.0%
South	2	2.7%
North East	11	14.7%
Foreign Country	3	4.0%
Total	75	100.0%

Summary of Observations and Findings

In terms of the data collected it is possible to make some generalizations about hikers on Specimen Mountain trail. For example, most people are hiking in this area for the first time with one or two family members or friends. Specimen Mountain is not the first trail in Rocky Mountain National Park these people have hiked on, but, in fact, a trail system that they try after they have hiked on some other trails. They are hiking in this area to view wildlife and mountain scenery. Many of

these hikers are camping in or around the park.

For most hikers the quality of their hiking experience in the Specimen Mountain area is a good one. When asked to indicate their overall satisfaction with their total hiking experience, 77 percent reported that they were "very satisfied". None of the hikers reported that they were "dissatisfied" or "very dissatisfied". In the evaluation of specific factors that are related to the quality of their hiking experience, most respondents rated conditions as excellent or good.

Day hikers in this area proved to be well educated with over half of them college graduates. This high educational level was, no doubt, reflected in the fact that hikers were alert to environmental issues and were protective of the park environment. Most common environmental problems were seen as good reasons for limiting day use. When it came to evaluating possible ways of limiting day use, most hikers seemed to prefer non-coercive forms of day use limitation that would permit them some active choices.



Chapter 8

Total of All Trails

Introduction

The purpose of this chapter is to present summary data for the six previously described trail systems. An identical survey instrument was used in the same manner on all six trails so that data could be totaled for all questions except destination which was different for each trail system. While each trail system should be considered as unique, totals of data from all trails does present some commonalities worth considering.

Survey Results

The first part of the questionnaire was concerned with obtaining specific information about the respondent's hike on that particular day. We found that over 60 percent of hikers had been hiking 1 to 4 hours. The largest single category of hours hiked was 3 to 4 hours reported by 25 percent of the hikers. In terms of time, the longest hikes, on the average, were occurring on the Long's Peak trails and the shortest hikes, on the average, were at Bear Lake. Also, 62 percent of the respondent's reported that they had been hiking with between 1 to 3 other persons (see Table 1 below).

TABLE 1

Number of Persons the Respondent Hiked With

Number in Hiking Party	Number	Percentage
By myself	73	7.3%
One other person	336	33.6%
Two or three other people	288	28.8%
Four or five other people	147	14.7%
Six or seven other people	61	6.1%
Eight or more people	96	9.6%
Total	1,001	100.0%

According to our sample, the largest groups hiking, on the average, were on the Glacier Gorge trail system and the smallest groups hiking, on the average, were at Long's Peak.

Over 48 percent of the respondents reported that they were hiking with family members. Another 24 percent reported that they were hiking with friends. The trail with the highest percentage of family members hiking on it was Glacier Gorge followed by Cub Lake. The trail with the highest percentage of friends hiking together was Specimen Mountain followed closely by Long's Peak.

In terms of distance to destination, the largest single category of miles to destination checked by hikers was 4 or more miles (25.2 percent). The longest hikes, on the average, were occurring at Long's Peak and the shortest at Cub Lake. Over 80 percent of our total sample reported reaching their destination.

The next section of the questionnaire was concerned with why day hikers chose a particular trail for hiking. The respondents were asked to evaluate a variety of possible reasons for their trail choice. Those possible reasons included the difficulty of the trail, quality of trail, length of trail, safety, ease of parking at trail head, etc. Some of the more significant results from these questions are included in Table 2 below.

TABLE 2

Hiker Evaluation of Reasons for Choosing a Trail for Hiking

Reason for Choosing a Trail	Very Important	Important	Minor Importance	Not Important	Does Not Apply
Mountain Scenery	54.5%	39.0%	4.4%	0.9%	1.2%
Variety of Attractions	33.8%	50.5%	10.3%	3.3%	2.1%
Forest and/or Wild Flowers	34.1%	43.8%	16.7%	4.1%	1.4%
Possibility of Viewing Wildlife on Trail	35.0%	41.2%	18.0%	3.7%	2.2%
Wanted to Try New Trail	9.6%	30.9%	20.5%	11.2%	27.9%
Trail Recommended	11.7%	24.2%	21.5%	13.2%	29.5%
Read Description of Trail	8.6%	24.4%	17.7%	13.3%	36.1%

Percentages are based on a total of 1,001 responses.

For over 60 percent of the hikers, hiking on a particular trail was a first time experience. The highest percentage of first time hikers was recorded on the Glacier Gorge trails and the lowest on Long's Peak (see Table 3 below).

TABLE 3
Percentage of First Time Hikers by Trail

Trail System	Percentage of First Time Hikers
Bear Lake	59.1%
Glacier Gorge	72.2%
Wild Basin	52.0%
Long's Peak	46.8%
Cub Lake	67.9%
Specimen Mountain	66.7%

Percentages are based on a total of 1,001 responses.

We asked those who had hiked on a particular trail before to evaluate the present quality of the trail based on their past experiences. The majority of repeat hikers reported the quality of the various trails was about the same as in the past.

The past amount of hiking experience in the park varied greatly from trail to trail. For Example, 34.5 percent of Bear Lake hikers reported having hiked on no other park trails, while at Long's Peak only 13.5 percent of hikers reported that they had not hiked on any other park trails. Experienced hikers who had hiked three or more different park trails composed almost 70 percent of the hikers on the Long's Peak and Specimen Mountain trails (see Table 4 below).

TABLE 4

Percentage of Hikers Who Have Hiked on Three or More
Different Park Trails by Trail System

Trail System	Percentage of Hikers Who Have Hiked on Three or More Different Park Trails
Bear Lake	36.6%
Glacier Gorge	44.9%
Wild Basin	61.2%
Longs Peak	69.9%
Cub Lake	46.4%
Specimen Mountain	69.3%

Percentages are based on a total of 1,001 responses.

The focus of the next section of the questionnaire concerned the quality of hiking experience preferred and what kind of experience a particular trail seemed to provide. For example, hikers were asked what type of trail they usually preferred to hike on, with 45 percent of our sample indicating they preferred "primitive trails with little improvement and often rough." Another 33 percent responded that they preferred "developed trails with railings and bridges where needed." Less than 2 percent of hikers preferred "very developed trails that are paved." Being concerned about not only the physical quality of the trail, but also social qualities, we asked: "When you are hiking on the trails in Rocky Mountain National Park, how many other hikers do

you prefer to meet?" Over 50 percent of the respondents reported that they prefer to meet small numbers of hikers on the trail. Less than 2 percent of the hikers indicated that they like to meet "lots" of hikers on the trail.

In asking about their immediate experience, we asked hikers to evaluate the quality of a variety of factors related to their hike. The quality of most conditions was rated as "excellent" or "good" by approximately 80 to 90 percent of the hikers except for the number of other hikers on the trail (see Table 5 below).

TABLE 5
Evaluation of Various Factors Related to
the Quality of the Hiking Experience

Quality Factors	Excellent	Good	Fair	Poor	No Opinion
Adequacy of the Trail Itself	52.0%	42.6%	4.1%	0.1%	1.2%
Cleanliness of Trail (litter)	65.0%	26.7%	5.1%	2.4%	0.8%
Environmental Conditions Along Trail (Erosion, etc.)	40.9%	43.6%	11.7%	2.0%	1.9%
Directional Signs and Information Along Trail	32.4%	42.2%	18.1%	4.9%	2.5%
Number of Other Hikers On Trail	11.0%	41.5%	28.3%	13.5%	5.8%
Noise Levels Along Trail (Other Hikers)	36.2%	41.9%	14.6%	4.9%	2.5%

Percentages are based on a total of 1,001 responses.

Additional evidence that hikers were sensitive to the number of people on the trail comes from another question where we asked: "In your opinion, can too many people in hiking areas of the park detract from the enjoyment of those areas?" Over 80 percent of our total sample answered "yes". Only 13 percent of hikers said "no" and another 5 percent had no opinion. Also, a majority of hikers disapproved of commercial horse use on park trails with 29.8 percent indicating that they "strongly disapprove".

When hikers were asked about their sources of information on the trail system they were using, they reported that maps played a major role in providing trail information. Talking with other people they met in or near the park seemed to provide the least amount of information (see Table 6 below).

TABLE 6
Sources of Information About Trail

Information Source	Very Important	Important	Minor Importance	Not Important
Hiked on it Before	16.6%	20.0%	19.5%	44.0%
Description from Family Member or Friend	13.6%	27.6%	19.4%	39.5%
Park Handout at Gate	7.5%	23.6%	24.8%	44.2%
A Map or Maps	23.9%	40.6%	16.8%	18.8%
National Park Literature	16.7%	38.7%	19.8%	24.9%
People Met in or Near the Park	5.0%	17.2%	26.3%	51.5%
Purchased Trail Guide	10.7%	17.3%	20.2%	51.8%
Talking with Park Personnel	15.1%	26.0%	18.8%	40.2%
Roadsigns in Park	11.7%	28.3%	23.0%	37.1%
Signs Describing Trail	12.5%	27.1%	21.5%	39.0%
Park Information Center	15.2%	31.5%	18.2%	35.2%
Park Newspaper	8.8%	16.2%	23.7%	51.3%

Percentages are based on a total of 1,001 responses.

Of central concern to this study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting

day-use. On all trails surveyed most hikers turned out to be very protective of the park environment (see Table 7 below).

TABLE 7
Evaluation of Possible Reasons for Regulating
or Limiting Day-Use

Reasons for Limit- ing Day-Use	Very Important	Important	Minor Importance	Not Important	No Opinion
Damage to Wildlife	70.8%	22.7%	3.6%	0.9%	2.0%
Damage to Vegetation	64.3%	28.5%	4.4%	0.9%	1.9%
Damage to Water Quality	68.2%	23.4%	5.7%	0.8%	1.9%
Damage to Geological Formations	54.9%	31.0%	10.0%	1.9%	2.2%
Damage to Quality of Trail	36.4%	39.3%	19.2%	2.3%	2.9%
Danger to Hikers	41.8%	28.9%	18.6%	7.6%	3.2%

Percentages are based on a total of 1,001 responses

Another important question for this study was the day hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate them in terms of their acceptability to you." The results seem to

indicate that most respondents favor non-coercive forms or systems of day-use limitations that would impinge the least on their personal freedoms (see Table 8 below).

TABLE 8

Acceptability of Different Systems of Limiting Day-Use

Possible Day-Use Limitation Systems	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
First Come, First Serve	17.1%	34.0%	22.0%	19.1%	7.9%
Reservation System	14.1%	26.2%	17.8%	29.5%	12.5%
Alternate Day-Trail Usage	6.6%	18.1%	28.8%	34.7%	11.9%
Limitations on Park- ing at Trail Head	10.6%	31.7%	28.4%	21.8%	7.6%
Lottery Drawing	0.8%	1.9%	14.9%	49.6%	32.9%
Signs Identifying Heavily Used Trails	36.3%	43.7%	13.5%	5.2%	1.4%
Block Off Trail Access so Hike Be- comes Longer	8.6%	15.9%	28.2%	35.2%	12.2%
Set Number of Hikers Allowed per Hour	8.4%	32.1%	26.1%	26.2%	7.3%
Ticket to Use the Trail	4.9%	18.0%	25.7%	37.8%	13.7%
More routes	25.9%	37.5%	15.8%	14.5%	6.4%
Advertise Lightly Used Trails	28.7%	39.3%	15.1%	10.8%	6.2%

Percentages are based on a total of 1,001 responses

In terms of demographic characteristics, 78 percent of our sample of day hikers were from out of state. The region of the U.S. with the greatest representation was the Great Lakes region (see Table 9 below).

TABLE 9
Day Hiker's Permanent Residence

Place of Permanent Residence	Number	Percentage
No Answer	9	0.9%
Colorado	20	22.0%
Mountain States	9	0.9%
West Coast	39	3.9%
South West	80	8.0%
Great Plains	190	19.0%
Great Lakes	254	25.4%
South	61	6.1%
North East	129	12.9%
Foreign Country	10	1.0%
Total	<u>1,001</u>	<u>100.0%</u>

There was considerable variation in the number of in-state hikers on different trails. Longs Peak had the highest percentage of in-state hikers while Bear Lake trails had the lowest percentage (see Table 10 below).

