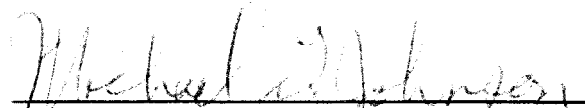
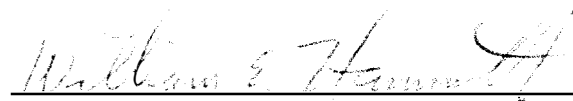
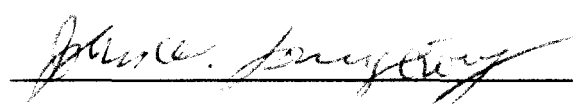
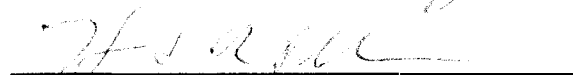


To the Graduate Council:

I am submitting herewith a dissertation written by Rebecca Lynne Van Cleave entitled "Attitudinal and Perceptual Differences between Experienced and Novice National Park Users". I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Ph.D., with a major in Psychology.


Michael G. Johnson, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:


Associate Vice Chancellor
and Dean of the Graduate School

ATTITUDINAL AND PERCEPTUAL DIFFERENCES BETWEEN EXPERIENCED
AND NOVICE USER GROUPS IN GREAT SMOKY MOUNTAINS NATIONAL PARK

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Rebecca Lynne Van Cleave

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ABSTRACT

One of the primary goals of the National Park Service is to protect the natural environments of its parks. At the same time the Park Service must provide quality experiences for its visitors. At times these two goals may seem mutually exclusive. For the Park Service to maintain a balance between protection and use management must possess a thorough understanding of the visitors to the parks. The present research sought to extend this understanding.

The goals of this research were: to explore differences in attitudes towards and perceptions of Great Smoky Mountains National Park (GSMNP) by different user groups; to determine how these attitudes and perceptions of visitor groups differ from people who have expertise in natural environments; to examine the effect of previous experience on attitudes and perceptions of visitors to GSMNP independent of user group; and to examine the activities in which user groups and experts engage while in a wildland recreation area such as GSMNP. A total of 1283 surveys was collected from visitors to GSMNP during the summer and fall of 1990. Items on the survey were designed to assess user attitudes and perceptions towards features, activities, and management policies in GSMNP using Stevens's scaled and open-ended items. The activities chosen by visitors were assessed by an activities checklist.

The results from Stevens scale ratings and the analysis of open-ended items support the hypothesis that there are significant differences in attitudes towards features of the park, management

decisions, and activities available in the park between different user groups. Results also confirm that experts in natural environments have different attitudes and perceptions of wildland recreation areas such as GSMNP from most visitor groups. User groups such as backpackers, who tend to have more personal contact with the environment, had attitudes which were similar to the experts, while groups who had less personal contact had attitudes which differed considerably from the experts.

Findings confirm that visitors with a high level of previous experience visiting wildland recreation areas like GSMNP have different attitudes and perceptions than visitors with a low level of previous experience. Visitors who have been to several parks are more supportive of management initiatives and concerns than are those who have visited fewer parks. They tend to rate park features and experiences more positively than do those who have visited fewer parks and to rate the 'typical tourist experience' more negatively. The study found that visitors who had a large overall level of experience in wildland recreation areas had attitudes and perceptions which were different from those who had little overall experience and from those who had a high amount of local experience but little experience elsewhere. The study also found that different user groups, experts, and experience level groups come to GSMNP for different activities.

Understanding the attitudes and perceptions of visitors to wildland recreation areas is necessary in order to form policy that both protects the environment and provides a quality experience for the visitors. This study found differences in attitudes, perceptions and

chosen activities among visitors in GSMNP, differences which vary reliably with experience. This data is useful for understanding the various groups studied and thus for effective policy formulation.

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CHAPTER 1

INTRODUCTION

The understanding of user knowledge, perceptions, and attitudes is essential to understanding and perhaps predicting behaviors in natural recreational environments. To manage a wilderness or natural area effectively, the protection of the natural environment must be balanced with its use by the public. Since most natural recreational lands are public use areas, state parks, national parks or national forests, environmental protection cannot be accomplished by restricting use in any major way. Rather, effective protection must come from a thorough understanding and management of the users of such recreation environments.

In addition to protecting the environment in natural recreation areas, park managers are responsible for assuring that the areas offer quality recreational experiences to visitors. In the past, a great deal of research has centered around the protection issue, the result being that most research was undertaken within the context of the physical sciences, included such means as studying ecosystems and environment impacts. The human side was virtually ignored until social science began user research in the 1960s. As a consequence, over the years policy making had been based more on the protection imperative and less on the basis of human expectations and needs.

Fortunately, that is changing and more emphasis is now being placed on looking at individuals visiting natural recreation areas

including their perceptions, preferences, motivations, attitudes, and experiences. Results from this type of research give managers of wilderness and natural areas a better picture of the visitors expectations and experiences while visiting the area and an improved ability to predict behaviors which may be detrimental to the environment and recreational experiences.

National Park Service policy is often based on the "generic park user" -- the typical tourist. However, this person does not exist. Rather, there is a wide diversity in people's perceptions, knowledge and attitudes, which makes it all the more important to understand not only the "typical" park visitor, but the atypical ones as well, and the wide variety of expectations that people possess visiting a natural recreational area.

Managers need to know the connections among knowledge, attitudes, perceptions, and behaviors and how these affect a person in a natural recreational setting in order to better shape policy towards use opportunities and protection of natural resources. It would be very useful to managers to devise a method for measuring the amount and type of knowledge that people have about natural areas, and measure user attitudes towards features and activities in the park and attitudes towards management policy.

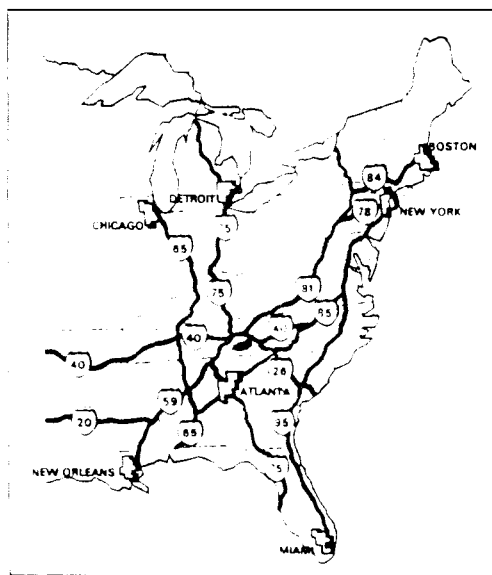
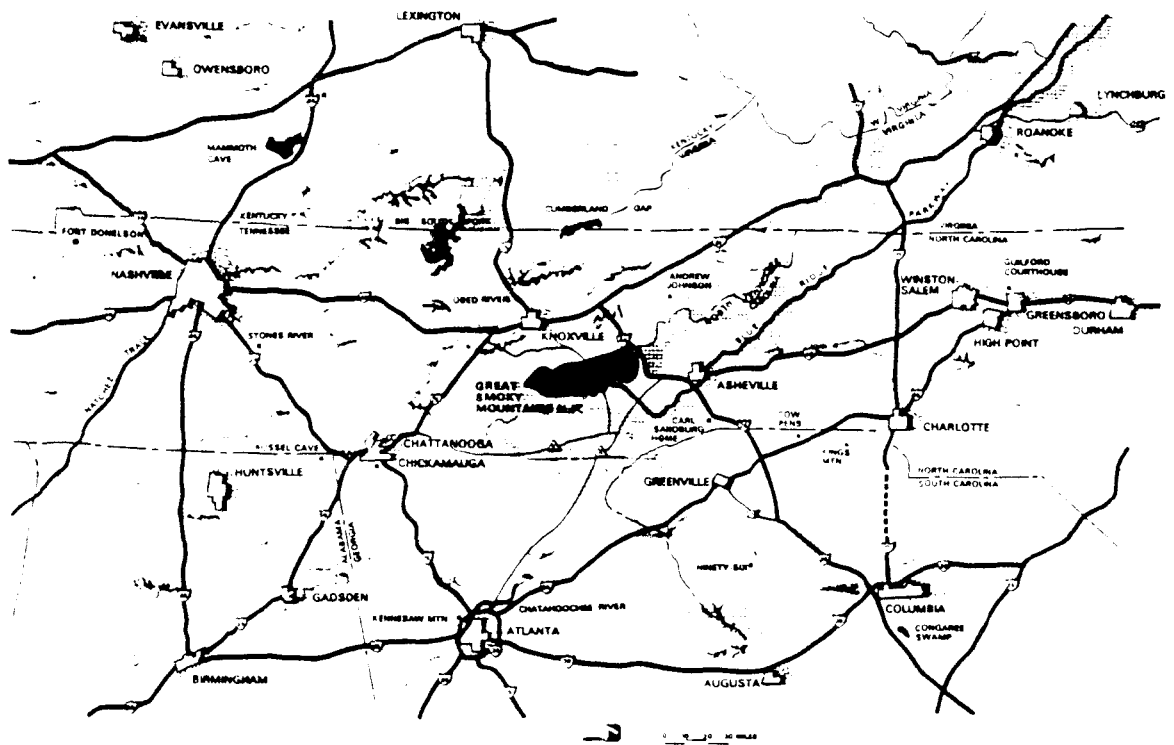
This knowledge would allow park management to understand and predict visitor behavior for different types of user groups. Such information would serve as a basis for making informed policy decisions and as a guide to developing interventions through interpretive programs. Programs could then be developed which aim at different user

groups and their different perceptions and knowledge bases. These programs would increase the effectiveness of protection policies and also allow for an increase in visitor satisfaction with the recreation area.

The purpose of this study, a continuation of four years of research and methodological refinement, is to explore the differences in attitudes and perceptions of different user groups visiting The Great Smoky Mountains National Park (GSMNP). GSMNP is a 520,000 acre national park located on the Tennessee-North Carolina border. Figure 1 (NPS, 1981) depicts its geographic location.

It is intended that this study examine the differences in attitudes towards and perceptions of GSMNP between different user groups and experts in natural environments (professionals) and between visitors with different levels of experience in wildland areas, GSMNP and others. Additionally, it was of interest to examine what activities each type of group engages in while in the park.

This information should be of use to park officials for making policy, and the data from this study should serve as baseline for detecting future changes in the relative proportions of visitors in various groups as well as shifting attitudes and perceptions within groups. Because this study was designed for use by park service management, the reader will note a resources management bias in the reporting of the results and discussion of the implications.



-  GREAT SMOKY MOUNTAINS NATIONAL PARK
-  OTHER UNIT OF NATIONAL PARK SYSTEM
-  AREA WITHIN EXTERIOR BOUNDARY OF NATIONAL FOREST
-  RESERVOIR

LOCATION

GREAT SMOKY MOUNTAINS NATIONAL PARK
NORTH CAROLINA-TENNESSEE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE
JULY 1988
JAL-DET 87

Figure 1. Location of Great Smoky Mountains National Park

Literature Review

Presented below are several current and historical perspectives on how people perceive, experience and come to know natural recreational environments including wilderness. Current and past research is reviewed with an emphasis on research involving the study of visitor attitudes towards and perceptions of natural recreation areas.

For present purposes the term "wildland recreation area" is defined as any natural area relatively free from human interference, such as areas found in nature-oriented national parks including GSMNP. In this research, questions asked of visitors to GSMNP did not define for them what was meant by "wildland" or "wilderness"; rather the visitor was asked to respond to questions using his or her own definition.

Historical Perspective

How people perceive natural environments, especially wildland recreation areas, has changed dramatically over the centuries. Presently, wildlands are perceived in a favorable light. Being in nature is something exciting to be experienced, hence, there has been massive growth over the past century in wildland recreational areas. Some people plan their leisure time toward the goal of visiting a natural area and "seeing" the wild, rugged scenery, dominated by nature. They want to experience "being one with nature", escaping the stresses of everyday life, getting away from other people, etc. (Franz, Van Cleave, Franz, Van Cleave, 1990). There has been an increase in

visitation to the National Parks of approximately 33 percent over the past 10 years (National Park visitation statistics, 1989).

This favorable perception, however, has not always been embraced by all people. Puritans interpreted the Biblical accounts of wilderness as the "house of Satan" (possibly stemming from the account of Jesus spending time in the wilderness where he was tempted by Satan). The interpretation of Biblical accounts of wilderness, however, has also changed over the centuries. A more modern interpretation is that wilderness is God's creation and therefore is good (Nash, 1982; Van Cleave, 1989).

It is interesting to note that perception of the wilderness by Native American cultures was entirely different from that of early settlers. A Sioux chief once made the comment that "only to the white man was nature a 'wilderness' and...the lands 'infested' with wild animals and 'savage' people" (Nash, 1982, p. xiv). To the Native Americans there was no 'wilderness' in the same way as there was no distinction between nature and man; man was part of nature and co-existed with it. The "back-to-nature" movement popular in the 1970's also embraced this perception of wilderness, with more and more people moving into 'untamed' areas of the country and living 'in tune with nature'.

For the most part, the cultural value of wilderness (at least in this society) has changed from a view of wilderness being evil and needing to be made totally habitable by human beings, to a type of environment worth preserving. Preserving wilderness areas has become a very important political and social issue in today's culture,

reflecting the continued change in perceptions of wilderness. In earlier times, taming the wilderness was perceived as essential for survival. Today preserving the wilderness is viewed as essential for survival. More and more National Parks are being given official "wilderness" status to protect them from being developed and allow them to preserve their wilderness qualities.

Culture, Perception, Choice and Recreational Behavior

When choosing a location for recreation, some people avoid all contact with the wildland areas and simply choose recreational activities elsewhere. Others, who do venture into a natural recreation area, do so with a great amount of caution. This could explain why the 1985 Visitor Use Survey, done in GSMNP, found that 17% of visitors never turn off their car engine while in the park (Peine and Renfro, 1988).

Fear of wildland areas was observed by the author at a trailhead when a woman stopped, looked down the trail, and commented that she would not go a step further into that "snaky-looking place". In a pilot survey, which contained sentence completion items, 33% of those surveyed said that "When in the woods a person should not be alone". This type of response also may indicate an attitude of caution in or fear of wilderness areas. This same result was found in a survey conducted by Franz, et al. (1990) in the city of Gatlinburg and in the GSMNP. In this study when people were asked to complete the sentence "When in the wilderness a person should...", 31 percent of people responded with an answer which indicated a large amount of fear or

caution such as 'never be alone', 'use extreme caution', or 'be on the lookout at all times'. While these may be stereotypical responses, they also indicate a certain degree of trepidation about natural areas. This trepidation could be attributed to being told by various organizations, such as the Boy Scouts and the National Park Service, to always be prepared, never go off the trails, and other such statements.

Based on the historical view that nature is something to be conquered, some people may feel that a wildland recreation area is a perfect place to prove their superiority over such an environment. They hold the old values of the early settlers: nature is something to impose order upon and to "humanize". This frequently results in abusive behaviors in an area such as a national park, where a person may feel compelled to "tame this wildness", even in a recreational setting. These thoughts of "taming the wilds" may not even be conscious, they nevertheless are manifested in behaviors such as chopping down any convenient tree in order to build a campfire (a practice observed on many occasions by the author). To a person with this attitude, the tree is there simply for human benefit.

Nowadays, many people choose wildland areas such as National Parks for recreation in order to "get closer to God" or to experience a oneness with nature - to become a part of that wildland. In the study by Franz et al. (1990), it was found that 17 percent responded to the sentence completion item "When in the wilderness a person should..." with responses such as 'experience nature' or 'enjoy wilderness'. When asked why they came to the Smoky Mountain region, 24 percent responded 'to experience nature' or 'see the mountains'. Some people are also

looking for solitude in their nature experience. Wildlands can have a healing effect on some people, acting as an escape from everyday "civilized" pressures (Hartig, Mang, & Evans, 1991).

As these examples attest, perceptions of natural areas will influence the type of recreational activities a person chooses when in a wildland recreation area. It is highly unlikely that someone who perceives the woods as "snaky" or who feels one should not be alone in the woods will take off on a solitary backpacking trip. It is more likely someone with this perception will choose group activities in a "safe", open area.

Several different perspectives have been used to explain differences in perceptions, including perceptions of wildlands. These perspectives include phenomenological, ecological, and cognitive. A discussion of each of these perspectives and research conducted follows.

Phenomenological Perspective

Phenomenological psychology looks at a person's 'geographical lifeworld,' (the sum of meanings, experiences, behaviors, and events in relation to the environment, space, place, and landscape) to help explain a person-environment relationship using the idea that there is an 'undissolvable unity' between a person and the world (Seamon, 1984). Seamon distinguishes between existential insideness and existential outsideness to explain a person's relationship with the environment. Existential insideness is a situation of profound, un-selfconscious immersion in a place. Existential outsideness is a sense of alienation

or homelessness. A place has meaning to a person in direct proportion to the degree in which one feels 'inside' that place.

The amount and/or type of knowledge a person has about a type of place relates to the degree of insideness or outsideness felt. People who have little knowledge of the natural environment may feel quite uncomfortable, even fearful, because they do not feel a part of that world; such people will feel existential outsideness. On the other hand, someone who has a great deal of knowledge about the natural world (such as a park ranger, ecologist, or forester) will likely feel very much at home and comfortable in a wildland area; the knowledgeable person will feel existential insideness.

What type of experiences a person has in a natural recreational area will heavily depend on how much 'insideness' or 'outsideness' that person feels while in that environment. A person who experiences insideness while in a wildland environment will comfortably hike for miles with no one else around. People who feel insideness are far more likely to feel that a wildland area is a part of themselves and, therefore, unlikely to engage in destructive behaviors. In contrast, someone who experience outsideness while in the wildland environment may likely never stray more than 15 feet from his or her car without feeling discomfort.

The more often a person visits a given environment, the more familiar he or she becomes with that environment and the more affective connections he or she makes to the environment. For a person to experience "insideness" in an environment, one would suppose a more than casual knowledge of and affective attachment to that environment.

If this is the case, the more familiar he or she becomes with that environment the more likely he or she is to experience it as being part of the self. Increased familiarity with wildland areas, for example, might be expected to lead to the development of expectations that the environment will be a source of self-identity. The person who experiences insideness is therefore likely to view injury to the environment as injury to self (Ittelson, Franck, & O'Hanlon, 1976).

A single place, such as a wildland area, may foster very different degrees of insideness and outsideness for different individuals. Additionally, a place, in its interaction with a person, is an 'environmental synergy' where the interaction brings forth a quality or spirit of place which is largely unmeasurable. In other words, for a particular person, a particular place has unique properties that cannot be measured or observed by others who have their own unique relationship with that particular place (Seamon, 1984).

Ecological Perspective

Along with individual differences in "insideness" and "outsideness" an individual feels in a natural environment, there are individual differences in what a person perceives in that environment. The ecological perspective is interested in finding out what a person perceives when in a natural environment in terms of what's 'out there' for a particular individual.

According to Gibson (1977), perception and behavior are reciprocal. Perception serves behavior, for what is perceived are facts of the environment relevant to ways of life. Affordances provide

the 'connection' between perception and behavior, for it is affordances that are perceived, and it is affordances which are used (Gibson, 1977; Lombardo, 1987). Some features of a wildland area may afford locomotion, such as trails or streams, inviting travel, while others may afford danger and the possibility of injury, such as cliffs or rhododendron thickets, inviting caution.

The meaning of a feature in the environment is its function for the perceiver. An example: a tangled pile of brush will 'afford' different things to different people and thus different perceptions and behaviors. To some, a tangled pile of brush will afford 'firewood'; their perception will be limited to firewood, and their behavior will be to gather the wood from the brush pile and burn it. To another, the brush pile may afford 'habitat'; this person would perceive the brush pile as a home to small animals or birds, and might spend time trying to observe the inhabitants. This person would not gather and burn the wood in the brush pile because the brush pile did not afford firewood. The person who gathered and burned the brush pile never perceived habitat and would not have searched for small animals.

This example is simplistic, in the sense that few people who are afforded habitat will not also be afforded firewood by the same pile. We may perceive several affordances from the same object, influenced by different bodies of knowledge and experience. To account for the linkage between affordances and behavior, it may be necessary to consider the values attached to the various affordances. If a person perceives affordances of habitat and firewood and does not burn the brush in his/her fire pit, one might infer that the affordance value of

firewood was lower than the affordance value of habitat.

Wohlwill (1983) discusses the idea that natural recreation environments afford refuge to a large number of people -- a change of pace from high intensity levels of activity. According to Wohlwill, the physical properties of a natural environment that afford refuge are properties such as a relative absence of complexity, sharp contrast, intense levels of stimulation, and frenetic movement found in man-made environments. Nature affords refuge because it presents the opportunity for escape from a man-made world. This idea is supported by the study by Franz, et al. (1990) which found that 33 percent of visitors to the Smoky Mountains region came primarily to escape and relax.

Additionally, Wohlwill (1983) hypothesizes that one reason wildland environments afford refuge is that they are generally unresponsive and unaffected by our presence in them. This failure of nature to be moved by a person entering it may be at the heart of the restorative powers claimed by it. This could also account for the feeling of freedom and oneness with nature expressed by some individuals in the wildlands. The individual experiences so little reaction to his or her presence in the wildlands that the boundaries between the self and the environment lose their definitions. For some people, those who feel existential insideness, this is a desired outcome. For others, those who feel existential outsideness, this feature of wildlands is likely to lead to discomfort and anxiety. Wohlwill (1983) reports that those who feel discomfort are likely to be

highly dependent upon signs of responsiveness from their environment and need the levels of stimulation to which they are accustomed.

From the ecological perspective, we can ask people what they perceive in a wildland area to discover what the setting affords to them, and possibly predict their attitudes and behavior in that setting. If at the same time we measure the valences of these affordances, we may strengthen our ability to predict their behavior.

Cognitive Perspective

From the cognitive perspective, psychological processes that mediate the relationship between the individual and the environment are essentially cognitive. Past experience with the environment largely determines how it is represented. From this perspective, the meaning of a given environment for an individual is the summation of past experiences in that environment.

Since everyone's experience is individual, each representation of an environment is unique, and these representations in turn determine the individual's behavior in that environment. However, even if individuals display similar behaviors in a given environment, one cannot assume that the cognitive representations of those individuals are the same. Behind the same displayed behavior or stated attitude there are perceptions, motivations, hierarchies of values, and structures of needs which can be extremely different (Levy-Leboyer, 1982).

Information coming in from the environment has specific validity for each person. A variety of cognitive representations can be seen

when two people are placed in the same environment. This is why two people visiting a wildland recreation environment can look at the same object or scene and see two entirely different things (such as the brush pile example given earlier).

Again, past experience is important. The role of the familiarity, novelty, or strangeness of an environment for an individual needs to be considered when assessing that individual's perception of the environment (Wohlwill, 1983). Unfamiliarity and strangeness of a wildland environment may serve as either a stimulus for exploration and adventure or as a source of fear and avoidance, depending on a person's past experiences or in some instances 'cultural priming.'

Nature is a construct that is a product of our intellect and imagination, and we determine the characteristics, as well as the powers, we attribute to it (Wohlwill, 1983). As was discussed in the section on the historical perspective of wilderness perception, different meanings were attached to the natural environment, particularly wilderness, by people in different cultures and different periods of time. The symbology of nature, what it represents to individuals, must be viewed in the context of the culture and time in which an individual lives as well in terms of as the 'private' cognitive representations that individual has about that environment.

