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# RECREATION AND PARKS: A Social Study at Shenandoah National Park

Glenn E. Haas  
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*August 1975*

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# 1

## Introduction

Leisure activities have many different values and are available in many forms. It is largely up to the individual what values are attained from leisure pursuits. Certain kinds of leisure activity are engaged in primarily for pleasure, while others are chosen because they provide a new experience or are personally satisfying; still others are valuable because they pass time and relieve boredom.

One major facet of leisure activity is outdoor recreation. Traditionally, outdoor recreation is resource-based; it requires a significant quantity and quality of natural resources and is largely the phenomenon of the 20th century. Prior to the 20th century, people did not actively participate in outdoor recreation.

In the setting of our forebears, outdoor recreation could not be considered a serious public purpose. What need was there for the Government to provide camping, picnicking, swimming, boating, hiking, hunting, and fishing? To the 76 million largely rural Americans of 1900, nature provided free all the opportunities the population could ever possibly use. People camped and picnicked of necessity. They hiked to get from place to place. Many hunted and fished—for food, not for fun. (Crafts 1966:15)

By the 1970s, the situation had changed drastically. Today, there are more men and women in the leisure-oriented ages of 18–44 years who are working less hours, making proportionately more money, have more leisure time available, are retiring at an earlier age, and have access to better transportation. These changes have increased interest in outdoor activities and, consequently, necessitated the creation of many new parks.

A park is a geographically identifiable area which has been set aside for and by society, and is the primary facility in outdoor recreation. Sociologically, parks may depict collective representations, symbolic of cultural values and beliefs shared by members of that society.

Attempts to understand human behavior associated with parks have incorporated two approaches. In the 1950s and 1960s, research was based on a resource perspective, that is, on activities and the site on which they occurred. During this period the social science disciplines provided a proliferation of descriptive material about participants in specific activities. Researchers identified an activity such as swimming, or a site such as a beach, and attempted to characterize the users by socioeconomic variables. The problem is that all the variables are not only intercorrelated one with the other, but also that certain users are quite homogeneous. Therefore, researchers must look outside these traditional social indicators and explore the dimensions of human behavior implicit in involvement in outdoor recreation.

Beginning in the late 1960s, and particularly in the 1970s, the approach to understanding human behavior associated with parks has been based on a human perspective, that is, on attempting to link together outdoor recreation and the broader, sociocultural dimensions. It is an attempt to study characteristics other than traditional demographic ones. By studying social aggregates such as those composed by visitation frequency, cost of equipment, years of experience, geographic location, camping styles, social interaction, ethnic background, or race better insight into the leisure behavior of people in an outdoor setting may be gained.

### Statement of the Problem

The principal intent of this study was to investigate selected aspects of human behavior at a family campground within a national park, specifically, the relationships between and among campers at Big Meadows Campground in Shenandoah National Park as related to social interaction, activity patterns, camping style, and descriptive characteristics.

### Hypotheses

Three hypotheses were formulated:

1. Social interaction occurs in a family-campground setting and is related to various descriptive characteristics.
2. Participation in activities is related to various user-descriptive characteristics.
3. Each camping style, user aggregate is identified with particular social-interaction levels, activity patterns, and descriptive characteristics.

### Definitions

An activity pattern was defined by those specific activities, listed in the questionnaire, in which the respondent participated while camping at Big Meadows Campground.

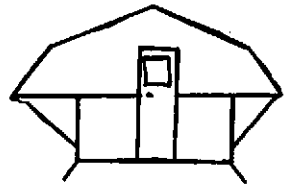
Social interaction was defined as the acknowledgment of someone outside one's own camping party via conversation. Two interaction matrices were developed to measure the interaction experienced by the respondents. The matrices measured with whom the campers interacted and during which activities interaction took place.

The *descriptive characteristics* provided a general profile of the respondents. The 14 specific variables were concerned with social status, family life-cycle, camper origin, and camping patterns.

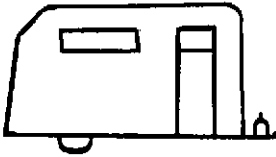
The *camping styles* were defined by the type of accommodations that the participants used while at the Big Meadows Campground. Classification of camping styles closely paralleled LaPage (1973): i.e., tent, tent-trailer or fold-out, truck-trailer or pick-up, travel-trailer, van-conversion, and motor-home (Fig. 1).



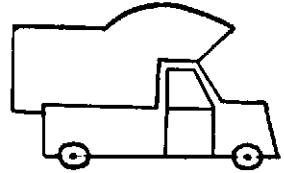
A. TENT



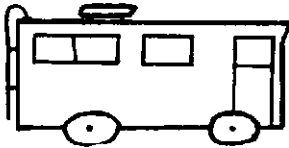
B. FOLD-OUT OR TENT-TRAILER



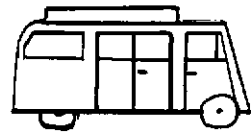
C. TRAVEL-TRAILER



D. PICK-UP OR TRUCK-TRAILER



E. MOTOR-HOME



F. VAN-CONVERSION

Fig. 1. Pictorial of camping styles.

### Delimitations

The study was delimited to the Big Meadows Campground and to those participating camping parties between 7 August and 10 September 1974. It was concerned primarily with social interaction in a family campground, and was restricted to verbal interaction as reported by means of a questionnaire.

### Limitations

The inherent design of the campground and the national park may influence the amount and level of social interaction. The format of the questionnaire did not permit respondents to indicate if they participated in an activity more than once. In conjunction, the questionnaire did not permit respondents to indicate whether they had time to participate in any activity.





## 2 Review of Literature

The 1950s and 1960s provided a proliferation of socioeconomic and demographic data concerning campers and other participants in outdoor recreation. However, since the late 1960s, and particularly in the 1970s, researchers have been exploring the dimensions of human behavior implicit in involvement in outdoor recreation.

### *Camper Characteristics*

Due to the numerous studies completed which described campers and outdoor users, research findings of the 1950s through the mid-1960s are here briefly identified and highlighted. The most recent investigations are described in more detail.

Dahle (1956) reported that small family groups of four to five people dominated the camping population. Pike (1956) found that the mean size of the camping party was 4.1 persons, with an average of 1.7 children per party, and with 90% using a tent and camping an average of 2.3 days. The Ohio Department of Natural Resources (1958) reported that groups using park facilities averaged four members. Stone and Taves (1958) found that wilderness users were from urban areas and were primarily of high occupational and educational status.

Fine and Werner (1960) concluded that campers were, on the average: families; living in the suburbs; under 45 years of age; tent users; white; and having one or more years of college. Bultena and Taves (1960) found that 83% of the campers were families who stayed three nights or less, and that 37% of the heads of the camping parties were in professional or managerial occupations. In another study, Bultena et al. (1960:4-27) reported similar results with nearly 60% of the camping parties in family groups; one out of every three campers 47-years-old or over; and 48% of all the campers 17 years or older having some college education. Hutchins and Trecker (1961) reported that incomes were greater for campers than for other park users, except those occupying cottages.

The Outdoor Recreation Resources Review Commission (ORRRC 1962a), in a nationwide survey, found striking regional differences among groups of campers, with participation increasing up to the 35- to 44-year-old age group and thereafter decreasing, as well as participation increasing up to the \$10,000 income group and thereafter decreasing. The Michigan House of Representatives' Interim Committee on State Parks and Public Lands (1962) found camping parties averaged 4.6

persons and 2.2 children, most using tents. Sixty percent of the participants indicated that they would not camp in parks without swimming facilities.

Wagar (1963b) reported that campers traveled farther to parks than other park users, and that a significantly higher proportion of campers were in professional occupations than any other classification. *Better Camping* (1964) found camping parties averaged 4.3 persons, including an average of 2.3 children, and that 66% of the main wage-earners were in skilled work or a profession.

McCurdy and Mischo (1965) used a questionnaire to collect data from 666 private campground users in Ohio. Ninety percent of the campers lived in an urban area, a greater percentage than normally found in Ohio. Campers were primarily from the middle and upper-middle classes, with an average income higher than that of the average Ohio resident. Most camped as a family; the parents were in the 25- to 44-year-old range and the majority had at least a high school education.

Burch and Wenger (1967) found that the place of residence had an impact on camper participation; that is, people from an urban environment were more inclined to use easy-access-type campgrounds. Thirty-one percent of the male campers had some college education; the 30- to 44-age range was the most prevalent. Sixty-nine percent of the campers had incomes between \$6,000 and \$15,000.

Thelen (1968) investigated characteristics of weekend campground users in relation to campground size at 24 Pennsylvania state park campgrounds. He found that nearly two-thirds of the camping parties were residents of the Commonwealth, and that over one-half (56%) traveled less than 100 miles to the campground. Nearly equal percentages of campers were weekend (49%) and vacation (48%) campers. Most campers were between the ages of 34 and 44. The most popular activities included swimming, relaxation, hiking, nature study, and fishing.

Shafer and Meitz (1969) conducted a wilderness-user study and reported that 70% of the users were professional, white-collar workers or students and that more than 50% had incomes over \$10,000. Seventy-seven percent of the respondents were male. One-half of the respondents had hiked for 11 years or more, while 84% had traveled between 100 and 500 miles to the area. The most common number of hikers in parties interviewed was two, with a mean size of approximately three. Also, Shafer and Meitz found that 50% of the users were under 29 years old. All the respondents felt that emotional and aesthetic experiences were the most important wilderness-recreation values.

Owens (1970) characterized campers as white, 26 years old, having more than 12 years of education, and a family income of \$8,086. In addition, it was found that people active in civic affairs were more apt to be active in outdoor recreation with an average of 12 vacation days per year.

Buxton and Delphendahl (1970) found that 53% of the respondents had completed 1 year of college and 37% were college graduates. Only 5% had less than a high school education. The study also indicated a low participation rate among 13- to 24-year-olds, and that 20% of the campers were under the age of 12.

In a national survey the Midwest Research Institute (McKelvey 1973) constructed a camper profile of tent and trailer campers. Most campers were urban residents; 56% of the tent campers and 46% of the trailer campers lived in a metropolitan area. The predominant age was between 35 and 44 years and over 40% had at least a high school education. The survey found that over 70% of the campers also were home owners. Tenters drew more heavily from the professional occupations than trailer campers, while the trailer campers drew more heavily from the craftsmen and foremen occupational classes.

The Pennsylvania Council of Churches (Park Ministry Study 1974) conducted a survey of 16 state parks during the summer of 1973, in conjunction with Kauffman (1974) who surveyed 33 private campgrounds in Pennsylvania. In comparing data it was found that the private campground users (50%) were suburban and urban residents, as opposed to state park users who were from rural areas. Kauffman found the predominant age of the adult male to be in the 36- to 50-year-old category, while the Park Ministry Study had a higher proportion of young adult males (15% compared to 6%). In both studies over 80% of the adult males had at least a high school education; however, in the private campground study there was a higher percentage of respondents with some college education. In addition, over 95% of campground users in both studies had children in the camping party, with the largest number of children in the primary grades. The Park Ministry Study (1974) found 62% of the respondents to be weekend campers (2-3 nights), while Kauffman found 50% of the respondents camping 2 or 3 nights. Conversely, both studies found that transient campers were the least frequent visitors.

### *Activity Patterns*

The ORRRC (1962b) reported that 83% of the campgrounds surveyed did provide swimming facilities, 79% picnicking resources, 71% fishing, 69% boating, and 33% hunting. From the same report, 20% of the campground owners surveyed indicated that swimming was the most popular activity, followed by fishing (19%), boating (11%), and picnicking (8%). Shafer (1965, 1968) and McCurdy and Mischon (1965) found that most campers were willing to travel up to 10 miles from the campground to go swimming.

The Bureau of Outdoor Recreation (1967), as a continuation of the 1962 study, indicated that the most popular recreational activities for general outdoor users included walking, swimming, driving, playing outdoor games and sports, and bicycling. Fishing ranked eighth, while boating, nature walks, and camping ranked tenth, eleventh, and twelfth, respectively.

In a national survey of 24,000 households having one or more members 9 years or older, the Bureau of Outdoor Recreation (1972) estimated the frequency of household participation in outdoor activities. Using the same categories as in the 1962 and 1967 studies, they found that swimming, picnicking, playing outdoor

sports and games, and walking were the four most popular activities. Also, household participation in fishing, boating, camping, and nature walks ranked sixth, seventh, ninth, and tenth, respectively.

King (1966) found that campers do not spend very much time in any one activity other than relaxation. He found that relaxation in the form of reading, listening to the radio, playing with children, and playing cards was the most popular, time-consuming activity (67% of all time spent participating in activities). King noted that the relative time spent in an activity is not a valid means to measure importance or satisfaction because different activities serve different purposes and use varying amounts of time and exertion. Most of the camper's time is spent in and around the campsite and the immediate environment is of considerable importance. Significantly, King found no one activity was engaged in by a majority of the campers, thus illustrating that campers need diverse facilities.

Green and Wadsworth (1966) found that for 29% of the campers, being in the out-of-doors was the most desirable aspect of camping. Lime (1969) found that in 63 auto campgrounds the location of natural and man-made environments influenced over 65% of the variation in intensity of use (percent occupancy). In a survey of 106 private campgrounds belonging to the Campground Association of Pennsylvania, Cardenuto (1972) found that campground owners identified historic-cultural features as the principal camper attraction, followed by man-made attractions, mountains, and water.

Hendee (1971) studied the changes in campers' interests as age and education increased. He developed a model containing two continuums: the vertical axis was an age continuum, and the horizontal axis was an education continuum. Among younger campers (under 30 years), softball, water skiing, swimming, and canoeing were common activities. As the educational level increased participation in mountain climbing, rappelling, rockhounding, and white-water canoeing also increased. With increased age, less-educated persons preferred the less active group sports and games, sightseeing by car, and relaxation. Better-educated, older people were attracted to such activities as photography, drawing, painting, and nature study.

### *Sociological Implications*

In focusing upon human behavior in a leisure setting, Burdge and Field (1972) concluded three assumptions which should be considered when dealing in outdoor recreation:

1. First is the recognition that involvement by individuals and social groups in outdoor recreation does not arise in a vacuum, but is behavior which is culturally influenced. To understand human behavior in outdoor recreation, attention must be directed toward the cultural similarities and differences of individuals and social groups in a play environment.

2. Second, like society, which is undergoing a continuous process of change, participants and the nature of participation in outdoor recreation is in constant change.
3. Finally, other concepts and theories derived from the study of human behavior do apply when researchers explore emerging behavior patterns such as leisure. While the settings of the action may be different, sociological processes operate and norms appear when social groups form in an outdoor setting.

Cheek (1972:32) found that a cross-section of all social classes go to some parks. He observed that all adults, regardless of age, social class, or education, tend to describe parks and their own behavior in parks in similar terms, and suggests that people in parks share several characteristics:

1. First, the social norm is that going to a park is done with another person.
2. Second, it is part of the normative pattern that only certain categories of persons are eligible to accompany someone, usually relatives and friends.
3. Finally, we noticed that social interaction occurs among strangers and is expected. Such interactions usually occur in the presence of significant others.

The last characteristic is very important in that the traditional anonymity of urban areas does not hold in an outdoor setting. People want to interact; they expect and enjoy it.

Cheek also found that traveling to work and traveling to a park are quite different experiences. People want to travel to work alone 74% of the time, but to a park alone only 10% of the time. Field (1973) also observed that people choose to go to parks with others 96% of the time, and that social groups, consisting of families and/or families and friends, are the prevalent social structures found in campgrounds.

Wohlwill and Carson (1972) found that behavior varies more among settings than among people. Predicting behavior in a given location is more accurate if an individual's characteristics and attitudes toward the environment are known. Actually, an individual may act very differently in one place than in another.

Hendee (1971) pointed out that activities normally pursued by groups are less satisfying to individuals. He felt that this results from being unable to maximize the satisfaction for all those involved.

Field and Wagar (1973) found that outdoor recreation areas attract new visitors each year, yet a large portion of the visitations are repeat visits by regulars. They also found that people visit recreational areas as members of social groups—family groups, friendship groups of the same age, and friendship groups of different ages, and they acknowledge the influence that social groups have upon the perceptions, attitudes, and/or behavior of individual members.

Field and Wagar recognized that visitors expect a relaxed atmosphere at parks and other outdoor leisure settings. Outdoor settings are places where informality prevails and group members are free to interact. The authors noted that the characteristics of informality and freedom to interact with "strangers" may be unique to leisure settings and should be encouraged.

The ORRRC survey (1962a) asked campers in what type of situation they preferred to camp. Thirty-one percent indicated a preference to camp "far away from other people," 25% preferred "a few campers around," and 25% preferred "a place where you can visit and talk with campers."

Another ORRRC survey (1962b) was concerned with user satisfaction in 24 recreational areas in federal, state, and county facilities. Eleven thousand park users responded to a questionnaire, with approximately 30% identifying themselves as campers; approximately 12% of the camping groups were dissatisfied with their camping experiences. Major complaints were "too crowded" (39%), "inadequate facilities" (28%), and "bad weather" (16%). Two to four times as many dissatisfactions were reported at National Park Service campgrounds as at U.S. Forest Service campgrounds. The commission attributed this variation to the different objectives of the campers. Those in the more primitive Forest Service areas tended to rely on their own camping skills and required minimum facilities, while campers in the more highly developed National Park Service campgrounds subordinated the role of camping to primary sightseeing attractions and were more likely to request facilities such as electricity, showers, and good access roads.

Shafer and Burke (1965) conducted personal interviews in four state parks in northeastern Pennsylvania to measure the direction and extent of demand for outdoor recreation facilities. The investigators found that campers differed significantly from noncampers in their preferences for swimming areas, fireplaces, camping facilities, and campsite spacing. With regard to camping space, more than one-half of the campers said they were satisfied if they could camp 50–100 ft from other campers; about one-third indicated a preference, and a willingness to pay a higher fee, for camping 250–400 ft from other campers. The remaining 6–8% wished to camp from 10 to 15 ft from other campers.

Etzkorn (1964) investigated the social characteristics and certain of the recreational values of public-campground users. He found that values in camping tended to be in terms of the camper's relation to the natural-resource base, and that phrases like "getting close to nature" and "escaping from people" have permeated practically all descriptions of the camping experience. Yet ironically, sociability more than outdoor resources provided the main motivation for camping. For many people the appeal of camping lies not in the opportunity to "escape from people," but rather in the opportunity to meet people in an unrestricted setting. Etzkorn found that people benefited from the "social system of the campground" rather than from the natural resources.

An open-ended question by Etzkorn on why campers chose a certain campground revealed that campers are more satisfied when their experiences are familiar and predictable. Thus, Etzkorn concluded that many campers perceive a campground as being familiar, both in the physical sense and in the sense of social relationships.

Three major clusters of camping values were interpolated by Etzkorn. Arranged in relative dominance they are:

1. Rest and Relaxation  
(Getting away from it all, quiet, no telephone)
2. Meeting Congenial People  
(Meeting people, informality, good fellowship, family together)
3. Outdoor Life  
(Outdoor life, fresh air, hiking, boating, fishing, swimming)

Burch and Wenger (1967) and Bultena and Klessig (1969) suggested that campers sought either a primitive and simple style or a comfortable and convenient style. Equating primitive and simple with a wilderness experience, Ade (1973) determined that campers sought either a social or a wilderness experience. Hendee et al. (1968) showed that spartanism is a strong factor in the wilderness for campers in the Pacific Northwest. The research of Burch and Wenger (1967) suggests a strong possibility that campers shift from one camping style to another, and that young to middle-age campers who preferred wilderness camping may, with a change in life cycle, switch to convenience camping.

LaPage (1967a) comparing public and commercial campgrounds in New England, found that most campers are gregarious, socially conscious people. Approximately 11% of those who camp in private areas do so because they enjoy meeting other campers; only half as many public-area visitors claimed the social aspect as their primary motive. However, LaPage noted that the desire to meet and visit other campers is a strong secondary motive for many who go camping. In addition, LaPage found that camping equipment influenced the amount of contact with other campers. The more mobile trailer-camper could see more campgrounds and make contact with more people than the less mobile tent-camper. Moreover, more sophisticated camping equipment attracts the attention of other campers and facilitates socializing in any type of weather.

Clark et al. (1971a) investigated more than 2000 easy-access campers and 260 park managers in Wenatchee and Gifford Pinchot national forests, in Olympic and Mount Rainier national parks, and in Chelan and Birch Bay state parks in Washington. Most easy-access campers reported that getting away from people, teaching children about the out-of-doors, and gaining awareness of unspoiled beauty were important reasons for their camping trip.

Clark et al. (1971b) found that a better grasp of social relations in parks could be helpful to park administrators, inasmuch as the quality of social life is not presently without its problems. Clark et al. made regular observations of "depreciative acts" committed by easy-access campers in a national forest, a national park, and a state park campground. The largest percentage (50%) of depreciative acts were nuisance behavior such as excessive noise and children running through other campers' campsites. Violations of campground rules, traffic regulations, and state laws constituted the second largest category of depreciative acts. Clark and his colleagues suggest that the norm of "noninvolvement" operates in easy-access campgrounds because 80% of the depreciative acts occurred in the presence of others and corrective measures rarely were taken.

Kauffman (1974) investigated the effects of proximity and activity on the sense of community. He found that the selection of a campground is related to distance from home. As the distance from the campground increases, the frequency of visitation decreases. Interaction between camping parties within a campground is related to distance between their campsites; and the frequency of interaction decreases as the distance increases. Kauffman also found that the campers participated in social activities, and that activities at playgrounds and recreation halls, along with swimming and evening campfires, were the best facilitators of interaction among camping parties. Kauffman supported the findings that solitude is not a primary reason for all camping experience.



### 3

## Methods and Procedures

The procedural methodology used in this study of the relationships between and among campers is discussed below. The methodology is divided into four sections: selection of subjects; instrumentation; collection of data; and treatment of data.