Table 10
Percentage of In-State Hikers by Trail

Trail System	Percentage of In-State Hikers
Bear Lake	9.4%
Glacier Lake	13.2%
Wild Basin	35.2%
Long's Peak	38.5%
Cub Lake	19.6%
Specimen Mountain	22.7%

Percentages are based on a total of 1,001 responses.

The largest single percentage (28.7 percent) of respondents were camping in the park. Fifty-five percent of the sample was male with 56.6% of hikers reporting a college education. Over 70 percent of our sample was under 40 years of age. Almost 40 percent of respondents classified their occupation as professional and another 20 percent labeled themselves as students.

Summary of Observations and Findings

From the data collected, it is possible to make some generalizations about day hikers in Rocky Mountain National Park. For example, on any one day it appears that a majority of hikers on most park trails

(except for Longs Peak) are first time hikers. Also, most people are hiking with other family members. Hikers are attracted to trails that are very scenic, offer a variety of attractions, have beautiful forests and wild flowers and where there is a possibility of viewing wild life.

For most hikers, the quality of their hiking experience was a good one with over 68 percent reporting they were "very satisfied" and another 27.9 percent indicating that they were satisfied. Only 6 people out of the total 1,001 sample reported being dissatisfied with their hike.

In the evaluation of specific factors that are related to the quality of their hiking experience, most respondents rated conditions as excellent or good. Only in relation to the numbers of hikers on the trail and horse use did significant numbers of people seem concerned about the lack of a quality experience.

It is very important to note that day hikers on all trails were very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day-use. In evaluating the possible ways of limiting day-use, most hikers seemed to prefer non-coercive forms of day-use limitation.



Chapter 9

The Visitor Center

by

Karen M. Jennison
Associate Professor of Sociology
University of Northern Colorado

Visitor centers are an important part of Rocky Mountain National Park, serving to acquaint visitors with the area. They are used as a focal point for distributing various kinds of information about numerous aspects of the park. In fact, the hikers who said a map was important in finding out about the trail (63 percent), or cited park literature (54 percent) and park personnel (41 percent) as being important sources of trail information are likely to have received at least some of this

information at visitor centers.

In order to find out more about the users of visitor centers, we conducted interviews with 148 individuals -- 50 at Headquarters Visitor Center, 49 at Moraine Park Visitor Center, and 49 at Alpine Visitor Center. This preliminary study, while by no means definitive, gives us some notion of aspects of visitor center use which might be studied further.

We will discuss factors related to the time in the visitor center itself, activities connected with the wider park experience as well as some demographic characteristics of individuals and, where appropriate, the visitor center users will be compared with the hikers. Finally, we will discuss differences among the three centers studied.

The Visitor Center Experience

We inquired as to the reason individuals come to the centers. Most wanted to find out about what to do in the park (30 percent) or about the general history and ecology of the area (23 percent). A third big reason was use of facilities such as phone, restroom, etc. About 11 percent said they stopped for this reason alone and another 11 percent gave several reasons with use of facilities among them. Interestingly, both those over 50 and those under 25 years of age were more likely to report stopping in order to use facilities, although when broken into age groups, the numbers are very small (see Table 1 following).

TABLE 1
The Visitor Center

Time in Center	Percent ¹
5 Minutes or Less	17.6%
10-15 Minutes	43.2%
16-30 Minutes	25.7%
Over 30 Minutes	13.5%
Reason for Visiting	Percent
More About What to do in Park	30.0%
General History and Ecology of the Area	23.0%
Use Facilities	10.8%
Buy Maps and Pamphlets	8.1%
Several Reasons Including Use of Facilities	9.5%
Several Reasons Excluding Use of Facilities	10.8%
Rest Stop (Driving Through)	7.4%
How Much Have Activities Been Affected by Visit?	
Considerably	10.1%
Somewhat	19.6%
Very Little	18.9%
Not at All	51.4%
How Many Times Visited Center This Trip	
First Visit	83.1%
Second or More	17.0%
N = 148	

¹ Percentages may not add up to exactly 100 because of non-response and rounding errors.

It is clear from Table 1 also that most people are on their first visit; there are few repeaters. Only 60 percent of hikers were on the trail for the first time contrasted with 83 percent on their first visit to the center. Perhaps this figure would go down if we took account of previous trips to the park, but there may well be potential for repeat visits to centers and hence more time spent in them than is being tapped.

Nor surprisingly, time spent in the center is related to reason for coming ($\lambda = .44$) with those coming to use facilities spending less time than those coming to find out what to do or to find out about the general history and ecology of the area.

We asked an open-ended question on what improvements or additions could be made to the visitor centers. The most common answers were improvements or additions to slides or films, and more or different exhibits, all features which are now included in the center. Obviously, the respondents used, as their frame of reference, what they had seen in the center they visited. Exhibits, for instance, were most likely to be mentioned by Moraine Park visitors. Sixty-two percent of the respondents made no comment, perhaps indicating that their expectations were not too different from what they found. (In fact, 10 of the respondents spontaneously indicated praise for the center they visited). Changing or expanding visitor centers would be more a matter of openness to change on the part of visitors than demand for it.

A final aspect of the visit which will be considered is that of influence of the center upon individual plans. Table 1 shows that 50 percent of the respondents felt their plans were not influenced by the visit whereas about 30 percent were "somewhat" or "considerably" influenced. No doubt, the centers do have a potential for change or additions to visitor plans. This aspect of the visit will be discussed in more detail when we analyze the centers separately.

In terms of influence, it should be remembered that while we speak of individuals and, in fact, interviewed individuals², the visit is a family event and if one person adds an activity because of something read, etc., chances are the whole family adds the activity.

The Park Experience

Since very little time is actually spent in the center in terms of the total visit to the park, we need to consider other aspects of this visit. What goes on in the visitor center should relate to other aspects of the park experience.

Table 2 shows that a minority of the respondents are actually on their first visit to Rocky Mountain National Park. The visitor center apparently tends to be included as a stop during the early part of the park visit although it is a choice at all stages of the visit.

A fairly large percentage of individuals reported they were staying elsewhere than in the park area. This may represent people who plan to travel on before evening. As compared with hikers, a smaller portion

TABLE 2

The Park

How Many Times Have You Visited the Park? Percent	
First Visit	43.9%
Second Visit	19.6%
Third or Fourth Visit	17.6%
Fifth or More Visit	18.9%
How Long Have You Been in the Park? Percent	
Just Got Here or Driving Through	18.2%
Under 2 Hours	16.9%
2-4 Hours	24.3%
A Full Day	10.8%
2 Days	17.6%
More Than 2 Days	12.2%
Where Are You Staying Percent	
Cabin or Motel	16.2%
Camping Outside Park	20.3%
Camping Inside Park	34.5%
Other (Y-Camp; Residence)	6.8%
Staying Elsewhere	22.3%
N = 148	

were staying in a cabin or motel and a larger proportion were camping either within or outside the park.³

An important part of the park experience consists of activities the individual chooses while there. As shown in Table 3, an overwhelmingly popular activity consists of driving along Trail Ridge or Fall River Road viewing scenery. Almost all respondents either had done or planned to do this.

TABLE 3
Activities

Activity	Percent Who Have Done or Plan to Do
Backpacking or Mountain Climbing	17.5%
Hiking Tundra Nature Trail	37.8%
Other Hiking on Own	70.3%
Evening Campfire Program	31.1%
Ranger Guided Activity	26.4%
Horseback Riding	27.7%
Driving Over a Scenic Road	91.2%

N = 148	

The second most popular activity was hiking. Interestingly, about 38 percent of the respondents chose hiking the Tundra Nature Trail as an activity they would do. This may reflect the information available to individuals. Had a less well known trail been suggested, we might have been able to separate hiking as a popular activity from "advertisement" of a particular trail. As one would expect, few plan to backpack while horseback riding, evening campfire programs and ranger guided activity did have a modest number of adherents.

Personal Characteristics

As shown in Table 4, the personal characteristics of the small visitor center sample matched those of the trail sample fairly well. The differences shown might be real or they might be an artifact of inexact sampling. The visitor center interviewees seem somewhat older than the hikers, which we might expect. We might speculate that if, indeed, the 30-39 year olds are not on hiking trails, it is because they have children who are too large to carry but too young to walk in a disciplined way.

The geographic area represented by the visitor center group match those of the hikers with the exception of Colorado residents. A larger percentage of hikers are residents of the state. Certainly, it seems sensible to find that patrons of visitor centers are predominantly out-of-state individuals. It may well be that Coloradans make up a large portion of those who are not hiking the trail for the first time. Thus, the proportion of others on first hikes and first visits to a center may be the same.

With regard to distance, we see that over half of those at the visitor center have come more than 1,000 miles to the park. This, of course, matches the geographic area measure.

Finally, with regard to education, the two samples are virtually the same.

TABLE 4

Characteristics of Visitors Interviewed

Age	Visitor Center ¹	Hikers ²
Under 25	22.3%	32.3%
25-29	16.2%	16.2%
30-39	34.5%	21.7%
40-49	12.2%	16.7%
Over 50	14.8%	12.7%
Sex	Visitor Center	Hikers
Male	60.8%	55.2%
Female	39.2%	43.8%
Geographic Area	Visitor Center	Hikers
Colorado	14.9%	22.0%
Other Mountain and West Coast	4.8%	4.8%
Southwest	12.2%	8.0%
Great Plains	21.6%	19.0%
Great Lakes	25.0%	25.4%
South	8.1%	6.1%
Northeast	11.5%	12.9%
Foreign	1.4%	1.0%
Distance Visitors Came to Park	Percent	
0 - 150 Miles	14.2%	
151 - 1,000 Miles	32.4%	
1,001 - 1,500 Miles	28.4%	
Over 1,500 Miles	25.0%	
Education	Percent	Hikers
High School Grad or Less	17.6%	21.6%
Some College	26.4%	21.0%
College Graduate	23.6%	{ 56.6%
Some Graduate Work	11.5%	
Graduate Degree	20.9%	
¹ N = 148		
² N = 1,001		

Percentages may not add to exactly 100 due to non-responses.

Visitor Center Differences -- Interpretations

One of the more obvious purposes of the visitor center is to give individuals information about and interpretations of what they see around them. The centers differ in the types of interpretations they give and in how this is done, hence different questions were designed in order to tap these divergencies.

The Alpine Center contains an exhibit on the tundra environment. The themes of this exhibit seem to be the unusual, fragile nature of the tundra, its strange beauty and the bareness and extreme weather one might expect. In order to test this informational transfer to visitors, a question on the tundra was asked. Respondents could agree with one of the three themes or could say they knew nothing about the tundra or fail to respond. Table 5 shows the relationship between viewing the tundra exhibit and endorsing one of the theme statements.

TABLE 5

Viewing of Tundra Exhibit and Opinion About Tundra

Viewed Exhibits	Opinion		Total
	Endorses One of Themes	No Response Knew Nothing, etc.	
Yes, saw all or some	21	6	27
No	4	18	22
Q = 88		N = 49	

We can see a strong relationship between viewing the exhibit and knowing the themes. By this criterion, the tundra exhibit is a success for those who view it.