The everyday environment in which an individual lives also provides a contrast for perceptions of natural environments. A person living in a small rural village (not unlike those common in the Third World) will likely have a very different perception of what natural

wildland environments symbolize when contrasted with the perceptions of a person who lives in a large city (Wohlwill, 1983).

Kaplan and Kaplan (1982) discuss how cognitive maps affect a person's perception and behavior in an environment. A cognitive map is the schematic knowledge a person has about a familiar place, the accumulation of or summary of experience, stored information a person has about an environment which influences how the environment "feels" to that person, what is noticed, what is ignored. A cognitive map can be considered to be an internalized model of an external environment (Knopf, 1981). A person who is familiar with an environment is less dependent on information coming from that environment because the person knows what to expect. Decisions can be made without careful analysis of what the outcomes may be. The term 'schema' can be used in the place of the term cognitive map, as the two concepts are closely related.

A person who has a good cognitive map or schema of a particular environment is able easily to recognize features of the environment and their significance, predict outcomes of his or her behavior, evaluate what needs can be filled by the environment, and then act in a manner that will fulfill those needs. Using the example of a wildland recreation environment, such as a national park, a person who has frequented such an environment in the past has developed a cognitive map of that park. He or she knows what needs are likely to be met when visiting the park and because of the knowledge about the environment is easily able to predict what will happen on the visit. It is not necessary to expend a great deal of time or energy deciding what

outcomes will result from given behaviors. A cognitive map or schema may exist not only for the entire geographic area of a park, but for micro-ecological settings such as a brush pile as well.

For the person who has not developed such a map of the park, these predictions are not possible. Where there is a large component of the unknown, much attention must be given to information coming in from the environment, and outcomes from possible behaviors must be evaluated. This person may also have an idea of what needs he or she would like to fulfill in this environment but will not be certain that he or she will be able to fill those needs because of the inability to predict what will happen in that type of environment. This is frequently seen in visitor centers in National Parks where first-time visitors come in and state that they want to do certain activities or want to fulfill certain needs but have no idea of how to go about doing so.

Cognitive maps have organizing functions that serve to facilitate the absorption and comprehension of details. They become 'mental scaffolding' on which to organize what otherwise may be fragmentary or meaningless pieces of information from the environment (Neisser, 1976). This function of cognitive maps has been tested and implemented by park personnel in interpretive programs (Knopf, 1981). In trying to increase first-time visitor understanding of interpretive programs at Gettysburg National Military Park, researchers set up programs which were designed first to build the 'scaffolding' of a cognitive map of the park and second to add details. These programs, which began by providing first-time visitors with a 'big picture' overview and then

added programs focusing on isolated details, proved to be quite successful.

From the cognitive perspective protocols can be collected from participants about what they perceive in selected settings and from these infer their cognitive maps or schemata about the setting. By tying these cognitive maps to sets of attitudes and by direct inference, it may be possible to predict behavior.

Prior Knowledge and Experience

One unifying theme derived from in all of the perspectives discussed above is that prior experience with or knowledge about environments should affect perceptions, attitudes, and behaviors related to that environment. The historical perspective related the importance of one's cultural history to present day attitudes and perceptions. The phenomenological perspective, ecological perspective, and cognitive perspective all related at least part of their theory to past experience and prior knowledge.

The amount of knowledge a person visiting a wildland recreation area has is important to management as this may affect the perceptions and behaviors of that person in the recreation area. The public may generally be unaware of damage to the environment that they or others may cause. They may not even perceive that anything is wrong when in fact there has been considerable environmental damage. In a survey reported by Hammitt and Cole (1987), over two-thirds of campers surveyed in an Indiana park saw no vegetation damage despite the fact

that expert evaluation indicated there was extensive tree and shrub damage.

Knowledge and Perceptions

How one perceives a natural environment depends a great deal on the amount of knowledge a person has about that type of environment. Prior knowledge and experience in natural environments affect not only perception, but attitudes and behaviors, and subsequent experiences people have while in that environment (Ittelson, et al., 1976). A person with a lot of knowledge about a particular natural environment (or even natural environments in general) will have well developed 'schemata' for that place (or type of place). Well developed schemata come through experience and learning, which enable a person to perceive progressively more subtle aspects of the environment. Schemata determine what in the environment is perceived, because information available in the environment can only be assimilated if there is a format ready to accept it (Neisser, 1975).

Perception of wildlands is related to what people think a wilderness is; in how they define what it connotes. To some, a wildland begins at the edge of the woods, while to others, wildlands are only those areas virtually inaccessible to people. How people define wildlands will also affect their perceptions and attitudes. When looking at people's personal feelings towards wildlands, it was found that, for the most part, no matter how visitors to wildland areas define it, affectively they like it (Stankey & Schreyer, 1987).

There are elements of perception in a wildland environment that are generalizable from other aspects of human experience. People tend to describe wildland experiences in terms of heightened perceptions and awareness. There are other experiences in life that offer heightened awareness and that occur for many people from widely varying backgrounds. Another common description of wildlands is that of mystical or spiritual awakenings, descriptions that are very similar to those revealed in religious experiences (Stankey & Schreyer, 1987). Additionally, because humans share a lot of experiences and knowledge sources, schemata tend to be similar (never identical, but at least similar), which can lead to commonalities in perceptions and experiences.

Environmental Perceptions

In reviewing the literature on studies concerning environmental perception in wildland recreation areas, little is seen prior to the 1970's. While environmental perception per se has been studied for quite a long time, perception of wildland recreation areas has only recently become a serious area for study. One of the first empirical studies of wildland visitor attitudes was conducted in the Pacific Northwest by Hendee, Catton, Marlow, and Brockman (1968). This study examined likes and dislikes of features of wildlands, activities that might occur in wildlands, and benefits that might be obtained from recreation in a wildland area. After individuals rated their likes and dislikes of wildland features on a Likert scale, they were divided into 'wildernists' and 'urbanists' based on their scores. Results revealed

that wildernists tended to be young, highly educated, and from urban backgrounds. The responses on the scale were factor analyzed to explore underlying dimensions. The study was criticized because it was thought that the items themselves predetermined the factors (Stankey and Schreyer 1987). However, the study did lead to a series of follow-up studies of environmental perception in wildland recreation environments.

In the early 1970's, other studies were conducted with the purpose of defining a 'wilderness purist' (Stankey & Schreyer, 1987). These studies based their surveys on the work done by Hendee, discussed above, but modified the scales. Once 'purists' were identified, the classification was used to examine differences in perception of crowding and management concerns. It was reasoned that managers should pay more attention to 'purists' than other types of visitors to natural recreation areas, as the 'purists' represented the true spirit and intent of wilderness legislation and were more knowledgeable about natural areas. These scales did not receive widespread use as many people thought the elitist connotations ran counter to democratic management.

As part of a study of the carrying capacity of the area, Lucas (1970) investigated visitors' perceptions of wilderness in Boundary Waters Canoe Area (BWCA) in Minnesota. Three aspects of wilderness perception were studied: 1) the importance of wilderness qualities as an attraction to the area, 2) the areas that were perceived as being wilderness, and 3) the types of behaviors thought to be appropriate to wilderness areas.

Results showed that the perception of what constitutes wilderness was related to the types of recreational activities the visitor engaged in. Wilderness attributes were most important to those who came for canoeing. People were asked at what point they thought they had entered "wilderness" when entering the area, and the responses were widely varied. Some people said they never found wilderness, while others thought they were in the wilderness just being in Minnesota, 100 miles from BWCA. Note that in this question the term "wilderness" was not defined, rather it was left to each individual to determine what wilderness was and then determine when he or she entered it (Lucas, 1970). Contrary to the researchers expectations, remoteness or distance from the "end of the road" did not have any apparent effect on wilderness perception (Lucas, 1970).

In a study reported by Iso-Ahola (1980), hikers, horseback riders, and campers were asked what criteria they use in defining wilderness. In general, undeveloped natural country, difficulty of access, absence of improvements, and few people were some of the important criteria. Hikers were much more specific when defining wilderness, such as giving exact distances from roads where they expected wilderness as beginning. Campers on the other hand, considered wilderness to begin at the edge of the campground. And, when a skunk got into the dishes on the picnic table at 2:00 a.m., the wilderness began at the tent flap. A conclusion drawn from this study, that supports the idea that individuals define wilderness in very different ways, was that an individual's perception of an environment

is influenced by the expectations of what a given recreation environment is, and what it can provide.

Yankelovich, Skelly, and White (1978) asked people what activities they perceived to be permitted in a wilderness area. Wilderness was not defined by the researchers but rather was deliberately left up to the subjects to define. It was found that in general, the public was either unaware of what types of activities are permitted in wilderness designated areas or had such a wide range of personal definitions for wilderness that it appeared they were unaware. However, 83 percent of respondents had strong affective feelings that wilderness areas should be preserved.

A thread running through these results is that people do not all define wilderness in the same manner. What constitutes wilderness for one person may not resemble wilderness for another. While it was found that attitudes toward wilderness and the government's mandate to establish wilderness were similar in that they had positive feelings towards the existence of wilderness areas, perceptions of wilderness differed widely.

Expertise

A different way of studying environmental knowledge is through the study of expertise. Expertise is primarily a skill of recognition; of seeing old patterns in a new problem. Experts see more richly encoded patterns than novices do and have organized the relevant concepts with more depth and many more central associations. Experts tend to have their knowledge highly structured and to use a variety of kinds of

knowledge structures. In other words, they may hold what they know about objects and systems in many different representations, each suitable for a different kind of reasoning. Experts see problem situations differently, plan ahead loosely, fill in details when the situation dictates, and move back and forth from abstract to concrete when evaluating strategies. Experts often do not have to go through problem-solving or interpretation of symptoms because their perceptions "afford" solutions directly (Olson & Rueter, 1987). Johnson, Zualkernan, and Garber (1987) further define expertise as a kind of operative knowledge which is characterized by generativity, or the ability to act in new situations. It is a kind of knowledge, not a property of behavior. This kind of knowledge contains a set of abilities which is required to realize the solutions of problems to which the expertise applies.

Mumpower, Renn, Phillips, and Uppuluri (1987) list several psychological characteristics of experts, several of which are relevant to experts in natural environments. Experts generally have highly developed perceptual/attentional abilities and are able to extract information that novices either overlook or are unable to see. They have the ability to make sense out of chaos by seeing patterns not perceived by others. Experts have an extensive and up-to-date content knowledge; if they are professionals, they make it a point to keep current. Mumpower, et al. (1987) also distinguish between perceptual experts and cognitive experts. Perceptual experts rely on highly developed sensory skills; they are experts because they perceive differences not apparent to others. Cognitive experts rely on their

superior ability to think through problems and to discover relations not found by others. The idea of a perceptual expert definitely has relevance to natural environment expertise. A natural environment expert will 'see' things in the environment and pick up on much more subtle cues than will a novice to that environment. A good example of this will be discussed below in an example of an expert tracker.

Expertise in perceiving the natural environment is also related to the expert's schemata for that environment. An expert in any field will have a well developed schemata for the area in which he or she is an expert, and these schemata will contain knowledge specific to the field and to the expert, which no other person can exactly duplicate. Schemata develop with experience, through perceptual learning which enables one to perceive progressively more subtle aspects of the environment. Schemata determine what is perceived because information can be picked up only if there is a format ready to accept it (Neisser, 1976).

People who have expertise in an area of the natural environment, such as foresters, ecologists, resource managers, park rangers to some degree, conservationists, etc., have schemata for natural environments which novices do not have. A visitor coming into a natural recreation environment for the first time ever simply will not perceive what an expert does because he or she does not have schemata for natural environments nor the experience necessary to have formed them.

Sentis and Burnstein (1979) discuss schema-consistent and schema-inconsistent information as it relates to experts and novices. Schema-consistent information is information that 'fits' into an existing

schema, is coded and stored more efficiently and is better remembered. Schema-inconsistent information does not fit as well into existing schemata. Schema-consistent information can be 'chunked' or processed better into larger units than can schema-inconsistent. Experts in a given area have well developed schemata for that area and are thus easily able to 'chunk' large amounts of schema-consistent information. Information that is schema-consistent for the expert is often schema-inconsistent for the novice. This ability to chunk large amounts of information is relevant to how people perceive as well as how they remember.

Expertise in Natural Environments as Related to Profession

Professional training involves learning to see things in particular ways such as combining elements that had previously not been associated. Categorizations that experts in a field use in particular settings are often not meaningful to novices. Categorization is just as important in the natural environment as in any other area.

'Experts' in land use are often called upon to make decisions about major changes to the natural environment since it is presumed that they have the expertise to categorize or 'see' the environment in ways that the untrained citizen is unable to do (Kaplan & Kaplan, 1989).

It is the nature of expertise that a person perceives the environment through the categories developed by his or her professional training and then no longer remembers that it was ever organized otherwise. For a group of land use professionals the categories tend to appear as reasonable, widely accepted bases for describing the

environment. For the 'man-on-the-street' novice, however, these categories can be relatively meaningless and the features, which are perceived by the experts, are not seen by the novice (Kaplan & Kaplan, 1989).

Iso-Ahola (1980) reports that environmental design professionals are more sensitive to differences in natural scenic quality than non-experts. Experts perceived and rated the natural environment on the basis of its specific features, while novices based their ratings on their overall impression of the environment. If you ask experts in different fields, all of which relate to the natural environment, to categorize scenes showing different outdoor environments, the groupings will reflect the different types of expertise (for example, botanists will group by species, planners by activities, ecologists by impacts, etc.). Novices will most likely have entirely different types of groupings, that are much harder to predict (Kaplan & Kaplan, 1989).

Buhyoff and Leuschner (1978) studied professional groups and novices on aesthetic judgments about southern pine beetle damage. Slides that depicted forests with varying degrees of damage were shown to introductory forestry students, outdoor recreation students, non-forestry participants (novices), and forestry professionals. Half the participants in each group (except the professionals) were either informed or uninformed that there was pine beetle damage. The participants were then asked to pick which slide they liked best from a pair. Preferences corresponded closely to the amount of damage in the informed group but not in the uninformed group. Limitations of this study included the lack of comparison between informed and uninformed

professionals. Additionally, members of the Sierra Club were included in the novice group, who may actually have had quite a bit of knowledge. Finally, asking people to choose which of two slides they liked best does not really disclose differences in environmental perception or even why people prefer one scene over the other.

There are other studies on preferences of various types of environments but few studies on differences purely in perception or attitudes between professionals and novices. Clearly this is an area that deserves further exploration. Two methods that might give a much more complete picture of the differences in perception of natural environments between experts and novices include phenomenological interviews -- to assess differences in experiences within and perceptions of a natural environment -- and knowledge extraction procedures frequently used in expertise studies (Olson & Rueter, 1987).

An example of how knowledge is extracted from an expert in natural environments is given in an interview of J.R. Buchanan, an expert in tracking (Van Cleave, personal communication). Buchanan's knowledge of natural environments is very extensive. He is one of the foremost trackers in the country and recently retired after 30 years as a Park Ranger, where he spent much of his time tracking poachers, marijuana growers, and lost hikers. He also taught the art of tracking to many others. Buchanan says he can just look into the woods and 'see' where a person has been - a perceptual ability very few people have. The way in which Buchanan perceives a natural environment is very different from the way most people do (other than other expert trackers). When

asked to relate specifically how he goes about tracking Buchanan gave some interesting information about what he sees in the woods:

What do you look for?

"Usually you will find, you won't see no good tracks, but you will see where something's tore up, like leaves going off the trail. It may be the person you're looking for and it may be a bear. You'll track a lot of bear."

You're looking for..you said something about torn up leaves? What else?

"Yea, leaves, broken sticks on the ground, broken branches; a lot of people has the habit going through the woods they'll reach up and break a green branch."

Or a dead branch?

"Yes. You can tell a broken branch, oh, from the waist up, usually that is a person. Now a bear will break a lot of dead sticks and stuff on the ground, which the only way to find out is to go to a good place where you can remove the leaves, and you'll find a track."

What else would you look for?

"Cobwebs are good; they'll tell you a whole lot. At certain times of the year, in certain places, you can track a person, especially where there's a lot of pines, in the fall of the year, you don't have to find no track, you can just get the sun, the light coming in right and just look through the cobwebs and they just give you a trail."

As is apparent from this brief segment, there is a lot of information about an expert's perception of a natural environment that can be gained from using an in-depth interview or knowledge extraction technique. For Buchanan, his 'world' of the Smokies is unlike that of the vast majority of people who come into that environment. Without the level of expertise Buchanan possesses, one would never begin to perceive the things that he does taking a walk in the woods.

Amount of Experience in Natural Environments

Levels of experience in a natural recreational environment is another way that researchers use to define 'experts', usually in

studies dealing with recreational choices and preferences. When one has experience in a setting, the imagery one has gained makes it possible to develop a model or cognitive map (or schema) of that environment, which effects how that environment is perceived (Kaplan & Kaplan, 1989). The influence of previous experience on perceptions and meanings in recreation has been examined in several areas. Studies have examined previous experience as determining expectations and satisfactions, involvement in recreational activities, psychological benefits, preferences, impact awareness, and other variables (Schreyer & Lime, 1984). A few of these studies will be discussed to illustrate this research approach.

Experienced users of natural recreation environments are more likely to perceive impacts to the environment and be supportive of management policies aimed at reducing impacts. Hammitt and McDonald (1983) found that the more experienced river users were more perceptive of river impacts. More experienced users have an earlier 'frame of reference' (or schema) of what an area should look like, or what it looked like in the past and thus are more likely to perceive differences caused by impacts.

The amount of experience individuals have in natural recreation areas can also have an impact on how they perceive their abilities to interact with that environment. It has been found that novice visitors to GSMNP indicate an uneasiness in the park environment which is not present in more experienced users. To a large number of visitors, the wildness of a National Park is perceived as a place which has the potential for harm, which can be quite valid (Van Cleave, Franz, Franz,

Van Cleave, 1990). For novices in a wildland area, a lack of knowledge and experience may cause them to fail to perceive danger in dangerous situations, sometimes with fatal results. There have been occasions in the Smokies where people have become lost and died as a result when they were just a short distance from the trail or roadway (J.R. Buchanan, 1988, personal communication). Someone who has knowledge of and experience in a wildland area, even if temporarily becoming lost, is not likely to panic.

For novices in the wildlands, who lack knowledge of animal behavior, animal encounters may lead to injury. Many visitors to the Smokies are totally unaware of the dangers in feeding black bears and are very surprised when they are bitten. When asked about their encounter many people related that they perceived the bear as friendly (Pelton, Scott, & Burghardt, 1976). In a survey by Overton and Van Cleave (1990), it was found that only 13 percent of people who encountered bears in the backcountry exhibited appropriate behaviors. Only 28 percent knew what to do when asked what they would do if they encountered a bear. A large number of visitors who go into the backcountry are novices and, unfortunately, Park Service personnel do not have contact with these visitors as the backcountry permit system is entirely self-registration.

It is important for managers of natural recreation environments to be aware of the differences in knowledge that exists between their visitors. Those who have little knowledge about the type of recreational area they are visiting have the potential to both harm the

environment through ignorance of the impacts caused by their behaviors and harm themselves through a lack of perception of possible dangers.

People of varying degrees of experience participating in the same recreational activity may have very different perceptions of that experience. Schreyer and Lime (1984) sought to analyze subjective perceptions and motivations for participation of river users as related to experience levels, both on the specific study river and on other rivers. It was found that people with general river experience had perceptions similar to those of people who had experience on the specific river, with the exception of questions that related specifically to the study river, in which case their perceptions were more like the novice group.

One problem noted in studies using experience levels to define expertise is that of widely varying definitions of experience. Lucas (1985) combined two variables, whether a person had visited any wilderness before and whether a person had visited the study area before (Bob Marshall Wilderness). From this combination three categories of experience were formed: 1) Beginners: people on their first trip to any wilderness; 2) Experienced newcomers: people who had visited other wildernesses, but who were visiting Bob Marshall for the first time; 3) Veterans: people who had visited Bob Marshall before. However, Lucas accepted only one visit to a wilderness area (Bob Marshall or other) to define a person as a veteran or experienced newcomer (average number of visits was 7, although 22% had only visited once).

Schreyer and Lime (1984) derived two categories of experience in a study on perceptions of river floaters: 1) Situation novices: those who had never floated on the study river and 2) Situation experienced: those who had made at least one previous trip on the study river. They further divided the situation novice group into three categories of experience: 1) Overall novice: on first river trip ever; 2) Overall moderate experience: one to ten previous river trips elsewhere; and 3) Overall high experience: over ten previous river trips elsewhere. They found that users labeled as novices perceived a given recreation experience differently based upon the amount of previous experience elsewhere. Persons who were first-time users of a the study river but had experience elsewhere tended to be more like persons who had previous experience on the study river.

Hammitt and McDonald (1983) created an experience index in a study of river users. They derived a composite variable from four questions: 1) total experience floating; 2) frequency of floating per summer; 3) total experience floating on river where sampled; and 4) frequency of floating per summer where sampled. Based on this composite variable, river users were divided into three categories: 1) Low experience: first year floaters and/or individuals that participate 1 to 2 times a year; 2) Moderate experience: floating 2 to 4 years and/or an average of 2 to 5 times per year; and 3) High experience: floating for 5 years or more and/or 6 or more times per year.

An experience index was computed by assigning a value of 1, 2, or 3 to low, moderate, high levels of experience and combining assigned values: $I = (\text{years of floating} \times \text{frequency of floating per summer}) +$

(years of floating where sampled X frequency of floating per summer where sampled). Assigned values (1-3) were used rather than actual years or frequencies. Composite scores ranged from 2 to 18 - divided into low (2-4), moderate (5-8), and high (9-18) experience categories. Results indicated that more experienced users were more perceptive of river impacts and more supportive of potential management strategies for controlling the impacts.

Hammitt, Knauf, & Noe (1989) computed the same type index as in the above study only they used horseback riders in Big South Fork, slightly different items, and a slightly different formula. The experience index was calculated as follows: $I = (\text{frequency per year riding at Big South Fork}) \times (\text{total years riding in all other areas} + \text{frequency per year riding in all wildland recreation areas} + \text{total riding trips in all wildland areas in last 5 years})$. Composite scores were divided into low (3-6), moderate (7-12), high (13-27). Horseback riders were also asked to classify their own experience levels as beginner, intermediate, advanced, expert. The results showed that the experience index is a more reliable measure than self classification.

Williams, Schreyer, and Knopf (1990) using data collected by Schreyer, Lime, and Williams (1984) derived the experience use history index (EUH). The EUH represents the amount, type, and diversity of information available to an individual through previous experience. Three variables are used to create the EUH: 1) number of times respondent floated the study river; 2) number of rivers the respondent had floated; and 3) total number of river trips the respondent had made. Six categories of experience were then derived: 1) Novice:

persons making their first river trip ever; 2) Beginners: persons with low amount of experience on a few rivers; 3) Locals: persons with high experience on the study river but low experience elsewhere; 4) Collectors: persons who have floated a large number of rivers but have little experience on the study river; 5) Visitors: persons who have had a large amount of total river running experience but little experience on the study river; and 6) Veterans: persons with a large amount of experience on the study river and on other rivers.

These studies illustrate the widely varying methods for determining past experience in either a specific wilderness area or just in general. Schreyer, et al. (1984) noted that more than just yes/no, I've done this before, measures are needed to define experience levels. They point out that not only the number of times a person has had an experience but also the type of experience the person has had can affect perceptions. Also, whether prior experience is general to all types of natural environments or specific to just one certain area can have an influence on how perceptions differ from those of a novice (Schreyer & Lime, 1984). The number of visits does not necessarily equate to how much a person has learned. One could drive through GSMNP twenty times and not learn as much as a person who stopped at the visitor center one time and attended an educational program or an interpretive hike.