### *Selection of Subjects*

The subjects for this study were overnight visitors to Big Meadows Campground from 7 August through 10 September 1974. The member of the camping party who signed the campground register received a questionnaire from a park ranger and was asked to respond before leaving the campground.

### *Instrumentation*

In order to accomplish the objectives of this study, it was necessary to develop an instrument capable of determining the degree of social interaction, the activities in which campers participated, and the user's socioeconomic and demographic characteristics. A review of related literature and analysis of possible instruments indicated that a questionnaire was the most effective means of measurement. The questionnaire contained a cover letter and three basic sections: people-interaction matrix; activity-interaction matrix; and the descriptive variables.

These sections are preceded by one concerned with the social-interaction hierarchy used in the two matrices.

#### **Social-interaction hierarchy**

During the initial stages of the study, the primary thrust was to define social interaction and to develop a means of measurement. An environment sociologist, Dr. Craig R. Humphrey, Associate Professor of Sociology at The Pennsylvania State University, assisted in defining social interaction and in developing a technique for measuring it. Social interaction is defined and measured based upon verbal communication; i.e., the acknowledgment of someone outside one's own camping party via conversation.

Measurement in this study involved not only the simple frequency of interactions, but also the level or degree of social interaction. Levels of interaction were developed and arranged in a theoretical hierarchy. The underlying rationale for the

creation and arrangement of the original four categories of interaction is the decreasing impersonalization and the probable increasing duration of interaction. The hierarchy does not have a rigid sequential structure.

The first level of social interaction is "Had passing conversation." The use of the word "conversation" is an attempt to eliminate such casual greetings as "hello," "good morning," and "thank you" from being considered social interaction. This level is perceived as being the most impersonal and the most temporal.

The second level in the ordinal hierarchy is based on the fact that many people come from many parts of the country to visit national parks. A very prevalent question among visitors concerns home origins; thus, the second category is "Learned the city or state of residence." This level is perceived to be less impersonal and to necessitate a longer duration of interaction than the category "Had passing conversation."

The third level, "Learned the first or last name," is perceived as being even less impersonal and to necessitate an even longer duration of interaction.

The final level, "Met for a second time," is the peak of the hierarchy in that the two parties previously spent time together and developed a more personal relationship.

Once the categories were developed, two approaches to investigate social interaction were implemented: with whom did social interaction occur; and during which activities did social interaction occur. Investigation of these two aspects necessitated the formation of two matrices: people-interaction matrix and activity-interaction matrix. In both matrices, four categories of interaction were hierarchically positioned from left to right on the horizontal axis. In the people-interaction matrix, the concern of the vertical axis is with whom did social interaction occur; thus, it contains a list of people possibly encountered while camping at Big Meadows Campground. In the activity-interaction matrix, the concern of the vertical axis is during which activities did social interaction occur; thus, it uses a list of activities available at or near Big Meadows Campground. See Appendix A for the pilot instrument.

### **People-interaction matrix**

The primary concern of the first matrix in the instrument is with whom the respondents interacted while camping at Big Meadows Campground. With the categories of interaction positioned on the horizontal axis, categories of people-possibly-met were developed and positioned on the vertical axis. The rationale for the creation and arrangement of the categories is based on distance from the respondent's campsite. The respondent's campsite is perceived to be the nucleus and the categories of people interacted with form conceptual concentric rings at varying distances (Fig. 2).

The first category is "Any member of the immediately neighboring campsite." Depending on the location of the campsite, this category may include from one to

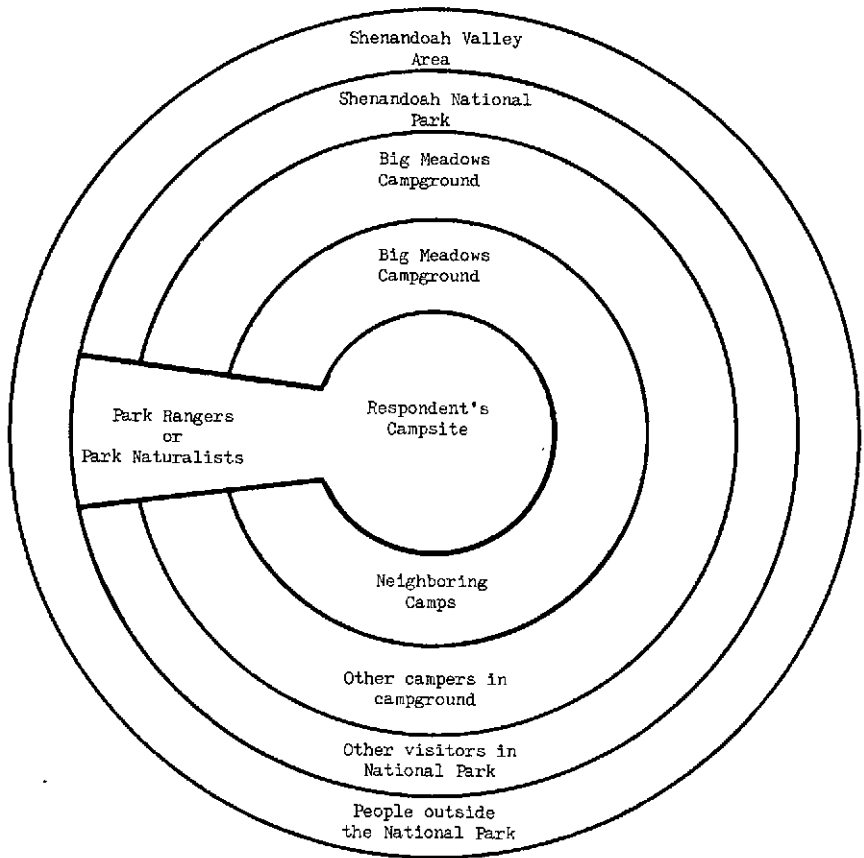


Fig. 2. Conceptualization of "People met" in people-interaction matrix.

four neighboring camping parties. "Other campers in the campground" is the next category, and includes the remaining campers in Big Meadows Campground. Interaction in this category most probably would occur outside of the conceptual concentric ring formed by the neighboring campsites around the nucleus.

"People outside of the national park" is the next category. Its rationale was that not only do people visit the national park but also the Shenandoah Valley, which is noted for its natural and cultural features. It was assumed that many park visitors take day trips to such places outside of the park.

The final category, "park ranger or park naturalist," deviated from the underlying rationale in the development of the categories in that there is no distance factor involved in this category. Its rationale is based on the fact that National Park Service personnel have considerable public interaction due to their administrative and interpretive roles.

### **Activity-interaction matrix**

This matrix had a dual purpose. The question was structured to determine the levels of social interaction experienced during an activity and the frequency of participation in each activity. The format did not permit the respondent to indicate if an activity was participated in more than once. In essence, the function of the matrix was to determine the social nature of the activities.

The categories of interaction were slightly altered in the second matrix. A new category, "No interaction during activity," was developed which would permit the respondent to indicate participation in an activity, even if no interaction was experienced. With the addition of this new category to the already complex question, the fourth social-interaction category previously described was eliminated. The following social-interaction categories appear from left to right on the activity-interaction matrix: No interaction during activity; Passing conversation; Learned the city or state of residence; and Learned the first or last name. It is possible that both the no-interaction category and an interaction category are experienced due to the fact that many activities may be participated in several times. One participation in an activity may result in interaction, while another participation may not. If such were the case, one frequency alternately was added to participation with interaction and one frequency to participation without interaction.

The activities on the vertical axis of the matrix were chosen based upon the Bureau of Outdoor Recreation (1967) listing of the most popular summertime, outdoor, recreational activities. Relevancy to Big Meadows Campground and the peripheral areas also was considered. Twenty-two activities were placed on the vertical axis, and the respondents were asked to indicate (check) those categories of interaction experienced while participating in activity with people outside of their own camping party.

### **Descriptive characteristics**

The purpose of the third section of the questionnaire was to provide a profile of the respondents. The selection of the variables and the structure of the questions paralleled studies with similar research designs, adding the variables that were directly relevant to the amount of social interaction experienced and the activities participated in while camping at Big Meadows Campground. The variables included: income, education, occupation, marital status, number of children, life stage, age, residence, length of stay, campsite location, and camping style.

The questions concerning income, education, family life-cycle, and camping styles were categorically structured and paralleled closely with LaPage (1973). Respondents were asked to check the category which identified them. The other variables were obtained through responses to open-ended questions: occupation, age, residence, length of stay, and campsite location. Subsequently, responses to the open-ended occupation question were categorized based upon the U. S. Department of Labor (1968) job classification. Residence of the respondents was

categorized by region and compared to the travel patterns of those reported in the Shenandoah National Park Tourist Study (1952).

### **Pilot test and revisions**

The pilot instrument (Appendix A) was administered by the investigator at Big Meadows Campground in Shenandoah National Park, during the weekend of 4–6 July 1974. Sixteen camping parties were chosen based upon the varying camping styles and age classes present. From the 16 campsites, 25 people volunteered to respond. Two and three people per campsite were permitted to respond independently of each other. The 25 individuals in the 16 campsites were observed while they answered the questionnaire, and any problem areas were noted. Since anonymity was not provided and a factor of convenience was involved, the respondents were instructed not to feel compelled to answer any particular question. When they did not answer, they were asked to verbally indicate that they understood the question. In addition, Mr. Robert Jacobsen, Park Superintendent, was consulted concerning the content and format of the instrument.

The pilot test served the usual purpose of testing for clarity of the questions and instructions, as well as for the general practicality and effectiveness of the format. Analysis of the pilot study resulted in several minor modifications in the instrument.

First, the wording of the cover letter was altered so that it would clearly identify the sponsor of the study. Second, the category "Any other visitor in the national park" was added to the list of categories of people-possibly-met in the social-interaction matrix. This category was inserted between the second and third categories, forming a third conceptual concentric ring around the respondent's campsite. Third, words were changed and instructions added in several instances for clarification purposes. The "No interaction during activity" category in the activity matrix was changed to "Participation, but no interaction." Fourth, Jacobsen suggested the addition and deletion of several activities listed in the pilot study. And fifth, several descriptive questions were added concerning the camping party composition and size of community. See Appendix B for the final instrument.

### *Collection of Data*

The collection of data began on the morning of 7 August 1974, and continued till the afternoon of 10 September 1974. The park rangers distributed a questionnaire to every individual who signed the campground register at Big Meadows Campground. Instructions in the cover letter made the questionnaire self-explanatory and allowed the respondent to return the instrument to either the registration office, to any park ranger, or via mail.

A memorandum was sent from the park headquarters to all park rangers and park naturalists working in the Big Meadows district describing the nature of the study

and the administrative instructions (Appendix B). The park naturalists were requested to remind the public to return the questionnaire prior to leaving. In addition, a 14- × 30-inch wooden sign, which read "Please Return Questionnaire," was placed on the campground registration office door, plainly visible to all incoming and outgoing traffic.

### *Treatment of Data*

This section is divided into two aspects. The first relates to preparation of the data and the second to the analysis of the data. Prior to tabulation and analysis, several assumptions and data clusterings were established.

#### **Preparation of the data**

Three assumptions were made concerning how the respondents answered. First, if two camping styles were checked, the style with the highest cost was assumed to be the principal camping style. Second, if any category of interaction was checked to the right of the category "Had passing conversation," then the latter was assumed to be checked. This assumption held true for both the matrix questions. And third, it was assumed that the respondents had the time and opportunity to interact with those people listed in the people-interaction matrix.

In several instances, data were clustered to facilitate further analysis. All the combinations of answers in the people-interaction matrix were clustered into a low-, medium-, or high-interaction category. Low interaction applied only if "Had passing conversation" was checked. Medium interaction meant any combination of two of the four categories. High interaction meant any combination of three categories or all four categories checked. No checks in the columns was assumed to mean no interaction.

All the combinations of answers in the activity-interaction matrix also were clustered into three, slightly different groupings: no-, low-, and high-interaction. No interaction applied if only "Participation, but no interaction" was checked; low interaction, if only "Had passing conversation" was checked. High interaction was the combination of the latter in conjunction with any category to the right of "Had passing conversation" (Appendix B). It should be noted that the two high-interaction categories differed in rationale. See preceding discussion.

The number of children indicated by the respondents was clustered for analysis. All respondents with more than four children were combined into a category labeled "Four or more children." Another clustering involved the number of people indicated in each of the camping-party composition questions. Of primary importance was the presence of at least one individual in a category, particularly the preschool through senior-high categories. The specific number in each category was disregarded and replaced by the number one if there were people in the camping party from that age group.

Based on a review of literature which showed considerable homogeneity among the variables of income, education, and occupation, data were clustered into a social-status index (SSI) (Spaulding 1973). The SSI involved clustering the answers to the variables of income, education, and occupation into three sections designated low, middle, and high. These were weighted one, two, and three, respectively, and are shown below:

Weight	Income	Education	Occupation
1	Less than \$10,000	Less than 12 years	Operatives, laborers, other
2	\$10,000–\$20,000	H.S. grad., some college	Sales, clerical, craftsmen, service workers
3	Over \$20,000	College grad., post-college work	Professional managers

For each respondent, the weights for the variables were added and divided by three to obtain the mean. The mean was then multiplied by 100 and the respondent placed in an SSI category. Index intervals for the categories were: low, 100–167; middle, 167–234; high, 234–300. If a participant did not answer one or more of the three variables, a SSI value was not computed.

Due to low frequencies, over one-half of the activities were not included in the activity pattern–descriptive variable analysis. Because of the comparatively large, natural break in the participation frequencies occurring between guided nature walks (141) and Luray Caverns (102), this was chosen as the analysis–inclusion point; thus, only 13 activities whose frequency was greater than 140 participations were included. However, “reading” was eliminated because over 95% of its participants had no interaction during this activity. In addition, any cell in the matrix of activities and interactions whose total was less than 11 was considered to have too few frequencies for valid analysis and was not included in the analysis.

Respondents’ length of stay ranged from 1 to 14 nights; thus, length of stay was divided into the categories of transient, weekend, or vacation. Transients were 1-night campers, weekenders camped for 2 or 3 nights, and vacationers camped 4 or more nights.

### Analysis of data

The treatment of the data is divided into four sections: descriptive characteristics; activity patterns; social interaction; and camping styles. The first analysis involves using descriptive statistics to develop general profiles of each section. The second analysis involves using a Chi-square test for independence to examine the relationships in the latter three sections. Activity patterns and social-interaction levels are related to the descriptive characteristics. The camping styles are compared in relation to the descriptive characteristics, activity patterns, and social interaction.

All testing for significance was based on a 0.05 level as the minimal level for accepting the null hypothesis. Statistical analysis was performed on the IBM 370 Model 168 computer at The Pennsylvania State University Computation Center.



## 4

# Analysis of Data

This chapter is sectioned into four parts: descriptive characteristics; activity patterns; social interaction; and camping styles. Each of these parts is further divided to examine social status, family life-cycle, camper origin, and camping patterns. The findings of each section are compared with pertinent research previously reviewed in chapter 2.

### *Descriptive Characteristics*

This section provides profiles of the responding campers in terms of their social status, family life-cycle, residence, and camping patterns. These profiles establish the characteristics of Big Meadows Campground users.

#### **Social status**

The profile of social status indicated that nearly one-half (47.6%) of the responding campers at Big Meadows Campground were in the "upper class" on the SSI. Approximately one-third (35.0%) of the respondents were in the "middle class," and the remainder (17.5%) were in the "lower class." In a comparison between U.S. Department of Commerce (1970) data and that of the respondents involving the income component of the SSI, it was found that the high-income brackets were overrepresented while the lowest-income bracket (\$7,500 or less) was considerably underrepresented. See Appendix C, Tables 16 and 17 for detailed data concerning the components of the SSI. The large majority of studies support the fact that campers are in the upper socioeconomic brackets, as is the case in this study. Investigations supportive of these findings include Stone and Taves (1958), Bultena and Taves (1960), Wagar (1963a), *Better Camping* (1964), Burch and Wenger (1967), Owens (1970), and Buxton and Delphendahl (1970).

#### **Family life-cycle**

The vast majority (81.6%) of respondents were married and an additional 4.5% of the respondents indicated "other." The remaining respondents (13.9%) were single. Approximately one out of every four respondents who indicated married or other had no children, with 44.6% of the remaining married or other respondents having three or more children. Nine out of every ten respondents who had children had at least one child still living at home, with over one-half of these respondents still having children under 10 years of age (Table 1). The large

TABLE 1. User profile of family life-cycle.

Characteristic	Frequency <sup>a</sup>	Percentage
Marital status (N=359)		
Single	50	13.9
Married	293	81.6
Other <sup>b</sup>	16	4.5
Number of children (N=309)		
None	75	24.3
One child	32	10.4
Two children	64	20.7
Three children	66	21.4
Four or more children	72	23.2
Life stage (N=253) <sup>c</sup>		
All children under 10 years	61	24.1
Some children under 10 years	77	30.4
All children over 10 years, living at home	51	20.2
All children over 10 years, some living at home	41	16.2
All children away from home	23	9.1
Camping party composition (N=361)		
Preschool children	68	18.8
Primary grade children	142	39.3
Junior high children	103	28.5
Senior high children	83	23.0
18-24 years old	104	28.8
25-44 years old	234	64.8
45-64 years old	92	25.5
65 years and over	12	3.3

<sup>a</sup>Number of respondents.<sup>b</sup>Due to low frequency, no further analysis was done.<sup>c</sup>Nineteen respondents indicated having children in a life-stage category without indicating how many children they had.

majority of studies are supportive of the finding that camping is a family-oriented activity, with the greatest attraction for young families. Dahle (1956), Pike (1956), Bultena and Taves (1960), Bultena et al. (1960), Michigan House of Representatives (1962), *Better Camping* (1964), McCurdy and Mischon (1965), Owens (1970), Buxton and Delphendahl (1970), Field and Wager (1973), Park Ministry Study (1974), and Kauffman (1974) had similar findings.

Approximately 65% of the camping parties had at least one member in the 25- to 44-age bracket, and approximately 40% had at least one member in the primary grades. The trend appeared to be that participation increases from preschool age through the primary grades, then declines through the junior- and senior-high

school age bracket and remains low until the early twenties. At this age, the greatest influx into camping begins and continues through to the mid-forties, when participation declines sharply. Less than 5% of the camping parties had a member 65 years or older. See Table 1 for a profile of the camping party composition. These findings are similar to Bultena and Taves (1960), ORRRC (1962b), McCurdy and Mischon (1965), Thelen (1968), Buxton and Delphendahl (1970), McKelvey (1973), and Kauffman (1974).

Both the mean and median age of the main wage earners was 38 years. The range of ages was 17 through 73 years, while the modal age was 41 years (Appendix C, Table 18). Fine and Werner (1960), ORRRC (1962b), McCurdy and Mischon (1965), Burch and Wenger (1967), Thelen (1968), McKelvey (1973), Park Ministry Study (1974), and Kauffman (1974) support the distribution of ages listed in Table 18. LaPage (1973) found the predominant age group to be 18–29 years.

### **Camper origin**

A comparison with the Shenandoah National Park Tourist Study (1952) showed no significant shift in the origin of the visitors, although the data indicated more local visitation. The Middle Atlantic Region and the South Atlantic (North) Region comprised 66.1% and 72.0% in 1952 and 1974, respectively. Less than 5% of the respondents in 1952 and less than 2% of the respondents in 1974 resided west of the Mississippi River (see Fig. 2 for 1974 regional distribution). A total of 29 states, along with Australia, Canada, and Puerto Rico were represented at Big Meadows Campground. See Appendix C, Table 19 for the percentage of respondents from each state and country in 1952 and 1974.

In comparing the Census Bureau's (U. S. Department of Commerce 1970) data to that of the responding campers, the four larger sizes of communities were all overrepresented, while the smallest community size (under 2500 population) was considerably underrepresented by campers at Big Meadows Campground. The comparison was made in regard to the 10 states which represented 85.4% of the respondents (Table 2).

LaPage (1973), McKelvey (1973), Park Ministry Study (1974), and Kauffman (1974) found similar results, with over one-half of the camping parties originating from urban or metropolitan areas. McCurdy and Mischon (1965) found that over 90.0% of the respondents in his Ohio survey lived in urban areas.