Moraine Park Visitor Center has an upstairs section devoted to information on glaciation and the changes it has caused in the environment. The tremendous changes man can make as compared even with the glacier and wildlife are emphasized. The format for this information consists of a slide show as well as exhibits. Respondents were asked if they visited the upstairs section of this center and if so what comment they had on the purpose of the exhibit. Sixty-three percent of the respondents had visited this section of the visitor center. Of those, 19 percent reported that the exhibit emphasized man's ability to change nature whereas 71 percent reported an emphasis on something else such as

glaciers, wildlife, etc. About 9 percent of those who saw it expressed no opinion about the exhibits. If one views the Moraine Park exhibit as instilling a kind of environmental ethic where man becomes aware of his power over nature, the exhibit could not really be viewed as a success.³

A main informational attraction at Headquarters Visitor Center is a film emphasizing a drive along Trail Ridge Road. Other features are also highlighted in the film. For instance, the tundra nature trail is depicted. Does the film have an impact on visitor plans? The answer to such a question really requires a more detailed analysis than we have performed here, but we can determine whether viewers of the film are more likely to plan hiking on the Tundra Trail. Of the 50 respondents at Headquarters Visitor Center, 15 saw the film and 35 did not. Half of those seeing the film planned to hike or had hiked on Tundra Nature Trail whereas about 1/3 of those not seeing the film planned such a hike.

As for the drive along Trail Ridge Road, also emphasized in the film, this activity is so popular among all groups that no difference is shown by visitor center; neither does seeing the headquarters film have any effect. Thus, the film may have a role in increasing knowledge of certain less popular park activities. The film might also attract the type of individual who would hike this trail anyway. The role of media in changing people's motivations is a very complex one.

Other Differences

We have discussed informational differences among the visitor centers. What about other types of differences?

Headquarters Visitor Center seems to be visited more often than the others early in the park visit probably because of its location. Table 6 shows a mild association between the amount of time in the park and the visitor center where the interview took place. While visitor center use may tend to be concentrated in the first half day of the park visit, there is considerable use after that; however, it falls off after one full day in the park.

TABLE 6
Visitor Center and Length of Time in Park

<u>Time in Park</u>	Headquarters	Moraine	Alpine	Total
Just Got Here	54% (28)	15% (8)	31% (16)	52
2-4 Hours	17% (6)	50% (18)	33% (12)	36
More than one-half day	27% (16)	38% (23)	35% (21)	60
	Lambda = .19; $p < .05$			148

Headquarters visitor center is utilized more than the others as an introduction to the park and it is also one in which individuals are most likely to spend a very short period of time. Of those spending 5 minutes or less in the center, 58 percent were at headquarters with 23 percent at Moraine and 19 percent at Alpine. This mild association

seems best explained utilizing time as a prior factor. Are people anxious to see the park and, therefore, limited in time; do they come to use facilities, a type of use generally taking less time? The latter question can be answered since we asked about motivation for coming to the center. There is a slight association between motivation and visitor center with individuals interested in using facilities most likely to be at Alpine. However, utilizing facilities is also a popular motivation for visiting Headquarters. Thus, the short time spent in Headquarters may be due to the individual's reasons for coming there or other factors may be involved. This question bears further investigation.

TABLE 7

Motivation and Visitor Center

Motivation	Headquarters ²	Moraine Park	Alpine	Total
More about what to do	37% (19)	37% (19)	26% (14)	52
General History and Ecology	26% (11)	43% (18)	31% (13)	42
Use Facilities ¹	36% (19)	23% (12)	41% (22)	53

Lambda = .12

¹ This category includes visitors who reported use of facilities as one of several reasons. Buying maps or pamphlets is also included here.

² One individual did not answer the motivation question.

There is also a relationship between visitor center and respondent's report of their visit or planned activities being affected ($\lambda = .15$; $p \leq .05$). Headquarters is associated with being affected "considerably" whereas at Alpine and Moraine Park respondents were more likely to report being affected "not at all". Thus, perhaps the time of the visit in relation to the whole trip to the park is of more importance than time actually spend in the center in terms of changing activities planned.

Motivation for using the center is also related to plans being affected by the visit ($p < .05$) with those coming to the center to find out what to do, etc., most likely to be affected and those coming to use facilities least likely. Thus, the individual also brings a "readiness" to be influenced into the situation.

The one other difference between respondents at different centers involves hiking as an activity planned or previously engaged in on the park visit. Table 8 shows visitors to Alpine are less likely than the others to plan hiking.

TABLE 8
Hiking and Visitor Center

	<u>Center</u>			Total
	Headquarters	Moraine	Alpine	
Hiking Plans or Have Done	38% (39)	39% (41)	23% (24)	104
Don't Plan	25% (11)	18% (8)	57% (25)	44
$\lambda = .16$ $p = .05$				148

This relationship is evidently not due to age as the people interviewed at Alpine were not older than those at other centers (in fact, they were slightly younger). This points to some differences in type of visitor⁴ that we have not really been able to specify in this study. Since hiking is such a popular activity throughout the park, users of the Alpine Center may differ in important respects from the "average" park user.

Conclusion

Interviews at three Rocky Mountain National Park visitor centers resulted in a small sample which matched that of hikers on some important demographic characteristics. Visitor center users as compared with hikers were more likely to be from out-of-state and to be camping in or around the park or to be staying elsewhere. Hiking and driving over one of the scenic roads were the most popular activities for visitor center users. Thus, they had much in common with the hikers.

The average visit to a center occurred early in the park visit and was short in duration. When changed plans are related to visitor center use, it may be because that use occurs early in the park visit and because the individual comes to the center looking for the kind of information that would lead to new activities. Headquarters Visitor Center most matches the model of one which would serve as a stimulus to this kind of behavioral change.

On the whole, visitors were pleased with what they found at the centers although Moraine Park's upstairs exhibit seemed to be most

problematic in terms of diffusing a specific message. Visitors to this center stay longer and are somewhat more likely to be motivated by "learning about the general history and ecology of the area". They are least likely to be motivated by using facilities (including signing up for nature hikes).

Indications are that messages sent in films and exhibits do get across to visitors; many are expecting this kind of information. They are relatively satisfied with their visitor center experience but are probably open to new definitions of the visitor center function by park personnel.

Footnotes

- 1 Interviews were conducted as individuals were leaving the visitor center but because of the number of people, the interviewer was unable to keep a count and interview every nth individual. However, we can have some confidence in our sample being representative for it matches the much larger sample of trail users on both education and sex (See Table 4)
- 2 In fact, at times members of a family, particularly husband and wife, insisted on both answering the questions. The family nature of the visit is certainly important and is an aspect one might want to study further.
- 3 In fact, this high percentage of campers may have been inflated by the Moraine Park center which is across from a campground and is used heavily by campers. However, there were no significant differences among centers in where respondents were staying. The centers may be used heavily by campers.
- 4 This may be far too harsh a view of the efficacy of this exhibit since some respondents reported the slide show wasn't working and this is the major vehicle for presenting the environmental ethic mentioned. However, there were more negative comments (slide show doesn't work, space is wasted) about the upstairs segment of Moraine Park than any other visitor center aspect, indicating that somehow the individuals who bothered to go upstairs may have had an expectancy that was not fulfilled. Further study with larger samples may need to be completed regarding this exhibit.

Footnotes - cont'd

- 5 One might suppose that those at Alpine are more likely to be driving through the park. A more specific question on this type of park use might reveal whether this is the case. Some respondents volunteered that they were driving through the park and stopped for a rest.



CHAPTER 10

Campground Information Use Survey

Introduction

This study was originally designed to take place at park visitor centers but due to the length of the survey instrument we decided to use it on park campground and conduct short interviews at the visitor centers. (see previous study by Dr. Jennison). The purpose of this small scale survey was to gather additional information about visitor activities in the park, information sources used, and the use of

visitor centers. In the previously described major six trail hiker survey, the largest single category of trail hikers (28.7 percent) were people camping inside the park. This statistic would lend support to the idea that campers inside the park would be an important group to reach in communicating any day use limitation system implemented on park trails.

Also, a natural place to provide an introduction to day use limitations would be park visitor centers. This study concentrated on the three visitor centers on the east side of the park; Alpine Visitor Center, Moraine Park Visitor Center and Park Headquarters. We attempted to discover how many campers utilize them, for what purposes, and, in general, what kinds of rules and information are successfully communicated.

Research Design

A 53 item self-administered questionnaire was distributed on the Moraine Park, Glacier Basin and Aspenglen Campgrounds. They were distributed in the evening when we hoped campers would be present preparing their evening meal. One questionnaire was distributed per group at each camp site. Our respondents consisted of campers or people visiting with them. We received a total of 92 completed useful questionnaires.

Survey Results

In terms of basic demographic characteristics, our sample of 92 respondents shared many common characteristics with our sample of day

hikers and in some ways were quite different. One obvious and expected difference was that a very low percentage of campers were from Colorado (5.4 percent). The majority of the campers were from the Great Plains or Great Lakes region of the U.S. (see Table 1 below).

TABLE 1
Camper's Permanent Residence

Place of Permanent Residence	Number	Percentage
No Response	2	2.2%
Colorado	5	5.4%
Mountain States	3	3.3%
West Coast	4	4.3%
South West	7	7.6%
Great Plains	22	23.9%
Great Lakes	28	30.4%
South	5	5.4%
North East	13	14.1%
Foreign Country	3	3.3%
Total	92	100.0%

Seventy-five percent of our sample were under 40 years of age. The largest single age category checked by our respondents was 18 to 24 years reported by 28.3 percent of the campers. This might indicate that camping in the park is more representative of a younger life style or that older people are less likely to be traveling with a lot of small children and are more affluent. Over 70 percent of the respondents had some college education and 50 percent were college graduates. Most people reported an urban background with 46 percent indicating that their permanent address was in a large city of over 100,000. Finally, for 45 percent of our sample, it was their first visit to Rocky Mountain National Park. But, a significant 22 percent of the sample reported five or more previous visits to the park (see Table 2 below).

TABLE 2
Frequency of Visits to Rocky
Mountain National Park

Past Visits	Number	Percentage
No Response	2	2.2%
First Visit	42	45.7%
Second Visit	20	21.7%
Third or Fourth Visit	7	7.6%
Fifth or More Visit	21	22.0%
Total	92	100.0%

Campers were also asked how long they had been in the park on this particular visit. Sixty-seven percent of the people surveyed had been in the park one full day to four days. An additional 26 percent of the respondents reported being in the park more than 4 days. When asked about activities they had undertaken or planned to participate in while visiting the park, driving over Trail Ridge Road, photography, and hiking rated very high. Fishing and backpacking did not seem to be as popular with the majority of campers (see Table 3 below).

TABLE 3
Level of Participation in Park Activities

Park Activities	Have Done	Plan to Do	Have Not Considered	Not Interested
Backpacking (overnight)	6.5%	12.0%	46.7%	34.8%
Evening Campfire Programs	40.2%	28.3%	16.3%	15.2%
Fishing	8.7%	20.7%	17.4%	53.3%
Hiking on a Trail Beginning at Bear Lake	44.6%	32.6%	12.0%	10.9%
Hiking on the Tundra Nature Trail	32.6%	16.3%	30.4%	20.7%
Other Hiking on Your Own (Not Guided by a Ranger)	60.9%	21.7%	3.3%	14.1%
Driving over Trail Ridge Road	67.4%	22.8%	5.4%	4.3%
Driving Over Fall River Road	45.7%	27.2%	12.0%	15.2%
Horseback Riding	12.0%	18.5%	19.6%	50.0%
Mountain Climbing	16.3%	7.6%	28.3%	47.8%
Photography	71.7%	10.9%	1.1%	16.3%
Picnicking	60.9%	7.6%	8.7%	22.8%
Ranger Guided Activities	21.7%	17.4%	33.7%	27.2%

No responses were coded as not interested. Percentages are based on a total of 92 responses.

The second major focus of the questionnaire was on information sources used in relation to the park environment. For example, campers were asked to evaluate a variety of possible sources of information about the park in terms of their importance before the respondent left home on his or her visit to the park. These sources of information included things like description of park by friends, family or acquaintances; free information from an agency (State of Colorado, AAA, etc.) purchased book or atlas describing the park; and read about the park in a general book or magazine. For those who had visited the park before, it was their previous visit that provided the most information. The most important general source of information for everyone was a description of the park by friends, family, or acquaintances. The least important source of information was road maps.

The respondents were also asked about the type of information sources they made use of when visiting the park. A majority of respondents reported using all of the different information sources we listed for their evaluation. The free map handed out at the gate seemed to be the most utilized with the park newspaper the least used source. (see Table 4 below).