In summary, several issues have been discussed relating to how visitors to wildland recreation areas differ in their perceptions and attitudes towards the natural environment. People coming into a natural recreation environment such as GSMNP have different perceptions

and attitudes towards the environment of the park based on their past experience with natural environments, their particular cultural upbringing, and their knowledge about natural systems.

Goals of the Current Research

The primary purpose of the present research was to explore the differences in attitudes and perceptions of different user groups visiting GSMNP. Based on prior research, it was hypothesized that there would be differences in attitudes towards features and activities in the natural environment of GSMNP between different user groups. An example of a hypothesized difference is that those visitors who come to the park primarily to drive through would have attitudes and perceptions different from visitors, such as backpackers, who interact directly with the environment.

A second goal of this study was to determine how attitudes and perceptions of visitor groups differ from people who have expertise in natural environments. Previous studies on expertise have shown that expert perceptions differ from those of novices. The second hypothesis was that experts in natural environments will have different attitudes and perceptions of GSMNP from most user groups to the park, which reflect greater knowledge of natural systems.

The third goal of this research was to examine the effect of previous experience on attitudes and perceptions of visitors to GSMNP independent of user group. A number of studies conducted in the Smokies have used the traditional "how many times have you visited" as the measure of experience level for visitors being surveyed (Van

Cleave, et al., 1990; Overton & Van Cleave, 1990; Peine & Renfro, 1988). The current study chose to use the experience use history variable (modeled after Williams, et al, 1990) in order to more accurately use experience level more accurately as a variable in examining differences among different visitors to GSMNP. Based on previous studies using experience level to assess differences between recreation area users, it was hypothesized that visitors with a high level of previous experience visiting wildland recreation areas (GSMNP or other areas) will have different attitudes and perceptions than visitors with a low level of previous experience.

A final area of interest in this study was an examination of the activities in which each user group and a group of experts engages while in a wildland recreation area such as GSMNP. Since people come into a recreation area such as GSMNP with different expectations in mind it is reasonable to assume they will engage in different activities while visiting. For example, those visitors who come to the park primarily to auto-tour are unlikely to engage in strenuous physical activities such as backpacking and more likely to engage in activities such as sightseeing and shopping. Based on this supposition, and previous findings in GSMNP and Gatlinburg (Franz, et al., 1990), it is hypothesized that different user groups will indicate that they come to GSMNP for different activities as will a group of experts.

CHAPTER 2

METHOD

Overview

This study sought to examine differences in perceptions and attitudes of different user groups to Great Smoky Mountains National Park (GSMNP). To accomplish this goal, visitors were surveyed at several different locations in the park thought to represent different user groups. These locations were: 1) the four largest campgrounds (Elkmont, Smokemont, Cades Cove, and Cosby) to sample overnight campers; 2) Newfound Gap and Clingmans Dome to represent the auto-touring or "windshield tourist"; 3) backcountry campsites and shelters and Mt. LeConte lodge for the overnight backcountry user; 4) various short trails popular to day hikers to represent the dayhiker group; 5) picnic grounds (Cades Cove, Metcalf Bottoms and Chimneys) to represent day/picnic users; 6) the Sinks, a popular swimming area which tends to attract users who are from the local area; 7) the cabins in Elkmont which are privately leased and used only by an exclusive group. Also surveyed was a group of people considered to be experts in natural environments. This group included GSMNP employees in the interpretation, resource management and science divisions, and University of Tennessee faculty and graduate students in the Departments of Forestry, Wildlife and Fisheries and Ecology.

Visitors were surveyed during the summer and fall seasons, 1990. For GSMNP, summer is defined as the time period between Memorial Day

and Labor Day, which encompasses most of June, July, and August. Fall is defined as the period between Labor Day and Thanksgiving, which encompasses most of September, October, and November. In GSMNP, September visitation tends to decrease considerably from the summer months. October visitation tends to equal or surpass summer visitation rates due to the fall colors. November visitation rates tend to vary according to the amount of fall color and the weather. In 1990, the fall colors remained well into the second week of November and visitation rates stayed high until then.

Participants

A total of 1283 surveys was collected from visitors over the entire study period. The number of surveys collected from each user group, displayed in Table 1, was as follows: 105 from backcountry users, plus 43 from Mt LeConte lodge; 153 from day hikers; 517 from campers (164 from Elkmont, 159 from Cades Cove, 100 from Smokemont, 94 from Cosby); 90 from the picnic grounds; 239 from "windshield tourists" at Newfound Gap and Clingmans Dome; 32 from the Elkmont cabins; 26 from the Sinks; and 78 from experts.

The age of participants ranged from 16 to 72 with a mean age of 37.7 years. Most visitors had at least a high school education, the terminal education of 29% was a college degree, and 17% had an advanced degree. Overall, 54% of the participants were married with children, 15% were married without children, and 31% were single. Income ranged from \$5,000 to more than \$75,000 per year, with 21% earning between

Table 1. Distribution of Locations where Surveys were Collected

Location	Number of surveys
Backpackers	105
Mt. LeConte lodge	43
Day hikers	153
Campers (total)	517
(by campground)	
Elkmont	164
Cades Cove	159
Smokemont	100
Cosby	94
Picnic grounds	90
Windshield tourists	239
Elkmont cabins	32
Sinks	26
Experts	78
Total surveys	1283

\$5,000 and \$15,000, 29% earning between \$15,000 and \$30,000, 26% earning between \$30,000 and \$45,000, and 24% earning \$45,000 or more.

Seventy percent of all visitors surveyed were not local to the Smoky Mountain area, but only 17% overall were first-time visitors. The mean number of times visitors have been to GSMNP was 18.0, the mean number of visits per year to wildland recreation areas was 8.1, and the mean number of days spent in GSMNP was 4.7 across all visitors.

Procedure

Surveys were distributed primarily by research assistants who approached visitors individually at the various locations and inquired if they would be willing to complete a survey. Surveys were collected at all locations from visitors who were willing to participate and the data represents a convenience sample. Because of the nature of the survey locations in the park, it was not possible to have a systematic, truly random sampling strategy for collecting the surveys, nor was it possible to obtain a proportional sample.

At three of the major campgrounds some surveys were collected via a drop-box. As campers registered, they were given a survey by the campground ranger and asked to fill it out and return it to the dropbox. This method yielded about a 30 percent response rate. All campgrounds were also surveyed by researchers collecting surveys. The compliance rate for personal contact by the researchers was about 90 percent.

Backcountry users were surveyed at campsites and shelters within GSMNP, with the research assistant remaining overnight at the site.

This allowed for the collection of surveys at the backcountry sites after the hikers had set up for the night and could spend time filling out the surveys. This also ensured that only overnight backcountry users were included in the user group. The compliance rate for this group was almost one-hundred percent. Those people who were staying overnight in the Mt. LeConte lodge were surveyed in the evening at the lodge. Researchers also spent the night at the lodge in order to collect surveys only from those who were actually spending the night there.

Visitors in the day hiker user group were surveyed at trails known to be frequented by people taking short day hikes, such as Chimney Tops and Alum Cave Bluffs (Van Cleave, Beard, Shunamon, & Peine, 1990). Researchers surveyed only those hikers who were day hiking; no overnight hikers were surveyed at these locations. Response rate for this group was approximately 85 percent.

Visitors to three picnic grounds in the park, Chimneys, Metcalf Bottoms, and Cades Cove, were surveyed by personal contact on site. The majority of these visitors were day users. The Sinks user group was surveyed on site. This site is a popular diving and swimming location in the park. Users were surveyed as they emerged from the water or while they were sitting on the rocks by the waterfall. Elkmont cabin users were surveyed using a door-to-door method by research assistants. A few surveys were collected from visitors to Sugarlands Visitor Center. However, since it was not possible to consider those visitors that stop at a visitor center as a distinct

user group (due to the heterogeneous nature of those who stop), they were not included in the user group analysis.

At Newfound Gap and Clingmans Dome, visitors were initially reluctant to take the time to fill out a survey. At these locations, the primary user group targeted was the windshield tourist, those who drive through the park but rarely stop. Newfound Gap and Clingmans Dome are the two major overlooks at the highest points along the road which transects the park from north to south. These locations are also the only places along the road at which there are rest rooms. Consequently, tourists tend to spend just a long enough period of time to either use the facilities or take a few pictures at the overlook.

Because of the low compliance rate (approximately 25 percent) in filling out surveys at these locations, a slightly different strategy had to be used. Participants who filled out the survey were given an "incentive" in the form of a postcard with a picture of a black bear. When the incentive was added, the participation rate increased to nearly one-hundred percent. This was the only user group for which an incentive was required as inducement to fill out the surveys. All other user groups had about a 90 percent compliance rate when approached by the researchers.

The expert group was surveyed by placing surveys, with instructions for return, in the mailboxes of those selected for participation. Park service employees returned their surveys through the park mail system. Faculty and graduate students in the Departments of Forestry, Wildlife and Fisheries and Ecology at the University of

Tennessee returned their surveys through campus mail. The response rate for this group was about 70 percent.

Materials

Overview of Survey Instrument

The survey instrument was modified from instruments used in surveys conducted by Van Cleave, et al.(1990) and by Van Cleave (1988). The survey included 49 Stevens-scaled items (Stevens, 1951) for rating attitudes towards features of the park, activities, management practices, local tourist communities, and illegal or destructive behaviors. The Stevens scale was chosen to assess differences in attitudes between the different user groups on several categories of items. The rationale for selecting this scale and a discussion of each item included on the scale are presented later in this chapter.

Also included on the survey was an activities checklist which was created from phenomenological interviews and open-ended questions in the Franz, et al. (1990) study. Responses to the item "I come to the Smoky Mountain region to...", collected in that study, were used to generate the activities checklist. Other activities on the checklist were taken from interviews in which participants discussed the types of activities they liked to participate in while in GSMNP. This checklist was included on the survey primarily for the benefit of managers of GSMNP, who desired to know what activities are important to visitors to the park. It was also intended that the activities checked be compared

with attitudes expressed in the Steven's scale to determine whether specific attitudes relate to specific activities chosen.

The survey also collected basic demographics and trip characteristics information. The demographic and trip variables used are generally standard for surveys conducted by the National Park Service and the Forest Service. Demographic variables included age, gender, state of residence, occupation, educational level, marital and family status, income level, and race. Trip variables included type of group traveling with, first-time or repeat visitor, number of days spent in the GSMNP region, number of times visited GSMNP, times per year visited national or state parks, and number of other national or state parks visited. The last three of these trip variables were included as a measure of the experience level of the visitor, based on Williams, et al. (1990).

Nine open-ended, sentence completion items, modified from the Franz, et al., (1990) study, were included as a qualitative measure of visitors' attitudes or perceptions of several specific situations that occur in GSMNP. For example, it was desired to know how people feel about practices such as feeding animals, or situations such as encountering bears, using a method which would not force a particular response, but would instead allow the participant to respond with whatever first came to mind. These items may serve as a cross-check against similar numerically-scaled attitude items.

The survey given to the expert group was essentially identical to the one given the visitors to the park. Some of the instructions were

reworded to reflect the fact that the expert group was not actually visiting the park at the time they filled out the survey.

Some of the open-ended questions were also slightly reworded but asked the same question. The two versions of the questionnaire are included in Appendix A.

Specific Item Selection

Stevens Scaled Items

A Stevens scale was selected for assessing the attitudes of visitors to GSMNP on 49 different items. This scale was selected because the Stevens method of scaling does not attach any particular system of valuation on the items, but allows raters to supply their own metrics, or systems of evaluation (Stevens, 1951). It was felt that individuals in different user groups would tend to rate qualities of a natural recreational environment similarly to each other because they possess similar evaluative systems, and differently from those in other groups. Use of a Stevens scale allows examination of these metrics using factor analysis.

Overview of item selection

The Stevens-scaled items fell into several categories: features of the park, activities, management practices, local tourist communities, and illegal or destructive behaviors. The items in each categorical group will be discussed below. Virtually all of the Stevens-scaled items were chosen on the basis of past research. While the groups in

the previous studies were more limited in their diversity than in the present study, it was felt that items would continue to differentiate in the broader context showing that they elicit different responses from people in different groups (Van Cleave, et al, 1990; Van Cleave, 1988).

Initial generation of the items in Van Cleave (1988) was based on observing the various groups of park users over a three year period. In Van Cleave, et al. (1990) some items from Van Cleave (1988) which did not produce variance in the original sample were discarded and new ones added. In the present study, those items with the best differentiation in Van Cleave, et al. (1990) were retained, with some new items added by Park Service administrators.

Park features. The park features category of items included things typically found in national parks, including animals, people, and programs. No activity was implied in these items with the exception of "stopping at the visitors center". For the majority of items in this category the features were simply listed.

The Animal items included in this category were "Bears in the backcountry" and "Snakes in the National Park". These items were used to assess attitudes toward two animals that are protected in the park, but towards which attitudes differ widely. Seeing bears is desired by many visitors, and thus represent a positive animal feature. It was felt that seeing bears in their own natural context rather than from the safety of a car would produce different responses between groups but similar responses within groups. Attitudes towards snakes also vary widely, representing a negative animal feature for some groups

(Van Cleave, et al., 1990). Because snakes are an important part of a natural ecosystem, the inclusion of an item about snakes should reveal how various user groups differ on awareness of the importance of snakes in the ecosystem and of their protected status in the park. It may be assumed that those who give positive ratings to snakes either like snakes, implying a familiarity born of knowledge about them, or have knowledge of the importance of snakes to the ecosystem of the park. It was also felt that those who give negative ratings are probably reacting affectively to the idea of a snake and do not understand that snakes are important to a naturally functioning ecosystem. It was expected, therefore, that this particular item would distinguish knowledgeable from less knowledgeable park visitor user groups.

"Mountain roads" is a feature of GSMNP that has in the past produced varying ratings between visitors. Some visitors were uncomfortable driving on steep, winding roads and gave this item negative ratings; others did not have this attitude and rated the item either neutrally or positively (Van Cleave, et al., 1990). This item was included because it was felt that the user groups have different attitudes towards mountain roads based on different levels of experience.

Two items, "The National Park Service" and "National Park Rangers" were included in the features category. It was of interest to the managers of GSMNP to assess the attitude visitors have towards the Park Service itself and towards Park Rangers, who tend to be expected "features" of the park. It was also felt that attitudes towards the

Park Service and Rangers would differ with levels of knowledge and experience of those entities.

Two other related items, "Interpretive Programs in the National Park" and "Stopping at the visitor center in the National Park," were also included for park management who were interested in visitor perceptions of these two services offered to the public.

Park activities. Eleven items were included in the park activities category, which consisted of items measuring attitudes towards various "things to do" while visiting the park. It was felt that the user groups would differ in their attitudes towards the activities in a manner which would differentiate between the groups.

Two animal-related activities were included: "Seeing animals in the wild" and "Trout fishing". The first was included because it is a sought-after activity by many visitors, as evidenced by interviews with visitors who stated that they desired to see wild animals in the park (Franz, et al., 1990). It was felt that some user groups have more positive attitudes towards seeing wild animals and are more interested in this activity than are others. Trout fishing is an activity which may not be desirable to some users but may be the sole reason for coming to the park for others. This item was included because it was felt that it would systematically differentiate groups.

Two auto-related activities were included: "Views from your car while driving in the park" and "Photographing the mountains from roadside pull-offs". These items were used because some user groups (such as the windshield tourists) gave higher ratings to these more passive activities than did other user groups (such as backpackers).

"Having a picnic in the National Park", "Hiking a short nature trail in the National Park", "Tent camping in the National Park", and "Playing around in a cold mountain stream" were items that represent park activities that are a little more active than the auto-related activities but are not so strenuous that the majority of visitors could not participate in them. Despite the accessibility of these activities, however, people differ in their attitudes towards them. The main purpose of these items was to differentiate user groups on the basis of their attitudes towards these moderate activities.

Two items, "Wilderness solitude" and "Walking alone in the woods", were included to measure attitudes towards activities not sought after by all user groups. Past research (Van Cleave, et al., 1990) has shown that some visitors fear being out the "wilderness" while others enjoy it. It was assumed that if a person gave a very negative rating to walking in the woods alone it was because there was some element of fear in doing so. (This attitude has been observed by the author on many occasions when walking alone in the backcountry and being questioned by groups of visitors as to why I was not afraid to be alone in the woods.) "Wilderness solitude" was included because some user groups are more interested in a solitude experience than others and some groups are aversive to this type of solitude, as found in previous research (Van Cleave, et al, 1990).

The final item included in this category was "Vacationing with family or friends in the National Park". It was included because it was felt that some user groups have more positive attitudes towards family vacations in the park than do others.

Physical activity. Five items representing more physically challenging activities in the park were included because user groups differ in attitudes towards engaging in these types of activities. "Backpacking overnight in the National Park" and "Hiking 10 miles in the mountains" are both strenuous activities that are popular among certain groups of visitors (such as backpackers) but not among others. These items were also intended for comparison with respondents' actual choice of activities as measured by the activity checklist.

"Rock climbing in the National Park" and "Snow skiing" are physically challenging activities that are not often engaged in while visiting GSMNP. These items were included because they are indicative of global attitudes towards physical activities of this sort and because it was felt that this global attitude differs systematically among groups.

The item "Engaging in challenging physical activities" was included as a more global measure of visitor attitudes towards activities that are physically difficult. This item was included as a comparison with expressed attitudes towards the more specific physical activities and with actual recreational choices.

Tourist activities. Twelve "tourist related activities" were included to assess attitudes towards various features and activities in the tourist communities surrounding the park. These items were included because it has been found that certain visitors to the park have strong interests in visiting the tourist communities and rate these places highly, whereas other visitors have very low opinions of the tourist communities and try to avoid them at all costs (Van Cleave,

et al., 1990). Further, these differences are systematic across groups.

It was found in previous research (Van Cleave, 1988) that some visitors who held very positive attitudes towards the tourist communities gave high ratings to illegal activities such as feeding animals, possibly indicating a lack of knowledge about the ecosystem and a specific lack of knowledge about the consequences of illegal activities. Because of this previously found correlation, it was thought that tourist-related items would be rated differently by members of knowledgeable and non-knowledgeable groups. Items representing the tourist towns which adjoin or are very close to the park were "Attractions in Pigeon Forge", "Shopping in Gatlinburg", and "Cherokee, North Carolina".

Two items, "Camping in the National Park in a motor home or trailer" and "Camping in a commercial campground", were included in the tourist related activities rather than in park activities to distinguish them from more primitive camping usually found in the national parks. These items were included because it was expected that some user groups would have positive attitudes towards motor home and commercial camping while other groups would have negative attitudes.

Three items representing stereotypical tourist activities were included: "Playing miniature golf", "Souvenir shops", and "Tour buses in the National Park". These items were used to assess "typical tourist" attitudes of the user groups. It was expected that user groups more knowledgeable of the park and its natural systems would rate these items more negatively than groups who were less

knowledgeable of the park and its environment, while groups who were more adventure and activity oriented would rate them more negatively than would group who were more passively-oriented.

In several of the tourist communities, black bears are displayed in cages, and visitors have the opportunity to feed them. The item "Seeing wild animals like black bears in cages" was included because attitudes towards this practice differ between user groups. It was expected that the expert group would rate this item particularly negatively. This item can also be compared to "Seeing animals in the wild" and "Bears in the backcountry" between different user groups. A group rating all three items positively would most likely be rating seeing the bear in a global sense, while a group rating seeing a bear in captivity negatively and rating seeing it in the wild positively would most likely be rating the animal-context relationship.

Billboards in the region surrounding GSMNP are numerous and are considered by members of some more knowledgeable groups to be 'a blight upon the land.' For visitors from out of town, however, billboards may be useful sources of local information and therefore are not looked upon unfavorably even when they detract from the surrounding views. The item "Billboards with local information" was intended to differentiate more knowledgeable from less knowledgeable groups and more ecologically-minded from less ecologically-minded groups.

The final two items included in this category were "Visiting local craft shops" and "Seeing local cultural exhibits". These two items represent non-stereotypical tourist activities, as they cannot be found in just any tourist town. The crafts and culture of the GSMNP region

are frequently evaluated as educational. It was felt that these tourist activities might be rated more highly than were the more stereotypical activities because of the educational component.

Rules and regulations. Four items related to activities that are illegal in GSMNP were included in the rules and regulations category. These items were expected to tap differences between user groups on their attitudes towards engaging in the illegal activities.

Two items involved plants: "Digging plants in the National Park to take home" and "Cutting trees for firewood in the National Park". Visitors to GSMNP engage in both of these illegal activities and it was felt that some user groups may have more positive attitudes towards these activities than do others.

Two items involved feeding animals in the park: "Feeding bears in the National Park" and "Feeding squirrels in the National Park". Feeding any animal in the park is illegal and harmful to the animal, but is also a practice in which many visitors engage. Bears and squirrels were selected for the items because they represent two very different types of animals and it was thought that the attitude ratings would differ between the animals. Feeding bears contains an element of danger for the person doing the feeding, whereas feeding a squirrel is a seemingly danger-less activity. Additionally, some visitors may perceive the harm to a bear in feeding it human food but may not perceive the harm to the squirrel. It was felt that these differences would be systematic between user groups.

Management practices. Four management practice items were included. They were included to differentiate between user groups on

differences in their attitudes towards certain management practices. The items selected reflect practices which on the surface may seem either unnecessary or controversial but which, if the person has knowledge about the natural environment of the park, are seen as necessary and are more likely to be rated positively. It was expected that this knowledge-attitude linkage would differentiate knowledgeable from non-knowledgeable groups.

Two items involved the removal of exotic species which either do harm to native species or damage the park in some way: "Removing non-native plants from National Parks" and "Killing non-native wild hogs in the National Park". Removing exotic plants from the park is rather innocuous and may not be much of an issue to many visitors, but the idea of killing animals in the park, even those which do a great amount of damage, may be more negatively perceived by a number of visitors who do not understand why the practice is necessary. In addition to differentiating among groups, it was of interest to discover which user groups have the knowledge necessary to understand these practices and give the items positive ratings. The reintroduction of the red wolf into the park is a highly publicized project that is not without controversy. The item "Reintroducing the Red Wolf into the Smokies" was included at the request of GSMNP administrators. Wolves carry a lot of emotional loading for people, and it was of interest to determine if some user groups have more negative attitudes towards reintroducing the wolf into GSMNP than do others. Positive ratings of wolves in the park would also reflect knowledge of why it is important

to have this predator in the park and it was felt that this item might differentiate groups on the basis of knowledge.

"Harvesting trees in the National Forest" was included to determine if there were differences in attitudes between this item and "Cutting trees for firewood in the National Park". Cutting trees in national forests is a controversial issue when it involves widespread logging, but is permitted, while cutting trees in the park is forbidden. In order to rate this item validly, the respondent would have to first know the difference between a national park and a national forest and their attendant policy differences. The author has observed on several occasions when talking with visitors that a number of people are not aware that there is a difference. The item was included to determine whether there are differences in attitudes between the two tree cutting contexts, and it felt that there might be differences between user groups based on differences in knowledge.

Controversial issues. Six issues were surveyed which are sometimes controversial both to visitors and to managers of the park. Some of these items were included at the request of park management who desired to know visitor attitudes towards the issue. Inclusion of the item "Horseback riding on the trails in the National Park" was specifically requested by the superintendent of GSMNP. This is a controversial issue because on some trails the impact from horses is so great that the trails become very difficult to hike. It was also felt that attitudes towards horses on trails differed between user groups, particularly between those who may have encountered problems on horse trails and those who have not.