### **Camping patterns**

Approximately one out of every four respondents camped 1 night (23.6%), while approximately one out of every three respondents camped for 3 or 4 nights (34.0%). The largest percentage (42.4%) of respondents camped for 2 or 3 nights at Big Meadows Campground (Table 3). It should be noted that of the 34.0% of respondents who stayed for 4 or more nights, only 23 camping parties (6.8%) stayed longer than 7 nights, while only 3 camping parties stayed the full 14 nights permissible by the National Park Service. See Appendix C, Table 20 for data

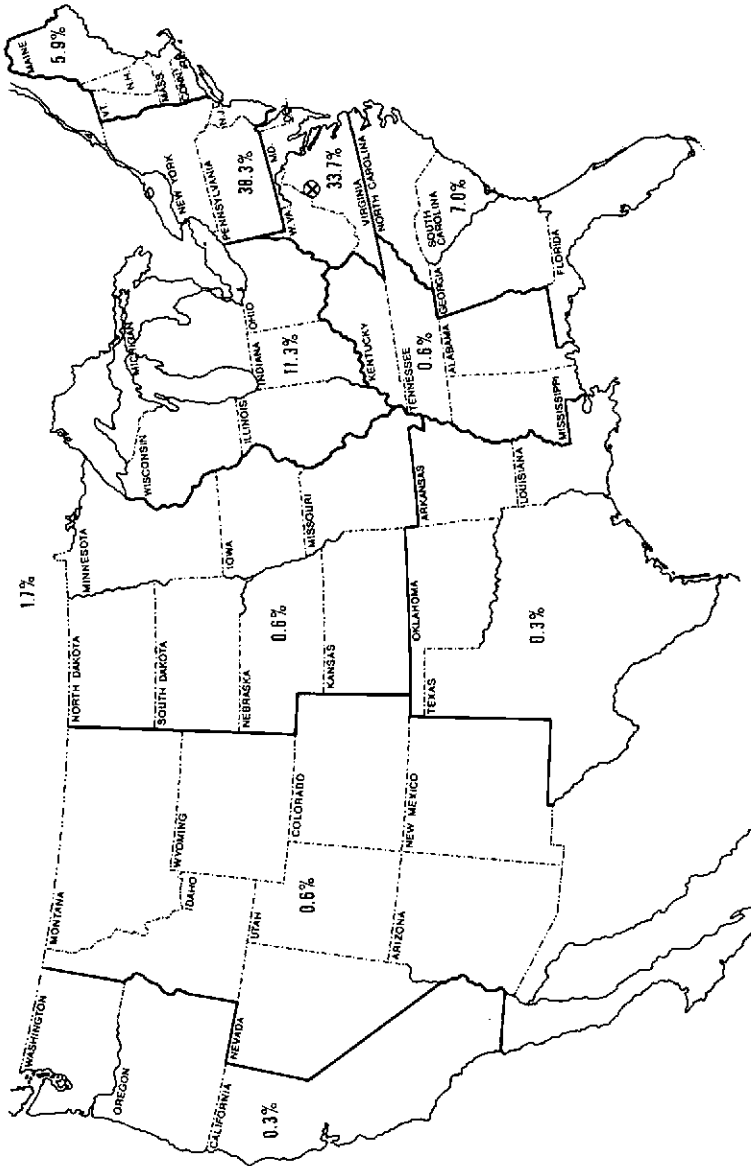


Fig. 3. Percentage distribution of campers by regions. The States of Hawaii and Alaska were not represented in the 1974 study. The regions used were established by the National Park Service. Approximate location of Shenandoah National Park is shown by ⊗. See Appendix C for percentage distribution of campers by states.

TABLE 2. Percentage distribution of campers by size of community.

Sizes of communities (population)	Respondents' distribution (N=352)		U.S. Census distribution <sup>a</sup> %
	N	%	
Under 2,500	24	6.8	40.2
2,500 – 14,999	77	21.9	13.8
15,000 – 49,999	88	25.0	14.9
50,000 – 249,999	75	21.3	15.4
250,000 and over	88	25.0	15.6

<sup>a</sup>The Census Bureau (U.S. Department of Commerce 1970) distribution represented the 10 states from which 85.4% of the respondents resided. The states included Virginia, Ohio, Pennsylvania, New York, New Jersey, Florida, Maryland, Massachusetts, Delaware, and North Carolina.

support. Most related studies supported the fact that the average length of stay of camping parties is 2–3 nights, ostensibly a weekend. Pike (1956), Bultena and Taves (1960), Thelen (1968), Park Ministry Study (1974), and Kauffman (1974) agree that campers predominately camp 2 or 3 nights.

TABLE 3. User profile of camping patterns.

Characteristic	Frequency N	Percentage %
Camping styles (N=357)		
Tent	177	49.6
Fold-out or tent-trailer <sup>a</sup>	95	26.6
Pick-up or truck-trailer	16	4.5
Travel-trailer	36	10.1
Motor-home	15	4.2
Van-conversion	15	4.2
Other <sup>b</sup>	3	0.8
Length of stay (N=339) <sup>c</sup>		
Transient (1 night)	80	23.6
Weekender (2–3 nights)	144	42.4
Vacationer (4 or more nights)	115	34.0
Park visitation (N=355)		
First visit	187	53.0
Returnee	168	47.0

<sup>a</sup>Fold-out or tent-trailer will be referred to as tent-trailer.

<sup>b</sup>This category includes a station wagon, and two respondents indicating "under the stars."

<sup>c</sup>See Appendix C, Table 18 for detailed information on length of stay by number of nights.

Approximately one out of every two respondents (47%) indicated having visited Shenandoah National Park previously (Table 3). Very few related studies had data of this nature. The fact that approximately one-half of the visitors were "repeaters" did parallel the findings of Field and Wager (1973) and Etzkorn (1964).

The profile of camping styles used by the respondents revealed that tents, tent-trailers or fold-outs, or travel-trailers were used by 86.3% of the respondents. Approximately 50% of the respondents were tent users (see Table 3 for the profile). These findings appear to deviate from the trend in camping as evidenced in other studies. Fine and Werner (1960) and Michigan House of Representatives (1962) were in agreement. Conversely, the Park Ministry Study (1974) found that tents were decreasing in use and being replaced by travel-trailers. Both the Park Ministry Study (1974) and Kauffman (1974) found that fewer than one-third of the people used tents.

Only three responding camping parties considered their mode of camping as their permanent residence. This number equates to less than 1%; thus, no further analysis was done involving this variable. There were no comparative studies.

### *Activity Patterns*

This section primarily concerns activity participation, with an activity profile being developed and discussed. In addition, the descriptive characteristics of the users are considered in relation to the activities in which they participated. Length of stay was the only descriptive characteristic to significantly influence activity patterns. Details of each variable follow with the support tables in Appendix D.

#### **Activity profile**

Seven of the 27 listed activities were participated in by the majority of the respondents, although two of the activities, campstore and camp chores, have questionable leisure status. Approximately two-thirds of the respondents participated in the five most frequented activities: hiking, leisure walking through campground, park visitor center, campstore, and evening campfire talks. Percentage of participation in these activities was within 8.0%, ranging from 64.0 to 71.5% participation. The remaining two activities with over 50% of the respondents participating were camp chores (58.2%) and driving for pleasure (52.4%) (Table 4).

The next seven activities, which are below 50% participation, vary from each other by less than 6.0%, ranging from 39.1 to 44.9% participation. The activities included basking, reading, visitors to your campsite, visiting another's campsite, photography, interpretive trails, and guided nature walks.

The five least participated-in activities were frequented less than 15 times. The activities were television, rockhounding, swimming, fishing, and canoeing. The unavailability of such activities may be the reason for the low participation.

TABLE 4. Percentage distribution of activity participation and activity interaction.

Activity	Participation (N=361)		Level of interaction		
	N	%	None	Low	High
Hiking	258	71.5	27.1	40.3	32.6
Leisure walking through campground	251	69.5	35.1	38.6	26.3
Park visitor center	240	66.5	60.8	28.3	10.8
Campstore	237	65.7	68.4	25.7	5.9
Evening campfire talks	231	64.0	44.9	30.7	24.7
Camp chores	210	58.2	76.7	14.3	9.0
Driving for pleasure	189	52.4	86.2	4.8	9.0
Basking	162	44.9	59.9	22.8	17.3
Reading	157	43.5	95.5	1.9	2.5
Visitors to your campsite	157	43.5	10.8 <sup>a</sup>	21.0	68.2
Visit another's campsite	149	41.3	13.4 <sup>a</sup>	15.4	71.1
Photography	143	39.6	67.8	20.3	11.9
Interpretive trails	142	39.3	42.3	39.4	18.3
Guided nature walks	141	39.1	30.5	39.0	30.5
Visit Luray Caverns	102	28.3	65.7	29.4	4.9
Playing cards	92	25.5	83.7	3.3	13.0
Restaurant	92	25.5	62.0	30.4	7.6
Picnic	84	23.3	75.0	10.7	14.3
Historical sites	82	22.7	68.3	20.7	11.0
Horseback riding	77	21.3	32.5	41.6	26.0
Informal sports and games	63	17.5	42.9	20.6	36.5
Bicycling	44	12.2	72.7	11.4	15.9
Television	14 <sup>b</sup>	3.9	92.9	—	7.1
Rockhounding	14 <sup>b</sup>	3.9	85.7	7.1	7.1
Swimming	11 <sup>b</sup>	3.0	63.6	27.3	9.1
Fishing	9 <sup>b</sup>	2.5	66.7	—	33.3
Canoeing	3 <sup>b</sup>	0.3	33.3	33.3	33.3

<sup>a</sup>These percentages appear to indicate respondents had problems understanding the question.

<sup>b</sup>Due to the low frequency, the activity was excluded from further analysis.

It should be noted that the activity frequencies in Table 4 do not necessarily reflect the total family activity pattern while at Big Meadows Campground. Theoretically, the activity pattern is of one adult member of the particular camping party, which may or may not reflect the activity of its other members.

### Social-status index

While there was no significant difference among the three social-status classes in the activities participated in, the high social-status respondents were overrepresented in most activities, yet the preferred activities differed little among the SSI categories. By comparing the percentages of respondents in each social-status

class to the percentage of each social-status class participating in each activity, the data revealed that high social-status respondents were overrepresented in 18 out of 22 activities, while the low social-status respondents were underrepresented in 18 out of 22 activities (Appendix D, Table 21).

While the percentage of participation differed, the relative rank order of activities participated in among the social-status classes was quite similar. All three classes participated most in hiking, park visitor center, leisure walking through the campground, and evening campfire talks. Six activities were participated in by more than 50% of the low-SSI respondents, and seven activities were participated in by more than 50% of the middle- and high-SSI respondents (Appendix D, Table 22).

### **Family life-cycle**

While there existed no significant difference between the activity patterns of single and married people, married respondents were overrepresented in 17 of the 22 activities. Over 50% of the married respondents participated in seven activities as opposed to only four activities participated in by over 50% of the single respondents. At least 10% more married respondents participated in reading, park visitor center, camp chores, campstore, hiking, and leisure walking. While married respondents may have participated slightly more, the five most popular activities for single and married respondents were the same. They included hiking, leisure walking, evening campfire talks, campstore, and park visitor center (Appendix D, Tables 23 and 24).

While there was no significant difference in the activities pursued with respect to number of children, those who had three or more children participated slightly more. In 19 of the 22 activities a higher percentage of respondents having three or more children had a higher percentage of participation. Considering the number of activities participated in by at least 50% of each category, "no children" had six activities, "one child" had eight activities, and "two children" had seven activities, while the remaining two categories, "three" and "four or more children," had nine activities having at least a 50% participation. Within each "number of children" category, the first five most-participated-in activities were the same. The five activities were leisure walking through campground, evening campfire talks, park visitor center, hiking, and driving (Appendix D, Tables 25 and 26).

There was no significant difference in the specific activities participated in by five life stages in terms of children. Visiting the park visitor center and leisure walking through the campground were two of the five most popular activities common to each category of life stage. Hiking and evening campfire talks were common to the first four categories of life stage, that is, all stages which had children at home, while reading was popular with respondents who had older children (over 10) or whose children were all away from home. Eight was the mean number of activities with at least 50% participation by each category of life stage.



All of the activities were participated in by some percentage of each life stage, except for horseback riding. Those respondents whose children were away did not horseback ride.

By comparing the total percentage of respondents in each category to the percentage of respondents who participated in each activity, some activities were overrepresented and some activities were dominated by certain life stages. Picnicking, informal sports and games, hiking, visiting Luray Caverns, and visiting another's campsite were overrepresented by the early life stage. Bicycling, leisure walking, evening campfire talks, and the restaurant were overrepresented by the middle life stage, while the later life stage was overrepresented in basking, reading, historical sites, restaurant, and visiting another's campsite (Appendix D, Tables 27 and 28).

The presence of one child in any camping-party composition category, or the combination of any number of children in any combination of categories did not influence the activity pattern. Each category of campground composition had its highest participation in the same five activities, namely, hiking, leisure walking, park visitor center, campstore, and evening campfire talk. And conversely, considering the seven least-participated-in activities of each camping-party composition category, six of the seven activities were common to each category (Appendix D, Tables 29 and 30). It should be noted, however, that due to the structure of the camping-party composition question the categories are not mutually exclusive. Theoretically, the answers could have ranged from the number "one" in one category to a considerably larger number in each category. This analysis is only concerned with the influence the four children categories (preschool, primary grades, junior high, and senior high) had on the activity pattern of the camping party.

### **Camper origin**

The size of community that the respondents were from had no significant influence on activity patterns. The overall percentage distribution of respondents from each population category was directly proportionate to the percentage distribution in relation to each activity. A comparison of the categories of populations by each activity indicated close similarity among the categories. Leisure walking through the campground, hiking, and campstore were three of the five most popular activities common to all the population categories. Evening campfire talks, and park visitor center were two of the five most popular activities common to four of the five population categories (Appendix D, Tables 31 and 32).

### **Camping patterns**

The length of stay of respondents influenced the amount of participation but not what activities were participated in. Vacation-types in 20 of 22 activities had a higher percentage of participation than weekend-types, while both vacation-types

and weekend-types had a higher percentage of participation in all activities than transients.

Based on the five most popular activities for each length-of-stay category, leisure walking through campground, park visitor center, and campstore were common activities. Hiking was common to vacationers and weekenders, while evening campfire talks and driving for pleasure were two of the five most popular activities among transients. Few transients participated in horseback riding, interpretive trails, guided nature walks, bicycling, or reading (Appendix D, Tables 33 and 34).

Analysis of data suggested that returnees may participate more in activities. Fifteen of the 22 activities were participated in by a higher percentage of returnees. Bicycling and the restaurant (lodge) were the only activities with more than 60% of participants who were returnees. In contrast, visiting Luray Caverns was popular (62.8%) with first-time visitors. The largest differences between first- and second-time visitors were increases in the amount of participation by second-time visitors in the relatively passive activities: basking (18.4%), camp chores (16.4%), restaurant (15.2%), leisure walking through the campground (14.1%), visitors to your campsite (13.7%), and reading (12.1%). Visiting Luray Caverns, historical sites, horseback riding, driving for pleasure, and the park visitor center were primarily first-time visitor activities (Appendix D, Tables 35 and 36).

### *Social Interaction*

This section is primarily concerned with social interaction. It first discusses the findings of the people-interaction and activity-interaction matrices, followed by a discussion on the descriptive characteristics in relation to social interaction. There were no descriptive characteristics which significantly influenced the amount or level of social interaction. Details of each variable follow with support tables in Appendix E.

#### **Social-interaction matrices**

A profile of the people-interaction matrix indicates a direct relationship between the level and amount of interaction and the conceptual distance from a respondent's campsite. The greater the distance from the respondent's campsite, the higher the percentage of "no-" and "low interaction", and the lower the percentage of "medium-" and "high interaction." "No-" and "low interaction" increased from 18.8 and 19.1% to 39.1 and 29.4%, respectively. "Medium-" and "high interaction" decreased from 24.7 and 37.4% to 19.4 and 12.2%, respectively. The influence of distance on interaction has been substantiated by Festinger et al. (1950) and Kauffman (1974) (Table 5).

Data in Table 5 indicate that 81.2% of the respondents interacted with members of neighboring campsites and almost the same percentage (78.7%) interacted with

TABLE 5. Percentage distribution of people interaction.

People met	None		Low		Medium		High	
	N	%	N	%	N	%	N	%
Any member of the immediately neighboring campsite.	68	18.8	69	19.1	89	24.7	135	37.4
Any other camper in the campground.	77	21.3	105	29.1	88	24.4	91	25.2
Any other visitors in the national park.	141	39.1	106	29.4	70	19.4	44	12.2
Any people outside of the national park.	258	71.5	63	17.5	23	6.4	17	4.7
Any park rangers or park naturalists.	90	24.9	139	38.5	42	11.6	90	24.9

other campers in Big Meadows Campground. Slightly less (60.9%) respondents interacted with other visitors in the national park. The least impersonal interaction, and the one of longest duration, occurred most often with members of a neighboring campsite.

The fourth category, "Any people outside of the national park," was basically supportive of the trend in the first three categories, but the frequency and percentage in the "no interaction" level may be significantly distorted due to the structure of the matrix. This is so because respondents had neither time nor opportunity to go outside the national park. As mentioned in chapter 3, the assumption of the matrix is that people had time and opportunity to meet those people listed in the matrix, which is particularly questionable for the fourth category of persons (people outside of the park).

Approximately three out of every four respondents experienced interaction with a park ranger or a park naturalist, with approximately one out of every four respondents meeting a park ranger or a park naturalist twice. See Table 5 for the people-interaction matrix profile. It should be noted that this category did not form a conceptual concentric ring around the respondent's campsite; interaction could have occurred anywhere.

The amount of interaction occurring during activities varies greatly. The percentage of people interacting during an activity ranged from 4.5% during reading to 72.9% during hiking. This range excludes the two activities, "Visitors to your campsite" and "Visit another's campsite," where 100.0% interaction had to occur. "No interaction" was mostly experienced during reading, driving for pleasure, or playing cards. "Low interaction," which involved having passing conversation, was experienced most during participation in interpretive trails,

guided nature walks, and leisure walking through the campground. The "high interaction" category, which involved learning a person's name or home origin, was experienced most during participation in informal sports and games, hiking, and guided nature walks. Table 4 indicates the percentage of people who experienced each level of interaction during participation. In ranking the activities (excluding the two activities concerned with visiting campsites) based on the amount of interaction, hiking had the highest percentage of interaction. The programmed activities of the National Park Service (guided nature walks, interpretive trails, evening campfire talks, park visitor center) ranked second, fifth, seventh, and ninth, respectively.

The percentages tabulated for "Visitors to your campsite" and "Visit another's campsite" indicate confusion in responding; that is, 10.8 and 13.4%, respectively, of the participants indicated they had visited with people but did not interact with them. This seems unlikely and indicates the probability that the "no interaction" category is inflated. The amount of interaction may have been greater than the data indicate.

### **Social status**

There was no significant difference in social interaction among the social-status classes related to the people-interaction matrix. A direct relationship was noted between the distance from the respondent's campsite and the total amount of interaction and the amount of each level of interaction. For all three SSI classes, the level of "no interaction" increased with distance and, in conjunction, the level of "high interaction" decreased with distance. This was not necessarily true for the category "Any park ranger or park naturalist," since distance was not relative in this category (Appendix E, Table 38).

### **Family life-cycle**

Married respondents and single respondents did not differ significantly in the people they interacted with. Distance was a direct influence on the total amount of interaction and the amount of interaction at each level (Appendix E, Table 39). While there was no difference between single and married respondents in the amount of interaction with other people, single respondents had a higher percentage of interaction in 9 of the 13 activities, as well as having a higher percentage of "high interaction" in 10 of the 13 activities. The four activities in which married respondents interacted more were interpretive trails, guided nature walks, evening campfire talks, and the park visitor center (Appendix E, Table 40).

The number of children had no effect on social interaction, but distance had a direct influence on the amount of interaction (Appendix E, Table 41). Also, children did not significantly influence the amount of interaction during activities. Childless respondents interacted most in 7 of the 13 activities, and, while hiking, they interacted from 10 to 20% more than respondents with children. Respondents

with three or more children interacted approximately 10% more than other respondents during guided nature walks and interpretive trails (Appendix E, Table 42).

There was no significant difference among the life stages and amount of interaction with people. Distance was a direct influence, with interaction decreasing with distance (Appendix E, Table 43). Also, life stage did not have any significant effect on interaction during activities. No patterns are evident (Appendix E, Table 44).

The composition of the camping party had no effect on interaction. Eight out of every 10 respondents interacted with a member of the neighboring campsite and a park ranger or a park naturalist. Distance had a direct influence on interaction (Appendix E, Table 45). There is no difference among the composition of camping parties in relation to interaction during activities. No patterns are evident (Appendix E, Table 46).

### **Camper origin**

The size of the community from which the respondents came had no effect on the amount of interaction. The influence of distance from the respondent's campsite is the only pattern evident; that is, interaction decreased with distance (Appendix E, Table 47). Also, the size of the community had no effect on the amount of interaction during activities (Appendix E, Table 48). There was no analysis of respondents' states of residence related to social interaction.

### **Camping patterns**

The length of stay had a significant effect on the amount of interaction. Vacationers not only had more total interaction than transients or weekenders, but also had a greater amount of "high interaction" in all five categories of people-possibly-met. While distance from the respondent's campsite influenced interaction, the length of stay neutralized the effect of distance by as much as 35%. (Appendix E, Table 49).

Interaction while participating in leisure walking through the campground was the activity significantly influenced by the length of stay. Although in every activity the amount of "no interaction" was reduced by the shorter length of stay, it should be noted that the results are probably a function of the number of times an activity was participated in, rather than that vacationers are more sociable people (Appendix D, Table 50).

Interaction was not significantly affected by the fact that a respondent was a first- or second-time visitor to Shenandoah National Park. Second-time visitors interacted slightly more (50%) with neighbors, other campers, and park rangers. Interaction was directly influenced by distance; that is, a decrease in interaction with an increase in distance from the respondents' campsite, excluding the park ranger category (Appendix D, Table 51). The fact that a respondent was a first- or second-time visitor to the national park had a significant effect on the interaction at

the park visitor center. There was approximately 5% more "low interaction" and 10% more "high interaction" for second-time respondents. No other patterns were evident (Appendix D, Table 52).

### *Camping Styles*

This section examines the relationship of the three camping-style (tents, tent-trailers, and travel-trailers) user aggregates to the descriptive characteristics, social interaction, and activity patterns. The section is divided into the three areas in which camping styles are compared.

#### **Descriptive characteristics**

The three camping style user aggregates were significantly different in their marital status, number of children, life stage, camping-party composition, community size, and first visits to the park. Also, there was a considerable difference in age among the main wage earners. Conversely, the three camping styles did not significantly differ in social status or length of stay (Table 6).

TABLE 6. Relationships of camping style<sup>a</sup> with descriptive variables.

	<i>N</i>	Df	Chi square	Significance
Family life-cycle				
Marital status	296	2	31.14	0.01
Number of children	285	2	41.54	0.01
Life stage	218	8	37.85	0.01
Social status	262	4	4.27	N.S.
Camping party composition				
Primary grades	308	2	17.53	0.01
Junior high	308	2	20.76	0.01
18-24 years	308	2	22.15	0.01
45-64 years	308	2	36.94	0.01
Camper origin				
Size of community	300	8	20.89	0.01
Camper pattern				
First visit	306	2	12.27	0.01
Length of stay	293	6	10.77	N.S.