TABLE 4

Use of Park Information Sources Used on this Visit

Type of Source	Have Used	Have Not Used But Know About	Have Not Used and Do Not Know About	No Response
Park Visitor Center	53.3%	26.1%	14.1%	6.5%
Free Park Map Handed Out at Gate	85.9%	5.4%	3.3%	5.4%
Park Newspaper	54.3%	12.0%	27.2%	6.5%
Purchased Material About the Park	52.2%	22.8%	16.3%	8.7%
Films or Slide Shows	51.1%	28.3%	16.3%	4.3%
Talks by Park Per- sonnel	51.1%	29.3%	17.1%	5.4%
Informally Talking With Park Personnel	72.8%	9.8%	9.8%	7.6%
Signs Describing Park Regulations	82.6%	7.6%	4.3%	5.4%
Signs Describing Trails	75.0%	14.1%	5.4%	5.4%
Informal Talks With Other Visitors	67.4%	21.7%	5.4%	5.4%

Percentages are based on a total of 92 responses.

In an attempt to see if the use of various sources of information would result in the park visitor remembering any park regulations, we asked the respondents to list any rules they could remember. Over 85 percent of the campers were able to list one or more park regulations. The most common type of regulation mentioned were rules related to camping. The least common regulation mentioned was Tundra related rules. When asked about the source of the regulations they listed, the vast majority of people (over 80 percent) reported that they came from park literature distributed at the entrance or from park signs.

The use of the park visitor centers by campers was a final focus of the questionnaire. Based on previous trips to the park or visits made during this particular summer 77, only 8.7 percent of the sample reported having never visited a visitor center. Over 16 percent of the respondents reported having visited more than one visitor center (see Table 5 below).

TABLE 5
Visitor Centers Visited

Visitor Center	Number	Percentage
None	8	8.7%
Park Headquarters	24	26.1%
Moraine Park	24	26.1%
Alpine	21	22.8%
More than one	15	16.3%
Total	92	100.0%

The questionnaire then asked campers about their use of the visitor centers. It is important to note that, unlike Dr. Jennison's study where people were interviewed immediately upon leaving a visitor center, in this study a subject was reporting on what may have occurred many hours or days ago. In fact, some campers may have been reporting activities based on previous trips to the park in other years.

When asked about time spent in a visitor center, 50 percent of the sample indicated spending from 1 to 30 minutes and an additional 40 percent of the sample reported spending over 30 minutes. The respondents were asked to evaluate possible reasons for using the visitor center. Wanting to know more about specific features in the park was rated the most important reason for using the visitor center by campers. Over 47 percent rated it as a "very important" reason and another 39 percent rated it as an "important" reason. What was interesting to note was, using the facilities (phone, restroom, etc.) was rated the least important reason for the use of the visitor center. Over 55 percent of the sample rated it as "not important" or of "minor importance."

An open-ended question asked if any additional services are needed in the visitor centers. A clear majority did not respond, but 13 percent of the respondents made comments related to the need for more general information on the park, more displays, and maps, etc. An additional 30 percent of the respondents provided a wide range of comments. In addition, we asked if the activities planned while visiting the park had been affected by visiting a visitor center. A sizeable majority reported that there had been some effect. Over 30 percent of

The campers said that their plans were affected considerably and another 44 percent reported that their plans had been affected somewhat.

Summary of Observations and Findings

This study provides some information about campers inside the park, their activities, information sources and the use of the visitor centers. We noted that over 90 percent of the respondents were from out-of-state and represented a relatively young, well educated population. Most campers had previously visited the park, but for a significant minority (45 percent) this was a first visit. Over 80 percent of the sample had driven or planned to drive over Trail Ridge Road, take pictures, and go hiking. Fishing, backpacking and horseback riding did not seem to appeal to many campers.

Most of the information about the park used prior to this particular visit came from either previous visits or talking with friends, family or acquaintances. Once inside the park, the park map handed out at the entrance seemed to be the most used single source of information. Also, over 80 percent of the campers were able to list one or more park regulations when asked to.

Over 90 percent of our sample had visited a park visitor center. Only a small percentage of this group had spent less than 10 minutes in a visitor center, most spent more time. They reported the most important reason for using the visitor centers was to learn about specific features in the park, while the least important reason was to use the

facilities. Finally, more than 70 percent of our sample reported that visitor centers had an affect on their planned activities while visiting the park.



Chapter 11

The Use of Informational Signs to Control Hiker Traffic on Day-Use Trails in Rocky Mountain

National Park: An Experiment

by

Richard K. Ormrod
Assistant Professor of Geography
University of Northern Colorado

Introduction

One of the possible ways of limiting day use on Rocky Mountain National Park trails which was suggested on the Day-Hiker Questionnaire

proposed the use of signs to identify heavily used trails. It was felt that if hikers knew which trails in an area were most heavily used, a number of them would decide to avoid those trails. In this way, some use pressure might be removed from the more heavily used trails and redistributed to lesser used trails. This suggested traffic control strategy was viewed positively by most respondents to the day hiker questionnaire (36 percent "Strongly Favor" and 44 percent "Favor"). Because of the preference indicated for this strategy and because it represented a possible low cost non-coercive means of controlling hiker flows on heavily used trails, an experiment was conducted to test its effectiveness.

Research Design

Signs were placed at the junction of two similar trails and several types of monitoring of trail usage were undertaken to assess the impact of the signs. The trails chosen were the Lake Haiyaha trail and the Emerald Lake trail. These two trails branch at a junction located at the foot of Dream Lake and lead to rather similar destinations (alpine lakes). They are of approximately equivalent length. In spite of these similarities, the Emerald Lake trail was normally the more heavily used.

Signs were placed at the junction of these trails informing hikers that there usually was more traffic to Emerald Lake. Two different versions of the sign were prepared and used during two different time periods to determine whether differently worded messages would have

different levels of impact on the hikers' trail decisions. One sign can be described as "positively" worded and the other can be described as "negatively" worded:

Positive Sign

SEEKING SOLITUDE?
THIS PLEASANT TRAIL TO
DRAMATIC LAKE HAIYAHA
OFTEN HAS FEWER HIKERS.

Negative Sign

WANT TO AVOID THE CROWD?
THE TRAIL TO EMERALD LAKE IS
OFTEN THE MORE
HEAVILY TRAVELED.

The positive sign was designed to encourage use of the lesser used trail (to Haiyaha) by pointing out its attraction; the negative sign was designed to discourage use of the more frequently used trail (to Emerald) by pointing out its more crowded condition. Each sign was left in place at the trail junction for approximately one week and trail use for each of those periods was monitored. In addition, both signs were placed at the junction at the same time and left approximately one week. Trail use for this period was also monitored.

During these test periods several types of monitoring of trail usage were undertaken. Hiker behavior at the junction was observed, optical counters were placed on the trails, and interviews were conducted at one of the trail destinations. Members of the research team directly observed and noted hiker response to each of the signs at the trail junction itself. The optical counters were placed on each trail with the assistance of Rocky Mountain National Park personnel and automatically recorded a tally of trail users. The functioning of the counters was checked regularly and readings were taken several times during each test period. The optical

counters tallied hikers going in either direction on a trail. Nevertheless, the figures derived were considered representative of numbers of hikers entering each trail at the junction since the Emerald Lake trail is a dead-end route and the Haiyaha trail is only joined by a primitive trail which is very lightly used. Thus, the trail tallies were presumed to represent hikers entering each trail at the junction and then returning on the same trail to the junction. The tallies were directly compared to determine the relative number of hikers that chose one trail over the other. Interviews were conducted at Lake Haiyaha during each test period to obtain a more direct measure of the effectiveness of the signs in influencing hikers' decisions. One member of each hiking party was asked several questions about the group's decision to use the Haiyaha trail and the role the sign may have played in that decision. Specifically, each group was asked whether they had definitely decided to visit Lake Haiyaha before they left the parking area; whether they had seen the sign (or signs) at the trail junction; whether the sign had affected their decision to hike to Lake Haiyaha in any way, and, if it had, in what way.

Research Results

Several positive results were noted from the use of the signs. The signs were read by nearly all hikers who reached the trail junction. It was observed that the signs stimulated discussion among hikers at the junction and raised the "crowding issue" for them as a point of discussion in making their trail decision.

A comparison of the hiker tallies for each trail during the several test periods indicated a change in traffic volumes, with an increased percentage of the hikers using the Lake Haiyaha trail when the signs were in place (see Table 1 below).

TABLE 1
Hiker Traffic Patterns

	Average Daily Number Hiking to Emerald Lake	Average Daily Number Hiking to Lake Haiyaha	Percentage of Total Hikers Going to Lake Haiyaha
When no Signs in Place	243	104	30%
When Positive Sign in Place	277	120	30%
When Negative Sign in Place	252	140	36%
When Both Signs in Place	159	117	42%

Initially traffic volume was measured on the trails without the signs in place. It was found, during this control period, that 30 percent of the total hikers used the Haiyaha trail. During the period the positive sign was in place there was no change in this pattern. When the negative sign was in place, the usage rate of the Haiyaha trail rose to 36 percent and when both signs were in place simultaneously the usage rate went up to 42 percent.

Although there was a positive change in the volume of traffic on the Lake Haiyaha trail, it was concluded that the change could not be reliably linked to the influence of the signs. In particular, it was noted, during observation of the hikers on the trails, that the sizes of groups hiking together varied greatly. Thus, a single decision to use one or the other of the trails could have resulted in one large party passing one of the trail counters and registering a significant change in the traffic flow patterns. Since daily rates for both trails averaged from 250 to 300 hikers, the proportions could be rather easily changed by the decisions of one or two larger groups. In addition, it was found in talking to hikers along the trail that a number of them visited both destinations---hiking to one lake, returning to the junction, and then hiking to the other lake. Thus, the increase in percentage of hikers visiting Lake Haiyaha may be related to the influence of the signs but this relationship cannot be conclusively shown.

The interviews of hikers arriving at Lake Haiyaha give a more direct indication of the influence of the signs (see Table 2 below).

TABLE 2

Interview Responses of Hikers
Arriving at Lake Haiyaha

	Sample Size	Number Admitting Influence by Sign	Number Indicating Lack of Destina- tion Commitment	Number of Uncommitted Admitting In- fluence by Sign
Positive Sign	37	16 (43%)	20 (54%)	11 (55%)
Negative Sign	39	6 (15%)	21 (54%)	6 (29%)
Both Signs	31	12 (39%)	16 (52%)	9 (56%)
Total of All Samples 107		34 (32%)	57 (53%)	26 (46%)

A total of 107 persons were interviewed during the three different test periods. Of that total 57 (or 53 percent) said that they had not made a firm decision to hike to Lake Haiyaha at the time they left the parking area. It was anticipated that this group, representing hikers who had not made a mental commitment to either destination prior to arriving at the trail junction, would be the hikers most likely to be influenced by the informational signs. Of the 57 uncommitted parties, 26 (or 46 percent) indicated that the sign (or signs) had influenced their decisions to hike to Lake Haiyaha. Furthermore, eight parties who said that they had already decided on Lake Haiyaha as a destination before arriving at the junction said they were influenced by the sign (or signs).

Presumably, the effect on those eight parties was that of reinforcement or positive confirmation of their original decision. Altogether, 34 persons (or 32 percent of the total interviewees) admitted that they were positively influenced by the sign (or signs).

The interviews were conducted at three different times: once when the positive sign was in place, once when the negative sign was in place, and once when both signs were in place together. A comparison of the results from the three different samples indicates that the differently worded signs and the change in display from a single sign to both signs had different levels of impact on the hikers' decision (Table 2). The positively worded sign showed the strongest impact: 43 percent of all the parties questioned at that time admitted being influenced by the sign, while 55 percent of the uncommitted parties in that sample were influenced. When both signs were in place at the same time a similar pattern of response was found: 39 percent of all the parties questioned at that time admitted being influenced by the signs, while 56 percent of the uncommitted parties in that sample were influenced. However, the negatively worded sign showed a much weaker impact: only 15 percent of all parties questioned at that time admitted being influenced by the sign, while 29 percent of the uncommitted parties in that sample were influenced. It seems that positive phrasing aimed at attracting hikers to a particular trail is more effective than negatively phrased messages aimed at discouraging hikers from using crowded trails.