Two items relating to aircraft also were requested by park management: "Helicopter tours of the National Park" and "Small private airplanes flying over the park". The issue of aircraft noise affecting visitor enjoyment to the park and the potential impact upon the animals in the park is an ongoing controversy. Currently there are no restrictions on aircraft, including high speed military aircraft, although studies are being conducted nationwide to assess the impact of aircraft noise on both visitors and animals. It was of interest to park management to include these items on the survey to determine visitor attitudes in general towards aircraft flying over the park. It was also felt that more knowledgeable and ecologically-minded groups like the experts and backpackers would have more negative attitudes towards aircraft than would less knowledgeable and ecologically-minded groups.

Items involving two campground issues were included: "People who bring their pets camping" and "Permitting alcohol in picnic grounds and campgrounds". Both of these practices are permitted in GSMNP but both have the potential to cause problems. These items were included to determine the overall attitudes of visitors on these issues and because differences were expected between user groups due to differences in having experienced problems related to pets and alcohol and due to differences in global attitudes towards these things.

The final item included in this category was "The Sierra Club". The Sierra Club is an environmentalist group that sometimes is controversial in its platform and practices. The item was included because it was expected that different user groups would have different

attitudes towards the Sierra Club on the basis of similarity of group attitudes to Sierra Club attitudes.

Open-ended Items

Sentence completion or open-ended statements were used to examine perceptions, knowledge and attitudes towards the natural environment of GSMNP, visitor behavior in the park, experiences while visiting, and feelings towards the park. In this method respondents provided a response to an incomplete sentence stem and it was assumed that the respondent would reveal his or her subjective feelings and intended behaviors in the way the sentence is completed (Whyte, 1977). In previous studies in the Smokies this method was found to reveal quite useful data about perceptions and feelings towards National Parks (Van Cleave, 1988) and tourist communities (Van Cleave, et al., 1990). In the present study it was felt that there would be thematic differences between groups, but it was also desired to find out specifically what those themes would be.

Nine items were chosen for sentence completion. Three items related to animals in the park. The first, "Animals in a National Park should be" was included to assess visitors' general attitudes towards the animals in the park. Knowing the attitude a visitor has towards animals that reside in the park can help park managers assess visitor knowledge and develop interpretive programs designed to educate the public about the animals and why they are protected. It was felt that thematic differences would be found with differences in knowledge and experience.

The second animal item, "Encountering a black bear in the park" was more specific in that it sought to reveal attitudes towards a potentially dangerous but highly sought-after animal. Visitors frequently express the desire to see a bear, although interacting with one has an element of danger. This item was expected to yield differences in attitudes towards bears between different user groups.

The third animal item, "People who feed animals in the National Park" was included to assess visitor attitudes towards an activity in which visitors frequently engage, but which is illegal. Certain groups of visitors may feed animals or tolerate feeding them because they lack the knowledge that it is bad for the animal to do so, while other groups may not because they are aware of the consequences of feeding them. Knowing which groups of visitors are unaware of the danger to the animals of feeding them and knowing visitor attitudes towards this practice more generally may help park managers gear educational programs specifically to these groups.

Three open-ended items were included to assess expectations and experiences while visiting GSMNP. The first of these, "When I come to the Smoky Mountains I expect" was included to determine what expectations people have when coming to the park. An open-ended question was desired here so people would respond with personal expectations rather than to predetermined expectations that they may or may not have had. It was thought that expectations vary between different user groups based on their reasons for coming to the park, their past experiences with GSMNP or other wildland recreation areas, and their knowledge of the park and similar areas.

The other two items, "My best experience in the Great Smoky Mountains National Park was" and "My worst experience in Great Smoky Mountains National Park was" were included to determine what types of experiences, both good and bad, were figural for visitors to the park. It was felt that good and bad experiences have commonalities within user groups but differ among user groups. Open-ended questions were the only possible way to gather this information because experiences are so varied between visitors and so subjective.

The item "Hiking on the trails in the Smokies" was included to examine differences among user groups in their attitudes towards a specific activity readily available to all user groups but differentially elected by certain groups. Hiking on the extensive trail system in GSMNP is an activity sought after by some and ignored by others. This item was intended to discover differences in attitudes towards hiking on the trails between visitors who specifically come to the park to hike (backpackers) and those who may or may not be willing to hike. An open-ended item was chosen (as well as scaled items relating to hiking) order to permit thematic examination of visitors' attitudes or feelings about hiking.

Discovering what people think they should do in the wilderness and how these perceptions of what should be done differ between user groups was the intent of the item "When in the wilderness a person should". The term wilderness was not defined but left up to them to determine what it meant to them when completing the sentence. This item was used in previous research in the park (Van Cleave, et al., 1990) and was found to produce quite different responses between visitors to

Gatlinburg and visitors to the park. It was felt that differences would also exist among user groups in the park in their perceptions of what people should do when in a wilderness environment. Such differences, it is felt, would be indicative of differences in knowledge and experience.

The final item in the open-ended series, "The most dangerous thing in the National Park", was included because previous research (Van Cleave, 1988; Van Cleave, et al., 1990) had discovered that people expressed fear towards various things in the park. By using this item it was thought that the specific things people perceive to be dangerous in the park could be discovered. It was also intended to determine if there were commonalities within user groups and differences between user groups in things that are perceived to be dangerous in the park. Such differences were expected on the basis of differences in knowledge and experience.

Demographic and Trip Characteristics

The demographic items chosen were those which are standard for use on questionnaires in GSMNP (Overton & Van Cleave, 1990; Peine & Renfro, 1988; Van Cleave, et al., 1990). These included age, gender, occupation, education, income, race, and marital or family status. Home state and zip code, also standard for GSMNP research, were collected to determine where most visitors are from.

The item "Local to this area?" was included to determine if a visitor resided within the area considered to be local to the Smokies. This item differed in this survey from previous research in that it

specifically asked visitors whether or not they were local to the area. In past research whether or not a person was local to the area was determined by the zip code; those who fell within a particular postal region were considered to be local. In this study it was intended that the person answering the question make the determination of whether or not they were local. This allowed for people who had lived in the local area but moved away and still consider themselves to be locals to be included in the local category. Past research in the park has used local versus non-local as an independent variable in some analyses and has found that there are differences in attitudes based on whether or not a person is from the local area or is a visitor from somewhere else (Peine & Renfro, 1988; Overton & Van Cleave, 1990).

Certain characteristics about visitor trips to the GSMNP region are also standard for surveys in the park. Standard items which measured trip characteristics were: type of group traveling with, first-time or repeat visitor, number of times visiting the Smokies, and number of days spent in the Smokies. Type of group traveling with is used to indicate the number of family groups, single individuals, and organized tours that come into the park. First-time or repeat visitor is used to determine the percentage of first-time visitors to an area. It was of interest to discover if certain user groups have a higher percentage of first-time visitors than other user groups. The number of days spent in the park was also collected to determine if there were differences between user groups in the length of time a person stays in the park.

Two additional items were included to measure experience level. Choice of these items was based on previous research which used an "experience use history" variable (Williams, et al., 1990). These items were: times per year visit national or state parks, and number of other national parks or wilderness recreation areas visited. These two items, along with number of times visiting the Smokies and first-time or repeat visitor, were combined to create an experience use history. The composite was used to analyze for differences between levels of experience in wildland recreation areas and whether these differences predict attitudinal differences.

Activities Checklist

As was mentioned in the general overview of the survey instrument above, an activities checklist was created from phenomenological interviews (Franz, et al., 1990) and from open-ended questions (Van Cleave, et al., 1990). Responses to one of the open-ended items, "I come to the Smoky Mountain region to" were used to generate the activities checklist as were responses from interviews in which participants discussed the types of activities they liked to participate in while in the Smokies. The activities people chose while in GSMNP are of interest to the managers of GSMNP, who desired to know what activities visitors feel are important. Activities chosen by different user groups in the park were of interest in this study because it was expected that groups would choose certain activities over others.

Categories of items

There were several categories of items chosen for the activities checklist. Respondents simply checked off the items on the list which corresponded to activities they engaged in while in the park. Items included in each category follow.

Social. Five items are activities of a social nature. These are: family vacation, meet new people, visit relatives, be with my close friends, and party. Differences were expected among groups in social orientation.

Personal growth. Nine personal growth items were included to differentiate among groups and explore how user groups differ in interest in learning about the park or using the park as refuge from everyday stresses. These items were: "escape from everyday routine," "seek solitude," "avoid crowded areas," "relax and relieve tensions," "learn more about myself," "get closer to nature," "become more nature educated," "explore new territory," and "spiritual growth."

Items related to personal growth experiences included the items "get closer to nature," "become more nature educated" and "learn more about myself." These were included because of expected differences between groups on attitudes towards personal growth in the park context. The items that had to do with escape, seeking solitude, and avoiding crowded areas were chosen because differences were expected between user groups in using the park as a refuge or retreat from others rather than as a social gathering place. Additionally, these items were expected to show that different levels of experience in

visiting wildland recreation areas is related to the desire for personal growth and learning experiences.

Park activity. Six park activity items were used to determine which are most likely to be engaged in by different user groups. These items were: "go on a picnic," "see animals," "bird watch," "look at the scenery," "camp in the campgrounds," and "go fishing." Some of the park activity items were chosen because it was felt that these are activities which most people coming to GSMNP desire, such as "see animals" and "look at the scenery." Other items, such as "go on a picnic" and "camp in the campgrounds" were chosen because it was expected that only certain user groups engage in these activities. "Bird watching" and "fishing" were chosen because it was felt that certain user groups are more likely than others to engage in these activities; it was expected that groups more knowledgeable about natural systems would be more inclined to watch birds.

Tourist activity. Five items which reflect more tourist-oriented activities were included: "auto tour," "shop/window shop," "amusement park," "see local arts and crafts," and "interest in local cultures." Shopping and amusement park items were chosen because it was expected that user groups differ in their interest in "typical" activities found in the adjoining tourist towns (Gatlinburg, Pigeon Forge, and Cherokee). The items dealing with local culture and arts and crafts are not as "touristy" but are important to the local tourist communities for drawing visitors to the area. These two items were included to discover which user groups are more likely to be interested in the local culture and crafts.

Physical activity. Five items which are more physically oriented were included: "camp in the backcountry," "swim in the rivers," "hike the trails," "be physically active," and "be adventurous." Some user groups, such as backpackers and experts, are likely to chose activities which require more physical exertion than other groups, such as windshield tourists. These physical items were expected to differentiate groups but also were intended to discover just which user groups were more likely to engage in sometimes strenuous physical activities such as hiking and backpacking. It was also of interest to determine whether user groups considered themselves to be more or less adventurous than others, so this item was also included.

Other. Two items did not fit into any of the above categories but were included to determine the percentage of respondents who were not in the park for vacation or leisure. These items were: "just passing through" and "business trip."

CHAPTER 3

RESULTS

Overview

The basic finding of this study is that attitudinal differences exist between identifiable groups of people who use Great Smoky Mountains National Park. People can be classified on the basis of differences in "user group" (defined by their primary recreational choices and where they were surveyed), experience level in national parks (defined by the number of times they have visited GSMNP and the number of other parks they have visited), level of expertise (defined by profession or academic training), and attitudes (defined in terms of their responses to Stevens-scaled items rating their feelings towards various features, activities and management practices in the park).

In order to address these classifications, several analyses were performed on the data. Initial analysis included calculating the means and standard deviations from the attitude scale, analyzing the demographic and trip characteristic data, and computing the percent checked on the activities checklist for each user group and for level of experience.

Statistical significance of each attitude item was determined using Analysis of Variance by user group and experience level. The overall F-test was significant for most items, indicating that most of the items contribute to the ability of the overall scale to differentiate among user groups or experience level groups. Factor

analysis was performed to generate attitudinal constructs capable of differentiating the user groups and to examine how user groups differ in those constructs.

Organization of Results

Because of the large amount of data that was analyzed, the following organization of the results was used. The results are divided into four main sections: 1) analyses by user group; 2) analyses by experience level; 3) factor analysis; and 4) analysis of open-ended items. Each main section is further subdivided. The first two sections, analysis by user group and experience level are both subdivided into three sections: 1) demographics and trip characteristics, 2) attitudes, and 3) activities. The section on factor analysis is subdivided by user groups, experience level, and regression analysis. The section on open-ended items is subdivided by question and analysis reported by user group.

Most of the subsections first present a summary of the important results relevant to hypothesis confirmation or policy. After the summary a detailed presentation of all the results is presented. Reading the summary of each subsection should be sufficient for understanding the main results of the research.

CHAPTER 4

ANALYSIS BY USER GROUPS

Demographics and Trip Characteristics of Different User Groups

Demographics

The demographic data for all user groups is presented in Table 2. The overall mean age of visitors surveyed was 37.7 years; minimum age was 16. Day hikers tended to be slightly younger than the average at 31.3 years, and windshield tourists tended to be older than average at 44.6 years, followed by campground campers at 41.6 years. The mean age for all other groups ranged between 35.4 and 37.8, close to the overall mean.

Most park visitors have at least completed high school and some college. However, there are some rather distinct differences in education level among different user groups. Not surprisingly, the expert group is much more highly educated than any park visitor group, with 87.1 percent of the experts having a college degree or advanced degree. The 13 percent of experts who had not yet received a college degree were either college students working in the park who had a great deal of knowledge about natural systems or resource management employees who were deemed experts by their level of experience in working in their fields.

Table 2. Demographics and Trip Characteristics of User Groups to GSMNP

Variable	User Group*								
	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk	All
Mean age	35.4	35.8	31.3	41.6	37.8	44.6	37.2	37.6	37.7
Education (%)									
Less than HS	0.0	4.8	2.7	4.8	5.6	5.7	3.1	7.7	4.6
Hs/some college	13.0	38.6	58.1	50.7	67.4	56.8	28.1	80.0	50.2
College	44.2	32.4	29.7	26.8	23.6	26.0	50.0	7.7	28.7
Advanced degree	42.9	24.8	9.5	17.8	3.4	11.5	18.8	3.9	16.5
Family status (%)									
Married/children	33.3	49.6	35.1	61.6	59.5	57.6	70.4	37.5	54.1
Married/ no children	20.8	12.2	10.5	17.0	7.6	18.7	3.7	16.7	15.2
Single/children	4.2	1.4	3.0	4.8	3.8	5.4	7.4	12.5	4.3
Single/ no children	41.7	36.7	51.5	16.6	29.1	18.2	18.5	33.3	26.3
Income (%)									
\$5,000-15,000	32.4	22.3	39.7	16.4	24.7	13.5	16.7	27.3	21.2
15,000-30,000	36.5	23.0	24.3	30.0	37.0	31.5	30.0	31.8	29.5
30,000-45,000	14.9	24.5	14.7	30.4	18.5	28.0	30.0	31.8	25.6
45,000-75,000+	16.2	30.2	21.3	23.3	19.8	27.0	23.3	9.1	23.7
Percent non-local	51.4	74.2	61.3	75.8	27.5	85.8	57.1	55.0	70.3
Percent first time visitor	N/A	20.6	16.6	13.4	8.1	28.1	6.3	11.5	17.1
Mean # of times visited GRSM	N/A	17.8	16.7	19.6	15.6	7.7	25.1	23.2	18.0
Mean # days spent in GRSM	N/A	7.3	2.6	7.4	3.4	4.5	5.1	3.6	4.7
Mean visits per year to National or State Parks	15.5	8.9	9.9	6.5	6.7	4.1	4.9	8.5	8.1
Number of other National/State Parks visited (1-10)	8.3	4.8	2.8	4.9	2.7	3.7	2.9	4.4	4.3

*Exp=Expert; Bck=Backpacker; Day=Dayhiker; Cmp=Camper; Pic=Picnicker
 Wnd=Windshield Tourist; Cab=Elkmont Cabin user; Snk=Sinks user

The group with the least education was the Sinks user group. Only 11.6 percent of this group had a college or advanced degree, and 7.7 percent had less than high school. Those surveyed in the picnic grounds (mostly local day users) were the next least educated group with 27 percent attaining a college or advanced degree. A higher than average percent of Elkmont cabin users had college or advanced degrees (68.8%). Backpackers were also more highly educated than overall, with a 67.2 percent having obtained a college or advanced degree. Dayhikers, however, were not as highly educated, with 39.2 percent receiving a college or advanced degree.

There were four categories of family status: married with children, married without children, single with children, and single without children. There were differences in family status among the eight user groups. Overall, 54.1 percent of visitors were married with children. Among experts, only 33.3 percent were married with children, and 41.7 percent were single with no children. These percentages probably reflect the fact that a number of experts were graduate students. The group with the highest percentage of married with children was the Elkmont cabin group (54.1%). The group with the highest percentage of single without children was dayhikers (51.5%). The high percentage of single dayhikers is probably because they were also the youngest group, with a mean age of 31.3.

The high levels of education obtained by the expert group were not paralleled by high levels of income. Only 31.1 percent of experts had incomes higher than \$30,000 per year. This may be due in part to some members of the expert group being graduate students, but is also due to

park service income being relatively low even for experts in various fields. The higher incomes in the expert group came from faculty at the university. The groups with the highest levels of income were windshield tourists, backpackers, campground users, and Elkmont cabin users (55.0%, 54.7%, 53.7%, and 53.3% respectively, with incomes higher than \$30,000 per year).

Trip Characteristics

Trip characteristics for all user groups also are presented in Table 2. The percentages of visitors who were either local or non-local to the Smoky Mountain region varied widely among user groups. The group with the highest percentage of non-local visitors was the windshield tourists (85.8%). The group with the lowest number of non-local visitors was the picnic ground users, with only 27.5% non-local. Among the experts, 51.4 percent consider themselves non-local even though all of the experts surveyed live either in Knoxville, the park or communities surrounding the park. This is possibly due to graduate students and temporary park employees from other regions of the country considering themselves to be non-local.

The vast majority of visitors surveyed were repeat visitors; the overall percentage of first time visitors was only 17.1 percent. First time visitors were most frequent in the Windshield tourist group (28.1%), and least frequent among Elkmont cabin users (6.3%).

The mean number of times a person visited GSMNP was calculated for each user group. The groups who had visited the park the most often were the Elkmont cabin users (25.1 times) and visitors to the Sinks

(23.2 times). The group that had visited the park the least frequently was Windshield tourists (7.7 times). Backcountry campers and campground campers spent the largest number of days in the park (7.3 and 7.4 days respectively). Dayhikers spent the least number of days in the park (2.6).

The expert group had, by far, the largest mean number of visits per year to national or state parks (including GSMNP) at 15.5 visits per year. Windshield tourists and Elkmont cabin users had the fewest (4.1 and 4.9 visits per year, respectively). The expert group also had visited the largest number of other national or state parks (8.3 other parks). Dayhikers, picnickers, and the Elkmont cabin users had visited the least number of other parks (2.8, 2.7, and 2.9 other parks visited).

Attitudes of Different User Groups

Summary of Results

There are seven categories of items on which visitors were assessed via Stevens-scaled questionnaire items: park features, park activities, tourist activities, physical activities, regulation items, management issues, and controversial issues. Statistically significant differences ($p > .05$) were found among user groups for nearly every item. In the park features category, means were in the positive or high neutral ranges for all items and all groups except snakes in the national park. Snakes were rated positively by experts, high neutral by backpackers, and neutral by the other groups. There is apparently a

link between attitude and knowledge, as the more environmentally-experienced groups rated the snakes more positively than did other groups. No other item in this category display quite as pronounced a knowledge-attitude linkage.

In the park activities category, solitude and being alone in the woods were rated most positively by the expert and backpacker groups. (These two items are actually motives but were included in the park activities category.) Conversely, these two groups rated short hikes, views from cars and picnics in the park less positively than the other groups. In the physical activity category, however, the expert and backpacker groups rated physical challenge, backpacking and hiking ten miles the most positively of all the groups. It would appear, then, that the more expert groups in the park environment prefer the more strenuous and solitary activities over the more moderate to sedentary activities favored by the other user groups.

While the more experienced park users favored the outdoor, strenuous activities, the more casual users tended to rate the tourist experience items like shopping in Gatlinburg, visiting Pigeon Forge and Cherokee and local crafts more positively or less negatively than did the experts and backpackers. Even so, however, few of the group by item means were above middle-neutral, and many of these were negative.

The means of all groups were negative for three of the four regulation items. Among the management issues items, the experts rated removing exotic plants, introducing wolves, killing hogs and cutting trees in the national forest more positively than did any other group, indicating a link between their attitudes and their knowledge of these

programs and their purposes. An opposite pattern held for ratings of the controversial issues items horses on trails, planes over the park and helicopters tours where experts rated these items the lowest. The experts, however, were more positive towards alcohol in the campgrounds.

Details from the Analysis

Means for the attitude items are presented in separate tables by item category. Item groupings are based on conceptual or functional similarity. Because an item may have a mean in the neutral range when in actuality the individual ratings were not neutral but bipolar, frequencies of responses to each item were also tabulated. The tables also display the percentages of positive and negative attitudes toward each item (positive items were those which were rated 8, 9, or 10 on the 1 to 10 scale and negative items were those which were rated 1, 2 or 3) by user group. The percentages of neutral responses are not presented. Refer to these tables for the following discussion.

Categories of items

Park features. The mean ratings in the park features category were relatively consistent across all user groups for most items; means and the percentages of positive and negative ratings are displayed in Table 3. Despite this apparent consistency, all items except "National Park Rangers" yielded differences which were statistically significant ($p. < .05$) among groups as measured by Analysis of Variance. The item in this category with the most variance

Table 3. Means and Percentages of Park Feature Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Bears in BC	m	9.3	8.6	8.2	8.5	8.3	7.9	8.2	8.9
	+	91.0	78.4	69.9	76.2	74.4	67.0	75.0	88.5
	-	0.0	4.1	5.2	6.0	5.6	8.4	3.1	3.9
Snakes in NP	m	8.6	6.7	5.5	5.2	4.1	5.0	4.5	5.3
	+	80.8	46.0	36.6	30.4	18.9	28.5	21.9	26.9
	-	2.6	17.6	35.3	34.4	48.9	38.9	43.8	26.9
Mtn roads	m	7.0	7.0	7.9	8.0	7.5	7.7	7.4	7.4
	+	48.7	50.0	63.4	66.7	62.2	67.4	62.5	57.7
	-	5.1	8.1	2.6	4.6	10.0	9.6	4.6	7.8
NPS	m	7.8	8.5	8.6	8.7	8.5	8.9	8.2	8.6
	+	66.7	79.1	79.1	80.9	73.3	85.4	68.7	76.9
	-	2.6	3.4	1.3	1.7	5.6	3.8	3.1	0.0
NPS ranger	m	8.0	8.5	8.5	8.6	8.3	8.8	8.8	8.7
	+	71.8	80.4	75.8	79.5	68.9	82.4	81.3	73.1
	-	1.3	2.0	2.0	2.9	2.2	4.2	0.0	0.0
Interp prog	m	7.9	7.4	7.4	8.0	7.2	7.9	7.0	7.5
	+	65.4	54.1	50.3	66.0	48.9	63.6	37.5	46.2
	-	1.3	6.8	5.9	5.4	7.8	10.9	6.3	15.4
Visitor cntr	m	7.1	7.2	7.2	7.6	6.9	7.7	6.2	6.4
	+	47.4	51.4	54.9	61.1	45.6	64.0	34.4	46.2
	-	5.1	5.4	9.8	6.2	13.3	7.5	15.6	19.2

Differences in mean ratings between groups were statistically significant, $p < .05$ for all items except NPS rangers. Means are represented with m, positive ratings with a +, and negative ratings with a -.

was "Snakes in the National Park". The expert group rated snakes much more positively than did any other group, (mean 8.6 and 80.8% positive). Other user groups did not rate snakes highly, with the lowest being the picnic group and the Elkmont cabin users (mean 4.1 and 4.5, respectively). Only 18.9 percent of the picnickers rated snakes positively, while 48.9 percent rated them negatively. The experts are probably more aware of the purpose of snakes in a wilderness environment whereas other groups seemed to respond with a typical negative reaction to snakes in general. This reaction is confirmed in the open-ended questions where a large number of people responded that the most dangerous thing in the national park was snakes. Apparently, the more knowledge a person has about snakes, the more positive his or her attitudes towards snakes will be.