<sup>a</sup>Camping styles include only tents, tent-trailers, and travel-trailers.

*Social Status.* There is no significant difference among the social status of tent users, tent-trailer users, and travel-trailer users. The percentage of campers in each

level of social status for each camping style was similar. The largest percentage of respondents for each camping style, approximately one-half, was in the high social-status index, with about one-third in the middle level and the remainder in the low SSI (Table 7).

TABLE 7. Percentage distribution of camping styles by social status.

Level of social status	Tent		Fold-out or tent-trailer		Travel-trailer	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Low	26	18.4	9	10.2	5	15.2
Medium	51	36.2	29	33.0	10	30.3
High	64	45.4	50	56.8	18	54.5

*Family Life-Cycle.* Marital status among the three camping styles was significantly different. All of the travel-trailer respondents and nearly all of the tent-trailer respondents (93.7%) were married, but only three-fourths (72.2%) of the tent users were married (Table 8).

The number of children in each family differed significantly among the three camping styles. Tent users had the highest percentage of no children (43.6%) followed by travel-trailer users (15.6%) and tent-trailer users (6.7%). Most notably, 91.1% of the tent-trailer users had two or more children, with 25.5% having four or more children (Table 8).

The life stage of the three camping styles differed significantly. Tent users were predominantly (63.7%) of the earlier life stages, tent-trailer users (64.8%) of the middle-life stages, and travel-trailer users (71.0%) in the latter-life stages. Less than 6.0% of tent and tent-trailer users had children who had left home, with 6.5% of the travel-trailer users having children under 10 years of age (Table 8).

The composition differed significantly in four of the eight camping-party composition categories when assessed by camping style. Camping parties with school children in the primary grades and junior high were predominantly tent-trailer users. Camping parties with 18- to 24-year-old participants were largely tent users, while camping parties with 45- to 64-year-old participants were predominantly travel-trailer users (Table 8).

The ages of the main wage earners were generally younger for tent users than the other two camping styles, while the main wage earners for travel-trailer users generally were older. The median age was 32 years for tent users, 41 years for tent-trailer users, and 47 years for travel-trailer users. Plus and minus one standard deviation of the mean age, or approximately 68% of each camping style, indicated

TABLE 8. Percentage distribution of camping styles by family life-cycle.

Family life-cycle	Tent (N=177)		Fold-out or tent-trailer (N=95)		Travel-trailer (N=36)	
	N	%	N	%	N	%
<b>Marital status<sup>a</sup></b>						
Single	42	23.9	2	2.1	0	—
Married	127	72.2	89	93.7	36	100.0
Other	7	4.0	4	4.2	0	—
<b>Number of children<sup>a</sup></b>						
No children	71	43.6	6	6.7	5	15.6
One child	13	8.0	2	2.2	8	25.0
Two children	25	15.3	25	27.8	4	12.5
Three children	21	12.9	34	37.8	8	25.0
Four or more children	33	20.2	23	25.5	7	21.9
<b>Life stage<sup>a</sup></b>						
All under 10	36	36.4	12	13.6	2	6.5
Some under 10	27	27.3	36	40.9	7	22.6
All over 10 at home	16	16.2	21	23.9	6	19.4
All over 10 some at home	15	15.2	14	15.9	7	22.6
All away from home	5	5.1	5	5.7	9	29.0
<b>Camping party composition</b>						
Preschool	37	20.9	15	15.8	6	16.7
Primary <sup>a</sup>	60	33.9	55	57.9	10	27.8
Junior <sup>a</sup>	40	22.6	46	48.4	8	22.2
Senior	34	19.2	34	35.8	9	25.0
18-24 <sup>a</sup>	74	41.8	17	17.9	5	13.9
25-44	117	66.1	68	71.6	17	47.2
45-64 <sup>a</sup>	24	13.6	31	32.6	21	58.3
Over 64	2	1.1	2	2.1	3	8.3
<b>Age</b>						
Median	32 years		41 years		47 years	
One standard deviation	23-45 years		33-49 years		36-58 years	

<sup>a</sup>See Table 6.

a shift in age: tent users were 23-45 years of age; tent-trailer users were 33-49 years of age; and travel-trailer users were 36-58 years of age (Table 8).

*Camper Origin.* There was a significant difference among the three camping styles in relation to the size of communities. Five percent of the tent users compared to 14.7% of the travel-trailer users were from towns with less than 2500 population. Conversely, 29.3% of the tent users compared to 8.8% of the travel-trailer users resided in cities with a 250,000 population or more. Approximately 60% of the respondents resided in towns of 2500-50,000 population (Table 9).



TABLE 9. Percentage distribution of respondents' camping styles by community size.

Size of community <sup>a</sup>	Tent		Fold-out or tent-trailer		Travel-trailer	
	N	%	N	%	N	%
72,500	9	5.2	8	8.7	5	14.7
2,500 – 14,999	32	18.4	27	29.3	6	17.6
15,000 – 49,999	45	25.9	28	30.4	8	23.5
50,000 – 249,999	37	21.3	12	13.0	12	35.3
250,000 and over	51	29.3	17	18.5	3	8.8

<sup>a</sup>See Table 6.

The states of residence of the respondents of the three camping styles were similar. Over 70% of each camping style was from the Middle Atlantic and South Atlantic (North) regions, with only four respondents from west of the Mississippi River, three of whom were tent users. It should be noted that the "1974 gas shortage" may have hindered travel, particularly for travel-trailer users (Table 10).

TABLE 10. Percentage distribution of respondents' camping styles by region of origin<sup>a</sup>.

Regions	Tent (N=169)		Fold-out or tent trailer (N=91)		Travel-trailer (N=36)	
	N	%	N	%	N	%
New England	12	7.1	4	4.4	3	8.3
Middle Atlantic	69	40.8	40	44.0	10	27.8
South Atlantic (North) <sup>b</sup>	60	35.5	29	31.9	16	44.4
South Atlantic (South)	9	5.3	3	3.3	5	13.9
East North Central	12	7.1	16	17.6	1	2.8
East South Central	1	0.6	0	—	0	—
West North Central	2	1.2	0	—	0	—
West South Central	0	—	0	—	0	—
Mountain	1	0.6	1	1.1	0	—
Pacific	0	—	0	—	0	—
Foreign	3	1.8	1	1.1	1	2.8

<sup>a</sup>See Appendix C, Table 19 for a listing of states within each region.<sup>b</sup>Shenandoah National Park, Virginia, is within this region.

*Camping Patterns.* The length of stay among the campers of the three camping styles was not significantly different. Tent users were weekend oriented, with

TABLE 11. Percentage distribution of respondents' camping styles by length of stay, first visits.

Camping pattern	Tent		Fold-out or tent-trailer		Travel-trailer	
	N	%	N	%	N	%
<b>Length of stay</b>						
Transient	35	21.1	13	14.0	10	29.4
Weekend	82	49.4	36	38.7	13	38.2
Vacation	49	29.5	44	47.3	11	32.4
<b>First visit</b>						
Yes	106	59.9	43	46.2	11	30.6
No	71	40.1	50	53.8	25	69.4

approximately one-half (49.4%) camping for 2 or 3 nights, while approximately one-half (47.3%) of the tent-trailer users were vacation oriented, camping 4 or more nights. Travel-trailer users were evenly distributed (Table 11).

TABLE 12. Percentage distribution of levels of social interaction by people met and camping styles.

People met and camping styles	Levels of interaction							
	None		Low		Medium		High	
	N	%	N	%	N	%	N	%
<b>Member of neighboring campsite</b>								
Tent	27	15.3	42	23.7	47	26.6	61	34.5
Fold-out	16	16.8	13	13.7	20	21.1	46	48.4
Travel-trailer	7	19.4	3	8.3	12	33.3	14	38.9
<b>Other campers in the campground</b>								
Tent	32	18.1	55	31.1	47	26.6	43	24.3
Fold-out	24	25.3	25	26.3	22	23.2	24	25.3
Travel-trailer	5	16.7	9	25.0	8	22.2	13	36.1
<b>Other visitors in national park</b>								
Tent	64	36.2	58	32.8	38	21.5	17	9.6
Fold-out	35	36.8	30	31.6	14	14.7	14	14.7
Travel-trailer	11	30.6	11	30.6	8	22.2	6	16.7
<b>People outside of national park</b>								
Tent	131	74.0	29	16.4	9	5.1	8	4.5
Fold-out	63	66.3	19	20.0	10	10.5	3	3.2
Travel-trailer	24	66.7	7	19.4	2	5.6	3	8.3
<b>Any park ranger or park naturalist</b>								
Tent	48	27.1	64	36.2	21	11.9	44	24.9
Fold-out	18	18.9	35	36.8	12	12.6	30	31.6
Travel-trailer	6	16.7	16	44.4	5	13.9	9	25.0

TABLE 13. Percentage participation and distribution of social interaction of tent users by activities.

Activity	Participation (N = 177)		Interaction		
	N	%	None %	Low %	High %
Hiking	126	71.1	23.0	41.3	35.7
Leisure walking (through campground)	118	66.6	28.0	44.1	28.0
Campstore	111	62.7	64.9	27.9	7.2
Visitor center	108	61.0	58.3	29.6	12.0
Evening campfire talks	107	60.4	41.1	32.7	26.2
Camp chores	99	55.9	71.7	14.1	14.1
Driving for pleasure	85	48.0	82.4	7.1	10.6
Visit another's campsite	72	40.6	8.3	18.1	73.6
Visitors to your campsite	72	40.6	6.9	26.4	66.7
Basking	71	40.1	53.5	21.1	25.4
Photography	70	39.5	62.9	20.0	17.1
Interpretive trails	69	38.9	37.7	43.5	18.8
Guided nature walks	69	38.9	30.4	39.1	30.4
Reading	67	37.8	94.0	1.5	4.5
Visit Luray Caverns	50	28.2	64.0	28.0	8.0
Restaurant	45	25.4	57.8	35.6	6.7
Picnicking	45	25.4	57.8	35.6	6.7
Horseback riding	40	22.6	37.5	45.0	17.5
Playing cards	41	23.1	80.5	2.4	17.1
Historical sites	38	21.4	65.8	23.7	42.4
Informal sports and games	33	18.6	30.3	27.3	42.4
Bicycling	14	7.9	71.4	14.3	14.3

The percentage of first visits to Big Meadows Campground was significantly different among the three camping styles. Tent users were predominantly (60.0%) newcomers to the campground, while travel-trailer users were predominantly (70%) returnees. The tent-trailer users were approximately equally divided (Table 11).

### Social interaction

While the data indicate a relationship between the level of interaction and the conceptual distance from the respondent's campsite, there was no significant difference in the level of interaction among the three camping styles. The greater the distance from the respondent's campsite, the higher the percentage of "no-" and "low interaction," and, conversely, the lower the percentage of "medium-" and "high interaction." No other patterns in social interaction among the three camping styles were evidenced (Table 12).

"Leisure walking through campground" was the only activity in which the levels of interaction significantly differed among the three camping styles. While

the levels of "no interaction" were approximately the same for all camping styles, travel-trailer users had twice as many (51.9%) high interactions as tent users (28.0%) and tent-trailer users (20.8%). Upon examining the 22 activities participated in by all three camping styles, travel-trailer users equaled or had the highest percentage of "no interaction" in 16 of the activities. Tent users equaled or had the highest percentage of "high interaction" in 15 of the 22 activities. Excluding the activities "Visitors to your campsite" and "Visit another's campsite," tent users interacted most during hiking, leisure walking through the campground, informal sports and games, guided nature walks, and interpretive trails. Conversely, tent users interacted the least during activities essentially individual in nature, i.e., reading, driving, playing cards, picnicking, and camp chores. Tent-trailer users interacted most during horseback riding, hiking, guided nature walks, interpretive trails, and leisure walking through the campground. The activities of

TABLE 14. Percentage participation and distribution of social interaction of tent-trailer users by activities.

Activity	Participation (N=95)		Interaction		
	N	%	None %	Low %	High %
Hiking	76	80.0	23.7	47.4	28.9
Visitor center	76	80.0	56.6	32.9	10.5
Evening campfire talks	73	76.8	41.1	37.0	21.9
Campstore	73	76.8	65.8	27.4	6.8
Leisure walking (through campground)	72	75.7	37.5	41.7	20.8
Camp chores	62	65.2	75.8	17.7	6.5
Driving for pleasure	55	57.8	85.5	5.5	9.1
Basking	50	52.6	66.0	24.0	10.0
Reading	50	52.6	96.0	4.0	—
Visitors to your campsite	46	48.4	10.9	15.2	73.9
Guided nature walks	45	47.3	24.4	42.2	33.3
Interpretive trails	44	46.3	34.1	43.2	22.7
Photography	41	43.1	70.7	24.4	4.9
Visit another's campsite	40	42.1	10.0	15.0	75.0
Visit Luray Caverns	34	35.7	67.6	29.4	2.9
Playing cards	29	30.5	93.1	3.4	3.4
Historical sites	27	28.4	66.7	22.2	11.1
Horseback riding	26	27.3	23.1	42.3	34.6
Restaurant	25	26.3	64.0	28.0	8.0
Picnicking	23	24.2	78.3	13.0	8.7
Informal sports and games	20	21.0	55.0	15.0	30.0
Bicycling	15	15.7	73.3	6.7	20.0

least interaction were the same five as for tent users. Travel-trailer users interacted most during leisure walking through campground, guided nature walks, hiking, interpretive trails, and evening campfire talks. Conversely, travel-trailer users interacted least during reading, driving for pleasure, campstore, playing cards, and bicycling (Tables 13, 14, and 15).

TABLE 15. Percentage participation and distribution of social interaction of travel-trailer users by activities.

Activity	Participation (N=36)		Interaction		
	N	%	None %	Low %	High %
Leisure walking (through campground)	27	75.0	29.6	18.5	51.9
Evening campfire talks	27	75.0	55.6	18.5	25.9
Visitor center	26	72.2	57.7	26.9	15.4
Hiking	25	69.4	44.0	20.0	36.0
Camp chores	25	69.4	76.0	20.0	4.0
Campstore	24	66.6	83.3	12.5	4.2
Driving for pleasure	23	63.8	91.3	—	8.7
Reading	21	58.3	95.2	—	4.8
Visit another's campsite	20	55.5	30.0	10.0	60.0
Basking	17	47.2	58.8	17.6	23.5
Visitors to your campsite	16	44.4	6.3	18.8	75.0
Interpretive trails	14	38.8	50.0	35.7	14.3
Guided nature walks	14	38.8	35.7	21.4	42.9
Restaurant	13	36.1	69.2	30.8	—
Photography	12	33.3	66.7	25.0	8.3
Playing cards	10	27.7	80.0	—	20.0
Bicycling	10	27.7	80.0	20.0	—
Historical sites	9	25.0	66.7	22.2	11.1
Visit Luray Caverns	9	25.0	55.6	44.4	—
Picnicking	7	19.4	57.1	28.6	14.3
Horseback riding	5	13.8	40.0	40.0	20.0
Informal sports and games	2	5.5	100.0	—	—

### Activity patterns

The seven most participated in activities for each camping style were the same: hiking, leisure walking through campground, park visitor center, evening campfire talks, camp chores, campstore, and driving. None of the camping styles was indicative of particular activities. Nine activities were participated in by the majority of the tent-trailer and travel-trailer users, while only six activities were

participated in by a majority of the tent users. Tent-trailer users had the highest percentage of participation in 17 of the 22 activities. Conversely, tent users had the lowest percentage of participation in 17 of the 22 activities. Conversely, tent users had the lowest percentage of participation in 16 of the 22 activities. While the popularity of participation varied little, the amount of participation in each activity did appear to differ among the three camping styles (Tables 13, 14, and 15).

## 5 Summary and Conclusions

The summary and conclusions of this study are divided into the following sections: summary of procedures; findings; conclusions; implications; and recommendations for further study.

### *Summary of Procedures*

Beginning the morning of 7 August 1974, and continuing through till the afternoon of 10 September 1974, park rangers distributed questionnaires to every individual who signed the campground register at Big Meadows Campground. During the 35 days, a total of 1260 questionnaires were distributed. Three hundred and sixty-one were returned, a 28.6% return.

The questionnaire included a cover letter and three basic sections: people-interaction matrix, activity-interaction matrix, and descriptive variables. The first two sections were each single questions structured as matrices, and were concerned with whom there was interaction and during which activities there was interaction. The descriptive variables obtained information on social status, family life-cycle, camper origin, or camper patterns.

Treatment of data consisted primarily of using frequencies and percentages in the construction of respondent profiles of the descriptive characteristics, of the nature of social interaction, and of the activity patterns. Additional analysis involved the use of cross-tabulations (Chi-square) in determining the associations among the camping styles.

### *Findings*

The major findings of the study are divided into four sections: descriptive characteristics; activity patterns; social interaction; and camping-style user aggregates. Because of the number of different variables, comparison of the findings with previous research is described in chapter 4 in the section presenting each variable.

#### **Descriptive characteristics**

The camping parties at Big Meadows Campground were primarily in the "upper class" on the social-status index. They were generally young families with

children, with two-thirds of the parents being in the 25- to 44-year-old age class. Of the families, approximately one-half had three or more children; over one-half with children under 10 years of age.

Approximately three-fourths of the respondents were from the Middle Atlantic Region and the South Atlantic (North) Region, that is, within a 300-mile range of the park. Most of the camping parties resided in urban and suburban areas, with a low percentage of people living in communities of less than 2500 population.

Nearly one out of every two camping parties stayed for 2 or 3 nights, had visited the park before, and/or were tent users. Less than 15% of the respondents used motor homes, van conversions, or truck trailers.

### **Activity patterns**

The five most popular activities, with over 50% participating, were hiking, leisure walking through campground, park visitor center, driving for pleasure, and evening campfire talks.

None of the descriptive variables were distinctively associated with activity participation, although respondents in the high social-status class had a slightly higher percentage of participation, as did the married respondents and respondents with three or more children. Also, the selection of activities was found to be slightly different for the varying life stages.

### **Social interaction**

Respondents indicated experiencing a considerable amount of social interaction while camping at Big Meadows Campground. Four out of every five respondents interacted with their neighbors, while three out of every four respondents interacted with a park ranger or park naturalist.

Distance was found to be a factor in the amount and level of social interaction. At greater distance from the respondent's campsite, less interaction was experienced.

The descriptive variables categorized into social status, family life cycle, and camper origin were not distinctively associated with the amount or level of social interaction. The length of stay was the only variable which appeared to be related to the amount and level of social interaction. Vacationers were found to have had more interaction and a higher amount of "high interaction."

### **Camping-style user aggregates**

The respondents of the three camping styles (tent, tent-trailer, and travel-trailer) were found to be significantly different in their marital status, number of children, life stage, and first visits to the park. Also, there was a considerable age difference for the main wage earners of the three camping styles.

There was no significant difference in the amount of interaction among the respondents of the three camping styles in the people-interaction matrix. The



influence of distance from the respondent's campsite was found to be common for all three camping styles.

"Leisure walking through campground" was the only activity in which the levels of interaction were significantly different. Travel-trailer users had twice as great a percentage of "high interaction" as tent or tent-trailer users. None of the camping styles was indicative of particular activities pursued by the respondents. The seven most participated-in activities for each camping style were the same.

### *Conclusions*

Based on the findings of the study and within its limitations, it was concluded that social interaction of a verbal nature, from passing conversation to visiting for a second time, does occur in a national park, particularly within a family-campground setting.

In regard to the three hypotheses postulated, the first was partially accepted, in that social interaction does occur in family campgrounds; however, neither the amount nor the level of social interaction is related to user descriptive characteristics, except for the length of stay and the distance from the campsite of persons with whom interaction occurs. While there are trends in terms of amount of participation in activities, user descriptive characteristics are not distinctly associated with activity patterns, and thus the second hypothesis was rejected. In comparing the camping-style user aggregates, the amount and level of interaction and activity patterns are similar, and thus the third hypothesis is partially rejected. However, the descriptive characteristics, marital status, number of children, life stage, and first visits, do significantly differ among the three camping styles and, therefore, this aspect of the third hypothesis is accepted.

### *Implications*

This investigation studied selected aspects of human behavior in a national park family-campground setting. The primary implication concerns the social interaction which occurred among the campers. In addition, there are implications concerning activity programming and planning and design.

#### **Social interaction**

Interaction is a prevalent occurrence in a national park family campground. Interaction occurs not only within each camping party, but is experienced with people outside one's own camping party who, theoretically, would be labeled "strangers." Cheek (1972) supports this notion that interaction occurs among strangers in a park setting and suggests that participants expect it.

The fact that interaction does occur among strangers in a park setting suggests a possible difference between a park environment and society's living and working environment. Perhaps in a natural environment the "awe" of Mother Nature, particularly in a national park, creates an atmosphere which humbles us, one in which we perceive ourselves as being micro in a macro world, and makes us feel the need and love for our "brothers." This is an atmosphere in which social distinctions are "stripped," where anonymity reigns and informality prevails; an atmosphere which would appeal to campers, whom LaPage (1967b) described as "gregarious, socially conscious people." Many postulations could be suggested concerning the possible difference in the environment.

It was noted that respondents not only experienced passing conversation, but that they also learned peoples' names, where they were from, and met them for a second time. Some researchers may suggest that propinquity, in conjunction with our cultural orientation, in many instances may obligate people to interact. This may have been the case at the nodes and internodes within the campground (e.g., water pumps, adjacent sinks in the bathrooms, trails), but the postulation of "forced interaction" only explains the occurrence of some passing conversation. Festinger's Cognitive Dissonance Theory (Festinger et al. 1950) suggests that if individuals experience "undesirable obligation," they will alleviate or correct the situation, which in this instance would involve a simple departure from the node or internode. Learning a person's name, where a person is from, or, most assuredly, meeting a person for a second time is a free-choice decision of the respondents.