Conclusions and Recommendations

1. Results of the experiment showed that informational signs placed at a junction point along hiking trails in a national park did influence the route decisions of some of the hikers using those trails. The specific information that was made available to hikers pointed out which trail was normally most heavily used and pointed out the attraction of the less used alternate trail. The impact of the signs was demonstrated most clearly by observation of hiker behavior at the trail junction and by the responses to interviews conducted at one of the trail destinations.

2. Although the signs did influence the decisions of a number of the hikers, the exact strength or relative importance of that influence could not be isolated from the impact of other factors which may have affected their decisions. Although a third of the total number of hikers interviewed at Lake Haiyaha admitted being influenced by the sign (or signs), it cannot be unequivocally stated that the signs alone caused them to decide on Lake Haiyaha as a destination. Furthermore, it was not possible to infer unequivocally that the changes in traffic flow patterns observed when the signs were in place were primarily a result of the influence of the signs. It may be that the signs operated primarily as a contributing influence among several others.

3. Different phrasing of the information included on the signs produced different levels of impact on the hikers. It seems that positive (or "attracting") phrasing is more effective than negative (or "repelling") phrasing and consequently should be preferred if such signs are used as a traffic control technique.

4. It was concluded that the use of informational signs as a technique for influencing hiker traffic patterns is worth applying since: a positive impact was demonstrated, it is a low cost and non-coercive approach, and it does provide a service to the sub-group of hikers who are particularly sensitive to the numbers of other hikers they meet along the trail (responses on the Day Hiker Questionnaire indicate that the majority of hikers have some sensitivity to numbers of other hikers on the trails). Because the strength of influence of the signs was not clear-cut (and definitely not over-powering) this strategy cannot be recommended as a primary solution to the problem of overcrowded trails. However, it could be a useful complement to a package of other traffic control strategies.





Chapter 12

Day Hikers Versus Horseback Riders

by

Marcille F. Trahan

Introduction

Extensive horse use in Rocky Mountain National Park has created a variety of environmental concerns as well as conflicts between hikers and horseback riders.

Research conducted during the summer of 1976 in Rocky Mountain National Park investigated hiker attitudes toward horse use of park trails. The majority of hikers (55 percent) disapproved or strongly

disapproved of horseback riders using park trails. Disapproval was greater for large groups of riders from commercial liveryes than for the private horseback rider.¹ The above investigation was conducted on trails shared by horse riders and hikers.

When data was compiled on the six trail systems investigated this past summer, opinion again was unfavorable towards horse usage of park trails. This is significant in that not all trails were used by horses and, therefore, did not show the physical evidence which might trigger disapproval. Over 57 percent disapproved or strongly disapproved of horse usage (see Table 1 below).

TABLE 1.

Hiker Attitudes Toward Commercial Horseback Riding on Park Trails

Hiker Attitude	Number	Percentage
Strongly Approve	37	3.7%
Approve	206	20.6%
Disapprove	280	28.0%
Strongly Disapprove	298	29.8%
No Opinion	180	18.0%
Total	1,001	100.0%

The Research Procedure

Disapproval of horse usage of park trails is quite significant. However, the specific reasons behind this disapproval have not been clear. A small pilot study was conducted at the request of Dwight Hamilton, Chief Naturalist, to determine why a majority of day hikers object to sharing trails with horseback riders.

Hikers on trails within the Moraine Park trail system and the Glacier Gorge trail system used by the commercial liveries were interviewed by a UNC Environmental Studies student under our direction. Only one person in each party was interviewed. We received a total of 49 completed and useful interviews.

Survey Results

Three quarters of the hikers were unaware that they would meet any horses, much less commercial "tour trains" of horses on the trail. Over half of the hikers interviewed had met up to 15 horses. The remainder had met 16 to 30 or more horses on the trail. Fifty-seven percent of the hikers had a generally unfavorable impression of horse use of park trails. When asked why their impressions were unfavorable, the responses generally dealt with how the hiking experience was diminished by the smell and presence of manure on the trail and the inconvenience of having to move off the trail for large horse parties.

The last section of the interview schedule consisted of a self-administered questionnaire. The individual hiker was asked to rate a

series of horse use related issues concerning the impact of large groups of horses on park trails.

The major horse use impact noted by hikers was the presence of manure on the trail. Sixty-five percent of the hikers strongly disliked or disliked manure on park trails. Manure is a highly visible by-product of horses and its impact on hiking made it the number one complaint of those hikers interviewed.

Flies and insects associated with the manure proved to be the second largest complaint with 50.9 percent strongly disliking or disliking them. A significant number of hikers (42.8 percent) strongly disliked or disliked the damage caused to park trails by horse riders. More than one-third (36.7 percent) were opposed to the dust created when horses passed. Approximately one-third of the hikers objected to having to move off the trail for riders or to the size of the horseback riding party. Although many aspects of horseback riding were resented by hikers, over 80 percent did not feel antagonism towards those who chose ride rather than walk (see Table 2 below).

TABLE 2

Hiker's Perceptions of Horse Impact on Park Trails

Horse Impact	Strongly Dislike	Dislike	Not Bothered By	Did Not Consider
Horse Manure	38.7%	26.5%	34.7%	0.0%
Horse Caused Dust	6.1%	30.6%	49.0%	14.2%
Flies and Other Insects	18.3%	32.6%	34.7%	14.2%
Having to Move Off Trail for Riders	6.1%	16.3%	71.4%	6.1%
Damage to Trails (if no damage perceived, indicate "did not consider")	20.4%	22.4%	18.3%	38.7%
The Size of the Horseback Riding Party	12.2%	20.4%	59.2%	8.1%
The General Idea of Some Persons Riding While Others Walk	8.1%	8.1%	61.2%	22.4%

Percentages are based on a total of 49 responses.

The results of this small pilot study should be considered as evidence but not complete proof of the reasons behind hikers' conflicts with horseback riders. Further research using an expanded questionnaire and large sample population over an extended period of time is necessary to more accurately identify these reasons.

Footnotes

- 1 Richard G. Trahan, "Commercial Horseback Riding in Rocky Mountain National Park," in Trends, July-August-September, 1977, p. 44-48.



Chapter 13

Final Summary and Recommendations

Introduction

The purpose of this final chapter is to provide a brief review of the more important findings presented in the preceeding chapters and make some pertinent recommendations. Part I, chapters 2 through 8, will be reviewed as a single unit concerning hiker perceptions of day-use limitation. A second section will be concerned with Part II, chapters 9 through 12 as individual studies. Finally, the chapter will conclude with recommendations regarding day-use limitation at Rocky Mountain National Park.

Visitor Perceptions of Day-Use Limitation

Day hikers utilizing six trail systems in the park (Bear Lake, Glacier Gorge, Wild Basin, Longs Peak, Cub Lake, and Specimen Mountain) were randomly surveyed on a different day of the week, each week, over seven weeks (July-August, 1977). These six trail systems reflect the differing degrees and types of visitor impact problems present in the park. The day-hikers leaving these trails were given a seven page self-administered questionnaire to complete. The questionnaire contained approximately 80 items. It focused on why hikers chose a particular trail for hiking; what they thought about existing trail conditions; their evaluation of various factors as possible reasons for regulating or limiting day-use; their evaluation of the acceptability of various methods of limiting day-use; and their sources of information about a trail. We obtained a total of 1,001 completed questionnaires from this survey.

Consistent findings from the data collected make possible some generalizations about day-hikers in Rocky Mountain National Park and their attitudes toward day-use limitation. For example, the majority of hikers on the trails surveyed (except for Longs Peak) are first time hikers. Most people are hiking with other family members and are attracted to trails that are very scenic and offer a variety of attractions. However, recommendations from others or having read a description of the trail were rated very low as reasons for choosing a particular trail for hiking.

For most hikers, the overall quality of their hiking experience was good. In the evaluation of specific factors that are related to the

quality of their hiking experience, most respondents rated conditions as excellent or good. Only in relation to the number of other hikers on the trail and commercial horse use of park trails did significant numbers of people seem concerned about the lack of a quality experience.

Regarding sources of information on the trail system they were using, hikers reported that maps played a major role in providing trail information. Talking with other people they met in or near the park seemed to provide the least amount of trail information. This data suggests that use of park maps and literature can be an effective way to communicate systems of day-use limitation to the day hiker.

Of central concern to this study was hiker evaluation of possible factors for the National Park Service to use as reasons for limiting day-use. On all the trails surveyed most hikers revealed they were extremely protective of the park, accepting common forms of environmental damage as sufficient reasons for limiting day-use. Over 90 percent of the hikers surveyed rated damage to wildlife and vegetation as a "very important" reason for limiting day-use.

Another important question for this study was the day-hiker evaluation of the acceptability of various schemes of limiting day-use at Rocky Mountain National Park. The questionnaire asked: "If the National Park System found it necessary to limit day-use in particular areas of the park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day-use below, please evaluate them in terms of their acceptability to you." The results indicated that most respondents favored non-coercive forms or systems of day-use

limitations that would impinge the least on their personal freedoms. For example, the use of signs to identify heavily used trails or "first come, first served" were the techniques most preferred over other alternatives such as lottery drawings or tickets to use the trail.

In conclusion, it is important to note that day-hikers on all the trails surveyed were very protective of the park environment. Most common environmental problems were seen as good reasons for limiting day-use. In evaluating possible ways of limiting day-use most hikers seemed to prefer non-coercive forms of day-use limitation. Nevertheless, the researchers believe that even very coercive or rigid limitations systems would be accepted by hikers if justified to them and explained on environmental grounds.

Supportive Studies

The first supportive study focused on the role of the park visitor centers to see how they functioned as part of the park communication system. Surveys at three park visitor centers (Headquarters, Moraine Park, and Alpine) provided a random sample of 148 interviews. It was discovered that the typical visit to a center occurred early in the park visit and was of short duration. The most common reason for utilizing a visitor center (for 30 percent) of the sample) was to discover what to do in the park, while another 23 percent of the visitors stated that they wanted to learn about the park. Over 80 percent of those interviewed were on their first visit to the particular visitor

center. About 30 percent of the respondents reported that they believed their visitor center experience effected their plans on what to do in the park.

Much of the data collected in this supportive study indicates that visitor centers play an important part in a visit to Rocky Mountain National Park, serving to acquaint visitors with the area. The centers serve as major focal points for distributing a range of information about the park. The data gathered in this research confirms that messages via films and exhibits do get transmitted to visitors. The researchers have concluded that park visitor centers should play an important role in communicating day-use limitation information to park visitors. Park literature, media, and displays should be utilized to describe park trails, environmental impact problems, and any limitations on day-use for particular trail systems.

A second, but similar, study obtained data from campers at park campgrounds regarding their use of various park information sources and potential activity plans. A survey was conducted using a 53-item self-administered questionnaire which was distributed at the Moraine Park, Glacier Basin and Aspenglen campgrounds. One questionnaire was distributed per group at each camp site. Our respondents consisted of campers or people visiting with them. We received a total of 92 completed useful questionnaires.

Over 90 percent of these respondents were from out-of-state and the majority were representative of a young, well-educated population. Most campers had previously visited the park, but for a significant minority

of our sample (45 percent) this was a first visit. Over 80 percent of the respondents reported that they had driven or planned to drive over Trail Ridge Road, take pictures, and go hiking. Fishing, backpacking, and horseback riding did not appeal to many campers.

Most of the information about the park possessed by the campers prior to this particular visit came from either previous visits or talking with friends, family or acquaintances. Once inside the park, the park map received at the entrance seemed to be the most used single source of information. Also, over 80 percent of the campers were able to list one or more park regulations when asked to.