The National Park Service and NPS rangers received relatively high ratings from all user groups. Interpretive programs and the visitor centers received relatively consistent ratings in the high-neutral range from all user groups.

Bears in the backcountry were rated the highest by the experts (mean 9.3; 91.0% positive) and lowest by the windshield tourists (mean 7.9; 67.0% positive). While most windshield tourists express a desire to see bears they seem to only want to see them from the safety of their cars, with bears in the backcountry perceived as threatening.

Park activities. The means and percentages of positive and negative ratings are presented in Table 4 for this category of items. As a whole, activities in the National Park were rated highly, with means for all activities above 6.0 for all user groups. There are a

Table 4. Means and Percentages of Park Activity Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
See animal	m	9.6	9.4	9.4	9.4	9.0	9.0	8.9	9.8
	+	98.7	92.6	94.1	93.6	84.4	85.8	84.4	100.0
	-	0.0	2.0	2.0	1.7	4.4	4.6	3.1	0.0
Picnic NP	m	7.7	8.4	9.1	8.9	9.4	8.5	8.9	8.8
	+	60.3	75.0	86.9	83.0	89.0	77.8	78.1	84.6
	-	2.6	4.1	2.6	3.1	0.0	4.2	0.0	0.0
Views from car	m	7.3	7.8	8.5	8.7	8.7	8.6	8.7	8.9
	+	46.2	58.8	72.6	77.8	81.1	82.0	78.1	80.8
	-	6.4	4.1	1.3	2.9	3.3	4.6	3.1	0.0
Short hike	m	7.8	8.1	8.7	8.8	8.4	8.3	8.3	8.8
	+	55.1	64.9	80.4	81.4	77.8	72.4	71.9	88.5
	-	1.3	2.0	3.3	2.3	5.6	6.3	0.0	3.9
Trout fish	m	7.0	6.3	5.7	6.2	6.0	6.2	6.9	6.6
	+	48.7	38.5	30.7	36.6	34.4	38.5	50.0	46.2
	-	9.0	18.2	26.8	19.3	21.1	23.9	15.6	11.5
Camp tent	m	8.0	8.2	7.9	8.1	6.5	6.8	6.8	8.0
	+	71.8	72.3	65.4	70.0	46.7	45.6	50.0	69.2
	-	5.1	6.1	9.8	7.7	20.0	18.8	15.6	3.9
Swim mtn stream	m	7.8	7.6	8.1	7.9	7.3	6.3	8.3	7.3
	+	61.5	61.5	70.6	69.4	54.4	45.6	75.0	65.4
	-	2.6	9.5	7.2	8.3	11.1	21.3	6.3	15.4
Photo from road	m	7.2	7.6	8.6	8.7	8.4	8.7	8.4	8.5
	+	43.6	65.5	81.7	79.5	75.6	82.8	78.1	76.9
	-	5.1	4.7	2.6	3.1	6.7	4.2	3.1	3.9
Family vacation	m	8.3	9.1	9.2	9.5	9.3	9.1	8.8	9.2
	+	71.8	88.5	88.9	92.8	95.6	87.9	81.3	88.5
	-	1.3	1.4	2.0	1.2	1.1	3.8	0.0	0.0
Alone in woods	m	8.8	7.6	6.8	6.8	6.1	6.1	6.5	7.4
	+	82.1	59.5	54.3	54.7	44.4	47.3	46.9	65.4
	-	2.6	8.8	21.6	21.8	28.9	27.2	21.9	19.2
Solitude	m	9.3	9.4	9.0	8.8	7.9	8.2	8.2	7.8
	+	91.0	92.6	88.9	81.0	68.9	74.9	75.0	53.9
	-	1.3	0.7	1.3	5.2	8.9	8.8	3.1	7.7

Differences were statistically significant, $p < .05$ for all items except trout fishing. Means are represented with m, positive ratings with a +, and negative ratings with a -.

few items, however, which vary in rating by user group. Attitude ratings on all items were statistically significant ($p < .05$) among groups except for "Trout fishing", which was rated most neutrally by all user groups.

The most interesting item and the one with the most variance among groups was "Walking alone in the woods". This item was rated the highest by the expert group, followed by backpackers (mean 8.8, 7.6 respectively). When examining the percentages of people who rated the item negatively, several user groups have relatively high percentages of negative ratings for this item, the highest being the picnickers (28.9% negative) and windshield tourists (27.2% negative). The item "Solitude" received consistently high ratings by all groups.

"Playing around in a cold mountain stream" was not rated as highly by the windshield tourists as by other user groups. Only 45.6 percent of windshield tourists rated this item positively and 21.3 percent rated it negatively. Surprisingly, 15.4 percent of visitors to the Sinks rated this item negatively. Playing around in a cold mountain stream is what draws most people to the Sinks. Perhaps some Sinks respondents, aware of the coldness of the water, had no desire to go into the water themselves. Personal observation has shown that there is a large number of onlookers at the Sinks at any given time.

Picnickers, windshield tourists, and Elkmont cabin users rated "Tent camping in the National Park" the lowest of all user groups (20.0%, 18.8%, and 15.6% negative, respectively) while backpackers, experts, and campground users rated it the highest (72.3%, 71.8%, and 70.0% positive, respectively).

Tourist activities. Table 5 presents the means and percentages of negative and positive ratings for this category. Most of the items in this category varied considerably among user groups, primarily between experts and backpackers on one side and the other user groups on the other. This category, more than any other, showed similarities in attitudes between the experts and backpackers in that both groups tended to rate tourist related activities very negatively. Other user groups either were neutral or positive in their ratings of tourist related items. The only item in this category whose ratings did not reach statistical significance ($p < .05$) among groups was "Seeing wild animals like black bears in cages" which was rated negatively by all groups.

The towns of Pigeon Forge, Gatlinburg, and Cherokee were all rated the most negatively by the expert group (82.1%, 68.0%, and 53.9% negative respectively) followed by backpackers (60.8%, 56.8%, and 37.8% negative respectively). Cherokee was apparently not as distasteful as Pigeon Forge and Gatlinburg to either group, as ratings for it were not quite as negative. Other user groups were relatively neutral on their ratings of these three tourist towns.

Camping in a motor home was rated highest by campers in the campgrounds, picnickers, windshield tourists, and visitors to the Sinks (means 6.6, 6.2, 5.9, 5.8, respectively). Motor home camping was rated lowest by experts and backpackers (mean 3.5 and 4.0, respectively). Camping in commercial campgrounds received similar ratings among groups, with lowest ratings from experts and backpackers.

Table 5. Means and Percentages of Tourist Activity Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Pigeon Forge	m	2.2	3.3	4.3	4.5	5.9	5.3	5.7	5.3
	+	0.0	8.1	17.7	19.9	34.4	29.7	31.3	26.9
	-	82.1	60.8	46.4	46.2	26.7	37.7	31.3	26.9
Gatlinburg	m	2.7	3.7	4.3	4.5	5.2	5.4	5.7	5.1
	+	0.0	10.8	18.3	19.3	28.9	25.9	31.3	11.5
	-	68.0	56.8	45.8	42.9	34.4	31.4	28.1	38.5
Cherokee	m	3.3	4.5	5.5	5.2	6.7	6.0	6.8	6.3
	+	6.4	12.8	30.7	23.8	43.3	33.1	37.5	34.6
	-	53.9	37.8	28.8	33.1	12.2	30.5	15.6	23.1
Commercial camp	m	3.6	4.5	5.1	4.5	5.9	5.6	5.5	6.6
	+	3.9	12.2	20.9	16.8	31.1	27.2	31.3	34.6
	-	56.4	37.2	31.4	41.4	23.3	30.1	28.1	15.4
Motorhome camp	m	3.5	4.0	4.8	6.6	6.2	5.9	5.1	5.8
	+	5.1	11.5	22.2	48.4	37.8	33.9	31.3	38.5
	-	59.0	46.0	38.6	24.0	16.7	25.5	40.6	30.8
Bear in cage	m	1.5	1.7	2.1	1.9	2.2	2.2	2.4	2.2
	+	0.0	2.0	5.2	4.3	5.6	3.8	9.4	0.0
	-	93.6	89.2	84.3	86.5	84.4	81.2	87.5	80.8
Billboards	m	2.5	3.5	3.7	3.6	3.7	3.8	4.1	3.6
	+	1.3	12.2	12.4	14.7	11.1	17.6	6.3	15.4
	-	75.6	59.5	52.3	58.4	55.6	57.7	46.9	57.7
Souvenirs	m	2.2	2.9	3.7	3.7	4.0	4.2	4.7	4.4
	+	1.3	5.4	9.2	12.0	15.6	17.6	21.9	15.4
	-	80.8	71.0	49.7	54.2	46.7	45.6	46.9	46.2
Tour bus	m	4.5	4.1	4.1	4.2	4.8	5.2	5.8	4.7
	+	7.7	10.8	11.8	13.0	23.3	25.9	25.0	23.1
	-	37.2	46.0	44.4	43.5	36.7	30.1	18.8	38.5
Local crafts	m	5.0	4.8	5.3	5.9	6.4	6.3	6.4	6.6
	+	10.3	23.0	23.5	32.7	42.2	38.9	31.3	11.5
	-	26.9	40.5	24.2	22.2	14.4	18.0	12.5	23.1
Local culture	m	6.9	6.8	6.9	7.5	7.5	7.5	7.2	6.8
	+	39.7	42.6	47.7	57.8	60.0	59.8	53.1	53.8
	-	5.1	11.5	9.8	6.4	6.7	8.8	6.3	11.5

Differences between groups were statistically significant $p < .05$ for all items, except "bears in cages". Means are represented with m, positive ratings with a +, and negative ratings with a -.

Items in the Tourist Activity category that received the highest ratings were "Visiting local craft shops" and "Seeing local cultural exhibits". These activities seem to be positive for almost all groups, particularly "Seeing the cultural exhibits."

Physical activity. The means and percentages of positive and negative responses for all user groups are presented in Table 6. Overall, activities requiring some degree of physical exertion were rated high or neutral by almost all groups. As might be expected, backpackers, dayhikers and experts rated items such as "Hiking 10 miles in the mountains" and "Backpacking overnight in the National Park" higher than any other group. Backpackers who rated "Backpacking..." negatively (6.8%) were apparently not enjoying their backpacking experience.

"Snow skiing" was rated highest by the Elkmont cabin users (7.8; 62.5% positive) and lowest by windshield tourists (6.1; 36.8% positive). This may be due to affluent Elkmont cabin users taking advantage of skiing in Gatlinburg during the winter and being able to stay in their cabins. The windshield tourists have a higher mean age and tend to rate other physical activities lower. "Rock climbing" was the most highly rated by dayhikers and users of the Sinks (7.2, 6.7; 53.4%, 46.2% positive, respectively). Many of the surveys from dayhikers were collected at the Chimney Tops trail which requires rock climbing at the end of the trail in order to get to the top of the rock formation. Some rock climbing is also required at the Sinks in order to fully utilize the area. Both groups may also be more sensation seeking than other user groups.

Table 6. Means and Percentages of Physical Activity Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Hike 10 miles	m	8.5	8.3	7.7	6.7	6.3	6.3	6.8	6.6
	+	82.1	71.6	60.1	46.2	40.0	41.4	50.0	42.3
	-	2.6	3.4	7.2	13.9	16.7	20.1	12.5	11.5
Backpack	m	8.4	8.9	8.0	7.1	6.2	6.6	6.7	7.0
	+	80.8	85.8	66.0	54.4	41.1	46.4	50.0	50.0
	-	3.9	6.8	8.5	14.9	18.9	22.6	25.0	11.5
Climb rocks	m	6.0	6.2	7.2	5.8	5.7	5.8	6.3	6.7
	+	26.9	36.5	53.4	31.7	34.4	33.5	43.8	46.2
	-	19.2	18.2	13.7	24.2	25.6	25.9	21.9	19.2
Snow ski	m	6.4	6.4	7.1	6.3	6.5	6.1	7.9	6.9
	+	35.9	41.9	51.6	41.4	48.9	36.8	62.5	42.3
	-	10.3	22.3	17.0	20.5	24.4	28.0	9.4	11.5
Challenges	m	8.7	8.6	8.4	7.6	7.6	7.0	7.8	7.7
	+	80.8	81.0	77.0	60.9	60.7	53.2	59.4	65.4
	-	2.6	4.1	3.3	7.6	6.7	14.2	3.1	7.7

Differences in mean ratings between groups were statistically significant $p < .05$ for all items. Means are represented with m, positive ratings with a +, and negative ratings with a -.

Rules and regulations. The rules and regulations set forth by the Park Service are supported, overall, by most visitors. The means and percentages of positive and negative ratings for these items are displayed in Table 7. The four items related to regulations were all worded to assess attitudes towards engaging in an illegal activity. "Digging plants in the National Park to take home" was rated negatively by all user groups. The only group that gave this item over ten percent positive ratings (11.5%) was the Sinks user group. "Cutting trees for firewood in the National Park" was rated negatively by all user groups. These two items produced no statistically significant differences ($p < .05$) among user groups.

Two items related to feeding park animals did show statistically significant differences ($p < .05$) among user groups. "Feeding bears in the National Park" generally received negative ratings by all groups. Elkmont cabin users, picnickers, and Sinks users had the highest percentages of positive attitudes towards feeding bears (15.6%, 11.1%, and 11.5% respectively). These are relatively high percentages of positive ratings for such a dangerous practice. Either the people who rated feeding bears positively were not aware of how dangerous black bears can be or they were unaware of the implications of feeding human food to bears. No experts and only one backpacker rated feeding bears positively. In fact, 100% of the experts rated feeding bears negatively.

"Feeding squirrels in the National Park" had even more variance in responses. While feeding a squirrel is not dangerous to the feeder, it is detrimental to the squirrel. This lack of knowledge about the

Table 7. Means and Percentages of Regulation Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Dig plant	m	1.4	1.6	1.8	1.7	1.8	1.8	2.3	2.1
	+	1.3	2.0	2.6	3.5	3.3	5.0	6.3	11.5
	-	94.9	91.9	88.9	90.1	90.0	88.7	84.3	84.6
Feed bear	m	1.1	1.5	2.2	1.7	2.8	2.3	3.7	2.4
	+	0.0	0.7	4.6	3.3	11.1	7.5	15.6	11.5
	-	100.0	93.9	79.7	89.8	72.2	81.2	56.3	84.6
Cut trees NP for firewood	m	2.1	1.7	2.0	1.8	2.0	2.1	1.9	1.2
	+	2.6	0.7	3.3	4.5	1.1	4.6	3.1	0.0
	-	83.3	89.9	85.6	86.9	85.6	82.0	90.6	96.2
Feed squirrel	m	2.3	3.9	5.4	4.4	6.0	5.0	6.1	4.9
	+	0.0	18.2	30.7	20.3	36.7	25.5	37.5	15.4
	-	78.2	51.4	30.7	44.9	21.1	36.0	18.8	30.8

Differences in mean ratings between groups were statistically significant, $p < .05$ for all items except digging plants, and cutting trees in the NP. Means are represented with m, positive ratings with a +, and negative ratings with a -.

detrimental effects is reflected in the ratings given to this item. No experts rated feeding squirrels positively, reflecting their knowledge of detrimental effects. Several user groups rated feeding squirrels positively. The Elkmont cabin users, picnickers, dayhikers, and windshield tourists all had mean ratings of five or above (6.1, 6.0, 5.4, and 5.0 respectively) for this item. The percentages of positive ratings for feeding squirrels was also high for these groups (37.5, 36.7, 30.7, and 25.5 respectively). Even the backpackers, who rated feeding bears negatively (only 0.7% positive) had a higher percentage who rated feeding squirrels positively (18.2%). Apparently the personal danger rather than the effects on the animal was figural in the low ratings for feeding bears for backpackers.

Management practices. Table 8 presents means and percentages of positive and negative responses for management items. Four items were included to assess visitors attitudes towards some of the more controversial management practices in GSMNP and in National Forests: removing non-native plant species, reintroduction of red wolves into the Smokies, killing non-native wild hogs and harvesting trees in national forests. Three of these items showed marked differences in attitudes between the expert group and most other user groups.

"Reintroducing the red wolf into the park" was the one item in this category which had the least variance in ratings across all user groups, although there were statistically significant differences ($p < .05$). The expert group had the highest mean rating (8.7) followed by the Sinks users (8.5), dayhikers (8.2), and campers (8.2). The lowest mean rating was by picnickers (6.8) and Elkmont cabin users (7.4), who

Table 8. Means and Percentages of Management Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Remove exotics	m	6.4	3.3	2.9	3.3	2.6	3.4	3.2	2.8
	+	44.9	8.8	6.5	13.2	4.4	15.1	12.5	7.7
	-	24.6	58.1	65.4	62.1	73.3	63.2	65.6	73.1
Intro wolves	m	8.7	8.0	8.2	8.2	6.8	7.5	7.4	8.5
	+	76.9	67.6	72.6	69.3	52.2	59.8	53.1	84.6
	-	3.8	7.4	4.6	6.4	14.4	12.1	9.4	3.9
Killing hogs	m	8.1	5.5	4.6	5.4	4.9	4.3	5.0	3.7
	+	65.4	35.1	22.2	32.9	25.6	18.8	28.1	11.5
	-	3.9	33.8	41.8	34.6	36.7	47.7	34.4	53.9
Harvest tree in NF	m	5.1	2.3	2.8	2.7	3.7	3.1	3.9	3.4
	+	25.6	6.1	9.8	10.4	22.2	11.7	15.6	19.2
	-	41.0	82.4	73.9	72.2	62.2	67.4	53.1	69.2

Differences in mean ratings between groups were statistically significant, $p < .05$ for all items. Means are represented with m, positive ratings with a +, and negative ratings with a -.

were mostly local people. It may be that the local people perceive wolves as more of a threat to them than do the other visitor groups who had higher percentage of non-local respondents. The exception to this is the windshield tourists who had a mean rating of 7.5, but were mostly non-locals. It is possible that this group was unaware of the reintroduction program and its importance to the species and the park.

Responses to the item "Killing non-native wild hogs in the National Park" revealed large differences in knowledge about the park's ecosystem. Wild hogs, which were accidentally introduced several years ago, cause a great deal of damage to the park and are actively exterminated. The mean rating by the experts (8.1) was much higher than all other groups, reflecting the expert's knowledge of the problem and its solution. Other user groups rated killing hogs much more negatively. Backpackers rated killing hogs highest among user groups (5.5), probably because they have seen the damage the hogs create in the backcountry.

"Removing non-native plants from National Parks" showed the same pattern of responses as killing hogs, although not to the same degree. The expert group rated removing plants the highest (6.4), with all other user groups having a mean rating below 3.5. Again, the expert group's attitude reflects a greater knowledge of the problems an exotic species may cause in the ecosystem of the park.

In general, the ratings were negative towards "Harvesting trees in National Forests", but not as negative as towards "Cutting trees in National Parks for firewood". The expert group rated this item the highest (5.1), probably reflecting greater knowledge of the difference

between a national park and a national forest and their differing policies. However, even 41% of this group rated harvesting trees in a national forest very negatively. This is likely due to a number of respondents in the expert group holding strong environmentalist attitudes and feeling that this practice is wrong.

Controversial issues. Six items were included to assess attitudes towards some of the more controversial issues in the park and one controversial organization. The means and percentages of positive and negative responses to these items are presented in Table 9. While all of these items showed statistically significant differences ($p < .05$) in ratings among groups, none of the items show the extreme differences between experts and the various user groups that have been found in other items. "Horseback riding on the trails in the National Park" was rated the lowest by the experts (mean 5.1, 48.7% negative) and backpackers (mean 5.5, 30.4% negative). All other user groups rated this item in the high neutral range (mean 6.2 to 7.6). Both experts and backpackers have experienced the negative physical impacts (mud holes and erosion) of horses on trails more than the other groups would have. The mean rating for dayhikers on this item was 7.1 with only 15% rating horses negatively. Apparently this group uses trails not frequented by horses, which includes most of the popular dayhiking trails.

"Small private planes flying over the park" and "Helicopter tours of the National Park" were both rated negatively by most user groups (all means for both items were under 5.0). The expert group rated both items the most negatively (69.2% negative for planes, 81% negative for

Table 9. Means and Percentages of Controversial Items by User Group

Item		Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Horse on trail	m	5.1	5.5	7.1	6.8	7.3	6.6	7.6	6.2
	+	18.0	31.8	56.2	46.6	52.2	42.7	59.4	38.5
	-	48.7	30.4	15.0	15.1	6.7	19.7	12.5	15.4
Plane over park	m	3.1	3.0	3.8	3.0	3.5	3.6	4.9	3.9
	+	2.6	4.7	11.1	4.6	10.0	8.4	15.6	7.7
	-	69.2	64.2	49.7	63.6	53.3	52.7	25.0	42.3
Helicopter tour	m	2.3	2.7	3.7	3.1	3.9	4.1	4.0	4.4
	+	4.8	2.7	12.6	9.3	14.6	19.9	9.7	19.2
	-	81.0	71.6	50.3	63.4	49.4	47.9	45.2	50.0
Sierra Club	m	6.6	7.3	6.4	6.3	5.6	6.5	6.4	6.1
	+	38.5	55.4	42.5	37.3	27.8	38.1	34.2	34.6
	-	6.4	14.9	24.8	23.4	31.1	31.4	25.0	15.4
Pets in campground	m	3.7	3.0	3.6	4.1	3.9	3.6	5.1	3.7
	+	6.4	4.1	9.8	16.1	11.1	12.6	25.0	11.5
	-	55.1	64.8	54.9	44.9	45.6	57.3	31.3	53.9
Alcohol in campground	m	4.7	3.8	3.5	4.2	2.7	2.7	4.4	4.2
	+	18.0	15.5	18.3	20.9	13.3	9.2	21.9	23.1
	-	32.1	54.1	62.1	48.0	73.3	73.6	43.8	50.0

Differences in mean ratings between groups were statistically significant, $p < .05$ for all items. Means are represented with m, positive ratings with a +, and negative ratings with a -.

helicopters). Of the other groups, 19.9% of the windshield tourists and 19.2% of the Sinks users rated helicopter tours as positive.

Two controversial campground issues, pets and alcohol, generally received negative ratings from groups not utilizing campground facilities and slightly higher ratings from those who were. "People who bring their pets camping" was rated highest by campers (mean 4.1, 16.1% positive) and Elkmont cabin users (mean 5.1, 25% positive). Even these are not particularly high ratings, reflecting the general negative attitude towards bringing pets into the national park. "Permitting alcohol in picnic grounds and campgrounds" also received relatively negative ratings from most groups. The highest ratings for this item were from the experts, Elkmont cabin users, campers, and Sinks users (means 4.7, 4.4, 4.2, 4.2, respectively).

The organization "The Sierra Club" was included as an item in order to assess differences in user group attitudes towards this rather controversial organization. Ratings from all groups were relatively neutral. The group which gave this item the highest rating was backpackers (mean 7.3, 55.4% positive). The Sierra Club publishes a hikers guide for backpackers which may account for this group having the highest rating. Of all items, this one had the highest no-response rate, indicating that a large number of people had no opinion of the Sierra Club or had no knowledge of it.