Experiencing more than passing conversation may be related to the fact that many respondents, approximately one out of every two, had previously visited Shenandoah National Park. Etzkorn (1964) found that people often relate their satisfactions to familiarity and predictability of their experience, and he concluded that many campers perceive a campground as being familiar in the sense of social relationships. This occurrence may partially account for the amount and level of social interaction. Returning visitors looking for similar previous experiences may create a "rolling stone" effect, which may be influential not only in social interaction, but also in other aspects of human behavior which social research has not yet substantiated.

Field and Wager (1973) postulated that freedom to interact with strangers may be unique to leisure settings and should be encouraged. Based on the premise that social interaction is a positive, desirable experience, National Park Service personnel can aid in creating a "friendly park atmosphere." Through their own personalities and actions, park rangers and park naturalists can encourage interaction both between themselves and park visitors and among park visitors. By way of public contact and programmed activities, park naturalists can communicate that experiencing people is just as rewarding as experiencing nature, and they can convey that one of the National Park Service's objectives is to bring people together to live and play in harmony with nature.

In concluding this section on social interaction, the data support the generally

held belief as to why people go camping. The traditional cliches which have permeated campers' descriptions of why they go camping ("far away from people" and "escaping from people") may be inaccurate. Technology over the last 15 years has "shifted" not only the camping industry but also the campers from a primitive-oriented to a convenience-oriented style of camping. Perhaps campers have changed, or perhaps the convenience-oriented shift has attracted a new breed of campers. Nevertheless, contemporary cliches which are permeating campers' descriptions of why they go camping ("meeting people" and "talking and visiting with campers") indicate that today sociability is a major motivating factor for camping.

### **Programming**

There are two approaches to programmed activities. The most prevalent approach implemented by the National Park Service, whether designed or intended, is unidirectional, i.e., it provides information without feedback from participants. Examples would include self-guiding interpretive trails, park visitor center, guided nature walks, and evening campfire talks. During the latter two activities, the offer for feedback may be extended, but relatively few people ask questions or exchange information. Unidirectional activities are an integral part of programming and satisfy the needs and desires of many people.

The second approach, less prevalent in the National Park Service, is multidirectional; the participants can relate their own experiences, feelings, and knowledge among themselves. Multidirectional activities have a less formal structure in that the park naturalist's "expert image" is minimized while intragroup interaction is maximized. These are activities in which people may learn something for themselves, have the chance to express themselves, or to communicate with others and feel more a part of the activity.

Examples of this approach may involve an entire activity or be a modification of a present activity. For instance, after an evening of campfire talk or presentation, the offer for people to stay and talk might be extended, even if it requires additional staff to facilitate small groupings. During guided nature walks, the participants might be involved by having them sit quietly for a few minutes and then have them express what they heard, what they saw, and what they smelled. Or, participants might be asked to observe a tree or a mountain ridge and describe what image they see or to find a squirrel's nest or woodpecker's hole. There are unlimited possibilities which have the same goal: to have people learn and discover for themselves, and to relate their experiences, feelings, and knowledge to others.

During programmed activities, social interaction can be encouraged and opportunities for interaction provided. By means of "interaction facilitators," many of which the National Park Service utilizes, commonality among strangers can be revealed and an attempt to "break the ice" can be made. Examples of interaction facilitators include: asking the participants where they are from and on what campground loop they are camping; asking participants to shake hands with people

behind them; centralizing the seating arrangement; singing; and having open discussions and question and answer periods.

In concluding the programming section, it is recommended that the National Park Service place more emphasis on providing "experiences" between people and nature and among people. Based on the popularity of the National Park Service programmed activities, they could be instrumental in providing such opportunities.

### **Planning and Design**

Planning and design is a vital component influencing "experiences" for individuals and among individuals. Approximately 20% higher interaction occurred during evening campfire talks, guided nature walks, and interpretive trails, as compared to the park visitor center. This occurrence may be a function of the park visitor center's layout, its "museum-like" design, or its "moving sidewalk" effect. Perhaps the inclusion of large circular displays which would permit several families to observe at one time would facilitate more social interaction. The intragroup interaction could easily initiate intergroup interaction. Another similar example would be large action displays, where perhaps buttons are pushed to identify areas or objects. Availability of seating, with careful consideration given to spacing and arrangement, would also be conducive to social interaction.

Planning and design can bring people together; it also can separate them. The design of a facility, both the layout of campsites, trails, and roads and the existence of natural barriers, influences social interaction. Within the management objectives and natural constraints of a specific locale, the emphasis of park planning and design should be directed towards providing "experiences," one of which is social interaction.

### *Recommendations for Further Study*

This study has raised many questions to be considered for further research. Areas to be considered are:

1. Due to the lack of research concerned with measuring social interaction, this study has been unable to use comparative findings. A similar research proposal should be implemented using the same conceptual basis (see Fig. 2) with several suggested changes. Suggested changes would include eliminating some of the descriptive variables and activities listed in the instrument and administering the questionnaire within a short time of the respondent's departure.

Interview or unobtrusive observation could be used which would enable one to determine the frequency of interaction as well as the level of interaction. In addition, more of the camping party could be questioned concerning social interaction and activity patterns. These techniques would relieve the respondent of filling out a questionnaire and the responsibility of returning it and would increase

the percentage of return. Also, several of the descriptive questions could be determined by the investigator.

2. The entire phenomena of social interaction in a leisure setting needs further investigation. Are there rules or norms governing social interaction in this setting? Are there limits to the depth of interaction? Do these limits vary among people? How often do people interact and how formal are their interactions? Do people select those they wish to interact with or is the interaction spontaneous? Are there topics (jobs, economy, politics) which are undesirable for discussion?

3. The influence of distance is a large area of needed investigation. Is the increase in interaction due to the direct relationship between distance and frequency of contact or does behavior change in "unfamiliar territory"; that is, does it change away from the respondent's campsite which is perceived as being home?

4. In terms of determining where interaction occurs, the various nodes and internodes (water pumps, bathhouses, trails, visitor center, bulletin boards) could be identified and studied. Do people expect and desire to interact at certain places and not others? What level of interaction is experienced where? During what periods of the day does interaction take place at each node or internode?

5. Investigating proximity and arrangement of all the variables within a facility or within the campground may require innumerable studies. What influence does the arrangement of campsites within the campground have on interaction? Do campsites that face one another experience more interaction? How are the natural barriers perceived? What do campers perceive as the optimal space between campsites and between facilities?

How does the design within such facilities as the visitor center, restaurant, or bathhouse affect interaction? Do the present designs negatively affect interaction? Would the addition of large circular interpretive displays or bench areas facilitate interaction?

6. Since returnees to the parks constitute a high percentage of participants, they should be examined. Do these people aspire to similar, previous experiences? Do they return to meet with previous acquaintances? What do they remember about previous visits to the park? What activities do they plan to participate in during their stay?



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# APPENDIX A

## PILOT STUDY



# THE PENNSYLVANIA STATE UNIVERSITY

276 RECREATION BUILDING  
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Health, Physical Education and Recreation

Area Code 814

July, 1974

Dear Campers:

In an effort to provide better service to you, the Recreation and Parks program of The Pennsylvania State University, in cooperation with the National Park Service, is conducting a visitor-use study. The study has three primary purposes:

1. To determine activity patterns of the campers during their stay in the park.
2. To better understand camper interaction.
3. To develop a profile of the various camping-style users.

It would be appreciated if you would take a few minutes to complete this questionnaire just before leaving and return it to either the campground office or any Park Ranger. If you find it inconvenient to leave the questionnaire, you may return it via mail.

Sincerely,

Betty van der Smissen  
Professor of Recreation  
Study Adviser

Glenn Haas

There are ten questions in this questionnaire. Please have an adult member of your camping party answer the questions.

VISITOR USE STUDY

Length of Stay # \_\_\_\_\_ Nights      Number in Camping Party # \_\_\_\_\_

1. During your stay in the park, you have probably talked and visited with other people. If you have talked or visited with any of the people in the below left column, please check (✓) those categories of interaction you experienced.

Categories of Interaction

Passing Conversation With:	Learn The City or State of Residence Of:	Learn The First or Last Name Of:	Have Met For a Second Time With:
(1)	(2)	(3)	(4)
Any member of the immediately neighboring campsite?	_____	_____	_____
Any other Camper in the camp- ground?	_____	_____	_____
Any people out- side of the National Park?	_____	_____	_____
Any Park Ranger or Park Natura- list?	_____	_____	_____

2. Type of Camping Style (check)?

_____ Tent	_____ Travel trailer
_____ Fold out or tent trailer	_____ Van conversion
_____ Pick up or truck trailer	_____ Motor home

-Next Page-



3. During your stay in the park, you have probably participated in several of the following activities. Please check (✓) those categories of interaction you experienced with other people outside of your own camping party.

## Categories of Interaction

	No Inter- action During The Activity (0)	Passing Conversa- tion (1)	Learn The City or State of Residence (2)	Learn The First or Last Name (3)
Fishing	_____	_____	_____	_____
Boating	_____	_____	_____	_____
Swimming	_____	_____	_____	_____
Picnicking	_____	_____	_____	_____
Sports . . . . .	_____	_____	_____	_____
Bicycling	_____	_____	_____	_____
Horseback riding	_____	_____	_____	_____
Rockhounding	_____	_____	_____	_____
Photography	_____	_____	_____	_____
Leisure walking. . . . .	_____	_____	_____	_____
Hiking	_____	_____	_____	_____
Driving for pleasure	_____	_____	_____	_____
Interpretive trails	_____	_____	_____	_____
Evening campfire talks	_____	_____	_____	_____
Park visitor center . . . . .	_____	_____	_____	_____
Historical sites	_____	_____	_____	_____
Restaurant	_____	_____	_____	_____
Visit another's campsite	_____	_____	_____	_____
Playing cards	_____	_____	_____	_____
Television . . . . .	_____	_____	_____	_____
Reading	_____	_____	_____	_____
Camp chores	_____	_____	_____	_____
Campstore	_____	_____	_____	_____

4. Family-life cycle
- \_\_\_\_ Single \_\_\_\_ Divorced \_\_\_\_ Widowed
- \_\_\_\_ Married \_\_\_\_ Separated
- Number of children # \_\_\_\_
- \_\_\_\_ All children under 10
- \_\_\_\_ Some under 10 years old
- \_\_\_\_ All children over 10, living at home
- \_\_\_\_ All children over 10, some living at home
- \_\_\_\_ All children away
7. Age of the Main Wage Earner?
- Years # \_\_\_\_
8. Residence
- Miles from home: \_\_\_\_ miles
- State \_\_\_\_\_
9. Briefly describe the occupation of the main wage earner. If you are retired, please briefly describe your main occupation during your working years.
10. Comments,
5. Gross Income of Main Wage Earner?
- \_\_\_\_ Less than \$7,500
- \_\_\_\_ \$7,500-\$9,999
- \_\_\_\_ \$10,000-\$14,999
- \_\_\_\_ \$15,000-\$19,999
- \_\_\_\_ \$20,000-\$24,999
- \_\_\_\_ \$25,000 and over
6. Education of Main Wage Earner?
- \_\_\_\_ Less than 12 years
- \_\_\_\_ H.S. graduate
- \_\_\_\_ Some college
- \_\_\_\_ College graduate
- \_\_\_\_ Post-college work

-End-

# APPENDIX B

## FINAL INSTRUMENT AND DISTRIBUTION MEMORANDA



## THE PENNSYLVANIA STATE UNIVERSITY

276 RECREATION BUILDING  
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Health, Physical Education and Recreation

Area Code 814

August, 1974

Dear Campers:

In an effort to gain a better understanding of public-park campground users and to make recommendations to managers of these areas, the Recreation and Parks program of The Pennsylvania State University is conducting a visitor-use study. The study has three primary objectives;

1. To determine activity patterns of the campers during their stay in the park.
2. To better understand camper interaction.
3. To develop a profile of the various camping-style users.

It would be appreciated if you would take a few minutes to complete this questionnaire just before leaving. Your responses should be based on your experiences while at Big Meadows Campground. Please return to either the Big Meadows Campground registration office or any Park Ranger. If you find it inconvenient to leave the questionnaire, you may return it via mail.

Sincerely,

Betty van der Smitten  
Professor of Recreation  
Study Advisor

Glenn Ernest Haas

There are twelve questions in this questionnaire. Please have an adult member of your camping party answer the questions based on their stay at Big Meadows Campground.

PLEASE FILL OUT WITHIN A DAY BEFORE LEAVING BIG MEADOWS CAMPGROUND

### VISITOR USE STUDY

Length of Stay # \_\_\_\_ Nights      Campsite # \_\_\_\_

1. During your stay at Big Meadows Campground, you have probably talked and visited with other people. If you have talked or visited with any of the people in the below left column, please check (✓) all categories of interaction you experienced.

#### Categories of Interaction

	Had Passing Conversation With:	Learned the City or State of Residence of:	Learned the First or Last Name of:	Have Met For a Second Time With:
People Met:	(1)	(2)	(3)	(4)
Any member of the immediately neighboring campsite.	_____	_____	_____	_____
Any other camper in the camp- ground.	_____	_____	_____	_____
Any other visi- tors in the National Park.	_____	_____	_____	_____
Any people out- side of the National Park.	_____	_____	_____	_____
Any Park Ranger or Park Natura- list.	_____	_____	_____	_____

## 2. Type of Camping Style (check).

<input type="checkbox"/> Tent	<input type="checkbox"/> Travel-trailer
<input type="checkbox"/> Fold out or tent-trailer	<input type="checkbox"/> Van-conversion
<input type="checkbox"/> Pick up or truck-trailer	<input type="checkbox"/> Motor-home

## 3. Is your recreational vehicle your permanent residence?

☐ yes      ☐ no

## 4. Is this your first visit to Shenandoah National Park?

☐ yes      ☐ no

5. Considering only the activities in which you have participated while at Big Meadows Campground, please check (✓) those categories of interaction you experienced with people outside your camping party. Please leave blank those activities in which you did not participate.

## Categories of Interaction

Activities:	Participation, But No Interaction (0)	Had Passing Conversation (1)	Learned the City or State of Residence (2)	Learned the First or Last Name (3)
Fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canoeing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picnicking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informal Sports & Games . . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bicycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horseback Riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rockhounding (out- side park)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Photography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leisure Walking (through camp- ground). . . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Categories of Interaction (cont.)

Activities:	Participation, But No Interaction (0)	Had Passing Conversation (1)	Learned the City or State of Residence (2)	Learned the First or Last Name (3)
Basking (loafing)	_____	_____	_____	_____
Hiking	_____	_____	_____	_____
Driving for Pleasure	_____	_____	_____	_____
Interpretive Trails	_____	_____	_____	_____
Guided Nature Walks . . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .
Evening Camp- fire Talks	_____	_____	_____	_____
Park Visitor Center	_____	_____	_____	_____
Historical Sites (out- side park)	_____	_____	_____	_____
Visit Luray Caverns	_____	_____	_____	_____
Restaurant (Lodge) . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .
Visit Another's Campsite	_____	_____	_____	_____
Visitors to Your Campsite	_____	_____	_____	_____
Playing Cards	_____	_____	_____	_____
Television	_____	_____	_____	_____
Reading . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .	_____ . . . . .
Camp Chores	_____	_____	_____	_____
Campstore	_____	_____	_____	_____



6. Family-life Cycle
- \_\_\_ Single
- \_\_\_ Married
- \_\_\_ Other
- Number of children in your  
family # \_\_\_  
(Including those not with you)
- \_\_\_ All children under 10 years  
old
- \_\_\_ Some under 10 years old
- \_\_\_ All children over 10,  
living at home
- \_\_\_ All children over 10,  
some living at home
- \_\_\_ All children away
9. Gross income of the main wage  
earner in your family.
- \_\_\_ Less than \$7,500
- \_\_\_ \$7,500-\$9,999
- \_\_\_ \$10,000-\$14,999
- \_\_\_ \$15,000-\$19,999
- \_\_\_ \$20,000-\$24,999
- \_\_\_ \$25,000 and over
11. Residence
- State \_\_\_\_\_
- Size of community (population)
- \_\_\_ Under 2,500
- \_\_\_ 2,500-14,999
- \_\_\_ 15,000-49,999
- \_\_\_ 50,000-249,999
- \_\_\_ 250,000 and over
13. Comments and/or suggestions.
7. Indicate the number of people  
by age who are in your camping  
party. Be sure to include  
yourself. (place #)
- Pre-school \_\_\_\_\_
- Primary Grades \_\_\_\_\_
- Junior High School \_\_\_\_\_
- Senior High School \_\_\_\_\_
- Between 18 and 24 years \_\_\_\_\_
- Between 25 and 44 years \_\_\_\_\_
- Between 45 and 64 years \_\_\_\_\_
- 65 years or older \_\_\_\_\_
8. Age of the main wage earner in  
your family as of last birth-  
day.
- Years # \_\_\_\_\_
10. Education of the main wage  
earner in your family.
- \_\_\_ Less than 12 years
- \_\_\_ H.S. graduate
- \_\_\_ Some college
- \_\_\_ College graduate
- \_\_\_ Post-college work
12. Briefly describe the occupation  
of the main wage earner. If  
you are retired, briefly de-  
scribe your main occupation  
during your working years.

August, 1974

SUGGESTED MEMORANDUM CONTENT

I. To: Park Rangers at the Big Meadows Campground

From:

Subject: Visitor-Use Study being implemented at Big Meadows Campground

Purpose of Study:

1. To determine activity patterns of the campers during their stay in the campground.
2. To better understand camper interaction.
3. To develop a profile of the various camping-style users.

Methodology: The questionnaire should be dispersed beginning the morning hours of August 7, 24-hours a day, until approximately 3,000 are distributed.

- \*\*
1. Give one questionnaire to each individual registering for a campsite.
  2. If a questionnaire is misplaced by the camper, please give another to the individual.
  3. Place all returned questionnaires in a safe, central location.

II. To: Central District Park Naturalists

From:

Subject: The Visitor-Use Study being implemented at Big Meadows Campground, sponsored by Pennsylvania State University.

Beginning

Date: The morning of August 7.

Purpose of Study:

1. To determine activity patterns of the campers during their stay at the Big Meadows Campground.
2. To better understand camper interaction.
3. To develop a profile of the various camping-style users.

## SUGGESTED MEMORANDUM CONTENT (cont.)

For the next five weeks there will be a questionnaire distributed to each camping party at the Big Meadows Campground. In order to achieve a high return rate, you are asked to mention to the campers (not applicable to people staying at the lodge) during the evening campfire talks and guided nature walks the following points:

1. Briefly describe the purpose of the study.
2. Remind campers to fill out the questionnaire within a day of leaving the campground.
3. Return the questionnaire to the Big Meadows Registration Office or any Park Ranger.
4. If any one has misplaced their questionnaire, you can get another at the Big Meadows Registration Office.

III. To:

From:

Subject: Positioning of sign concerning the Visitor-Use Study at Big Meadows Campground, sponsored by Pennsylvania State University.

During Glenn Haas' recent visit over the July-4 weekend, you aided in deciding where to place a sign ("Please Return Questionnaire") so as the campers could readily see. It was decided to attach it directly beneath the directional sign indicating the location of the loops just beyond the entrance, at the registration office.

The hardware necessary to attach the sign will be forthcoming with the sign. Please see that it is in place for the duration of the questionnaire dispersal.



# APPENDIX C

## TABLES FOR DESCRIPTIVE CHARACTERISTICS



TABLE 16. User profile of social status

Characteristic	Frequency	Percentage	SSI weights
Income ( <i>N</i> = 331)			
\$7,500 or less	31	9.4	1
\$7,500–9,999	51	15.4	1
\$10,000–14,999	96	29.0	2
\$15,000–19,999	76	23.0	2
\$20,000–24,999	46	13.9	3
\$25,000 and over	31	9.4	3
Education ( <i>N</i> = 347)			
Less than 12th grade	15	4.3	1
High school graduate	50	14.4	2
Some college	73	21.0	2
College graduate	82	23.6	3
Post-college work	127	36.6	3
Occupation <sup>a</sup> ( <i>N</i> = 331)			
Professional, technical and kindred workers	168	50.8	3
Managers and administrators	52	15.7	3
Sales workers	12	3.6	2
Clerical workers	14	4.2	2
Craftsmen	38	11.5	2
Operatives, except transport	8	2.4	1
Transport equipment operators	3	0.9	1
Laborers	3	0.9	1
Farmers	1	0.3	1
Service workers	13	3.9	2
Miscellaneous <sup>b</sup>	19	5.7	1

<sup>a</sup>Occupation classification scheme from U.S. Department of Labor (1968).

<sup>b</sup>Category was composed of college students and unemployed people.

TABLE 17. Percentage distribution of campers by income.

Income	Respondents' distribution ( <i>N</i> = 331)		U.S. Census distribution <sup>a</sup> %
	<i>N</i>	%	
\$7,500 or less	31	9.4	28.0
\$7,500–9,999	51	15.4	17.6
\$10,000–14,999	96	29.0	28.2
\$15,000–19,999	76	23.0	8.6
\$20,000–24,999	46	13.0	8.6
\$25,000 and over	31	9.4	4.9

<sup>a</sup>Distribution was based on the ten states which represented 85.4% of the respondents. The states included Virginia, Ohio, Pennsylvania, Maryland, New York, New Jersey, Florida, Delaware, Massachusetts, and North Carolina.

TABLE 18. Percentage distribution of main wage earners by age.