Over 90 percent of our camper sample had also visited a park visitor center. Only a small percentage of this group had spent less than 10 minutes in a visitor center, most spent more time. They reported the most important reason for using the visitor centers was to learn about specific features in the park, while the least important reason was to use the facilities (restrooms, etc.). Finally, more than 70 percent of our sample of park campers reported that visitor centers had an effect on their planned activities while visiting the park.

These research results are important since over 25 percent of the day hikers in our major six trail survey were campers camping inside the park. Campers apparently rely on the park map and visitor centers in learning about the park and possible visitor activities within it. These findings would support previous research that indicates that park maps, literature and visitor centers should all be utilized in communicating and explaining any system of day-use limitation.

A third supportive study experimented with the use of informational signs to effect hiker use of park trails. Data from the day hiker survey indicated that if hikers knew which trails in an area were the most heavily used, a number of them would decide to avoid those trails. In this manner some use pressure might be removed from the more heavily used trails and redistributed to lesser used trails. It was decided that a test of this technique would be worthwhile.

Two similar types of trails were chosen for this study. The trails chosen were the Lake Haiyaha trail and the Emerald Lake Trail. These two trails branch at a junction located at the foot of Dream Lake, lead to rather similar destinations and are of approximately equivalent length. In spite of these similarities, the Emerald Lake Trail was normally the more heavily used by hikers.

Signs were placed at the junction of these trails informing hikers that there usually was more hiker traffic to Emerald Lake. Two different versions of the sign were prepared (with positive and negative wording). They were used during two separate time periods to determine whether differently worded messages about the number of hikers using a particular trail would have a significant impact on the hikers' trail decisions.

During the test periods hiker behavior at the junction was observed, optical counters were placed on the trail and interviews were conducted at one of the trail destinations. The researchers noted that the signs were read by nearly all the hikers that reached the trail junction. In addition, there was a change in traffic volume, with an increased percentage of the hikers using the Lake Haiyaha Trail when the signs were in place.

The interviews were conducted at Lake Haiyaha during three different times; once when the positive sign was in place, once when the negative sign was in place and once when both signs were in place together. A total of 107 persons were interviewed during the three different test periods. The positively worded sign had the greatest impact on hiker's decisions with 43 percent of all the parties interviewed at that time admitting being influenced by the sign, while 55 percent of those with no definite destination were influenced to hike to Haiyaha. When both the positive and negative signs were in place, 39 percent of all the parties questioned admitted being influenced by the signs. However, the negatively worded sign by itself showed a much weaker impact, with only 15 percent of all parties questioned at that time admitting being influenced by the sign. It seems that a positively phrased sign designed to attract hikers to a particular trail will be more effective than negatively phrased ones aimed at discouraging hikers from using crowded trails.

The researchers have concluded that the use of informational signs as a technique for influencing hiker traffic patterns is worth applying since a positive impact was demonstrated; it is a low cost and non-coercive approach; and it does provide a service to the sub-group of hikers who are particularly sensitive to the numbers of other hikers they meet along the trail. Because the strength of the signs was not clear-cut nor over-powering this strategy cannot be recommended as a primary solution to the problem of over-crowded trails. However, it could be a useful complement to a package of other traffic control strategies.

The final supportive study dealt with horse/hiker conflict on park trails. Data compiled from the six trail surveys indicated that hiker opinion was unfavorable towards commercial horse use of park trails. Over 57 percent of our sample of 1,001 day-hikers disapproved or strongly disapproved of commercial horse use. However, the specific reasons behind this disapproval have not been completely clarified. A small pilot study was conducted to determine why a majority of day-hikers objected to sharing trails with commercial horseback riders,

Hikers who had encountered horses on the Moraine Park and Glacier Gorge trails were interviewed by a University of Northern Colorado Environmental Studies student under our direction. Only one person in each party was interviewed. We received a total of 49 completed and useful interviews.

Three quarters of the hikers were unaware, when they began their hike, that they would meet any horses, much less commercial "tour trains" of horses on the trail. Over half of the hikers interviewed had met up to 15 horses. The remainder had met 16 to 30 or more horses on the trail. Fifty-seven percent of the hikers had a generally unfavorable impression of horse use of park trails. When asked why their impressions were unfavorable, the responses generally dealt with how the hiking experience was diminished by the smell and presence of manure on the trail and the inconvenience of having to move off the trail for large horse parties.

The last section of the interview schedule consisted of a self-administered questionnaire. The individual hiker was asked to rate a

series of horse-use related issues concerning the impact of large groups of horses on park trails. The major horse-use impact noted by hikers was the presence of manure on the trail. Sixty-five percent of the hikers strongly disliked or disliked manure on park trails. Flies and insects associated with the manure proved to be the second largest complaint with 50.9 percent strongly disliking or disliking them. A significant number of hikers (42.8 percent) strongly disliked or disliked the damage caused to park trails by horse riders. More than one-third (36.7 percent) objected to dust created when horses passed. Approximately one-third of the hikers disliked having to move off the trail for riders and the size of the horseback riding party. Although many aspects of commercial horseback riding were resented by hikers, over 80 percent did not feel antagonism towards those who chose to ride rather than walk the trails.

The results of this small pilot study should be considered as evidence but not complete proof of the nature of trail use conflicts between hikers and horseback riders. That a majority of hikers object to sharing the trails with commercial horseback riders is quite clear. It is probable that manure on the trail is the major factor in their dislike, but other reasons such as size of party, having to move off the trail, and horse-caused damage seemed important to a significant number of hikers. Further research using an expanded questionnaire and a larger sample population over an extended period of time is necessary to more accurately explore and identify various reasons.

Park Management Concerns

Interviews, both formal and informal, with rangers, naturalists, and maintenance personnel of different ranks and experience at the park indicated a common perception that there are problems created by heavy day-use. These day-use problems were perceived in various ways and to different degrees by individual staff members. For example, a person in maintenance might be concerned with the problem of maintaining certain facilities in the face of heavy visitor use, a ranger might be concerned with the problem of enforcing park regulations, and a naturalist with visitor impact on some area of the park. While many of those interviewed felt that day-use limitation was probably "coming", there was no uniform opinion or substantial agreement on the level or type of day-use limitation strategies that should be employed in the park.

The most commonly mentioned possible limitation strategy by those interviewed involved the use of a "barrier" to physically limit day-use. For example, a number of the people interviewed believed that the closing of a park road would be more effective as a day-use limitation strategy than another alternative which calls for voluntary compliance to restrictions by visitors. Finally, many of those interviewed indicated apprehension over public reaction to limitations being placed on day-use. In particular, there was some concern with the issue of public complaint.

Conclusions and Recommendations

Most of the evidence from our Summer '77 research indicates that day-hikers are a well educated group concerned with protecting the park environment. The researchers believe that any reasonable day-use limitation strategy that is explained to visitors and can be justified on environmental groups would be acceptable to the public. Since both controlled and non-controlled day-use limitation is already occurring in the park, the addition of an equitable system of day-use limitation that offers the visitor some alternatives (e.g., suggests other places to hike) will probably result in little or no increase in public complaints. Also, we believe there is an important potential role for voluntary components to any system of day-use limitation.

Any day-use limitation system established within the park should have its physical and informational components integrated to ensure a coordinated program. Visitors do seem to utilize information centers and park literature, especially park maps. All of these potential information sources should be used to introduce or explain some aspects of day-use limitation. Information should also be provided at the site of the limited-use facility itself. For example, a display at Park Headquarters could discuss park use and environmental problems. Then, various types of trails and user levels would be identified and those with user restrictions noted. The park maps distributed to visitors should also identify trails with any restrictions. Finally, the site of any particular trail restrictions should have a sign or pamphlet explaining the restrictions and reasons for them.

Based on the survey data and observation of park use patterns, several recommendations for the individual trail systems surveyed are offered. First, the Bear Lake area, due to geographical and historical factors, will probably continue to be a high day-use area. The system of public transportation proposed for the area in the master plan may actually bring increased visitor use in the future. If visitor use is severely limited in this area it will divert increased user impact to other areas of the park and/or deny many people the opportunity of easy hikes along spectacular trails to beautiful high mountain lakes. For these reasons, the researchers recommend the continuation of the Bear Lake trail system as a high use area, provided physical and biological damage does not become extremely severe. Thought should be given to additional physical and organizational means of cushioning the impact of heavy visitor use. In addition, there should be an increase in the interpretative aspects of the Bear Lake experience, with the different trails and environmental features more elaborately described. The proposed system of public transportation offers the opportunity for the use of a variety of orientation methods.

The Glacier Gorge trail system will probably face increased day-use if the proposed system of public transportation into the area is initiated. At present, the small trail head parking lot serves to restrict trail access. Once it is possible to take a bus to the trail head the number of day-hikers may increase. The Glacier Gorge trail area could also serve as an area of heavy day-use linked with the Bear Lake area by an emphasis on environmental orientation and education. Both of

these areas could be identified on maps, in park literature, and on displays at visitor centers as high use areas so that user expectations would be appropriate for the hiking experiences these trails would offer. On the other hand, if the National Park Service decides to limit or restrict day-use in these areas, reductions in parking space or the scheduling of public transportation could be designed to control the number of hikers entering the areas.

Since Rocky Mountain National Park is in many ways a "hikers" park, the National Park Service must also pay attention to the quality of the hiker's experience. For this reason, the removal of large-party commercial horseback riding from heavily used trails is recommended since a majority of the hikers on trails disapprove of it.

On the other trails surveyed the concern with quality of experience focused on the number of other hikers met on the trail. If the National Park Service decides that hiker limits should be set to maintain quality of experience or to control environmental impact, limits on the amount of parking available, controlling road access, and the use of first come, first serve systems would work to effectively limit day-use on these other trails. In addition, voluntary limitation systems could be useful in certain instances. For example, the closure of Specimen Mountain above the Crater could be (in our opinion) successfully accomplished by the use of signs and explanatory literature explaining the environmental problems of the area and asking hikers not to hike in that area.

The preceeding specific trail suggestions go beyond an interpretation of the research data and should only be considered as an attempt to identify possible management alternatives for the National Park Service. What the research data does clearly indicate is that day hikers will accept any reasonable system of day-use limitation, including no-use, in areas of the park faced with environmental damage.

APPENDIX A

Rocky Mountain National Park
Day Hiker Questionnaire

ROCKY MOUNTAIN NATIONAL PARK

DAY HIKER QUESTIONNAIRE

This questionnaire was constructed to help us learn about hikers in Rocky Mountain National Park. We would appreciate your cooperation in filling it out. Answering this questionnaire should not take too much of your time. Thank you!

General Instructions: Either a pen or pencil may be used to complete the questionnaire. Most of the questions may be answered by simply placing an "X" in the appropriate box; other questions call for written-in answers. However, you may write in additional comments whenever you wish to do so. Please ignore the numbers beside the questions and answers; they are for machine tabulation only. If you have questions, please feel free to ask the person giving out this questionnaire for any information.

(1) 1. How long have you been hiking today?

- | | |
|------------------------|-------------------------|
| 1 () Less than 1 hour | 5 () 4 to 5 hours |
| 2 () 1 to 2 hours | 6 () 5 to 6 hours |
| 3 () 2 to 3 hours | 7 () 6 hours or more |
| 4 () 3 to 4 hours | 8 () An overnight hike |

(2) 2. How many people did you hike with today?

- 1 () Hiked by myself
- 2 () Hiked with one other person
- 3 () Hiked with two or three other people
- 4 () Hiked with four or five other people
- 5 () Hiked with six or seven other people
- 6 () Hiked with eight or more people

(3) If you hiked with other people today were they:

- 1 () Friends
- 2 () People met on trail
- 3 () Members of your family
- 4 () Friends and family members
- 5 () Organized group or club
- 6 () Combination of some of the above

(4) 3. If you had a destination for your hike - what was it? _____

(5) 4. Approximately how many miles is it from your starting point to your destination?