Activities of Different User Groups

Summary of Results

To determine what activities are desired by different user groups to GSMNP, the activities checklist was analyzed by computing the frequencies of activities checked by each user group. Chi-square analysis revealed that differences among user groups on all activities on the checklist except for the item "party", reached statistical significance at least the .05 level.

The following discussion is a summary of the most important results, those which are hypothesis confirming or are relevant to park policy. A detailed discussion of each category of responses follows the summary. Individual tables for each category of responses are included in the detailed description of results.

Overall results indicate that there are differences in activities chosen by the different user groups. This is not surprising since the user groups were defined in part by where they were in the park. Obviously backpackers would chose to backpack while other user groups may not, picnickers would choose to picnic, and campers would chose to camp. However, campers may or may not chose to backpack or picnic. The purpose of this analysis was to determine the range of activities that different user groups choose while in the park and how those activity choices differ among the groups.

In general, most user groups indicated that they came to the park to escape the stresses of everyday life and to relax. Solitude and avoiding crowds of other people, however, were not sought by all user

groups. The experts had a strong desire for solitude and crowd avoidance, as did backpackers. Both experts and backpackers tend to have direct personal contact with the environment of the park. Other user groups such as windshield tourists did not have nearly as strong a desire for solitude or crowd avoidance. This group had the least direct personal contact with the park.

The group who sought to become more nature educated was the group who least needed to do so, the experts, whereas groups who were thought to be the least nature educated did not indicate a great deal of interest in becoming so -- picnickers, visitors to the Sinks, and windshield tourists. The same differences are seen for spiritual growth and learning more about oneself; the experts expressed a desire for these personal growth activities more than any other group. In general, the experts and backpackers most desired the personal growth activities more than any other group.

Following this same pattern, physical activities were also chosen most by experts and backpackers and least often by windshield tourists and picnickers. Backcountry camping was highly desired by backpackers and experts but not much by any other group including dayhikers, picnickers and windshield tourists.

Not surprisingly picnickers indicated that they came to the park to picnic and campers came to camp more so than other user groups. Seeing the scenery and animals was desired by all user groups. Bird watching, however, was only desired to any degree by experts. The more "touristy" activities were not greatly desired by any group with the exception of the Elkmont cabin users who indicated a desire to go

shopping. Most groups were at least mildly interested in the local arts and crafts. Learning about the local culture of the area was most desired by the experts.

Details from the Analysis

A detailed discussion of the results of the activity checklist is presented below. Percentages of activity items checked "yes" are presented in separate tables by item category. Item groupings are based on conceptual or functional similarity.

Categories of items

Social. Items in the social category included activities which involved other people. These interactions included family, friends, and strangers. The percentages positive responses to items in this category are presented in Table 10.

The overall percentage for family vacation as a reason for coming to GSMNP was 59.0%. Windshield tourists, campers, and the Elkmont cabin users had the highest percentages for family vacation as a reason for visiting GSMNP (69.9%, 69.5%, and 65.6%, respectively). Backpackers and dayhikers were the least likely to be there for a family vacation (37.4% and 37.1%).

Being with close friends was a reason for coming to GSMNP for 43.0% of visitors overall. Experts (62.3%), backpackers (60.4%) and Elkmont cabin users (59.4%) had the highest percent checked for this item. Visitors to the Sinks (23.1%) had the lowest percent checked.

Table 10. Social Activities by User Group

Activity	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Family vacation	54.5	37.4	37.1	69.5	44.7	69.9	65.6	53.9
Close friends	62.3	60.4	46.4	37.8	43.5	38.0	59.4	23.1
Meet new people	29.9	33.1	27.2	34.6	12.9	27.3	25.0	30.8
Visit relatives	20.8	8.6	9.3	12.7	23.5	7.4	15.6	11.5
Party	11.7	11.5	11.9	9.5	9.4	8.8	21.9	11.5

Percents checked "yes"

All differences were statistically significant; Chi-square < .05, except for the item "party".

Meeting new people in the park received an overall average of 29.8% as a reason for visiting GSMNP. The groups with the highest percentages of desiring to meet new people were campers (34.6%), backpackers (33.1%), and people at the Sinks (30.8%). Campers tend to be social, as do people at the Sinks, and backpackers apparently are interested in meeting new people who share their interests in backpacking. The group with the lowest percentage of wanting to meet new people were picnickers at 12.9%.

Visiting relatives was not a major reason for coming to GSMNP for most user groups (12.2% overall). The only groups which had a 20% or greater percentage for this item were picnickers (23.5%) and the experts (20.8%). Windshield tourists, backpackers, and dayhikers had the lowest percentage on this item (7.4%, 8.6%, and 9.3% respectively).

Of all the social items, partying was the least likely activity to be a reason for coming to GSMNP with only 10.4% overall. The user group most likely to party was the Elkmont cabin users at 21.9%. Percents for all other user groups ranged from 8.8% to 11.9%.

Personal growth. Personal growth items were those which included activities which promoted personal growth and learning. Also included in this category were items which reflected desires to escape or relax away from everyday life. The percentages of positive responses for items in this category are presented in Table 11.

Escaping from everyday routine was the item in this category which received the highest percentage of reasons checked for coming to GSMNP with 85.5% overall. While all groups rated this item highly, Elkmont cabin users, experts, and backpackers had the highest percentages

Table 11. Personal Growth Activities by User Group

Activity	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Escape	93.5	93.5	88.1	86.1	81.2	75.5	93.8	80.8
Relax	93.5	81.3	82.8	87.5	76.5	78.7	90.6	92.3
Solitude	84.4	71.2	61.6	70.9	51.8	46.3	62.5	65.4
Avoid crowds	87.0	57.6	51.0	58.6	42.4	39.0	40.6	42.3
Close to nature	80.5	80.6	72.2	76.4	55.3	69.0	75.0	73.1
Nature educated	61.0	42.5	40.4	50.5	23.5	35.2	43.8	34.6
Explore	87.0	64.0	64.9	51.1	42.4	46.3	40.6	46.3
Learn about self	57.1	47.5	29.1	29.5	14.1	25.9	21.9	34.6
Spiritual growth	53.3	33.1	24.5	32.2	18.8	27.3	18.8	30.8

Percents checked "yes"

All differences were statistically significant; Chi-square < .05.

(93.8%, 93.5%, and 93.5%, respectively). The overall rating for coming to the park to relax was 84.4% with the highest percentages for experts, visitors to the Sinks, and Elkmont cabin users (93.5%, 92.3%, and 90.6%, respectively). User groups with the lowest percentages checked for this item were picnickers and windshield tourists (76.5% and 78.7%).

Seeking solitude was a reason for coming to GSMNP for 64.4% of visitors overall. Experts, backpackers, and campers had the highest ratings (84.4%, 71.2%, and 70.9%, respectively). A solitude experience was not as desired by windshield tourists (46.3%) and picnickers (51.8%). Windshield tourists tend to stay near their vehicles which is not conducive to solitude and picnicking activities are generally social.

Avoiding crowds of people was of major importance only to the experts (87.0%). The overall percentage checked yes for this item was 53.6%. Windshield tourists (39.0%), Elkmont cabin users (40.6%), visitors to the Sinks (42.3%), and picnickers (42.4%) apparently did not consider avoiding crowds as important to their visit.

Being close to nature was important to 73.4% of visitors overall. Backpackers and experts rated this item the most important (80.6% and 80.5%, respectively), a reflection of being out in the backcountry for backpackers. The groups with the lowest rating for being close to nature were picnickers and windshield tourists (55.3% and 69.0%, respectively).

Becoming more nature educated was not a primary reason for coming to the park for most user groups. The overall percent checked yes was

43.6%. Interestingly, the group who was most interested in becoming more nature educated was the group who already has the highest amount of knowledge about nature, the experts (61.0%). Picnickers (23.5%), users of the Sinks (34.6%) and windshield tourists (35.2%) were the least interested in learning more about nature.

Exploring the park was of most importance to the experts (87.0%) followed by dayhikers (64.9%) and backpackers (64.0%). Exploration was least important for the Elkmont cabin users (40.6%) and picnickers (42.4%). The overall rating for this item was 54.4%.

Using the park to learn more about oneself was only important to the experts and backpackers (57.1% and 47.5%, respectively). The overall rating on this item was low at 31.2%. The group that considered this item the least important was picnickers who only had 14.1% check yes.

Spiritual growth was the least important reason for coming to GSMNP in this category (30.2% overall). The experts rated spiritual growth the highest (53.3%) while picnickers and Elkmont cabin users rated it the lowest (18.8% for both).

Park activities. Items included in the park activity category were those activities which are available in GSMNP and are typically chosen by visitors. The percentages of positive responses to park activity items are presented in Table 12 for each user group.

Viewing the scenery of GSMNP was important to the majority of visitors surveyed (88.8% overall). Interestingly, the group who had the highest percent checked yes were users of the Sinks (96.2%) and the lowest were picnickers (78.8%).

Table 12. Park Activities by User Group

Activity	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Scenery	93.5	90.7	86.1	90.3	78.8	86.8	93.8	96.2
See animals	81.8	73.4	57.6	76.2	62.4	60.2	62.5	73.1
Campgrounds	18.2	23.7	17.9	78.8	17.7	13.0	40.6	38.5
Picnic	49.4	23.0	35.8	40.0	72.9	34.7	59.4	57.7
Bird watch	53.3	27.3	21.2	27.9	5.9	14.4	12.5	23.1
Go fishing	42.9	13.7	12.6	21.4	8.2	8.4	21.9	15.4

Percents checked "yes"

All differences were statistically significant; Chi-square < .05.

Seeing animals in the wild was rated lower than expected with an overall percent checked yes of 69.6%. Experts were most interested in seeing animals in the wild (81.8%). Dayhikers rated this item the lowest (57.6%) followed by windshield tourists (60.2%), picnickers (62.4%), and the Elkmont cabin users (62.4%). Perhaps seeing animals in the wild are threatening to some visitors which could account for the lower than expected ratings.

Camping in the campgrounds was an activity which received 43.1% overall checked yes. Campers rated this the highest at 78.8% which would be expected. However, apparently 21.2% of campers were not there primarily to camp or were there unwillingly with someone else. Camping in the campgrounds was not a reason for visiting GSMNP for the majority of windshield tourists (13.0% checked yes), picnickers (17.7%), dayhikers (17.9%), and experts (18.2%). Approximately 23.7% of backpackers also indicated they would stay in campgrounds.

Going on a picnic was a desired activity by 40.1% of visitors overall. Of the picnickers, 72.9% checked that they were there to go picnicking. The groups least likely to be there to picnic were backpackers (23.0%) and dayhikers (35.8%).

Bird watching was an activity primarily desired by experts (53.3% checked yes). The overall rating for this item was only 24.0%. Picnickers were the least likely to be interested in seeing birds with only 5.9% checked yes.

As with bird watching, only the experts were interested in trout fishing (42.9% yes). Picnickers and windshield tourists were least likely to trout fish (8.2% and 8.4%, respectively). No other groups

were particularly interested in fishing either, with an overall percent checked yes of only 17.4%.

Tourist activities. Items in the tourist activity category included those activities which are found in the local tourist communities of Gatlinburg TN, Pigeon Forge TN, and Cherokee NC. The item "auto tour" was included in this category because even though a one may drive one's own car through the park it has the connotation of being a "touristy" activity and there are tours available from Gatlinburg that ride through the park. The percentages of positive responses for tourist activity items are presented in Table 13 for each user group.

Gatlinburg and Cherokee both promote local arts and crafts, Appalachian and Indian. Only 32.1% of visitors overall checked that they come to GSMNP to see local arts and crafts. Fifty percent of visitors to the Sinks checked this item yes, followed by windshield tourists (44.9%), Elkmont cabin users (37.5%), and experts (36.4%). Backpackers were least likely to be interested in local crafts (12.2%).

Experiencing the local Appalachian culture was checked by only 28.3% of visitors overall. The experts showed the highest percent of interest in this activity (50.7%), followed by visitors to the Sinks (34.6%). As with crafts, backpackers were least likely to be interested in the local culture (15.1%).

Auto touring received an overall percent checked yes of 32.3%. The group most interested in auto touring was, not surprisingly, the windshield tourists (46.3%) followed by campers (36.4%). Once again, the backpackers rated this activity the lowest (9.4%).

Table 13. Tourist Activities by User Group

Activity	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Arts & crafts	36.4	12.2	20.5	33.1	29.4	44.9	37.5	50.0
Local culture	50.7	15.1	19.2	31.5	16.5	31.5	28.1	34.6
Auto tour	22.1	9.4	25.2	36.4	32.9	46.3	21.9	26.9
Shop	6.5	4.3	15.2	19.6	31.8	31.9	43.8	34.6
Amusement park	1.3	0.0	4.0	5.7	11.8	12.6	12.5	15.4

Percents checked "yes"

All differences were statistically significant; Chi-square < .05.

Shopping in the tourist communities was desired by 21.0% of visitors overall. Elkmont cabin users were most likely to go shopping (43.8% yes), followed by visitors to the Sinks (34.6%). Backpackers and experts were the least likely to engage in the shopping activity (4.3% and 6.5% checked yes, respectively).

Going to the amusement parks in the tourist communities was not an activity desired by many as only 6.9% overall checked this item. The group with the highest percent was visitors to the Sinks (15.4%). No backpackers checked this item and only 1 expert did.

Physical activities. Items included in the physical activity category were activities which require some amount of physical exertion or sense of adventure. The percentages of positive responses for physical activity items are presented for each user group in Table 14.

Hiking on trails was a desired activity by 73.7% of visitors overall. This item was general and did not specify the length or difficulty of trails. Not surprisingly, backpackers, dayhikers, and experts had the highest percentages checked yes (91.4%, 88.7%, and 84.4%, respectively). The group with the lowest percentage checked was the windshield tourists at 52.8%.

Groups varied in their intentions to come to the park to be physically active. Overall 61.9% of visitors checked yes. Backpackers (85.6%), experts (77.9%), and dayhikers (74.8%) had the highest percentages checked for physical activity. The group with the least desire to be physically active was picnickers at 37.7%, followed by windshield tourists at 43.1%.

Table 14. Physical Activities by User Group

Activity	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Hike trails	84.4	91.4	88.7	75.8	60.0	52.8	71.9	61.5
Physical active	77.9	85.6	74.8	61.2	37.7	43.1	68.8	65.4
Be adventurous	70.1	71.2	62.3	53.1	40.0	43.5	53.1	50.0
Backcountry camp	68.8	70.5	17.9	28.5	14.1	13.4	28.1	19.2
Swim rivers	45.5	16.6	17.9	28.9	10.6	8.8	37.5	50.0

Percents checked "yes"

All differences were statistically significant; Chi-square < .05.

Being adventurous was a reason for coming to GSMNP by 54.5% of visitors overall. Backpackers and experts again had the highest percentages checked for this item (71.2% and 70.1%, respectively). Picnickers and windshield tourists were the least adventurous (40.0% and 43.5%, respectively).

As would be expected, there was a wide range in the percentages checked yes for Backpacking. Seventy percent of backpackers checked that they came to GSMNP to backcountry camp. The other 30% of backpackers that did not check this item as a reason for coming to the park perhaps were only going along with someone else who wanted to backcountry camp or this is error. The only other group with a high percentage for this item was the experts at 68.8%. The overall percent checked yes was only 30.4%. Windshield tourists were lowest at 13.4%, followed by picnickers at 14.1%. All other groups had relatively low percentages indicating that backpacking is a physical activity chosen only by certain groups of visitors.

Swimming in the rivers in the park was also a physical activity desired by few user groups. The overall percentage checked yes for this item was only 22.8%. Visitors at the Sinks had the highest percent at 50.0%. The Sinks is a popular swimming area although a lot of visitors stop at the Sinks just to sit on the rocks and watch others swim and dive. (Apparently the other 50% in this sample were watchers.) Experts were second at 45.5%. Windshield tourists were lowest at 8.8%.

Other. The other category included activities thought to rarely be a reason for coming to GSMNP. "Passing through" was included to determine the percentage of people who were driving through the park

without actually visiting for any period of time. "Business trip" was included to determine the percentage of people who were in the area primarily for business but also included a visit to the park as part the trip.

Only 5.1% of respondents were just passing through the park. The experts checked this item yes 10.4% followed by windshield tourists (9.3%) and Elkmont cabin users (9.4%). The Elkmont cabin users were all staying overnight so the fact that any of them checked passing through is puzzling. Perhaps they considered spending one night in the cabin on the way to somewhere else as passing through. This may also explain the 3.2% of campers who checked this item. The one backpacker who checked this item may have been a hiker traversing the park on the Appalachian Trail.

Coming into the park while on a business trip received 3.3% checked overall. The only group with a fairly substantial percent checked was the experts (22.1%). Those experts who checked this item yes are most likely park employees.

CHAPTER 5

ANALYSIS BY EXPERIENCE LEVEL

Definitions of Variables

Based on the experience use history (EUH) variable created by Williams, et al. (1990) an experience variable was created to assess differences in perceptions and attitudes of visitors coming into GSMNP with varying degrees of experience in wildland recreational areas. Four variables were used to create the EUH for this study: 1) whether the respondent was a first time or repeat visitor to GSMNP; 2) number of times the respondent had visited GSMNP; 3) number of times per year the respondent visits wildland recreation areas (GSMNP or other areas); and 4) total number of other National Parks or wildland areas the respondent had visited.

Five categories of experience were initially derived from these variables:

1) Novice: persons making their first trip to a wildland recreation area ever, including GSMNP.

2) Beginners: persons with low amount of experience in a few wildland areas, including GSMNP.

3) Locals: persons with high experience in GSMNP but low experience elsewhere; does not necessarily include only residential locals.

4) Collectors: persons who have little experience in GSMNP but have experience in several different parks or wildland recreation areas.

5) Veterans: persons with a large amount of experience both in GSMNP and in other wildland recreation areas.

6) Experts: persons who by profession have a high degree of knowledge about natural environments and had high levels of experience in wildland recreation areas.

After the initial analysis using these categories it was found that only two respondents fell into the "novice" category. This category was therefore combined with the "beginner" category, yielding a total of five categories, including the Experts. The definitions of each category, based on the four variables used to create the EUH, is as follows:

Beginner: First time or repeat visitor to GSMNP; visits to the Smokies less than seven; experience level with visits to other parks less than five. There were 602 respondents who fell into this category.

Local: Repeat visitor to GSMNP; visits to GSMNP greater than or equal to seven; experience level with visits to other parks less than five. There were 296 respondents who fell into this category.

Collector: First time or repeat visitor to GSMNP; visits to any parks more than or equal to five times a year; experience level with visits to other parks greater than or equal to five. There were 177 respondents who fell into this category.

Veteran: Repeat visitor to GSMNP; visits to GSMNP greater than or equal to seven; visits to parks greater than or equal to nine times a year; experience level with visits to other parks greater than or equal to five. There were 153 respondents who fell into this category.

Expert: Defined by profession. Seventy-eight experts participated in the study. The expert group is included in this analysis and discussion of results as a comparison group.

Experience Use History by User Group

Frequencies of experience use history categories were computed for each user group. The most experienced user groups were backcountry users and campers. The least experienced groups were windshield tourists, picnickers, and dayhikers. These frequencies are presented in Table 15.

Backcountry users had the most evenly distributed percentages of members in each experience use history category; 32% were beginners, 28.38% were locals, 16% were collectors, and 23% were veterans. Campground users had 36% beginners, 27% locals, 19% collectors, and 18% veterans.

Dayhikers were not as experienced a group: 64% were beginners, 21% were locals, 9% were collectors, and 6% were veterans. Picnickers were relatively inexperienced with 69% beginners, 22% locals, 4% collectors, and 4% veterans. Windshield tourists showed a similar pattern with 69% beginners, 15% locals, 11% collectors, and 5% veterans.

Elkmont cabin users also had few highly experienced members with 44% beginners, 47% locals, 3% collectors, and 6% veterans. Visitors to

Table 15. Percentages of Experience Level Categories by User Group

User Group	Beginners	Locals	Collectors	Veterans
Backpackers	32.4	28.4	16.2	23.0
Dayhikers	63.6	21.2	9.3	6.0
Campers	36.2	27.3	18.8	17.6
Picnickers	68.9	22.2	4.4	4.4
Windshield tourists	68.9	15.1	11.3	4.6
Elkmont cabins	43.8	46.9	3.1	6.3
Sinks	57.8	19.2	15.4	7.7

the Sinks had 58% beginners, 19% locals, 15% collectors, and 8% veterans.

Demographics and Trip Characteristics

Demographics

Demographics by experience level group are summarized in Table 16. The mean age of respondents increases with experience levels, except for the experts group, where the mean age is lowest. There is also a trend towards the more experienced and expert groups being composed more of males than females, such that 50.35% of beginners, but 59.48% of veterans and 77.92% of experts are male.

As expected, experts were the most highly educated group. Veterans and collectors were more highly educated than beginners and locals, and, consistent with other statistics on park users (Van Cleave, et al, 1990; Peine & Renfro, 1988), all the users, on average, were more educated than the general population.

Because they are younger, on average, experts tend not to be or have been married. Locals and veterans were more likely to be married and have children than were beginners and collectors. Veterans and collectors had the highest levels of income, followed by locals and beginners. The group with the lowest income is the experts, largely because this group in part is composed of graduate students and park service employees.

Overall, about two thirds of park visitors are geographic non-locals. Veterans and beginners were most likely to be non-local,

Table 16. Demographics and Trip Characteristics by Experience Use History and Experts.

	Beginner	Local	Collector	Veteran	Expert
Mean age	38.31	39.91	40.92	42.93	35.42
Percent male	50.35	55.17	54.07	59.48	77.92
Education (%)					
Less than HS	5.93	4.10	4.62	1.96	0.00
HS/some college	59.17	53.43	42.72	37.91	12.99
College	24.78	28.42	28.90	35.30	44.16
Advanced degree	10.12	14.04	23.12	24.84	42.86
Family status (%)					
Married/children	50.56	62.36	53.66	63.45	33.33
Married/ no children	15.54	11.79	17.68	15.17	20.83
Single/children	4.12	4.94	3.66	4.83	4.17
Single/ no children	29.78	20.91	25.00	16.55	41.67
Income (%)					
\$5,000-15,000	25.62	18.75	12.88	13.38	32.44
15,000-30,000	30.83	29.05	28.84	23.24	36.48
30,000-45,000	22.54	29.04	29.45	30.98	14.86
45,000-75,000+	14.65	23.16	28.83	30.40	16.22
Percent non-local	72.19	62.41	62.41	75.89	51.35
Percent first time visitor	27.41	0.00	24.86	0.00	N/A
Mean # of times visited GRSM	2.85	26.37	3.12	31.80	N/A
Mean # days spent in GRSM	4.31	5.80	6.00	10.65	N/A
Mean visits per year to National or State Parks	5.21	6.73	8.94	9.37	15.51
Number of other National/State Parks visited	1.89	2.01	8.18	8.68	8.26

followed by locals and collectors. Experts were least likely to be non-local, reflecting the tendency of experts to be working for the park or the university.

Trip Characteristics

Trip characteristics for all experience level groups is presented with the demographics in Table 16. Trip characteristics were used to define the experience groups; variables included first time visitor, number of visits to GSMNP, visits per year to national and state parks, and number of other national or state parks visited. Number of days in GSMNP was also collected.