Years of age	Frequency	Percentage (N=334)	Years of age	Frequency	Percentage (N=334)
17	1	0.3	47	6	1.8
18	2	0.6	48	8	2.4
19	0	0.0	49	11	3.3
20	1	0.3	50	9	2.7
21	6	1.8	51	4	1.2
22	13	3.9	52	2	0.6
23	6	1.8	53	5	1.5
24	11	3.3	54	2	0.6
25	10	3.0	55	2	0.6
26	9	2.7	56	2	0.6
27	9	2.7	57	4	0.6
28	11	3.3	58	0	0.0
29	7	2.1	59	2	0.6
30	9	2.7	60	2	0.6
31	8	2.4	61	1	0.3
32	12	3.6	62	3	0.9
33	8	2.4	63	2	0.6
34	10	3.0	64	5	1.5
35	10	3.0	65	4	1.2
36	9	2.7	66	0	0.0
37	12	3.6	67	0	0.0
38	14	4.2	68	1	0.3
39	14	4.2	69	0	0.0
40	9	2.7	70	0	0.0
41	15	4.5	71	0	0.0
42	10	3.0	72	0	0.0
43	8	3.0	73	1	0.3
44	10	3.0			
45	11	3.3			
46	3	0.9			



TABLE 19. Percentage distribution of automobile travel to Shenandoah National Park by region and state, 1952<sup>a</sup> and 1974 studies.

Region and state of registration	1952 park study <sup>b</sup>	1974 park study (N=355)	
		%	N
New England	3.52	5.90	21
Connecticut	1.12	1.40	5
Maine	0.12	—	—
Massachusetts	1.71	2.50	9
New Hampshire	0.14	0.60	2
Rhode Island	0.35	1.10	4
Vermont	0.08	0.30	1
Middle Atlantic	25.09	38.30	136
New Jersey	4.96	11.00	39
New York	7.83	13.50	48
Pennsylvania	12.30	13.80	49
South Atlantic (North)	38.00	33.70	120
Delaware	0.69	3.10	11
Maryland	8.98	13.50	48
Virginia	21.18	15.40	55
District of Columbia	4.87	1.10	4
West Virginia	2.28	0.60	2
South Atlantic (South)	8.45	7.00	25
Florida	2.62	3.90	14
Georgia	1.34	0.30	1
North Carolina	3.38	2.50	9
South Carolina	1.11	0.30	1
East North Central	16.17	11.30	40
Illinois	2.24	2.00	7
Indiana	1.55	1.10	4
Michigan	2.39	2.00	7
Ohio	9.52	6.20	22
Wisconsin	0.47	—	—
East South Central	2.88	0.60	2
Alabama	0.68	0.30	1
Kentucky	0.76	—	—
Mississippi	0.35	—	—
Tennessee	1.09	0.30	1
West North Central	1.57	0.60	2
Iowa	0.34	0.30	1
Kansas	0.25	—	—
Minnesota	0.26	—	—
Missouri	0.52	0.30	1
Nebraska	0.13	—	—
North Dakota	0.04	—	—
South Dakota	0.03	—	—

TABLE 19 (continued).

Region and state of registration	1952 park study <sup>b</sup>	1974 park study ( <i>N</i> = 355)	
		%	<i>N</i>
West South Central	2.28	0.30	1
Arkansas	0.14	—	—
Louisiana	0.60	—	—
Oklahoma	0.20	—	—
Texas	1.34	0.30	1
Mountain	0.32	0.60	2
Arizona	0.05	—	—
Colorado	0.08	0.60	2
Idaho	0.05	—	—
Montana	0.02	—	—
Nevada	0.02	—	—
New Mexico	0.05	—	—
Utah	0.03	—	—
Wyoming	0.02	—	—
Pacific	0.82	0.30	1
California	0.65	0.30	1
Oregon	0.07	—	—
Washington	0.10	—	—
Foreign	0.90	1.70	6

<sup>a</sup>Shenandoah National Park Tourist Study, U.S. Department of Interior, National Park Service, 1952:27.

<sup>b</sup>1952 park study only provided percentages.

TABLE 20. User profile of length of stay in park.

No. nights	Frequency	Percentage ( <i>N</i> = 339)
1	80	23.6
2	93	27.4
3	51	15.0
4	38	11.2
5	25	7.4
6	17	5.0
7	12	3.3
8	11	3.0
9	3	0.9
10	4	1.2
11	0	—
12	1	0.3
13	1	0.3
14	3	0.9

# APPENDIX D

## PERCENTAGE DISTRIBUTION TABLES CONCERNING ACTIVITIES BY DESCRIPTIVE CHARACTERISTICS



TABLE 21. Percentage distribution of participants by social status.

Activity	N	Level of social status		
		Low	Middle	High
Picnicking	70	14.3	34.3	51.4
Informal sports and games	50	8.0	44.0	48.0
Bicycling	34	17.6	29.4	52.9
Horseback riding	64	14.1	32.8	53.1
Photography	127	15.7	33.1	51.2
Leisure walking (through campground)	218	15.6	35.3	49.1
Basking (loafing)	141	19.1	36.2	44.7
Hiking	227	15.4	32.6	52.0
Driving for pleasure	163	15.3	38.7	46.0
Interpretive trails	125	13.6	30.4	56.0
Guided nature walks	122	11.5	34.4	54.1
Evening campfire talks	200	13.5	36.0	50.5
Park visitor center	215	13.0	35.3	51.6
Historical sites (outside park)	70	20.0	37.1	42.9
Visit Luray Caverns	88	17.0	27.3	55.7
Restaurant (Lodge)	83	9.6	28.9	61.4
Visit another's campsite	131	19.1	35.9	45.0
Visitors to your campsite	137	12.4	37.2	50.4
Playing cards	79	15.2	35.4	49.4
Reading	136	11.8	36.0	52.2
Camp chores	186	11.8	37.1	51.1
Campstore	208	14.9	35.6	49.5

TABLE 22. Percentage distribution of respondents' social status by activities.

Activity	SSI					
	Low (N=54)		Middle (N=108)		High (N=147)	
	N	%	N	%	N	%
Picnicking	10	18.51	24	22.22	36	24.48
Informal sports and games	4	7.40	22	20.37	24	16.32
Bicycling	6	11.11	10	9.25	18	12.24
Horseback riding	9	16.66	21	19.44	34	23.12
Photography	20	37.03	42	38.88	65	44.21
Leisure walking (through campground)	34	62.96	77	71.29	107	72.78
Basking (loafing)	27	50.00	51	47.22	63	42.85
Hiking	35	64.81	74	68.51	118	80.27
Driving for pleasure	25	46.29	63	58.33	75	51.02
Interpretive trails	17	31.48	38	35.18	70	47.61
Guided nature walks	14	25.92	42	38.88	66	44.89
Evening campfire talks	27	50.00	72	67.00	101	68.70
Park visitor center	28	51.85	76	70.37	111	75.51
Historical sites (outside park)	14	25.92	26	24.07	30	20.40
Visit Luray Caverns	15	27.77	24	22.22	49	33.33
Restaurant (Lodge)	8	14.81	24	22.22	51	34.69
Visit another's campsite	25	46.29	47	43.51	59	40.13
Visitors to your campsite	17	31.48	51	47.22	69	46.93
Playing cards	12	22.22	28	25.92	39	26.53
Reading	16	29.62	49	45.37	71	48.29
Camp chores	22	40.74	69	63.88	95	64.62
Campstore	31	57.40	74	68.51	103	70.06

TABLE 23. Percentage distribution of respondents' marital status by activities.

Activity	Single (N=50)		Married (N=293)	
	N	%	N	%
Picnicking	13	26.0	66	22.5
Informal sports and games	13	26.0	47	16.0
Bicycling	4	8.0	39	13.3
Horseback riding	11	22.0	61	20.8
Photography	17	34.0	120	40.9
Leisure walking (through campground)	30	60.0	211	72.0
Basking (loafing)	23	46.0	133	45.3
Hiking	31	62.0	216	73.7
Driving for pleasure	22	44.0	161	54.9
Interpretive trails	17	34.0	117	39.9
Guided nature walks	17	34.0	118	40.2
Evening campfire talks	27	54.0	194	66.2
Park visitor center	23	46.0	207	70.6
Historical sites (outside park)	9	18.0	70	23.8
Visit Luray Caverns	15	30.0	82	27.9
Restaurant (Lodge)	11	22.0	79	26.9
Visit another's campsite	20	40.0	121	41.2
Visitors to your campsite	17	34.0	131	44.7
Playing cards	12	24.0	74	25.2
Reading	12	24.0	136	46.4
Camp chores	22	44.0	177	60.4
Campstore	27	54.0	199	67.9

TABLE 24. Percentage distribution of participants by marital status.

Activity	<i>N</i>	Single	Married
Picnicking	83	15.7	79.5
Informal sports and games	63	20.6	74.6
Bicycling	44	9.1	88.6
Horseback riding	77	14.3	79.2
Photography	142	12.0	84.5
Leisure walking (through campground)	249	12.0	84.7
Basking (loafing)	162	14.2	82.1
Hiking	257	12.1	84.0
Driving for pleasure	188	11.7	85.6
Interpretive trails	140	12.1	83.6
Guided nature walks	140	12.1	84.3
Evening campfire talks	230	11.7	84.3
Park visitor center	239	9.6	86.6
Historical sites (outside park)	81	11.1	86.4
Visit Luray Caverns	101	14.9	81.2
Restaurant (Lodge)	92	12.0	85.9
Visit another's campsite	149	13.4	81.2
Visitors to your campsite	156	10.9	84.0
Playing cards	92	13.0	80.4
Reading	156	7.7	87.2
Camp chores	209	10.5	84.7
Campstore	236	11.4	84.3



TABLE 25. Percentage distribution of respondents' number of children by activities.

Activity	No children (N=94)		1 child (N=32)		2 children (N=64)		3 children (N=66)		4 or more children (N=72)	
	N	%	N	%	N	%	N	%	N	%
Picnicking	19	20.2	9	28.1	15	23.4	13	19.6	15	20.8
Informal sports and games	10	10.6	6	18.7	10	15.6	13	19.6	19	26.3
Bicycling	5	5.3	5	15.6	7	10.9	8	12.1	12	16.6
Horseback riding	19	20.2	4	12.5	15	23.4	17	25.7	16	22.2
Photography	37	39.3	14	43.7	27	42.1	30	45.4	23	31.9
Leisure walking (through campground)	64	68.0	22	68.7	41	64.0	47	71.2	51	70.8
Basking (loafing)	36	38.2	17	53.1	24	37.5	30	45.4	36	50.0
Hiking	60	63.8	21	65.6	48	75.0	53	80.3	55	76.3
Driving for pleasure	48	51.0	18	56.2	29	45.3	39	59.0	37	51.3
Interpretive trails	32	34.0	10	31.2	24	37.5	30	45.4	33	45.8
Guided nature walks	30	31.9	8	25.0	24	37.5	36	54.5	33	45.8
Evening campfire talks	51	54.2	15	46.8	46	71.8	48	72.7	49	68.0
Park visitor center	51	54.2	22	68.7	40	62.5	50	75.7	54	75.0
Historical sites (outside park)	14	14.8	7	21.8	17	26.5	12	18.1	21	29.1
Visit Luray Caverns	24	25.5	9	28.1	20	31.2	18	27.2	19	26.3
Restaurant (Lodge)	24	25.5	8	25.0	14	21.8	22	33.3	16	22.2
Visit another's campsite	35	37.2	13	40.6	28	43.7	28	42.4	30	41.6
Visitors to your campsite	33	35.1	16	50.0	28	43.7	33	50.0	34	47.2
Playing cards	20	21.2	10	31.2	15	23.4	16	24.2	23	31.9
Reading	36	38.2	15	46.8	24	37.5	29	43.9	36	50.0
Camp chores	45	47.8	19	59.3	39	60.9	43	65.1	43	59.7
Campstore	53	56.3	22	68.7	43	67.1	50	75.7	49	68.0

TABLE 26. Percentage distribution of participants by number of children.

Activity	<i>N</i>	No children	1 child	2 children	3 children	4 or more children
Picnicking	71	26.8	12.7	21.1	18.3	21.1
Informal sports and games	58	17.2	10.3	17.2	22.4	32.8
Bicycling	37	13.5	13.5	8.9	21.6	32.4
Horseback riding	71	26.8	5.6	21.1	23.9	22.5
Photography	131	28.2	10.7	20.6	22.9	17.6
Leisure walking (through campground)	225	28.4	9.8	18.2	20.9	22.7
Basking (loafing)	143	25.2	11.9	16.8	21.0	25.2
Hiking	237	25.3	8.9	20.3	22.4	23.2
Driving for pleasure	171	28.1	10.5	17.0	22.8	21.6
Interpretive trails	129	24.8	7.8	18.6	23.3	25.6
Guided nature walks	131	22.9	6.1	18.3	27.5	25.2
Evening campfire talks	209	24.4	7.2	22.0	23.0	23.4
Park visitor center	217	23.5	10.1	18.4	23.0	24.9
Historical sites (outside park)	71	19.7	9.9	23.9	16.9	29.6
Visit Luray Caverns	90	26.7	10.0	22.2	20.0	21.1
Restaurant (Lodge)	84	28.6	9.5	16.7	26.2	19.0
Visit another's campsite	134	26.1	9.7	20.9	20.9	22.4
Visitors to your campsite	144	22.9	11.1	19.4	22.9	23.6
Playing cards	84	23.8	11.9	17.9	19.0	27.4
Reading	140	25.7	10.7	17.1	20.7	25.7
Camp chores	189	23.8	10.1	20.6	22.8	22.8
Campstore	237	24.4	10.1	19.8	23.0	22.6

TABLE 27. Percentage distribution of respondents' life stage (children) by activities.

Activity	Life Stage (children)									
	All under 10 (N=61)		Some under 10 (N=77)		All over 10, home (N=51)		All over 10, some home (N=41)		All away (N=23)	
	N	%	N	%	N	%	N	%	N	%
Picnicking	21	34.4	16	20.7	8	15.6	9	21.9	6	26.0
Informal sports and games	14	22.9	18	23.3	10	19.6	8	19.5	2	8.6
Bicycling	5	8.1	15	19.4	10	19.6	4	9.7	2	8.6
Horseback riding	15	24.5	19	24.6	12	23.5	9	21.9	0	—
Photography	28	45.9	27	35.0	22	43.1	17	41.4	7	30.4
Leisure walking (through campground)	41	67.2	57	74.0	36	70.5	26	63.4	15	65.2
Basking (loafing)	25	40.9	35	45.4	24	47.0	23	56.0	12	52.1
Hiking	51	83.6	65	84.4	34	66.6	29	70.7	12	52.1
Driving for pleasure	31	50.8	41	53.2	25	49.0	21	51.2	15	65.2
Interpretive trails	31	50.8	35	45.4	19	37.2	16	39.0	4	17.3
Guided nature walks	23	37.7	37	48.0	21	41.1	18	43.9	7	30.4
Evening campfire talks	38	62.2	56	72.7	36	70.5	31	75.6	13	56.5
Park visitor center	43	70.4	54	70.1	39	76.4	28	68.2	17	73.9
Historical sites (outside park)	14	22.9	18	23.3	14	27.4	12	29.2	6	26.0
Visit Luray Caverns	25	40.9	20	25.9	10	19.6	12	29.2	6	26.0
Restaurant (Lodge)	13	21.3	21	27.2	13	25.4	12	29.2	7	30.4
Visit another's campsite	33	54.0	27	35.0	17	33.3	18	43.9	14	60.8
Visitors to your campsite	30	49.1	39	50.6	16	31.3	23	56.0	11	47.8
Playing cards	15	24.5	22	28.5	16	31.3	9	21.9	7	30.4
Reading	21	34.4	34	44.1	25	49.0	23	56.0	14	60.8
Camp chores	38	62.2	43	55.8	33	64.7	28	68.2	16	69.5
Campstore	39	63.9	59	76.6	34	66.6	30	73.1	14	60.8

TABLE 28. Percentage distribution of participants by life stage.

Activity	N	Life Stage (children)				
		All under 10	Some under 10	All over 10, at home	All over 10, some at home	All away
Picnicking	71	35.0	26.7	13.3	15.0	10.0
Informal sports and games	52	26.9	34.6	19.2	15.4	3.8
Bicycling	36	13.9	41.7	27.8	11.1	5.6
Horseback riding	55	27.3	34.5	21.8	16.8	6.9
Photography	101	27.7	26.7	21.8	16.8	6.9
Leisure walking (through campground)	178	23.0	32.0	20.2	16.3	8.4
Basking (loafing)	119	21.0	29.4	20.2	19.3	10.1
Hiking	191	26.7	34.0	17.8	15.2	6.3
Driving for pleasure	133	23.3	30.8	18.8	15.8	11.3
Interpretive trails	105	29.5	33.3	18.1	15.2	3.8
Guided nature walks	106	21.7	34.9	19.8	17.0	6.6
Evening campfire talks	174	21.8	32.2	20.7	17.8	7.5
Park visitor center	181	23.8	29.8	21.5	15.5	9.4
Historical sites (outside park)	64	21.9	28.1	21.9	18.8	9.4
Visit Luray Caverns	73	34.2	27.4	13.7	16.4	8.2
Restaurant (Lodge)	66	19.7	31.8	19.7	18.2	10.6
Visit another's campsite	109	30.3	24.8	15.6	16.5	12.8
Visitors to your campsite	119	25.2	32.8	13.4	19.3	9.2
Playing cards	69	21.7	31.9	23.2	13.0	10.1
Reading	117	17.9	29.1	21.4	19.7	12.0
Camp chores	158	24.1	27.2	20.9	17.7	10.1
Campstore	176	22.2	33.5	19.3	17.0	8.0

TABLE 29. Percentage distribution of respondents' camping-party composition by activities.

Activity	Camping Party Composition							
	Preschool (N=68)		Primary (N=142)		Junior (N=103)		Senior (N=83)	
	N	%	N	%	N	%	N	%
Picnicking	25	36.7	33	23.2	24	23.3	23	27.7
Informal sports and games	13	19.1	34	23.9	20	19.6	24	28.9
Bicycling	8	11.7	21	14.7	21	20.5	17	20.4
Horseback riding	15	22.0	36	25.3	29	28.4	26	31.3
Photography	36	52.9	60	42.2	42	41.1	31	37.3
Leisure walking (through campground)	51	75.0	101	71.1	72	69.9	63	75.9
Basking (loafing)	34	50.0	63	44.3	44	42.7	41	49.4
Hiking	56	82.3	121	85.2	80	77.6	64	77.1
Driving for pleasure	35	51.4	74	52.1	51	49.5	46	55.4
Interpretive trails	35	51.4	67	47.1	45	43.6	36	43.3
Guided nature walks	27	39.7	68	47.8	45	43.6	37	44.5
Evening campfire talks	46	67.6	102	71.8	69	66.9	62	74.7
Park visitor center	48	70.5	103	72.5	73	70.8	61	73.4
Historical sites (outside park)	18	26.4	35	24.6	24	23.3	29	34.9
Visit Luray Caverns	28	41.1	40	28.1	27	26.2	28	33.7
Restaurant (Lodge)	18	26.4	39	27.4	27	26.2	19	22.8
Visit another's campsite	34	50.0	58	40.8	38	36.8	31	37.3
Visitors to your campsite	33	48.5	71	50.0	45	43.6	38	45.7
Playing cards	17	25.0	40	28.1	33	32.0	36	43.3
Reading	30	44.1	62	43.6	44	42.7	43	51.8
Camp chores	45	66.1	87	61.2	65	63.1	54	65.0
Campstore	48	70.5	96	67.6	74	71.8	63	75.9

TABLE 30. Percentage distribution of participants by camping-party composition<sup>a</sup>.

Activity	N	Camping Party Composition			
		Preschool	Primary	Junior	Senior
Picnicking	84	29.8	39.3	28.6	27.4
Informal sports and games	63	20.6	54.0	31.7	38.1
Bicycling	44	18.2	47.7	47.7	38.6
Horseback riding	77	19.5	46.8	37.7	33.8
Photography	143	25.2	42.0	29.4	21.7
Leisure walking (through campground)	251	20.3	40.2	28.7	25.1
Basking (loafing)	162	21.0	38.9	27.2	25.3
Hiking	258	21.7	46.9	31.0	24.8
Driving for pleasure	189	18.5	39.2	27.0	24.3
Interpretive trails	142	24.6	47.2	31.7	25.4
Guided nature walks	141	19.1	48.2	31.9	26.2
Evening campfire talks	231	19.9	44.2	29.9	26.8
Park visitor center	240	20.0	42.9	30.4	25.4
Historical sites (outside park)	82	22.0	42.7	29.3	35.4
Visit Luray Caverns	102	27.5	39.2	26.5	27.5
Restaurant (Lodge)	92	19.6	42.4	29.3	20.7
Visit another's campsite	149	22.8	38.9	25.5	20.8
Visitors to your campsite	157	21.0	45.2	28.7	24.2
Playing cards	92	18.5	43.5	35.9	39.1
Reading	162	19.1	39.5	28.0	27.4
Camp chores	210	21.4	41.4	31.0	25.7
Campstore	237	20.3	40.5	31.2	26.6

<sup>a</sup>Percentage does not equal 100% because many parties had members from different categories.

TABLE 31. Percentage distribution of respondents' community size by activities.