- | | |
|------------------------------|-------------------------------------|
| 1 () Less than 1 mile | 6 () 3 miles to 3-1/2 miles |
| 2 () 1 mile to 1-1/2 miles | 7 () 3-1/2 miles to 4 miles |
| 3 () 1-1/2 miles to 2 miles | 8 () 4 or more miles |
| 4 () 2 miles to 2-1/2 miles | 9 () Do not know |
| 5 () 2-1/2 miles to 3 miles | 0 () I did not have a destination. |

(6) 5. Did you reach your destination?

- 1 () Yes
- 2 () No
- 3 () I did not have any destination

6. Below are various reasons for choosing a trail for hiking. _____
 important these reasons were to you in choosing this trail. (Please check one
 box for each of the reasons)

	Very Important	Important	Minor Importance	Not Important	Does not Apply
(7) A. Difficulty of trail (how steep, etc.)	()	()	()	()	()
(8) B. Quality of trail (how well developed)	()	()	()	()	()
(9) C. Safety of trail (how well marked out and patrolled)	()	()	()	()	()
(10) D. Length of trail (distance to destina- tion)	()	()	()	()	()
(11) E. Decision made by fellow hikers	()	()	()	()	()
(12) F. Waterfalls along trail	()	()	()	()	()
(13) G. Lake or Lakes on trail	()	()	()	()	()
(14) H. Views of mountain scenery	()	()	()	()	()
(15) I. Forest and/or wild flowers	()	()	()	()	()
(16) J. Alpine vegetation	()	()	()	()	()
(17) K. Rocks, cliffs, or geo- logical formations	()	()	()	()	()
(18) L. Possibility of viewing wildlife on trail	()	()	()	()	()
(19) M. Trail had a good vari- ety of attractions	()	()	()	()	()
(20) N. Thought the trail would not be crowded	()	()	()	()	()
(21) O. Trail strongly recom- mended to me	()	()	()	()	()
(22) P. Trail easy to get to	()	()	()	()	()
(23) Q. Parking space available	()	()	()	()	()
(24) R. Have seen other trails wanted to see this one	()	()	()	()	()
(25) S. Read a description of the trail that made it attractive	()	()	()	()	()

(26) 7. Were there other important reasons for choosing this trail that were not identified above?

1 () No

2 () Yes → If yes, please specify _____

(27) 8. Have you hiked on this trail before?

1 () No

2 () Yes → (About how many times? _____)

(28) If Yes, how does the quality of the area now compare with the way it was before.

1 () About the same

2 () Getting better

3 () Getting worse

Any comments regarding the area's condition _____

(29) 9. How many other trails have you hiked on in Rocky Mountain National Park?

1 () None

2 () 1 or 2 others

3 () 3 or 4 others

4 () 5 or 6 others

5 () 7 or 8 others

6 () More than 8 different trails

(30) 10. Which type of trails do you usually prefer?

1 () Very developed trails that are paved.

2 () Developed trails with railings and bridges where needed

3 () Primitive trails with little improvement and often rough

4 () Non-trail or off trail hiking

5 () It does not matter much what kind of trails I use

(31) 11. When you are hiking on the trails in Rocky Mountain National Park, do you prefer to:

1 () Meet no other hikers on the trail

2 () Meet a small number of hikers on the trail

3 () Meet moderate numbers of hikers on the trail

4 () Meet lots of hikers on the trail

5 () It does not matter how many hikers I meet on the trail

(32) 12. What do you think about commercial stables that rent horses using the park trails with groups of 10 to 20 riders?

1 () Strongly approve

2 () Approve

3 () Disapprove

4 () Strongly disapprove

5 () No opinion

(33) 13. Please indicate your overall satisfaction with today's total hiking experience by checking the number that best represents how you feel.

1 () Very satisfied

2 () Satisfied

4 () Dissatisfied

5 () Very dissatisfied

14. Below are a variety of factors that are related to the enjoyment of hiking. Please indicate your impression of the quality of these factors for your hike today.

	Excellent	Good	Fair	Poor	No Opinion
(34)A. Adequacy of the trail itself	()	()	()	()	()
(35)B. Cleanliness of trail (litter)	()	()	()	()	()
(36)C. Environmental conditions along trail (erosion, etc.)	()	()	()	()	()
(37)D. Direction signs and information along trail	()	()	()	()	()
(38)E. Number of other hikers on trail	()	()	()	()	()
(39)F. Noise levels along trail (other hikers)	()	()	()	()	()

15. Did you notice anything along the trail that requires the attention of the (40)Park Service? _____

16. Below are a number of factors that could cause the National Park Service to regulate or limit day use of some areas of Rocky Mountain National Park. How important should each of the following be as a possible reason for regulating or limiting day use?

	Very Important	Important	Minor Importance	Not Important	No Opinion
(41)Damage to wildlife	()	()	()	()	()
(42)Damage to vegetation	()	()	()	()	()
(43)Damage to water quality	()	()	()	()	()
(44)Damage to geological formations	()	()	()	()	()
(45)Damage to quality of trail	()	()	()	()	()
(46)Danger to hikers	()	()	()	()	()

17. In your opinion, can too many people in hiking areas of the park, detract from (47)the enjoyment of those areas?

- 1 () Yes
2 () No
3 () No opinion

18. If the National Park System found it necessary to limit day use in particular areas of the Park, there would be a variety of ways they could go about it. Considering the possible ways of limiting day use below, please evaluate in terms of their acceptability to you:

	Strongly Favor	Favor	Neutral	Oppose	Strongly Oppose
(48) A. First come, first serve (trail is closed after a set number of hikers are on it)	()	()	()	()	()
(49) B. A reservation system	()	()	()	()	()
(50) C. Alternate day trail usage (trail can only be used on certain days)	()	()	()	()	()
(51) D. Limitations on parking at trail head	()	()	()	()	()
(52) E. Lottery drawing	()	()	()	()	()
(53) F. Signs identifying heavy use trails, so some hikers may avoid them	()	()	()	()	()
(54) G. Block off the last few miles to the access roads so the trail hike would be made longer	()	()	()	()	()
(55) H. Allow only a set number of hikers per hour to enter the trail	()	()	()	()	()
(56) I. Hikers get numbered tickets at trail center which tells what time trail can be used that day.	()	()	()	()	()
(57) J. More routes-different trails to same destination	()	()	()	()	()
(58) K. Advertise lightly used trails	()	()	()	()	()

19. (59) If the National Park system were forced to limit use of certain areas of Rocky Mountain National Park, what system of limiting day use would be the most acceptable to you? _____

20. The following are possible sources of information about this trail. How important were they for you in knowing about this trail?

	Very Important	Important	Minor Importance	Not Important
(60) A. Hiked on it before	()	()	()	()
(61) B. Description from family member or friend	()	()	()	()
(62) C. Park handout at gate	()	()	()	()
(63) D. A map or maps	()	()	()	()
(64) E. National Park Literature	()	()	()	()
(65) F. People met in or near the park	()	()	()	()
(66) G. Purchased trail guide	()	()	()	()
(67) H. Talking with park personnel	()	()	()	()
(68) I. Roadsigns in park	()	()	()	()
(69) J. Signs describing trail	()	()	()	()
(70) K. Park information center	()	()	()	()
(71) L. Park newspaper	()	()	()	()
(72) M. Other important sources of information about this trail that you used _____				

(73) 21. Can you think of anything about this trail that you would have liked to know before you came to this trail?

1 () No

2 () Yes → If yes, please specify _____

Finally, in order to learn more about the many kinds of visitors to Rocky Mountain Park, we would like some general information about you.

(74) 22. Do you belong to any organizations that are primarily concerned with conservation or outdoor recreation?

1 () No

2 () Yes → If yes, please list them _____

(75) 23. Are you currently staying in or around the Rocky Mountain National Park Area?

1 () No

2 () Yes → If yes, where are you staying?

1 () In a cabin

2 () In a motel

3 () Camping outside the park

4 () Camping inside the park

5 () A summer residence

6 () A year-round residence

7 () Other _____

(76) 24. Your age?

1 () Below 18 years

2 () 18-24 years

3 () 25-29 years

4 () 30-39 years

5 () 40-49 years

6 () 50 years and over

(77) 25. Your sex?

1 () Female

2 () Male

(78) 26. What was the last year of school you completed?

1 () 8 years or less (elementary school)

2 () 9

3 () 10

4 () 11 - High School

5 () 12

6 () 13

7 () 14

8 () 15

9 () 16 (or more)

(79) 27. Please check the category that best describes your occupation

1 () Student

2 () Homemaker

3 () Manager, executive

4 () Farmer or Rancher

5 () Craftsman, technical

6 () Hourly or service worker

7 () Professional

8 () Retired

9 () Other -- specify _____

28. What is your permanent place of residence?

(80) State _____

(81-83) Zip Code _____

APPENDIX B

Rocky Mountain National Park
Visitor Center Interview

Rocky Mountain National Park

Visitor Center Interview

Introduction: (word as you wish) This interview is part of a study of visitor center use in Rocky Mountain National Park. It should be interesting and will take only a few minutes of your time.

4. What was your major reason for coming into the visitor center?
 1. wanted to know more about what to do in the park (or specific features of the park)
 2. was intersted in knowing more about the general history and ecology of the park
 3. wanted to use the facilities (restroom, phone, etc.)
 4. wanted to buy maps or pamphlets (booklets, etc.)
 5. sign up for hike
 6. several above including #3
 7. several above not including #3
 8. rest stop, driving through etc.
5. Is there any kind of information or exhibit you might expect in a visitor center that you would like to see added to this one? (what services could be improved upon?).
6. How much time did you spend in the visitor center?
 1. 5 minutes or less
 2. 10-15 minutes
 3. 16-30 minutes
 4. over 30 minutes
7. Did you see the visitor center film? (Have you seen it before?)
 1. yes (includes those who have also seen it before)
 2. no
 3. no, I've seen it before

This question asked at
Headquarters only. See reverse side
of last page for questions asked at
Alpine and Moraine Park.
8. How much have the activities you planned while in the park been affected by your visit to the visitor center?
 1. affected considerably
 2. affected somewhat
 3. affected but very little
 4. not at all affected.

9. How many times have you visited this visitor center on this trip to the park or park area?
1. this is the first visit
 2. second visit
 3. third or fourth visit
 4. fifth + visit
10. How many times have you visited Rocky Mountain National Park?
1. this is the first visit
 2. second visit
 3. third or fourth visit
 4. fifth + visit
11. How much time have you spent in the park so far?
1. just got here
 2. just enough time to drive through
 3. under 2 hours
 4. 2-4 hours
 5. a full day
 6. 2 days
 7. 3-4 days
 8. more than 4 days
12. Are you currently staying in or around the park area? (f Yes, where?)
1. no, staying elsewhere
 2. yes, cabin or motel
 3. yes, camping outside the park
 4. yes, camping inside the park
 5. yes, in a summer residence
 6. yes, year round residence
 7. yes, other _____

Now, I will read you a short list of activities. Please tell me which ones you have participated in within the park. If you haven't participated, do you plan to?

	<u>Have done</u>	<u>Plan to do</u>
	(1)	(2)
13. Backpacking or mountain climbing.....	()	()
14. Hiking on a Tundra Nature Trail.....	()	()
15. Other hiking on your own.....	()	()
16. Ranger guided activities.....	()	()
17. Evening campfire programs.....	()	()
18. Horseback riding.....	()	()
19. Driving over Trail Ridge or Fall River Road viewing scenery.....	()	()

Now, we would like a little information about you, yourself.

20. What is your present age? (for some rapport will be better if categories are read)

1. under 18
2. 18-24
3. 25-29
4. 30-39
5. 40-49
6. 50-59
7. 60 or over

21. Your sex?

1. male
2. female

22. Where did you come from (to the park) _____?

23. Do you know how far that is?

1. 0-50 miles
2. 51-150 miles
3. 151-500 miles
4. 501-1,000 miles
5. 1,001-1,500 miles
6. over 1,500 miles

24. What is the usual occupation of the major wage earner in your family? (If retired, describe occupation before retirement)

Title _____

Nature of Work _____

25. What is the highest level of education you have completed?

1. no formal education
2. some grade school
3. grade school graduate (8th grade)
4. some high school
5. high school graduate (12th grade)
6. some college
7. college graduate
8. some graduate work
9. a graduate degree

26. Visitor Center

1. headquarters
2. Moraine
3. Alpine

27. Following are some statements about the Tundra. You may agree with a number of them but just indicate which one you agree with the most. Which one stands out in your mind as the best way of describing the Tundra?