By definition, locals and veterans could not contain first time visitors to GSMNP. The percentage of first time visitors was highest for beginners (27.41%) and collectors (24.86%). Locals and veterans, by definition, had visited GSMNP seven or more times; locals had visited an average of 26.37 times, and veterans had visited an average of 31.8 times. Locals and beginners were defined as having visited fewer than five other parks; locals had visited 2.01 other parks, on average, and beginners had visited 1.89 other parks on average. Collectors and veterans, by definition, had visited five or more other parks; collectors had visited a mean of 8.18 other parks and veterans had visited an average of 8.68 other parks. Collectors, by definition, have visited some park five or more times a year, while veterans have visited some park at least nine times a year; collectors had, on average, visited parks 8.94 times in the last year, and veterans had

visited an average of 9.37 times. Experts had visited some park an average of 15.51 times in the last year.

Mean number of days during the visit was highest for veterans (10.65), possibly reflecting a population including retirees with travel trailers, who tend to stay two weeks or longer before moving on to a different park. Collectors and locals were next highest (6 and 5.8 days), followed by beginners (4.31). Collectors and locals were more likely to be vacationing in the park, while beginners and experts were more likely to be single day visitors.

Attitudes of Experience Level Groups

Summary of Results

Statistically significant differences were found among user groups for nearly every one of the Stevens-scaled attitude items. Generally, the higher the knowledge level of the EUH group towards the park, the more positive attitudes are towards park features, physical activities and management issues, and the more negative attitudes are towards tourist activities and regulation items. This relationship held only slightly for park activity items, with three items displaying the trend: solitude, alone in the woods and seeing wild animals, and the remainder mixed. Controversial items response means also were mixed, although the expertise-ratings trend of more expert people rating items more negatively held for horses on trails, planes over the park and helicopter tours. The opposite trend was observed for alcohol in the campgrounds.

Certain groups tended to rate items similarly. Beginners and locals tended to rate items similarly and collectors and veterans tended to rate similarly. Collectors and veterans tended to rate park items higher and tourist items lower than did beginners and locals. With respect to the patterns of ratings evident in these four groups, the experts group tended to fluctuate, rating some items higher than the other groups and some items lower.

Details from the Analysis

Means for the attitude items are presented in separate tables by item category. These groupings are based on conceptual or functional similarity. The tables will be referred to in the following discussion of each separate category of items.

Categories of items

Park Features. The mean ratings for the park feature items are presented on Table 17. With respect to park features, the collectors and veterans rated most items higher than did the beginners and locals. Experts rated animals higher than any of these groups, but rated mountain roads, the National Park Service, rangers and the visitors center more negatively. Expert ratings of interpretive programs were median. The item with the most variance in this category was "snakes in the national park", which received low ratings from the less experienced groups, beginners and locals (4.71 and 5.21), and higher ratings from the collectors and veterans (6.09 and 6.67), probably reflecting more knowledge about the role of snakes in a wildland area

Table 17. Mean Ratings of Park Features Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Bears in BC	8.10	8.39	8.55	8.94	9.35
Snakes in NP	4.71	5.21	6.09	6.67	8.56
Mtn roads	7.47	7.86	8.24	8.23	7.01
NPS	8.64	8.58	8.81	8.90	7.77
NPS ranger	8.50	8.50	8.77	8.91	7.99
Interp program	7.42	7.58	8.48	8.50	7.88
Visitor center	7.10	7.50	7.80	8.11	7.08

Differences in mean ratings between EUH categories were statistically significant, $p < .05$, except for "Interpretive programs".

due to higher experience levels. Experts rated this item the highest at 8.56.

Park Activities. For park activities, the pattern is not as consistent. The means of these items for experience level groups are presented in Table 18. On some items--short hike, camp in a tent, alone in woods and solitude--the pattern is clearly evident, while on other items it is suggested--family vacation and see wild animals. On most of the casual recreational activities like picnicking, views and taking pictures, experts consistently rated the activity less positively than did the other groups. "Being alone in the woods" showed a definite trend of lower ratings for less experienced groups to higher ratings for more experienced groups, ranging from 6.33 for beginners to 7.59 for veterans and 8.85 for experts.

Tourist Activities. The means for tourist activity items are displayed in Table 19 for experience level groups. Among the tourist activities, the pattern of attitude-experience linkage is reversed; the more experience and knowledge the user has about the park, the more likely he or she is to rate the typical tourist activities negatively. The more an activity conceptually conforms to the category of typical tourist activities, the stronger this trend, while the larger the educational component of the activity, such as in local crafts and culture, the weaker the trend.

For example, the three tourist towns of Pigeon Forge, Gatlinburg, and Cherokee were rated the highest by the beginners (4.96, 5.04, and 5.87, respectively) and lowest by the experts (2.17, 2.71, and 3.30, respectively). Local crafts and local culture did not show as wide of

Table 18. Mean Ratings of Park Activity Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
See wild animal	9.18	9.38	9.40	9.59	9.60
Picnic NP	8.78	8.96	8.79	8.90	7.74
Views from car	8.51	8.71	8.41	8.60	7.28
Short hike	8.43	8.62	8.77	8.71	7.76
Trout fishing	6.06	6.33	6.32	5.99	7.04
Camp tent	7.38	7.29	8.24	8.49	7.96
Swim mtn stream	7.01	8.15	7.75	8.28	7.76
Photo from road	8.45	8.59	8.59	8.72	7.19
Family vacation	9.13	9.37	9.44	9.59	8.28
Alone in woods	6.33	6.81	7.26	7.59	8.85
Solitude	8.37	8.67	9.12	9.41	9.32

Differences in mean ratings between EUH categories were statistically significant, $p < .05$.

Table 19. Mean Ratings of Tourist Activity Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Pigeon Forge	4.96	4.92	4.14	3.61	2.17
Shop Gatlinburg	5.04	4.97	3.79	3.77	2.71
Cherokee	5.87	5.70	4.87	4.64	3.30
Commercial camp	5.29	5.22	4.20	4.13	3.64
Camp motorhome	5.66	6.01	5.76	5.93	3.51
Bear in cage	2.22	1.88	1.72	1.77	1.46
Miniature golf	4.17	4.22	3.38	3.22	3.08
Billboards	3.88	3.63	3.60	2.97	2.47
Souvenir shops	4.04	4.02	3.07	3.14	2.24
Tour bus	4.58	4.50	4.24	4.25	4.51
Local crafts	5.82	6.19	5.48	5.90	4.96
Local culture	7.05	7.44	7.71	7.82	6.88

Differences in mean ratings between EUH categories were statistically significant, $p < .05$, except for "Tour bus".

ranges in ratings among different experience level groups. The rating for crafts from beginners was 5.82 and for experts was 4.96; local culture received a rating of 7.05 from beginners and 6.88 from experts.

Physical Activities. The means for physical activity rating by the experience level groups are displayed in Table 20. The experience-knowledge-attitude trend held generally for the more challenging physical activities, except that the expert group rated rock climbing less positively (5.17) than did the other groups (5.98 to 6.16). Generally, the composition of rocks in the park is not favorable for climbing; perhaps the experts are aware of this or are less positive because they have had to participate in rescues.

The mean rating for hiking ten miles and backpacking increased steadily with the level of experience with beginners rating these items 6.64 and 6.90, respectively, veterans rating the items 8.16 and 8.13, and experts rating the items 4.46 and 8.42, respectively. Physical challenges also showed the same trend with a rating of 7.46 from beginners, 8.43 from veterans, and 8.67 from experts.

Rules and Regulations. Most of the rules and regulation items received similar low ratings by all experience groups. The means of these ratings for all experience level groups are presented in Table 21. The one exception was "feeding squirrels". Beginners and locals rated this item higher (5.15 and 5.19, respectively) than did collectors (3.64), veterans (3.64), and experts (2.35). This difference in ratings for this item reflects the knowledge that more experienced users may have towards the problems of feeding any wildlife in the park. "Feeding bears" did not receive this wide of range among

Table 20. Mean Ratings of Physical Activity Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Hike 10 miles	6.64	6.78	7.27	8.16	8.46
Backpacking	6.90	7.07	7.91	8.13	8.42
Rock climbing	5.98	6.04	6.16	6.09	5.17
Snow skiing	6.53	6.21	6.74	6.34	6.44
Phys challenge	7.46	7.79	7.92	8.43	8.67

Differences in mean ratings between EUH categories were statistically significant, $p < .05$, except for "Rock climbing".

Table 21. Mean Ratings of Regulations Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Dig plant	1.86	1.87	1.33	1.53	1.42
Feed bear	2.30	1.94	1.52	1.53	1.14
Cut trees NP for firewood	1.98	1.86	1.67	1.79	2.09
Feed squirrel	5.15	5.19	3.82	3.64	2.35

Differences in mean ratings between EUH categories were statistically significant, $p < .05$, except for "Digging plants" and "Cutting trees for firewood".

the experience groups with beginners rating feeding bears only 2.30 and all other groups rating feeding bears less than 2.0.

Management Practices. The means of some items in the management practices category varied widely among experience groups, reflecting varying degrees of knowledge about why some practices are necessary. These means are presented in Table 22. The most notable of these items is "killing hogs", ratings for which ranged from a mean of 4.42 for beginners to 6.73 for veterans and 8.09 for experts. The higher the experience level, the more favorable the attitude towards killing the wild hogs in the park. People with low levels of experience are probably not aware of how much damage the hogs do to the park and are rating this item negatively because they do not like the idea of killing animals.

The same pattern is seen for the item "removing exotic plants", where ratings ranged from a mean of 2.94 for beginners to 3.94 for veterans, and 6.40 for experts. Again, knowledge about how exotic plant species may effect the ecosystem of the park affects the rating given to this item.

Mean ratings for "reintroducing red wolves into the park" were positive for all experience level groups although the highest mean ratings were from veterans and experts (8.75 and 8.67, respectively). Cutting trees in a national forest generally received negative ratings from all experience level groups and a neutral rating from the experts.

Controversial Issues. Most of the "controversial" items did not have wide ranges in mean ratings among experience level groups. The means for these items are displayed in Table 23. The most variation is

Table 22. Mean Ratings of Management Items by Experience Use
History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Remove exotics	2.94	3.04	3.47	3.94	6.40
Intro red wolves	7.68	7.83	8.12	8.75	8.67
Killing hogs	4.42	5.13	5.20	6.73	8.09
Harvest trees NF	2.97	2.71	2.82	2.86	5.11

Differences in mean ratings between EUH categories were statistically significant, $p < .05$.

Table 23. Mean Ratings of Controversial Items by Experience Use History and Experts

Item	Beginner	Local	Collector	Veteran	Expert
Horse on trail	6.58	6.64	6.43	5.73	5.11
Plane over park	3.57	3.23	3.10	2.57	3.13
Helicopter tour	3.97	3.22	2.95	2.48	2.25
Sierra Club	6.18	6.19	7.19	6.80	6.60
Pets in CG	3.91	3.93	3.42	3.63	3.73
Alcohol in CG	3.63	3.56	3.69	3.78	4.68

Differences in mean ratings between EUH categories were statistically significant, $p < .05$, except for "The Sierra Club" and "Pets in the campground".

seen on the item "horses on the trails" where the highest mean rating is from the beginners (6.98), and the lowest from the experts (5.11) and veterans (5.73). It is likely that the beginners have not experienced the impacts on the trails that can occur from heavy horse use.

Activities of Experience Level Groups

Summary of Results

To determine the activities most likely to be engaged in by visitors with different levels of experience, the activities checklist was analyzed by computing the frequencies of activities checked by each experience level group. Chi-square analysis revealed that the differences among experience level groups were statistically significant at .05 or less for all activities on the checklist except for "meeting new people", "visiting relatives", and "being close to nature".

The following discussion is a summary of the most important results relating to experience levels, those which are hypothesis confirming, are relevant to park policy, or are interesting. A detailed discussion of each category of responses, accompanied by individual tables for each category of responses, follows this summary.

As was found when examining differences among different user groups, approximately 85% in all experience level groups indicated that they came to the park to escape and relax. The same trend seen with experience level group attitudes is present in many instances in the

activities chosen while in the park. The more educational item -- becoming more nature educated -- was positively rated by the more experienced groups, the veterans and collectors. This activity was rated negatively by the less experienced groups, the beginners and locals. The more experienced a group was the more they desired solitude and avoiding crowds of other people. The less experienced groups did not indicate the same desire for solitude or crowd avoidance.

The trend in desired activities did not hold as well for some park activity items such as picnicking, which was most desired by locals, and seeing animals and park scenery, which was desired by most all visitors. Bird watching, however, did show a decreasing trend with the most experienced groups desiring this activity more than the less experienced groups. All but one (backcountry camping) of the more physical activities in the park such as backpacking, hiking, swimming, being physically active, and being adventurous, showed a definite linear trend by experience level with the more experienced groups showing a greater desire for physical activities than the less experienced groups.

In summary, as was seen with the different user groups, activities that are chosen in the park differ with the experience level of the visitor, with the more experienced visitors tending to choose those activities yielding close personal experiences with the park. Also, trends seen with the attitude items frequently appear with these activity items, with choice of activity varying with experience level.

Details from the Analysis

A detailed discussion of the results of the analysis of activities chosen by experience level follows. Individual tables of percentages of activities checked "yes" are included for each activity category.

Categories of items

Social. This category consisted of items revolving around interactions with other people. These interactions included family, friends, and strangers. The percentages positive responses to items in this category are presented in Table 24.

Two items in this category, "meeting new people" and "visiting relatives" did not reach statistical significance. Collectors and veterans had the highest percentages checked for "family vacation" (68.64% and 61.64%, respectively). Experts had the highest percentage for "being with close friends" at 62.34%.

Personal growth. Personal growth items were those which included activities which promoted personal growth and learning. Also included in this category were items which reflected desires to escape or relax away from everyday life. The percentages of positive responses for items in this category are presented in Table 25.

One item in this category, "being close to nature", was statistically nonsignificant. Overall, the experts had the highest percentages checked for almost all personal growth items and most items showed a definite trend of higher percentages checked by high experience level groups and lower percentages checked by low experience level groups.

Table 24. Social Activities by Experience Use History and Experts

Activity	Beginner	Local	Collector	Veteran	Expert
Family vacation	56.53	58.62	68.64	61.64	54.55
Meet new people	26.12	31.38	31.36	38.36	29.87
Visit relatives	11.27	11.03	10.06	16.44	20.78
Close friends	39.71	46.55	35.50	45.89	62.34
Party	9.48	12.07	8.28	12.33	11.69

Percents checked "yes"

All activity items were statistically significant; Chi-square <.05, except "Meeting new people", "Visiting relatives".

Table 25. Personal Growth by Experience Use History and Experts

Activity	Beginner	Local	Collector	Veteran	Expert
Escape	83.54	85.52	85.21	88.36	93.51
Spiritual growth	22.54	30.00	34.91	42.47	53.25
Solitude	55.46	66.21	71.01	78.08	84.42
Explore	53.85	42.76	60.95	54.11	87.01
Relax	81.57	85.86	84.02	87.67	93.51
Learn about self	28.44	25.17	31.95	39.73	57.14
Close to nature	68.87	72.76	79.88	80.82	80.52
Nature educated	36.67	40.00	55.62	54.79	61.04
Avoid crowds	46.51	48.28	57.99	68.49	87.01

Percents checked "yes"

All activity items were statistically significant; Chi-square <.05, except "Being close to nature".

For example, "spiritual growth" received highest percentages checked from veterans (42.47%) and experts (53.25%) and lowest from beginners (22.54%). Solitude was more sought after by higher experience level groups (71.01% for collectors, 78.08% for veterans, 84.42% for experts) than lower experience level groups (55.46% for beginners, 66.21% for locals). It appears that the higher the level of experience in wildland recreation areas, the more important personal growth and experiencing nature becomes.

Park activities. Items included in the park activity category were those activities which are available in GSMNP and are typically chosen by visitors. The percentages of positive responses to park activity items are presented in Table 26 for each experience level.

Park front country activities also varied with visitor experience level but not always in the same direction. For example, "bird watching" was desired by high experience groups (38.36% for veterans, 53.25% for experts) more so than by low experience groups (14.67% for beginners, 23.88% for locals). A similar trend can be seen for "seeing animals in the wild". Fishing was an activity only desired much by the experts (42.86%). Camping in the campgrounds was least desired by experts (18.18%) and most desired by collectors and veterans (56.80% and 60.27%, respectively).

Tourist activities. Items in the tourist activity category included those activities which are available in the local tourist communities of Gatlinburg TN, Pigeon Forge TN, and Cherokee NC. The item "auto tour" was included in this category because there are tours available from Gatlinburg that ride through the park. The percentages

Table 26. Park Activities by Experience Use History and Experts

Activity	Beginner	Local	Collector	Veteran	Expert
Picnic	38.64	48.28	27.81	38.36	49.35
See animals	64.94	70.34	68.64	81.51	81.82
Bird watch	14.67	23.88	30.18	38.36	53.25
Scenery	84.97	89.31	93.49	94.52	93.51
Campgrounds	35.78	46.90	56.80	60.27	18.18
Go fishing	16.28	18.97	7.74	15.75	42.86

Percents checked "yes"

All activity items were statistically significant; Chi-square <.05.

of positive responses for tourist activity items are presented in Table 27 for each experience level.

In general tourist activities did not receive high percentages checked by any experience level group. Shopping was most desired by low experience level groups (22.72 for beginners, 27.24 for locals) and least desired by high experience level groups (17.16% for collectors, 14.38% for veterans). Interest in the local culture was highest for experts (50.65%) and lowest for beginners (21.65%). Auto tours were most desired by collectors (42.60%), least by experts (22.08%).

Physical activities. Items in the physical activity category were those which require some amount of physical exertion or sense of adventure. The percentages of positive responses for physical activity items are presented for each experience level in Table 28.

Physical activities items showed the same trend as Personal Growth items of higher percentages checked by higher experience level groups. For example, backcountry camping was an activity desired by experts (68.83%), somewhat by veterans (32.88%) and collectors (31.95%), but not as much by beginners (27.19%) or locals (24.83%).

Overall "hiking the trails" was an activity frequently checked but was most desired by high experience level groups (88.35% for veterans, 82.84% for collectors, 84.42% for experts) and less desired by low experience level groups (66.91% for beginners, 71.38% for locals). "Swimming in the rivers" showed a definite experience level trend with low experience level groups not selecting this activity (17.35% for beginners) and high experience level groups selecting swimming more frequently (26.71% for veterans, 45.45 for experts).

Table 27. Tourist Activities by Experience Use History and Experts

Activity	Beginner	Local	Collector	Veteran	Expert
Shop	22.72	27.24	17.16	14.38	6.49
Amusement park	8.94	6.55	6.55	3.42	1.30
Arts & crafts	29.70	34.48	30.18	36.99	36.36
Local culture	21.65	25.86	37.28	36.30	50.65
Auto tour	29.16	32.76	42.60	36.99	22.08

Percents checked "yes"

All activity items were statistically significant; Chi-square <.05.

Table 28. Physical Activities by Experience Use History and Experts

Activity	Beginner	Local	Collector	Veteran	Expert
Backcountry camp	27.19	24.83	31.95	32.88	68.83
Swim rivers	17.35	23.79	25.44	26.71	45.45
Hike trails	66.91	71.38	82.84	88.36	84.42
Physical active	56.17	57.93	65.09	80.14	77.92
Be adventurous	49.55	52.76	60.36	62.33	70.13

Percents checked "yes"

All activity items were statistically significant; Chi-square <.05.

CHAPTER 6

FACTOR ANALYSIS

Overview

Factor analysis, using principle components and a varimax rotation, was performed on the Stevens scaled attitude items to confirm that the categories of items selected for the scale were conceptually grouped by visitors in a manner similar to that chosen by the investigator. It was felt that if the factor structure from the total sample analysis was similar to the conceptual factor structure of the investigator then those categories would have been 'validated' as natural conceptual groupings.

A second purpose of the factor analysis was to confirm that not only are those categories natural groupings in the study population as a whole, but that they are also natural groupings for the user and experience groups whose responses were examined. It was of interest to determine if items loading in the overall factors were similar for individual groups.

Additional information was expected from the order in which the factors emerged. Generally, the first factor to emerge in a factor analysis is the one which accounts for the most variance. It was felt that there might be differences among groups as to which factor accounted for the most variance.

Examination of the initial factors and the scree plot revealed that a four-factor model was most appropriate. A four-factor principle

components factor analysis with a varimax rotation was then performed. Coefficient alphas were computed for each overall factor to test for internal consistency. The four factors--tourist experience, park experience, challenges, and management issues, conformed closely to the conceptual categories of the investigator.

Additional four-factor factor analyses, also using principle components with a varimax rotation, were performed for each user group (except Elkmont cabin users and Sinks users, for whom sample size was too small) and for each experience level group to determine if the factor structures were similar among user groups or experience level groups and to test the robustness of the initial choice of four factors. The overall themes of the factor structures of the user groups and the experience groups were similar to the four factors of the overall sample but there were several items that loaded in one factor for one group and another factor for another group. The order of factor emergence also differed among groups, indicating some degree of differences among groups in attitude consensus.

Overall Factors

The four factors and their item loadings are displayed in Table 29. Only those items which loaded .35 or higher are included in the factor listings.

Factor one, named "Tourist Experiences, consists of items related to tourist experiences such as "shopping in Gatlinburg", "Pigeon Forge", "camping in a motor home", "feeding squirrels", "helicopter tours" and similar items. Alpha for factor one was .963.

Table 29. Overall Factor Analysis of the Stevens scale items

Item	Loading	Item	Loading
Factor One: Tourist Experience Alpha = .963		Factor Two: Park Experience Alpha = .961	
Pigeon Forge	.568	NP Rangers	.518
Camp commer.	.431	Picnic NP	.431
Gatlinburg	.562	View from car	.575
Local crafts	.435	Local crafts	.478
Feed bear	.500	Short hike	.568
Camp MH	.363	Camp MH	.418
Bear in cage	.487	Local culture	.668
Horse on trail	.378	Mountain road	.551
Golf	.583	NPS	.645
Planes	.460	Interp program	.595
Billboards	.603	Photos	.623
Souvenirs	.710	Visitor center	.659
Helicopter	.670	Family vacation	.517
Cutting tree	.381		
Feed squirrel	.435		
Cherokee	.510		
Pets in camp	.369		
Tour bus	.487		
Harvest trees	.420		
Factor Three: Challenges Alpha = .918		Factor Four: Management Issues Alpha = .779	
Hike 10 miles	.637	Exotic plants	.595
Bears BC	.415	Killing hogs	.568
Alone in woods	.470	Snakes in NP	.428
Camp tent	.613		
Backpack	.774		
Horse on trail	.396		
Rock climbing	.665		
Solitude	.491		
Snakes in NP	.440		
Streams	.474		
Red wolves	.468		
Snow skiing	.485		
Sierra club	.396		
Challenge	.634		

Factor two, named "Park Experiences", consists of items related to a front country or family vacation park experience. Items included in this factor are those such as "picnicking in the park", "interpretive programs", "the visitor center", "family vacation" and other related items. Alpha for factor two was .961.

Factor three, named "Challenges", includes items which are related to a more rigorous or backcountry park experience such as "backpacking", "hiking ten miles", "solitude", "being alone in the woods", "challenging physical activities", and other related items. Alpha for factor three was .918.

In the overall analysis, the fourth factor, named "Management Issues", included only three items. Two of these related to management issues, "removing exotic plants" and "killing hogs" and one related to an item with a large variance in ratings, "snakes in the national park". In the factor structures generated for specific user groups, this fourth factor included additional items, although specific items differed from group to group. Most items included in the fourth factor for the individual groups include management issues, illegal activities, and controversial issues. Alpha for factor four, overall, was .779.