Activity	Community Size (population)									
	Under 2,500 (N=24)		2,500– 14,999 (N=77)		15,000– 49,999 (N=88)		50,000– 249,999 (N=75)		250,000 and over (N=88)	
	N	%	N	%	N	%	N	%	N	%
Picnicking	7	29.2	20	25.9	21	23.8	16	21.3	18	20.4
Informal sports and games	3	12.5	17	22.1	15	17.0	13	17.3	14	15.9
Bicycling	6	25.0	10	12.9	10	11.3	8	10.6	9	10.2
Horseback riding	5	20.8	20	25.9	21	23.8	14	18.6	17	19.3
Photography	9	37.5	29	37.6	36	40.9	24	32.0	41	46.6
Leisure walking (through campground)	19	79.2	51	66.2	61	69.3	50	66.6	65	73.9
Basking (loafing)	13	54.2	41	53.2	38	43.1	26	34.6	40	45.4
Hiking	19	79.2	53	68.8	66	75.0	46	61.3	70	79.5
Driving for pleasure	15	54.2	37	48.0	50	56.8	38	50.6	45	51.1
Interpretive trails	11	45.8	27	35.0	33	37.5	27	36.0	41	46.6
Guided nature walks	10	41.7	26	33.7	36	40.9	28	37.3	37	42.0
Evening campfire talks	18	75.0	50	64.9	63	71.6	39	52.0	55	62.5
Park visitor center	18	75.0	54	70.1	60	68.2	44	58.6	58	65.9
Historical sites (outside park)	5	20.8	18	23.3	23	26.1	17	22.6	18	20.4
Visit Luray Caverns	8	33.3	26	33.7	29	32.9	21	28.0	16	18.2
Restaurant (Lodge)	5	20.8	19	24.7	22	25.0	21	28.0	24	20.4
Visit another's campsite	11	45.8	34	44.1	39	44.3	27	36.0	37	42.0
Visitors to your campsite	11	45.8	36	46.7	42	47.7	27	36.0	40	45.4
Playing cards	9	37.5	20	25.9	29	32.9	11	14.6	21	23.8
Reading	11	45.8	34	44.1	34	38.6	31	41.3	46	52.3
Camp chores	16	66.7	45	58.4	51	57.9	33	44.0	59	67.0
Campstore	20	83.3	51	66.2	59	67.0	41	54.6	62	70.4

TABLE 32. Percentage distribution of participants by respondents' community size.

Activity	N	Community Size (population)				
		Under 2,500	2,500– 14,999	15,000– 49,999	50,000– 249,999	250,000 and over
Picnicking	82	8.5	24.4	25.6	19.5	22.0
Informal sports and games	62	4.8	27.4	24.2	21.0	22.6
Bicycling	63	14.0	23.3	23.3	18.6	20.9
Horseback riding	77	6.5	26.0	27.3	18.2	22.1
Photography	139	6.5	20.9	25.9	17.3	29.5
Leisure walking (through campground)	246	7.7	20.7	24.8	20.3	26.4
Basking (loafing)	158	8.2	25.9	24.1	16.5	25.3
Hiking	254	7.5	20.9	26.0	18.1	27.6
Driving for pleasure	185	8.1	20.0	27.0	20.5	24.3
Interpretive trails	139	7.9	19.4	23.7	19.4	29.5
Guided nature walks	137	7.3	19.0	26.3	20.4	27.0
Evening campfire talks	225	8.0	22.2	28.0	17.3	24.4
Park visitor center	234	7.7	23.1	25.6	18.8	24.8
Historical sites (outside park)	81	6.2	22.2	28.4	21.0	22.2
Visit Luray Caverns	100	8.0	26.0	29.0	21.0	16.0
Restaurant (Lodge)	92	6.5	20.7	23.9	22.8	26.1
Visit another's campsite	148	7.4	23.0	26.4	18.2	25.0
Visitors to your campsite	156	7.1	23.1	26.9	17.3	25.6
Playing cards	90	10.0	22.2	32.2	12.2	23.3
Reading	156	7.1	21.8	21.8	19.9	29.5
Camp chores	204	7.8	22.1	25.0	16.2	28.9
Campstore	233	8.6	21.9	25.3	17.6	26.6



TABLE 33. Percentage distribution of respondents' length of stay by activities.

Activity	Length of Stay					
	Transient (N=80)		Weekend (N=144)		Vacation (N=115)	
	N	%	N	%	N	%
Picnicking	6	7.5	37	25.6	34	29.5
Informal sports and games	9	11.2	24	16.6	25	21.7
Bicycling	3	3.7	13	9.0	26	22.6
Horseback riding	5	6.2	32	22.2	35	30.4
Photography	16	20.0	58	40.2	57	49.5
Leisure walking (through campground)	36	45.0	113	78.4	88	76.5
Basking (loafing)	21	26.2	78	54.1	58	50.4
Hiking	24	30.0	115	79.8	106	92.1
Driving for pleasure	26	32.5	75	52.0	74	64.3
Interpretive trails	6	7.5	58	40.2	70	60.8
Guided nature walks	10	12.5	57	39.5	65	56.5
Evening campfire talks	27	33.7	91	63.1	98	85.2
Park visitor center	27	33.7	106	73.6	94	81.7
Historical sites (outside park)	10	12.5	36	25.0	31	26.9
Visit Luray Caverns	12	15.0	37	25.6	46	40.0
Restaurant (Lodge)	11	13.7	41	28.4	34	29.5
Visit another's campsite	16	20.0	55	38.1	71	61.7
Visitors to your campsite	15	18.7	53	36.8	77	66.9
Playing cards	9	11.2	38	26.2	40	34.7
Reading	11	13.7	75	52.0	62	53.9
Camp chores	25	31.2	93	64.5	80	69.5
Campstore	29	36.2	107	74.3	88	76.5

TABLE 34. Percentage distribution of participants by length of stay.

Activity	N	Transient	Weekend	Vacation
Picnicking	77	7.8	48.1	44.2
Informal sports and games	58	15.5	41.4	43.1
Bicycling	42	7.1	31.0	61.9
Horseback riding	72	6.9	44.4	48.6
Photography	131	12.2	44.3	43.5
Leisure walking (through campground)	237	15.2	47.7	37.1
Basking (loafing)	157	13.4	49.7	36.9
Hiking	245	9.8	46.9	43.3
Driving for pleasure	175	14.9	42.9	42.3
Interpretive trails	134	4.5	43.3	52.2
Guided nature walks	132	7.6	43.2	49.2
Evening campfire talks	216	12.5	42.1	45.4
Park visitor center	227	11.9	46.7	41.4
Historical sites (outside park)	77	13.0	46.8	40.3
Visit Luray Caverns	95	12.6	38.9	48.4
Restaurant (Lodge)	86	12.8	47.7	39.5
Visit another's campsite	142	11.3	38.7	50.0
Visitors to your campsite	145	10.3	36.6	53.1
Playing cards	87	10.3	43.7	46.0
Reading	148	7.4	50.7	41.9
Camp chores	198	12.6	47.0	40.4
Campstore	224	12.9	47.8	39.3

TABLE 35. Percentage distribution of first visits and returnees by activities.

Activity	First visit (N = 187)		Returnee (N = 168)	
	N	%	N	%
Picnicking	36	19.2	46	27.3
Informal sports and games	31	16.6	31	18.4
Bicycling	14	7.5	29	17.2
Horseback riding	43	22.9	34	20.2
Photography	69	36.9	70	41.6
Leisure walking (through campground)	117	62.6	129	76.7
Basking (loafing)	68	36.6	92	54.7
Hiking	125	66.8	129	76.7
Driving for pleasure	95	50.8	90	53.6
Interpretive trails	67	35.8	72	42.8
Guided nature walks	67	35.8	71	42.2
Evening campfire talks	112	59.9	115	68.4
Park visitor center	118	63.1	118	70.2
Historical sites (outside park)	46	24.6	34	20.2
Visit Luray Caverns	62	33.1	37	22.0
Restaurant (Lodge)	35	18.7	57	33.9
Visit another's campsite	75	40.1	73	43.4
Visitors to your campsite	69	36.9	85	50.6
Playing cards	44	23.5	47	27.9
Reading	71	37.9	84	50.0
Camp chores	94	50.3	112	66.7
Campstore	113	60.4	121	72.0

TABLE 36. Percentage distribution of participants by first visits and returnees.

Activity	<i>N</i>	First visit	Returnee
Picnicking	82	43.6	56.1
Informal sports and games	62	50.0	50.0
Bicycling	43	32.6	67.4
Horseback riding	77	55.8	44.2
Photography	139	49.6	50.4
Leisure walking (through campground)	246	47.6	52.4
Basking (loafing)	160	42.5	57.5
Hiking	254	49.2	50.8
Driving for pleasure	185	51.4	48.6
Interpretive trails	139	48.2	51.8
Guided nature walks	138	48.6	51.4
Evening campfire talks	227	49.3	50.7
Park visitor center	236	50.0	50.0
Historical sites (outside park)	80	57.4	42.5
Visit Luray Caverns	99	62.6	37.4
Restaurant (Lodge)	92	38.0	62.0
Visit another's campsite	148	50.7	49.3
Visitors to your campsite	154	44.8	55.2
Playing cards	91	48.4	51.6
Reading	155	45.8	54.2
Camp chores	206	45.6	54.4
Campstore	234	48.3	51.7

# APPENDIX E

## PERCENTAGE DISTRIBUTION TABLES CONCERNING SOCIAL INTERACTION BY DESCRIPTIVE CHARACTERISTICS



TABLE 37. Percentage distribution of respondents' social status by people met and interaction level.

People met	Interaction level	Social Status					
		Low		Middle		High	
		N	%	N	%	N	%
Any member of the immediately neighboring campsite.	None	8	15.1	17	15.6	31	21.1
	Low	8	15.1	26	23.9	29	19.7
	Medium	18	34.0	27	24.8	30	20.4
	High	19	35.8	39	35.8	57	38.8
Any other camper in the campground.	None	11	20.8	27	24.8	27	18.4
	Low	19	35.8	37	33.9	35	23.8
	Medium	12	22.6	22	20.2	41	27.9
	High	11	20.8	23	21.1	44	29.9
Any other visitors in the national park.	None	26	49.1	40	36.7	53	36.1
	Low	11	20.8	37	33.9	46	31.3
	Medium	10	18.9	21	19.3	30	20.4
	High	6	11.3	11	10.1	18	12.2
Any people outside of the national park.	None	39	73.6	73	67.0	107	72.8
	Low	10	18.9	20	18.3	27	18.4
	Medium	4	7.5	8	7.3	8	5.4
	High	0	—	8	7.3	5	3.4
Any park ranger or park naturalist.	None	16	30.2	22	20.2	32	21.8
	Low	24	45.3	44	40.4	52	35.4
	Medium	6	11.3	15	13.8	17	11.6
	High	7	13.2	28	25.7	46	31.3

TABLE 38. Percentage distribution of social status by activity and interaction level.

Activity	Interaction level	Social Status					
		Low		Middle		High	
		N	%	N	%	N	%
Photography	None	13	65.0	28	66.7	41	63.1
	Low	1	5.0	8	19.0	20	30.8
	High	6	30.0	6	14.3	4	6.2
Leisure walking	None	11	32.4	32	41.6	33	30.8
	Low	12	35.3	25	32.5	48	44.9
	High	11	32.4	20	26.0	26	24.3
Basking	None	17	63.0	26	51.0	40	63.5
	Low	5	18.5	16	31.4	13	20.6
	High	5	18.5	9	17.6	10	15.9
Hiking	None	10	28.6	23	31.1	28	23.7
	Low	11	31.4	28	37.8	53	44.9
	High	14	40.0	23	31.1	37	31.4
Driving for pleasure	None	19	76.0	57	90.5	66	88.0
	Low	1	4.0	3	4.8	4	5.3
	High	5	20.0	3	4.8	5	6.7
Interpretive trails	None	7	41.2	14	36.8	30	42.9
	Low	7	41.2	17	44.7	27	38.6
	High	3	17.6	7	18.4	13	18.6
Guided nature walks	None	2	14.3	18	42.9	15	22.7
	Low	9	64.3	12	28.6	28	42.4
	High	3	21.4	12	28.6	23	34.8
Evening campfire talks	None	11	40.7	41	56.9	34	33.7
	Low	9	33.3	18	25.0	38	37.6
	High	7	25.9	13	18.1	29	28.7
Park visitor center	None	18	64.3	48	63.2	64	57.7
	Low	8	28.6	20	26.3	34	30.6
	High	2	7.1	8	10.5	13	11.7
Visit another's campsite	None	2	8.0	11	23.4	4	6.8
	Low	4	16.0	6	12.8	13	22.0
	High	19	76.0	30	63.8	42	71.2
Visitors to your campsite	None	2	11.8	9	17.6	4	5.8
	Low	3	17.6	12	23.5	15	21.7
	High	12	70.6	30	58.8	50	72.5
Campstore	None	22	71.0	51	68.9	71	68.9
	Low	7	22.6	20	27.0	25	24.3
	High	2	6.5	3	4.1	7	6.8
Camp chores	None	19	86.4	57	82.6	69	72.6
	Low	1	4.5	6	8.7	20	21.1
	High	2	9.1	6	8.7	6	6.3



TABLE 39. Percentage distribution of respondents' marital status by people met and interaction level.

People met	Interaction level	Marital Status			
		Single		Married	
		<i>N</i>	%	<i>N</i>	%
Any member of the immediately neighboring campsite.	None	6	12.0	56	19.1
	Low	12	24.0	54	18.4
	Medium	13	26.0	71	24.2
	High	19	38.0	112	38.2
Any other camper in the campground.	None	11	22.0	61	20.8
	Low	12	24.0	89	30.4
	Medium	14	28.0	66	22.5
	High	13	26.0	77	26.3
Any other visitors in the national park.	None	19	38.0	114	38.9
	Low	8	16.0	89	30.4
	Medium	14	28.0	56	19.1
	High	9	18.0	34	11.6
Any people outside of the national park.	None	37	74.0	208	71.0
	Low	7	14.0	54	18.4
	Medium	4	8.0	17	5.8
	High	2	4.0	14	4.8
Any park ranger or park naturalist.	None	17	34.0	64	21.8
	Low	12	24.0	121	41.3
	Medium	8	16.0	34	11.6
	High	13	26.0	74	25.3

TABLE 40. Percentage distribution of marital status by activity and interaction level.

Activity	Interaction level	Marital Status			
		Single		Married	
		<i>N</i>	%	<i>N</i>	%
Photography	None	11	64.7	81	67.5
	Low	1	5.9	27	22.5
	High	5	29.4	12	10.0
Leisure walking	None	10	33.3	75	35.5
	Low	9	30.0	82	39.9
	High	11	36.7	54	25.6
Basking	None	11	47.8	83	62.4
	Low	4	17.4	30	22.6
	High	8	34.8	20	15.0
Hiking	None	5	16.1	63	29.2
	Low	11	35.5	87	40.3
	High	15	48.4	66	30.6
Driving for pleasure	None	17	77.3	141	87.6
	Low	0	—	9	5.6
	High	5	22.7	11	6.8
Interpretive trails	None	11	64.7	45	38.5
	Low	3	17.6	50	42.7
	High	3	17.6	22	18.8
Guided nature walks	None	6	35.3	34	28.8
	Low	5	29.4	49	41.5
	High	6	35.3	35	29.7
Evening campfire talks	None	13	48.1	85	43.8
	Low	5	18.5	64	33.0
	High	9	33.3	45	23.2
Park visitor center	None	15	65.2	123	59.4
	Low	6	26.1	61	29.5
	High	2	8.7	23	11.1
Visit another's campsite	None	1	5.0	19	15.7
	Low	3	15.0	18	14.9
	High	16	80.0	84	69.4
Visitors to your campsite	None	0	—	17	13.0
	Low	4	23.5	26	19.8
	High	13	76.5	88	67.2
Campstore	None	16	59.3	139	69.8
	Low	8	29.6	49	24.6
	High	3	11.1	11	5.5
Camp chores	None	15	68.2	138	78.0
	Low	1	4.5	28	15.8
	High	6	27.3	11	6.2

TABLE 41. Percentage distribution of respondents' number of children by people met and interaction level.

People met	Interaction level	Number of Children											
		None		One		Two		Three		Four or more		N	%
		N	%	N	%	N	%	N	%	N	%		
Any member of the immediately neighboring campsite.	None	17	18.1	7	21.9	10	15.6	10	15.2	17	23.6		
	Low	23	24.5	6	18.8	11	17.2	14	21.2	12	16.7		
	Medium	19	20.2	8	25.0	20	31.3	17	25.8	15	20.8		
	High	35	37.2	11	34.4	23	35.9	25	37.9	28	38.9		
Any other camper in the campground.	None	16	17.0	5	15.6	16	25.0	14	21.2	20	27.8		
	Low	32	34.0	8	25.0	17	26.6	23	34.8	18	25.0		
	Medium	28	29.8	10	31.3	16	25.0	14	21.2	11	15.3		
	High	18	19.1	9	28.1	15	23.4	15	22.7	23	31.9		
Any other visitors in the national park.	None	33	35.1	12	37.5	24	37.5	27	40.9	28	38.9		
	Low	30	31.9	8	25.0	17	26.6	21	31.8	23	31.9		
	Medium	18	19.1	7	21.9	16	25.0	12	18.2	15	20.8		
	High	13	13.8	5	15.6	7	10.9	6	9.1	6	8.3		
Any people outside of the national park.	None	63	67.0	21	65.6	45	70.3	51	77.3	53	73.6		
	Low	21	17.0	8	25.0	12	18.3	10	15.2	12	16.7		
	Medium	9	9.6	1	3.1	4	6.3	4	6.1	4	5.6		
	High	6	6.4	2	6.3	3	4.7	1	1.5	3	4.2		
Any park ranger or park naturalist.	None	26	27.7	11	34.4	13	20.3	16	24.2	15	20.8		
	Low	31	33.0	16	50.0	28	43.8	22	33.3	28	38.9		
	Medium	18	19.1	1	3.1	6	9.4	8	12.1	6	8.3		
	High	19	20.2	4	12.5	17	26.6	20	30.3	23	31.9		

TABLE 42. Percentage distribution of number of children by activity and interaction level.

Activity	Interaction level	Number of Children									
		None		One child		Two children		Three children		Four or more children	
		N	%	N	%	N	%	N	%	N	%
Photography	None	19	51.4	8	57.1	19	70.4	24	80.0	17	73.9
	Low	10	27.0	4	28.6	6	22.2	5	16.7	4	17.4
	High	8	21.6	2	14.3	2	17.4	1	3.3	2	8.7
Leisure walking	None	21	32.8	6	27.3	20	48.8	18	38.3	10	19.6
	Low	25	39.1	7	31.8	15	36.6	19	40.4	24	47.1
	High	18	28.1	9	40.9	6	14.6	10	21.3	17	33.3
Basking	None	19	52.8	9	52.9	15	62.5	20	66.7	21	58.3
	Low	9	25.0	4	23.5	5	20.8	4	13.3	10	27.8
	High	8	22.2	4	23.5	4	16.7	6	20.0	5	13.9
Hiking	None	8	13.3	8	38.1	14	29.2	19	35.8	13	23.6
	Low	28	46.7	7	33.3	20	41.7	20	37.7	24	43.6
	High	24	40.0	6	28.6	14	29.2	14	26.4	18	32.7
Driving for pleasure	None	41	85.4	14	77.8	26	89.7	35	89.7	29	78.4
	Low	1	2.1	1	5.6	2	6.9	2	5.1	3	8.1
	High	6	12.5	3	16.7	1	3.4	2	5.1	5	13.5
Interpretive trails	None	14	43.8	5	50.0	12	50.0	11	36.7	13	39.4
	Low	14	43.8	3	30.0	10	41.7	13	43.3	12	36.4
	High	4	12.5	2	20.0	2	8.3	6	20.0	8	24.2
Guided nature walks	None	9	30.0	3	37.5	9	37.5	10	27.8	9	27.3
	Low	13	43.3	2	25.0	10	41.7	16	44.4	10	30.3
	High	8	26.7	3	37.5	5	20.8	10	27.8	14	42.4
Evening campfire talks	None	18	35.3	7	46.7	23	50.0	23	47.9	22	44.9
	Low	14	27.5	5	33.3	14	30.4	19	39.6	12	24.5
	High	19	37.3	3	20.0	9	19.6	6	12.5	15	30.6
Park visitor center	None	32	62.7	13	59.1	24	60.0	32	64.0	30	55.6
	Low	13	25.5	7	31.8	14	35.0	14	28.0	14	25.9
	High	6	11.8	2	9.1	2	5.0	4	8.0	10	18.5
Visit another's campsite	None	2	5.7	1	7.7	3	10.7	4	14.3	5	16.7
	Low	5	14.3	3	23.1	5	17.9	6	21.4	3	10.0
	High	28	80.0	9	69.2	20	71.4	18	64.3	22	73.3
Visitors to your campsite	None	1	3.0	0	—	5	17.9	5	15.2	3	8.8
	Low	10	30.3	4	25.0	3	10.7	8	24.6	7	20.6
	High	22	66.7	12	75.0	20	71.4	20	60.6	24	70.6
Campstore	None	41	77.4	15	68.2	31	72.1	34	68.0	28	57.1
	Low	11	20.8	6	27.3	8	18.6	12	24.0	19	38.8
	High	1	1.9	1	4.5	4	9.3	4	8.0	2	4.1
Camp chores	None	32	71.1	14	73.7	31	79.4	34	79.1	33	76.7
	Low	8	17.8	3	15.8	4	10.3	6	14.0	6	14.0
	High	5	11.1	2	10.5	4	10.3	3	7.0	4	9.3

TABLE 43. Percentage distribution of respondents' life stage by people met and interaction level.