1. the Tundra is valuable because it is an unusual kind of environment
2. the Tundra is striking in its natural beauty
3. the Tundra is a barren area of severe weather
4. I know nothing at all about the Tundra
5. other _____

(the above question was asked of visitors at Alpine only)

The following questions were substituted for #7 at Alpine and Moraine

Moraine

Did you visit the upstairs section of the center?

____ Yes

____ No

(If Yes above, ask this one) What do you feel was the major message of that exhibit? What did it tell you?

Alpine

Did you look at the exhibits here?

1. Yes, all of them
2. Yes, some of them
3. No

Thank respondent for participating and ask if there are any further comments.

APPENDIX C

Rocky Mountain National Park
Visitor Center Survey

ROCKY MOUNTAIN NATIONAL PARK
VISITOR CENTER SURVEY

This questionnaire is part of a study of visitor center use in Rocky Mountain National Park. We would appreciate your cooperation in filling it out. It should take only a few minutes of your time.

Most of the questions may be answered simply by placing an "X" in the appropriate box. Please ignore the numbers beside the questions and answers; they are for machine tabulation only. If you have questions, please feel free to ask the person giving out this questionnaire for any information.

Below are various reasons for coming to the visitor center. Please indicate how important these reasons were to you in coming here. Check one box for each of the reasons.

- | | Very
Important | Important | Minor
Importance | Not
Important |
|--|-------------------|-----------|---------------------|------------------|
| 4. I wanted to know more about specific features in the Park | () | () | () | () |
| 5. I am interested in knowing more about the history and ecology of the Park | () | () | () | () |
| 6. I, or my family, wanted to use the facilities (phone, restroom, etc.) | () | () | () | () |
| 7. I wanted to buy maps or pamphlets | () | () | () | () |
| 8. Is there any kind of information or exhibit you might expect in a visitor center that you would like to see added to this one? (what services can we improve upon?) | | | | |

9. How much time did you spend in the visitor center?

- 1 () 5 minutes or less
- 2 () 10 - 15 minutes
- 3 () 16 - 30 minutes
- 4 () over 30 minutes

10. How have the activities you planned while visiting Rocky Mountain National Park been affected by your visit to this visitor center?

- 1 () they have been affected considerably
- 2 () they have been affected somewhat
- 3 () they have not been affected at all

11. How many times have you visited this visitor center on this trip to the Park or park area?

- 1 () this is my first visit
- 2 () this is my second visit
- 3 () this is my third or fourth visit
- 4 () this is the fifth or more time I have visited

12. How many times have you visited Rocky Mountain National Park?

- 1 () this is my first visit
- 2 () this is my second visit
- 3 () this is my third or fourth visit
- 4 () this is the fifth (or more) time I have visited

13. How much time have you spent in the Park so far?

- 1 () just enough time to drive through
- 2 () under 2 hours
- 3 () 2 - 4 hours
- 4 () a full day
- 5 () 2 days
- 6 () 3-4 days
- 7 () more than 4 days

14. Are you currently staying in or around the Park area?

- 1 () no, I am planning to stay elsewhere
- 2 () yes, in a cabin or motel
- 3 () yes, camping outside the park
- 4 () yes, camping inside the park
- 5 () yes, a summer residence
- 6 () yes, a year-round residence
- 7 () other _____

Please indicate whether you have or plan to participate in the following activities within the Park on this trip. Check one box for each of the activities.

	Have done	Plan to do	Have not considered	Not Interested
15. Backpacking (overnight)	()	()	()	()
16. Evening campfire programs.	()	()	()	()
17. Fishing	()	()	()	()
18. Hiking on a trail beginning at Bear Lake	()	()	()	()
19. Hiking on the Tundra Nature Trail()	()	()	()	()
20. Other hiking on your own (not guided by a ranger).	()	()	()	()
21. Driving over Trail Ridge Road . . .	()	()	()	()
22. Driving over Fall River Road. . .	()	()	()	()
23. Horseback riding.	()	()	()	()
24. Mountain climbing	()	()	()	()
25. Photography.	()	()	()	()
26. Picnicking.	()	()	()	()
27. Ranger guided activities.	()	()	()	()

How would you rate the following sources of information as to their importance to you before you left home on this visit to the Park? Please check one box for each information source.

	Very Important	Important	Minor Importance	Not Important
28. Previous visit or visits	()	()	()	()
29. Description of Rocky Mountain National Park by friends, family or acquaintances	()	()	()	()
30. Free information sent by the Park Service, state of Colorado, chamber of commerce or Triple A	()	()	()	()
31. Purchased book or atlas describing the Park	()	()	()	()
32. Read about the Park in a general book or magazine	()	()	()	()
33. Saw it on a road map	()	()	()	()

"

During your visit to the Park, which of the following types of information have you made use of or become familiar with? Again, please check one box for each information source.

	Have used	Have not used but know about	Have not used & do not know about
34. Other Park visitor centers	()	()	()
35. Free park map handed out at gate	()	()	()
36. Park newspaper	()	()	()
37. Purchased material about the Park	()	()	()
38. Films or slide shows	()	()	()
39. Talks by park personnel	()	()	()
40. Informally talking with park personnel	()	()	()
41. Signs describing park regulations	()	()	()
42. Signs describing trails	()	()	()
43. Informal talks with other visitors	()	()	()

44. Did you see the visitor center film?

- 1 () yes
 2 () no
 3 () no, but I've seen it before

45. The National Park Service is concerned about visitor awareness of Park regulations. Please list any Park rules you remember (3 or fewer) _____

46. How did you find out about these rules? (check one answer which was your major source)

- 1 () park newspaper
- 2 () park handout at gate
- 3 () purchased material about the park
- 4 () sign describing regulations on a road or trail
- 5 () informally talking with park personnel
- 6 () films or slide shows
- 7 () formal talks by park personnel
- 8 () conversation with other park visitors
- 9 () other _____

Finally, we would like some information about your background.

47. What is your present age?

- 1 () under 18
- 2 () 18 - 24
- 3 () 25 - 29
- 4 () 30 - 39
- 5 () 40 - 49
- 6 () 50 - 59
- 7 () 60 or over

48. Your sex?

- 1 () male
- 2 () female

49. What state are you from? _____

51. What is the usual occupation of the major wage earner in your family? (If retired, describe occupation before retirement)

Title _____

Nature of Work _____

52. Where do you presently live (your permanent address)?

- 1 () on a farm
- 2 () rural area but not a farm
- 3 () town less than 2,500
- 4 () town 2,500 - 25,000
- 5 () small city 25,000 - 100,000
- 6 () large city over 100,000

53. What is the highest level of education you have completed?

- 1 () no formal education
- 2 () some grade school
- 3 () grade school graduate (8th grade)
- 4 () some high school
- 5 () high school graduate (12th grade)
- 6 () some college
- 7 () college graduate
- 8 () some graduate work
- 9 () a graduate degree

APPENDIX D

Appendix of Question 40
From the
Day Hiker Questionnaire

Appendix of Question 40 from the Day Hiker Questionnaire

Trail -- Bear Lake

List of Complaints	Number of Complaints
1. Litter on the Trail	5
2. Identification Signs at the Lakes	4
3. Elevation Markers	3
4. Clarity on the Signs	2
5. Additional Sign at Lake Haiyaha	2
6. More Signs on the Trails	1
7. Block off Some of the Areas That Hikers Cut Across	1
8. People Picking the Flowers	1
9. Horse Manure on the Trail	1
10. Ground Markers for the Different Types of Trees	1
11. People Sitting on the Flowers and Plants	1
12. People with Dogs on the Trail	1
13. Feeding the Wildlife	2
14. Bathrooms Need Attention	1
15. Limit No. of Hikers on Trail	1
16. Not Enough Ample Parking or Public Transportation	1
17. Mud Holes on Trail	1
18. Asphalt Washing Out Between Nymph and Dream Lake	1
19. Signs Showing Distance Versus Time to Hike	1
20. Emerald Lake Sign at Dream Lake is Very Misleading	1

Trail -- Glacier Gorge

List of Complaints	Number of Complaints
1. Horse Manure on Trails	12
2. Litter on Trail	4
3. Better Marker Trails at Junctions	4
4. More Mileage Markers	2
5. Warning Signs Should be Posted at the Bluff and on Top of Falls for Children	2
6. More Education on Not Feeding the Animals	2
7. Tell People When Bear Lake Parking Lot is Full	1
8. Mushrooms Picked and Destroyed	1
9. More Signs	1
10. Better Signs for Toilets	1
11. Rock Slides on Trail	1
12. Better Marked Trail Toward the End of Black Lake Trail	1
13. Signs Have Been Moved	1
14. Too Many Toilets Ruin the Atmosphere	1
15. Hikers Should be Regulated	1
16. Unattended Youths - Should Have an Age Restriction	1
17. People Passint Out Questionnaires	1
18. Better Markings at End of Mills Lake	1

Trail -- Wild Basin

List of Complaints	No. of Complaints
1. More Mileage Markers	7
2. Horse Manure	4
3. Litter on Trail	3
4. Erosion on Trail	3
5. Signs Indicating "No Picking of Wild Flowers"	2
6. Carving on Trees	2
7. Too Many Horses on Trails	2
8. Back Country Rangers up at Headquarters Don't Know What They're Talking About	1
9. Sign Indicating Copeland Falls at its Destination Point	1
10. Sign needed, Indicating Trail From Lower Trail of Ouzel Falls to St. Vtain	1
11. Pine Tree Bark is Scaled, and Sap Running Out of Trees	1
12. Area Below the Calypso Cascades (The Bridge) Should be Identified, as it is Often Mistaken for the Calypso Cascades	1
13. Water Spigot for Drinking	1
14. Hand Out Map or Nature Guide Needed	1
15. People Without Permits	1
16. Re-education Program Before the Hiker is on the Trail	1
17. Dogs on Trails, Picking Wild Flowers, and Uprooting Plants	1

Appendix of Question 40 from the Day Hiker Questionnaire

Trails -- Long's Peak

List of Complaints	Number of Complaints
1. Horse Manure	20
2. Litter on Trail and at Jim's Grove	4
3. Trail not Marker at Chasm Lake	3
4. More Distance and Elevation Markers	3
5. More Signs on Trails	3
6. Signs About Feeding the Animals	2
7. The Trail Through the Boulder Field is Very Difficult to Follow	1
8. Erosion at the Switchbacks	1
9. Have the Cables Put Back In	1
10. More Signs at the Top	1
11. Better Patrolled People	1
12. More Dams are Needed	1
13. Tenters Camping on the Tundra Area	1
14. Jim's Grove Trail Needs a Sign From the Direction of the Boulder Field	1

Appendix of Question 40 from the Day Hiker Questionnaire

Trail -- Cub Lake

List of Complaints	Number of Complaints
1. Horse Manure on Trails (Why not have separate trails?)	5
2. More Signs on the Trail	4
3. Parallel trails being made by the hikers to avoid deeply rutted main trail	3
4. More Toilets	2
5. Better Designation of Actual Trail Starting From the Highway	
6. Erosion on the Trail	
7. More Signs with Mileage to Designations	1
8. Horses Destroy the Trails	1
9. First Lake is all Dried Out and Still has Fish in it	1
10. Signs at the Lakes Needed	1

Appendix of Question 40 from the Day Hiker Questionnaire

Trail -- Specimen Mt.

List of Complaints	Number of Complaints
1. Erosion Above and Below the Crater	5
2. People Walking off the Trail (Better paths with less loose rocks)	2
3. People Walking on the Tundra	2