People met	Interaction level	Life Stage									
		Children under 10		Some under 10		Over 10 living home		Over 10 some home		All children away	
		N	%	N	%	N	%	N	%	N	%
Any member of the immediately neighboring campsite.	None	14	23.0	12	15.6	13	25.5	6	14.6	3	13.0
	Low	13	21.3	13	16.9	8	15.7	7	17.1	3	13.0
	Medium	14	23.0	20	26.0	16	31.4	8	19.4	7	30.4
	High	20	32.8	32	41.6	14	27.5	20	48.8	10	43.5
Any other camper in the campground.	None	15	24.6	12	15.6	15	29.4	11	26.8	4	17.4
	Low	10	16.4	28	36.4	16	31.4	8	19.5	7	30.4
	Medium	15	24.6	14	18.2	11	21.6	13	31.7	3	13.0
	High	21	34.4	23	29.9	9	17.6	9	22.0	9	39.1
Any other visitors in the national park.	None	23	37.7	22	28.6	28	54.9	18	43.9	9	39.1
	Low	15	24.6	30	39.0	13	25.5	9	22.0	7	30.4
	Medium	14	23.0	16	20.8	7	13.7	12	29.3	2	8.7
	High	9	14.8	9	11.7	3	5.9	2	4.9	5	21.7
Any people outside of the national park.	None	38	62.3	56	72.7	42	82.4	31	75.6	17	73.9
	Low	16	26.2	15	19.5	5	9.8	6	14.6	4	17.4
	Medium	5	8.2	3	3.9	4	7.8	1	2.4	0	—
	High	2	3.3	3	3.9	0	—	3	7.3	2	8.7
Any park ranger or park naturalist.	None	16	26.2	16	20.8	11	21.6	10	24.4	5	21.7
	Low	29	47.5	30	39.0	17	33.3	17	41.5	11	47.8
	Medium	4	6.6	11	14.3	4	7.8	2	4.9	1	4.3
	High	12	19.7	20	26.0	19	37.3	12	29.3	6	26.1

TABLE 44. Percentage distribution of life stage by activity and interaction level.

Activity	Interaction level	Life Stage									
		Children under 10		Some under 10		Over 10 living home		Over 10 some home		All children away	
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Photography	None	20	71.4	20	74.1	18	81.8	11	64.7	5	71.4
	Low	7	25.0	6	22.2	2	9.1	3	17.6	1	14.3
	High	1	3.6	1	3.7	2	9.1	3	17.6	1	14.3
Leisure walking	None	17	41.5	16	28.1	17	47.2	7	24.1	6	40.0
	Low	14	34.1	30	52.6	10	27.8	12	41.4	2	13.3
	High	10	24.4	11	19.3	9	25.0	10	34.5	7	46.7
Basking	None	16	64.0	21	60.0	17	70.8	13	56.5	9	75.0
	Low	5	20.0	9	25.7	3	12.5	6	26.1	1	8.3
	High	4	16.0	5	14.3	4	16.7	4	17.4	2	16.7
Hiking	None	20	39.2	15	23.1	9	26.4	12	41.4	4	33.3
	Low	20	39.2	27	41.5	13	38.2	9	31.0	4	33.3
	High	11	21.6	23	35.4	12	35.3	8	27.6	4	33.3
Driving for pleasure	None	26	83.9	32	78.0	22	88.0	20	95.2	14	93.3
	Low	3	9.7	4	9.8	1	4.0	0	—	0	—
	High	2	6.5	5	12.2	2	8.0	1	4.8	1	6.7
Interpretive trails	None	13	41.9	12	34.3	10	52.6	7	43.8	2	50.0
	Low	12	38.7	16	45.7	5	26.3	7	43.8	0	—
	High	6	19.4	7	20.0	4	21.1	2	12.5	2	50.0
Guided nature walks	None	6	26.1	7	18.9	6	28.6	9	50.0	4	57.1
	Low	12	52.2	16	43.2	7	33.3	5	27.8	0	—
	High	5	21.7	14	37.8	8	38.1	4	22.2	3	42.9
Evening campfire talks	None	20	52.6	16	28.6	20	55.6	16	51.6	9	69.2
	Low	12	31.6	24	42.9	10	27.8	7	22.6	2	15.4
	High	6	15.8	16	28.6	6	16.7	8	25.8	2	15.4
Park visitor center	None	26	60.5	26	48.1	24	61.5	20	71.4	13	76.5
	Low	11	25.6	22	40.7	10	25.6	7	25.0	2	11.8
	High	6	14.0	6	11.1	5	12.8	1	3.6	2	11.8
Visit another's campsite	None	2	6.1	12	7.4	4	23.5	4	22.2	4	28.6
	Low	7	21.2	6	22.2	2	11.8	1	5.6	2	14.3
	High	24	72.7	19	70.4	11	64.7	13	72.2	8	57.1
Visitors to your campsite	None	2	6.7	3	7.7	2	12.5	7	30.4	1	9.1
	Low	4	13.3	6	15.4	5	31.3	5	21.7	3	27.3
	High	24	80.0	30	76.9	9	56.3	11	47.8	7	63.6
Campstore	None	25	64.1	34	57.6	26	76.5	20	66.7	11	78.6
	Low	10	25.6	23	39.0	5	14.7	8	26.7	1	7.1
	High	4	10.3	2	3.4	3	8.8	2	6.7	2	14.3
Camp chores	None	28	73.3	32	74.4	28	84.8	20	71.4	15	93.7
	Low	5	13.2	10	23.3	2	6.1	4	14.3	0	—
	High	5	13.2	1	2.3	3	9.1	4	14.3	1	6.3

TABLE 45. Percentage distribution of respondents' camping party composition by people met and interaction level.

People met	Interaction level	Camping Party Composition							
		Pre-school		Primary grades		Junior high		Senior high	
		N	%	N	%	N	%	N	%
Any member of the immediately neighboring campsite.	None	13	19.1	29	20.4	21	20.4	17	20.5
	Low	20	29.4	27	19.0	19	18.4	12	14.5
	Medium	13	19.1	29	20.4	23	22.3	22	26.5
	High	22	32.4	57	40.1	40	38.8	32	38.6
Any other camper in the campground.	None	13	19.1	33	23.2	28	27.2	19	22.9
	Low	20	29.4	42	29.6	30	28.6	20	24.1
	Medium	13	19.1	22	15.5	14	15.9	23	27.7
	High	22	32.4	45	31.7	31	34.1	21	25.3
Any other visitors in the national park.	None	24	35.3	50	35.2	39	37.9	34	41.0
	Low	18	26.5	46	32.4	36	35.0	26	31.3
	Medium	15	22.1	30	21.1	23	22.3	13	15.7
	High	11	16.2	16	11.3	5	4.9	10	12.0
Any people outside of the national park.	None	43	63.2	101	71.1	75	72.8	59	71.1
	Low	16	23.5	27	19.0	18	17.5	13	15.7
	Medium	6	8.8	8	5.6	8	7.8	7	8.4
	High	3	4.4	6	4.2	2	1.9	4	4.8
Any park ranger or park naturalist.	None	15	22.1	31	21.8	24	23.3	15	18.1
	Low	32	47.1	58	40.8	37	35.9	30	36.1
	Medium	7	10.3	13	9.2	10	9.7	11	13.3
	High	14	20.6	40	28.2	32	31.1	27	32.5

TABLE 46. Percentage distribution of camping-party composition by activity and interaction level.

Activity	Interaction level	Pre-school		Primary grades		Junior high		Senior high	
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Photography	None	27	75.0	47	78.3	32	76.2	24	77.4
	Low	8	22.2	11	18.3	7	16.7	6	19.4
	High	1	2.8	2	3.3	3	7.1	1	3.2
Leisure walking	None	18	35.3	33	32.7	23	31.9	19	30.2
	Low	21	43.1	47	46.5	32	44.4	24	38.1
	High	11	21.6	21	20.8	17	23.6	20	31.7
Basking	None	24	70.6	41	65.1	26	59.1	24	58.5
	Low	6	17.6	13	20.6	11	25.0	8	19.5
	High	4	11.8	9	14.3	7	15.9	9	22.0
Hiking	None	22	39.3	34	28.1	21	26.3	18	28.1
	Low	19	33.9	53	43.8	35	43.8	24	37.5
	High	15	26.8	34	28.1	24	30.0	22	34.4
Driving for pleasure	None	29	82.9	60	81.1	41	80.4	40	87.0
	Low	4	11.4	6	8.1	4	7.8	1	2.2
	High	2	5.7	8	10.8	6	11.8	5	10.9
Interpretive trails	None	16	45.7	25	37.3	17	37.8	15	41.7
	Low	13	37.1	27	40.3	19	42.2	10	27.8
	High	6	17.1	15	22.4	9	20.0	11	30.6
Guided nature walks	None	6	22.2	17	25.0	13	28.9	12	32.4
	Low	13	48.1	28	41.2	16	35.6	11	29.7
	High	8	29.6	23	33.8	16	35.6	14	37.8
Evening campfire talks	None	20	43.5	43	42.2	32	46.4	30	48.4
	Low	16	34.8	39	38.2	22	31.9	15	24.2
	High	10	21.7	20	19.6	15	21.7	17	27.4
Park visitor center	None	24	50.0	56	54.4	40	54.8	34	55.7
	Low	16	33.3	33	32.0	25	34.2	18	29.5
	High	8	16.7	14	13.6	8	11.0	9	14.8
Visit another's campsite	None	3	8.8	9	15.5	7	18.4	4	12.9
	Low	8	23.5	10	17.2	8	21.1	3	9.7
	High	23	67.6	39	67.2	23	60.5	24	77.4
Visitors to your campsite	None	4	12.1	8	11.3	7	15.6	4	10.5
	Low	5	15.2	11	15.5	8	17.8	8	21.1
	High	24	72.7	52	73.2	30	66.7	26	68.4
Campstore	None	27	56.3	59	61.5	51	68.9	41	65.1
	Low	18	37.5	30	31.3	21	28.4	18	28.6
	High	3	6.3	7	7.3	2	2.7	4	6.3
Camp chores	None	35	77.8	63	72.4	51	78.5	40	74.1
	Low	7	15.6	16	18.4	10	15.4	8	14.8
	High	3	6.7	8	9.2	4	6.2	6	11.1



TABLE 47. Percentage distribution of respondents' community size by people met and interaction level.

People met	Interaction level	Size of Community (population)									
		Under 2,500		2,500-14,999		15,000-49,999		50,000-249,999		250,000 +	
		N	%	N	%	N	%	N	%	N	%
Any member of the immediately neighboring campsite.	None	3	12.5	15	19.5	17	19.3	14	18.7	15	17.0
	Low	2	8.3	10	13.0	20	22.7	16	21.3	19	21.6
	Medium	8	33.3	22	28.6	16	18.2	20	26.7	23	26.1
	High	11	45.8	30	39.0	35	39.8	25	33.3	31	35.2
Any other camper in the campground.	None	4	16.7	14	18.2	17	19.3	18	24.0	19	21.6
	Low	7	29.2	24	31.2	22	25.0	21	28.0	30	34.1
	Medium	7	29.2	21	27.3	23	26.1	17	22.7	19	21.6
	High	6	25.0	18	23.4	26	29.5	19	25.3	20	22.7
Any other visitors in the national park.	None	9	37.5	26	33.8	30	34.1	34	45.3	36	40.9
	Low	6	25.0	28	36.4	29	33.0	14	18.7	27	30.7
	Medium	4	16.7	13	16.9	21	23.9	17	22.7	15	17.0
	High	5	20.8	10	13.0	8	9.1	10	13.3	10	11.4
Any people outside of the national park.	None	15	62.5	47	61.0	66	75.0	56	74.7	65	73.9
	Low	6	25.0	17	22.1	14	15.9	10	13.3	16	18.2
	Medium	2	8.3	6	7.8	6	6.8	4	5.3	5	5.7
	High	1	4.2	7	9.1	2	2.3	5	6.7	2	2.3
Any park ranger or park naturalist.	None	7	29.2	15	19.5	25	28.4	23	30.7	16	18.2
	Low	7	29.2	34	44.2	29	33.0	24	32.0	42	47.7
	Medium	3	12.5	8	10.4	14	15.9	10	13.3	6	6.8
	High	7	29.2	20	26.0	20	22.7	18	24.0	24	27.3

TABLE 48. Percentage distribution respondents' community size by activity and interaction level.

Activity	Interaction level	Size of Community (population)									
		Under 2,500		2,500–14,999		15,000–49,999		50,000–249,999		250,000+	
		N	%	N	%	N	%	N	%	N	%
Photography	None	6	66.7	22	75.9	22	61.1	16	66.7	28	68.3
	Low	2	22.2	6	20.7	9	25.0	4	16.7	6	14.6
	High	1	11.1	1	3.4	5	13.9	4	16.7	6	14.6
Leisure walking	None	9	47.4	15	29.4	20	32.8	15	30.0	27	41.5
	Low	3	15.8	25	49.0	22	36.1	14	28.0	14	21.5
	High	7	36.8	11	21.6	19	31.1	14	28.0	14	21.5
Basking	None	9	69.2	25	61.0	19	50.0	17	65.4	25	62.5
	Low	2	15.4	9	22.0	11	28.9	3	11.5	10	25.0
	High	2	15.4	7	17.1	8	21.1	6	23.1	5	12.5
Hiking	None	6	31.6	13	24.5	16	24.5	12	26.1	23	32.9
	Low	5	26.3	25	47.2	27	40.9	18	39.1	27	38.6
	High	8	42.1	15	28.3	23	34.8	16	34.8	20	28.6
Driving for pleasure	None	14	93.3	33	89.2	39	78.0	31	81.6	42	93.3
	Low	0	—	1	2.7	4	8.0	3	7.9	1	2.2
	High	1	6.7	3	8.1	7	14.0	4	10.5	2	4.4
Interpretive trails	None	6	54.5	6	22.2	12	36.4	11	40.7	24	58.5
	Low	3	27.3	15	55.6	12	36.4	11	40.7	13	31.7
	High	2	18.2	6	22.2	9	27.3	5	18.5	4	9.8
Guided nature walks	None	2	20.0	5	19.2	11	30.6	9	32.1	15	40.5
	Low	5	50.0	11	41.7	15	41.7	13	46.4	9	24.3
	High	3	30.0	10	38.5	10	27.8	6	21.4	13	35.1
Evening campfire talks	None	10	55.6	26	52.0	25	39.7	17	43.6	22	40.0
	Low	5	27.8	15	30.0	19	30.2	12	30.8	19	34.5
	High	3	16.7	9	18.0	19	30.2	10	25.6	14	25.5
Park visitor center	None	11	61.1	33	61.1	35	58.3	23	52.3	40	69.0
	Low	4	22.2	16	29.6	19	31.7	12	27.3	17	29.3
	High	3	16.7	5	9.3	6	10.0	9	20.5	1	1.7
Visit another's campsite	None	0	—	9	26.5	2	5.1	4	14.8	4	10.8
	Low	3	27.3	3	8.8	5	12.8	2	7.4	10	27.0
	High	8	72.7	22	64.7	32	82.1	21	77.8	23	62.2
Visitors to your campsite	None	0	—	5	13.9	3	7.1	3	11.1	6	15.0
	Low	2	18.2	9	25.0	8	19.0	3	11.1	11	27.5
	High	9	81.8	22	61.1	31	73.8	21	77.8	23	57.5
Campstore	None	14	70.0	36	70.6	34	57.6	31	75.6	44	71.0
	Low	3	15.0	14	27.5	20	33.9	7	17.1	16	25.8
	High	3	15.0	1	2.0	5	8.5	3	7.3	2	3.2
Camp chores	None	12	75.0	35	77.8	38	74.5	23	69.7	48	81.4
	Low	2	12.5	7	15.6	10	19.6	5	15.2	6	10.2
	High	2	12.5	3	6.7	3	5.9	5	15.2	5	8.5

TABLE 49. Percentage distribution of length of stay by people met and interaction level<sup>a</sup>.

People met	Interaction level	Transient		Weekend		Vacation	
		N	%	N	%	N	%
Any member of the immediately neighboring campsite.	None	30	37.5	27	18.8	4	3.5
	Low	20	25.0	30	20.8	14	12.2
	Medium	15	18.8	43	29.9	29	25.2
	High	15	18.8	44	30.6	68	59.1
Any other camper in the campground.	None	36	45.0	21	14.6	12	10.4
	Low	25	31.3	56	38.9	20	17.4
	Medium	12	15.0	37	25.7	35	30.4
	High	7	8.8	30	20.8	48	41.7
Any other visitors in the national park.	None	48	60.0	49	34.0	33	28.7
	Low	49	23.8	53	36.8	30	26.1
	Medium	7	8.8	28	19.4	32	27.8
	High	6	7.5	14	9.7	20	17.4
Any people outside of the national park.	None	68	85.0	106	73.6	67	58.3
	Low	7	8.8	25	17.4	28	24.3
	Medium	3	3.8	7	4.9	13	11.3
	High	2	2.5	6	4.2	7	6.1
Any park ranger or park naturalist.	None	36	45.0	33	22.9	9	7.8
	Low	35	43.8	59	41.0	39	33.9
	Medium	6	7.5	17	11.8	18	15.7
	High	3	3.8	35	24.3	49	42.6

<sup>a</sup>Significant at the 0.05 level.

TABLE 50. Percentage distribution of length of stay by activity and interaction level.

Activity	Interaction level	Length of Stay					
		Transient		Weekend		Vacation	
		N	%	N	%	N	%
Photography	None	14	87.5	38	65.5	35	61.4
	Low	2	12.5	10	17.2	16	28.1
	High	0	—	10	17.2	6	10.5
Leisure walking	None <sup>a</sup>	21	58.3	37	32.7	24	27.3
	Low <sup>a</sup>	12	33.3	42	37.2	39	44.3
	High <sup>a</sup>	3	8.3	34	30.1	25	28.4
Basking	None	15	71.4	50	64.1	28	48.3
	Low	3	14.3	18	23.1	15	25.9
	High	3	14.3	10	12.8	15	25.9
Hiking	None	7	29.2	32	27.8	26	24.5
	Low	13	54.2	50	43.5	38	35.8
	High	4	16.7	33	28.7	42	39.6
Driving for pleasure	None	25	96.2	69	92.0	57	77.0
	Low	0	—	3	4.0	4	5.4
	High	1	3.8	3	4.0	13	17.6
Interpretive trails	None	4	66.7	33	56.9	20	28.6
	Low	2	33.3	19	32.8	32	45.7
	High	0	—	6	10.3	18	25.7
Guided nature walks	None	3	30.0	22	38.6	15	23.1
	Low	6	60.0	21	36.8	24	36.9
	High	1	10.0	14	24.6	26	40.0
Evening campfire talks	None	13	48.1	43	47.3	38	38.8
	Low	8	29.6	27	29.7	33	33.7
	High	6	22.2	21	23.1	27	27.6
Park visitor center	None	18	66.7	71	67.0	50	53.2
	Low	7	25.9	30	28.3	28	29.8
	High	2	7.4	5	4.7	16	17.0
Visit another's campsite	None	5	31.3	8	14.5	6	8.5
	Low	3	18.8	10	18.2	8	11.3
	High	8	50.0	37	67.3	57	80.3
Visitors to your campsite	None	1	6.7	7	13.2	7	9.1
	Low	7	46.7	15	28.3	9	11.7
	High	7	46.7	31	58.5	61	79.2
Campstore	None	22	75.9	75	70.1	54	61.4
	Low	7	24.1	25	23.4	28	31.8
	High	0	—	7	6.5	6	6.8
Camp chores	None	23	92.0	76	81.7	51	63.8
	Low	2	8.0	8	8.6	20	25.0
	High	0	—	9	9.7	9	11.3

<sup>a</sup>Significance at the 0.05 level.

TABLE 51. Percentage distribution of respondents' first visits by interaction.

People met	Interaction level	First Visit		Returnee	
		<i>N</i>	%	<i>N</i>	%
Any member of the immediately neighboring campsite.	None	38	20.3	26	15.5
	Low	38	20.3	30	17.9
	Medium	40	21.4	49	29.2
	High	71	38.0	63	37.5
Any other camper in the campground.	None	42	22.5	30	17.5
	Low	62	33.2	43	25.6
	Medium	41	21.9	47	28.0
	High	42	22.5	48	28.6
Any other visitors in the national park.	None	71	38.0	65	38.7
	Low	60	32.1	45	26.8
	Medium	37	19.8	33	19.6
	High	19	10.2	25	14.9
Any people outside of the national park	None	130	69.5	122	72.6
	Low	37	19.8	26	15.5
	Medium	14	7.5	9	5.4
	High	6	3.2	11	6.5
Any park ranger or park naturalist.	None	54	28.6	32	19.0
	Low	74	39.6	65	38.7
	Medium	20	10.7	21	12.5
	High	39	20.9	50	29.8

TABLE 52. Percentage distribution of first visits by activity and interaction level.

Activity	Interaction level	First Visit		Returnee	
		<i>N</i>	%	<i>N</i>	%
Photography	None	47	68.1	47	67.1
	Low	12	17.4	16	22.9
	High	10	14.5	7	10.0
Leisure walking	None	41	35.0	44	34.1
	Low	49	41.9	47	36.4
	High	27	23.1	38	29.5
Basking	None	41	60.3	55	59.8
	Low	14	20.6	22	23.9
	High	13	19.1	15	16.3
Hiking	None	29	23.2	39	30.2
	Low	54	43.2	48	37.2
	High	42	33.6	42	32.6
Driving for pleasure	None	80	84.2	79	87.8
	Low	5	5.3	4	4.4
	High	10	10.5	7	7.8
Interpretive trails	None	29	43.3	29	40.3
	Low	25	37.3	30	41.7
	High	13	19.4	13	18.1
Guided nature walks	None	16	23.9	26	36.6
	Low	31	46.3	23	32.4
	High	20	29.9	22	31.0
Evening campfire talks	None	51	45.5	50	43.5
	Low	36	32.1	35	30.4
	High	25	22.3	30	26.1
Park visitor center	None	80	67.8	63	53.4
	Low	31	26.3	37	31.4
	High	7	5.9	18	15.3
Visit another's campsite	None	7	9.3	13	17.8
	Low	13	17.3	10	13.7
	High	55	73.3	50	68.5
Visitors to your campsite	None	4	5.8	13	15.3
	Low	16	23.2	17	20.0
	High	49	71.0	55	64.7
Campstore	None	81	71.7	78	64.5
	Low	28	24.8	33	27.3
	High	4	3.5	10	8.3
Camp chores	None	73	77.7	84	75.0
	Low	14	14.9	16	14.3
	High	7	7.4	12	10.7

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