In general, these factor structures showed conceptual groupings by visitors that were similar to those created by the investigator. There were seven categories of items chosen for the Stevens scale, and four factors emerging from the factor analysis. The tourist experience, park experience, challenges and management issues factors were similar to categories chosen by the investigator in generating the items.

Items from three other categories chosen by the author, such as illegal activities/rules and regulations, fit into the four emergent factors in conceptually reasonable ways. For example, "digging plants," a behavior often associated by experts with tourists, fit into the tourist experiences factor for that group; for windshield tourists and picnic users, this item loaded in management issues, indicative that these groups had somewhat internalized the rule and its likely enforcement.

Factors by User Group

Separate principle components factor analyses, using a four factor model with varimax rotation, were performed on five of the user groups, windshield tourists, campers, backpacker, dayhikers, and picnickers, and on the expert group. Factor analysis was not appropriate for users of the Sinks or the Elkmont cabin users because of inadequate sample size for this type of analysis (less than 50). The factor loadings and mean ratings for each item in the factor are presented for each user group in Tables 30 through 35.

Examination of these tables shows that the factor structures found in the overall sample generally hold for each user group, although the order in which the factors emerged varied among user groups. Additionally, there are variations in specific item loadings for each user group, although the overall factors remained constant. As might be expected from differences in knowledge and experience, groups varied somewhat in their mean ratings of loading factor items.

Table 30. Factor Analysis of Experts on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Park Experience		
Digging plants	.383	1.4	NP Rangers	.490	8.0
Pigeon Forge	.539	2.2	Wild animal	.369	9.6
Gatlinburg	.744	2.7	Picnic NP	.557	7.7
Bear in cage	.684	1.5	View from car	.769	7.3
Horse on trail	.512	5.1	Camp commercial	.380	3.6
Rock climbing	.483	6.0	Local crafts	.411	5.0
Golf	.630	3.1	Short hike	.761	7.8
Planes	.676	3.1	Camp MH	.470	3.5
Billboard	.645	2.5	Local culture	.665	6.9
Souvenirs	.812	2.2	NPS	.573	7.8
Helicopters	.723	2.3	Interp program	.672	7.9
Cherokee	.603	3.3	Photos	.612	7.2
Tour bus	.579	4.5	Visitor center	.624	7.1
			Killing hogs	.459	8.1
			Family vacation	.409	8.3
Factor Three: Challenges			Factor Four: Management Issues		
Wild animals	.365	9.6	NP Rangers	.524	8.0
Hike 10 miles	.703	8.5	Bears BC	.495	9.3
Bears BC	.375	9.3	Snakes in NP	.627	8.6
Alone in woods	.508	8.8	Exotic plants	.450	6.4
Camp tent	.608	8.0	Red wolves	.598	8.7
Backpack	.736	8.4	Sierra club	.439	6.6
Horse on trail	.434	5.1	Killing hogs	.426	8.1
Rock climbing	.453	6.0	Camp commer	-.445	3.6
Solitude	.592	9.3	Cutting trees	-.556	2.1
Streams	.623	7.8	Feed squirrel	-.350	2.3
Challenge	.682	3.7			
Pigeon Forge	-.402	2.2			
Camp MH	-.482	3.5			

Table 31. Factor Analysis of Backpackers on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Park Experience			Factor Two: Tourist Experience		
Picnic NP	.499	8.4	Pigeon Forge	.661	3.6
NPS Ranger	.470	8.4	Commercial camp	.428	4.4
Short hike	.714	7.8	Shop Gatlinburg	.630	3.4
Camping MH	.581	3.7	Local crafts	.502	4.3
Local culture	.671	6.4	Feed bear	.463	1.6
Mtn roads	.632	6.7	Bears in cages	.559	1.9
NPS	.581	8.3	Miniature golf	.566	3.1
Interp prog	.603	7.0	Souvenir shops	.806	2.9
Visitor center	.470	7.0	Helicopter tour	.683	2.8
Views from car	.617	7.4	Cherokee	.385	4.4
Local crafts	.428	4.3	Billboards	.472	3.5
Photos	.597	7.6	Tour bus	.405	4.1
Family vacation	.354	9.1			
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 miles	.526	8.2	Horse on trail	.419	5.1
Bears in BC	.508	8.5	Cut tree NP	.379	1.7
Alone in woods	.516	7.3	Trout fishing	.488	6.3
Backpacking	.548	9.0	Rock climbing	.490	6.3
Rock climbing	.371	6.3	Feed squirrel	.386	3.7
Solitude	.623	9.3	Cut tree NF	.476	2.3
Swim mtn stream	.488	7.1	Alcohol CG	.673	3.8
Snakes in NP	.707	6.7	Sierra Club	-.386	7.3
Challenge	.567	8.6			
Red wolves	.579	7.9			

Table 32. Factor Analysis of Dayhikers on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Challenges		
Pigeon Forge	.685	4.3	See animal	.417	9.4
Shop Gatlinburg	.668	4.3	Hike 10 miles	.508	7.7
Local crafts	.604	5.3	Bears in BC	.431	8.2
Feed bears	.435	2.2	Alone in woods	.371	6.8
Camp motorhome	.470	4.8	Camp tent	.557	7.9
Bears in cage	.547	2.1	Backpack	.745	8.0
Miniature golf	.555	3.6	Rock climbing	.696	7.2
Plane over park	.530	3.8	Snakes in NP	.432	5.5
Billboards	.667	3.7	Red wolves	.559	8.2
Souvenir shop	.786	3.7	Snow skiing	.618	7.1
Helicopter	.643	3.7	Sierra club	.533	6.4
Feed squirrel	.480	5.4	Challenge	.561	8.4
Cherokee	.517	5.5			
Tour bus	.437	4.1			
Factor Three: Park Experience			Factor Four: Management Issues		
Picnic NP	.554	9.1	Cut tree NP	.417	2.0
Commer camp	.380	5.1	Exotic plants	.495	2.9
Short hike	.511	8.7	Pets in CG	.413	3.6
Trout fishing	.400	5.7	Alcohol in CG	.546	3.5
Local culture	.670	6.9	NP Rangers	-.454	8.5
Mtn roads	.579	7.9	NPS	-.504	8.6
NPS	.450	8.6	Interp program	-.505	7.4
Interp program	.416	7.4	Photos	.508	8.6
Visitor center	.494	7.2			
Family vacation	.516	9.2			

Table 33. Factor Analysis of Campers on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Park Experience			Factor Two: Tourist Experience		
Picnic NP	.477	8.7	Pigeon Forge	.548	4.5
NPS Ranger	.574	8.6	Planes over park	.428	3.0
Short hike	.590	8.8	Shop Gatlinburg	.507	4.5
Camping MH	.443	6.6	Local crafts	.368	5.9
Local culture	.637	7.5	Feed bear	.435	1.7
Mtn roads	.496	8.0	Bears in cages	.432	1.9
NPS	.634	8.7	Miniature golf	.501	3.8
Interp prog	.518	8.0	Souvenir shops	.687	3.7
Visitor center	.663	7.6	Helicopter tour	.627	3.1
Views from car	.579	8.7	Cherokee	.460	5.2
Local crafts	.530	5.9	Billboards	.601	3.6
Photos	.632	8.7	Tour bus	.440	4.2
Family vacation	.555	9.5	Cut trees NP	.521	1.8
See wild animal	.385	9.4	Cut trees NF	.504	2.7
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 miles	.620	6.7	Interp prog	.400	8.0
Bears in BC	.395	8.5	Snakes in NP	.439	5.2
Alone in woods	.416	6.8	Exotic plants	.514	3.3
Backpacking	.762	7.1	Killing hogs	.562	5.4
Rock climbing	.640	5.8	Red wolves	.369	8.2
Solitude	.459	8.8	Horse on trail	-.419	6.8
Swim mtn stream	.414	7.9	Feed squirrel	-.365	4.4
Snakes in NP	.467	5.2	Camp commer	-.424	4.5
Challenge	.601	7.6			
Red wolves	.373	8.2			
Trout fishing	.351	6.2			
Camp tent	.574	8.1			
Horse on trail	.430	6.8			
Snowskiing	.462	6.3			
Sierra Club	.392	6.3			

Table 34. Factor Analysis of Windshield Tourists on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Challenges		
Pigeon Forge	.657	5.3	Hike 10 miles	.698	6.3
Commer camp	.488	5.6	Bears in BC	.398	7.9
Gatlinburg	.627	5.4	Alone in woods	.404	6.1
Local crafts	.599	6.3	Trout fishing	.451	6.2
Camp motorhome	.571	5.9	Mtn roads	.470	7.7
Local culture	.544	7.5	NPS	.382	8.9
Bear in cage	.431	2.2	Interp program	.394	7.9
Miniature golf	.651	4.2	Camp Tent	.775	6.8
Billboards	.666	3.8	Backpacking	.831	6.6
Souvenir shops	.810	4.2	Horse on trail	.572	6.6
Helicopter	.734	4.1	Rock climbing	.661	5.8
Visitor center	.423	7.7	Solitude	.354	8.2
Cherokee	.613	6.0	Snakes in NP	.491	5.0
Pets in CG	.389	3.6	Swim mtn stream	.368	6.3
Tour bus	.607	5.2	Intro red wolves	.560	7.5
Views in car	.363	8.6	Snow skiing	.470	6.1
Feed squirrel	.351	5.0	Phys challenge	.690	7.0
Factor Three: Park Experience			Factor Four: Management Issues		
See wild animal	.476	9.0	Dig plant	.486	1.8
Bears in BC	.515	7.9	Feed bear	.551	2.3
Picnic NP	.527	8.5	Cut trees NP	.391	2.1
Views from car	.601	8.6	Swim mtn stream	.489	6.3
Alone in woods	.448	6.1	Remove exotics	.673	3.4
Local crafts	.385	6.3	Feed squirrel	.537	5.0
Short hike	.544	8.3	Killing hogs	.416	4.3
Mtn roads	.370	7.7			
NPS	.507	8.9			
Interp program	.400	7.9			
Solitude	.520	8.2			
Swim mtn stream	.488	6.3			
Photo from road	.669	8.7			
Visitor center	.499	7.7			
Family vacation	.621	9.1			
Cut trees NP	-.449	2.1			
Cut tree NF	-.410	3.1			

Table 35. Factor Analysis of Picnickers on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Park Experience			Factor Two: Tourist Experience		
NP Rangers	.603	8.3	Pigeon Forge	.787	5.9
See animals	.607	9.0	Shop Gatlinburg	.762	5.2
Bears in BC	.568	8.3	Local crafts	.695	6.4
Picnic NP	.662	9.4	Feed bears	.432	2.8
Views from car	.542	8.7	Miniature golf	.628	5.1
Short hike	.591	8.4	Billboards	.419	3.7
Local culture	.675	7.5	Souvenir shops	.725	4.0
Mtn roads	.649	7.5	Cherokee	.541	6.7
NPS	.787	8.5	Cut trees NF	.456	3.7
Interp program	.608	7.2	Alone in woods	-.457	6.1
Solitude	.383	7.9			
Photos	.502	8.4			
Visitor center	.540	6.9			
Feed squirrel	.404	6.0			
Cherokee	.428	6.7			
Family vacation	.524	9.3			
Exotic plants	-.419	2.6			
Alcohol in CG	-.543	2.7			
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 miles	.531	6.3	Dig plants	.445	1.8
Camp commer	.361	5.9	Bears in cage	.513	2.2
Trout fishing	.387	6.0	Plane over park	.569	3.5
Camp tent	.692	6.5	Snakes in park	.523	4.1
Backpack	.651	6.2	Billboards	.531	3.7
Horse on trail	.694	7.3	Helicopters	.568	3.9
Rock climbing	.793	5.7	Tour bus	.430	4.8
Solitude	.395	7.9			
Challenge	.354	7.6			
Swim mtn stream	.391	7.3			
Red wolves	.525	6.8			
Snow skiing	.547	6.5			
Sierra club	.552	5.6			
Challenge	.396	7.6			

Analysis of Variance

Factor means were computed for each user group by summing all the items loading .35 or greater in the factors derived from the full sample and dividing by the number of items for which a response was made. These means differed among groups. Analysis of variance revealed that factor mean differences among user groups were statistically significant ($p < .0001$) for all four factors. Table 36 lists the factor means by user group.

As can be seen from examining the table, more knowledgeable groups such as the experts and backpackers had lower means for the "Tourist Experiences" factor (2.95 and 3.20, respectively) than did user groups presumed to have less knowledge, such as the windshield tourists (4.20) and picnickers (4.45). These differences were statistically significant ($F=16.39$, $p < .0001$). The R-square for this factor by user group analysis of variance was .092.

Conversely, the expert and backpacker groups had higher means for the "Challenges" factor (7.91 and 7.67, respectively) than did windshield tourists or picnickers (6.61 and 6.60, respectively), $F=12.19$, $p < .0001$. The R-square for this factor by user group analysis of variance was .070.

The "Management Issues" factor showed a difference in factor means between experts (7.69) and almost all other user groups. Picnickers had the lowest mean (3.86), windshield tourists (4.20) and dayhikers (4.32). On this factor the backpackers had the highest mean of the non-expert user groups (5.18); $F= 28.83$, $p < .0001$. The R-square for

Table 36. Means of Factors by User Group

Group	N	Mean	Std Dev	Minimum	Maximum
Factor 1: Tourist Experience					
Expert	78	2.95	1.01	1.29	5.29
Backpacker	148	3.20	1.15	1.06	7.00
Dayhiker	153	3.85	1.38	1.24	7.88
Camper	517	3.70	1.33	1.12	8.35
Picnicker	90	4.45	1.30	1.47	7.41
Windshield	239	4.20	1.55	1.00	8.75
ANOVA Factor 1=User Group F=16.39 P=0.0001 R-square=0.092					
Factor 2: Park Experience					
Expert	78	7.03	1.05	4.23	9.15
Backpacker	148	7.32	1.24	3.92	9.85
Dayhiker	153	7.74	1.07	2.85	10.00
Camper	517	8.12	1.24	3.62	10.00
Picnicker	90	7.91	1.33	3.38	10.00
Windshield	239	8.00	1.43	1.92	10.00
ANOVA Factor 2=User Group F=11.52 P=0.0001 R-square=0.066					
Factor 3: Challenges					
Expert	78	7.91	1.12	3.15	9.57
Backpacker	148	7.67	1.23	3.73	9.79
Dayhiker	153	7.57	1.35	4.07	10.00
Camper	517	7.15	1.45	2.79	10.00
Picnicker	90	6.60	1.50	3.36	9.79
Windshield	239	6.61	1.78	1.79	10.00
ANOVA Factor 3=User Group F=12.19 P=0.0001 R-square=0.070					
Factor 4: Management Issues					
Expert	78	7.69	1.70	3.33	10.00
Backpacker	148	5.18	2.10	1.00	10.00
Dayhiker	151	4.32	1.96	1.00	10.00
Camper	515	4.63	2.17	1.00	10.00
Picnicker	90	3.86	1.87	1.00	8.33
Windshield	239	4.20	2.18	1.00	10.00
ANOVA Factor 4=User Group F=26.83 P=0.0001 R-square=0.142					

this factor by user group analysis of variance was .142, accounting for the most variance of the four factors.

Factor means on the "Park Experience" factor were relatively consistent across user groups, but analysis of variance differences were still statistically significant ($F=11.52$, $p < .0001$), with means ranging from 8.12 for campers to 7.03 for experts. R-square for this factor by user group analysis of variance was .066.

In summary, the experts and the backpackers tended to display more positive attitudes towards management initiatives and physical challenges than did other user groups assumed from analysis of the experience variables to be less knowledgeable. At the same time, the experts and the backpackers tended to display less positive attitudes towards park experience factor and tourist experience factor items.

Factors by Experience Level

Further separate principle components factor analyses, using a four-factor model with a varimax rotation, were performed for each experience level group: beginners, locals, collectors, and veterans. The factor loadings and mean ratings for each item in the factor are presented for each experience level group in Tables 37 through 40.

Again, the general factor structures for each experience level group were similar to those in the overall model. The order of factor emergence varied from the overall model and there were individual items which loaded for some groups in a factor and not for other groups. However, the theme for each factor for all experience level groups was consistent among groups, and agreed with the overall model. Again,

Table 37. Factor Analysis of Beginners on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Park Experience		
Pigeon Forge	.715	5.0	NP Rangers	.530	8.5
Camp commer	.453	5.3	See animals	.439	9.2
Gatlinburg	.693	5.0	Bears in BC	.453	8.1
Local crafts	.610	5.8	Picnic NP	.384	8.8
Feed bears	.403	2.3	Views from car	.554	8.5
Camp MH	.483	5.7	Short hike	.554	8.4
Bears in cage	.382	2.2	Local culture	.612	7.1
Mini golf	.670	4.2	Mtn roads	.576	7.5
Billboards	.615	3.9	NPS	.699	8.6
Souvenirs	.792	4.0	Interp program	.581	7.4
Helicopters	.593	4.0	Photos	.569	8.5
Cherokee	.479	5.9	Visitor center	.649	7.1
Tour bus	.485	4.6	Family vacation	.522	9.1
Cut trees NF	.380	3.0			
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 miles	.642	6.6	Bear in cage	.357	2.2
Alone in woods	.423	6.3	Plane over park	.430	3.6
Camp tent	.674	7.4	Snakes in NP	.397	4.7
Backpack	.781	6.9	Cut tree NP	.503	2.0
Horse trail	.534	7.0	Exotic plants	.570	2.9
Rock climbing	.741	6.0	Killing hogs	.478	4.4
Solitude	.378	8.4			
Swim stream	.490	7.0			
Red wolves	.442	7.7			
Snow skiing	.502	6.5			
Challenge	.665	7.5			

Table 38. Factor Analysis of Locals on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Challenges		
Pigeon Forge	.637	4.9	Hike 10 miles	.597	6.8
Camp commer	.449	5.2	Bears in BC	.427	8.4
Gatlinburg	.643	5.0	Alone in woods	.461	6.8
Local crafts	.550	6.2	Trout fishing	.449	6.3
Mini golf	.693	4.2	Camp tent	.562	7.3
Billboards	.504	3.6	Backpack	.750	7.1
Souvenirs	.709	4.0	Horse on trail	.417	6.6
Helicopters	.582	3.2	Rock climbing	.644	6.0
Feed squirrel	.494	5.2	Solitude	.525	8.7
Cherokee	.570	5.7	Snakes in NP	.453	5.2
Snow skiing	.436	6.2	Swim mtn stream	.414	8.2
Tour bus	.434	4.5	Red wolves	.518	7.8
			Snow skiing	.509	6.2
			Sierra Club	.443	6.2
			Challenge	.598	7.8
Factor Three: Park Experience			Factor Four: Management Issues		
Picnic NP	.437	9.0	Dig plants	.451	1.9
Short hike	.511	8.6	Feed bears	.415	1.9
Camp MH	.459	6.0	Bears in cage	.540	1.9
Local culture	.627	7.4	Cut tree NP	.644	1.9
Mtn roads	.591	7.9	Exotic plant	.537	3.0
NPS	.579	8.6	Cut tree NF	.363	2.7
Interp prog	.576	7.6	Camp MH	.388	6.0
Photos	.636	8.6	NP Ranger	-.453	8.5
Visitor cntr	.638	7.5			
Family vac.	.525	9.4			

Table 39. Factor Analysis of Collectors on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Tourist Experience			Factor Two: Park Experience		
Pigeon Forge	.428	4.1	NP Rangers	.669	8.8
Camp commer	.478	4.2	Short hike	.411	8.8
Gatlinburg	.616	4.9	Camp MH	.495	5.8
Local crafts	.543	5.5	Local culture	.626	7.7
Horse trail	.463	6.4	Mtn roads	.552	8.2
Rock climbing	.449	6.2	NPS	.570	8.8
Mini golf	.579	3.4	Interp program	.674	8.5
Planes	.462	3.1	Photos	.624	8.6
Billboards	.638	3.6	Visitor center	.733	7.8
Souvenirs	.745	3.1	Family vacation	.547	9.4
Helicopters	.672	3.0	Camp tent	.390	8.2
Cut tree NP	.420	1.7	Feed bears	-.409	1.5
Feed squirrel	.477	3.8			
Cherokee	.560	4.9			
Pets in CG	.480	3.4			
Tour bus	.385	4.2			
Cut trees NF	.550	2.8			
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 miles	.651	7.3	See animals	.480	9.4
Alone woods	.437	7.3	Bears in BC	.466	8.6
Camp tent	.531	8.2	Picnic NP	.431	8.8
Backpack	.778	7.9	Views from car	.620	8.4
Rock climbing	.483	3.2	Short hike	.536	8.8
Solitude	.542	9.1	Horse on trail	.356	6.4
Snakes in NP	.533	6.1	Cut tree NP	-.396	1.7
Swim stream	.624	7.8	Killing hogs	-.392	5.2
Exotic plants	.348	3.5			
Red wolves	.403	8.1			
Snow skiing	.409	6.7			
Sierra club	.441	7.2			
Alcohol	.439	3.7			
Challenge	.525	7.9			

Table 40. Factor Analysis of Veterans on Stevens scaled items

Item	Loading	Mean	Item	Loading	Mean
Factor One: Park Experience			Factor Two: Tourist Experience		
NP Rangers	.437	8.9	Pigeon Forge	.627	3.6
See animals	.459	9.6	Camp commer	.444	4.1
Picnic NP	.477	8.9	Shop Gatlinburg	.701	3.8
Views in car	.609	8.6	Local crafts	.574	5.9
Local crafts	.470	5.9	Horses on trail	.376	5.7
Short hike	.649	8.7	Miniature golf	.667	3.2
Camp MH	.479	5.9	Billboards	.565	3.0
Local cultur	.727	7.8	Souvenir shops	.764	3.1
Mtn roads	.639	8.2	Helicopters	.477	2.5
NPS	.502	8.9			
Interp prog	.611	8.5			
Swim stream	.356	8.3			
Photos	.625	8.7			
Visitor cntr	.614	8.1			
Vacation	.501	9.6			
Factor Three: Challenges			Factor Four: Management Issues		
Hike 10 mile	.611	8.2	Feed bear	.526	1.5
Bears in BC	.393	8.9	Plane over park	.428	2.6
Trout fish	.416	6.0	Helicopters	.419	2.5
Camp tent	.442	8.5	Cut tree NP	.599	1.8
Backpack	.667	8.3	Feed squirrel	.516	3.6
Horse trail	.461	5.7	Cut trees NF	.530	2.9
Rock climb	.583	6.1	Alone in woods	-.459	7.6
Snakes NP	.555	6.7	Solitude	-.527	9.4
Solitude	.353	9.4			
Swim stream	.369	8.3			
Snow skiing	.567	6.3			
Sierra club	.407	6.8			
Challenge	.664	8.4			

overall differences were found among user groups on the mean responses to factor loading items.

Analysis of Variance

Factor means were computed for each experience level group, as was done for the user groups individual analyses, and these means also differed among groups. Analysis of variance showed that factor mean differences among experience level groups were statistically significant at .0001. The factor means for experience level groups are presented in Table 41.

On three factors, the factor means differed in a linear manner by experience level. The "Tourist Experiences" factor means were highest for beginners (4.09), followed by locals (3.96), collectors (3.39), and veterans (3.12); the mean for experts was 2.95 ($F=24.14$, $p < .0001$). The ANOVA R-square was .069.

The "Challenges" factor also showed a linear variation in means by experience level, but in the opposite direction of the "Tourist Experience" factor. The highest factor mean was for experts (7.91), followed by veterans (7.71), collectors (7.47), locals (7.07), and beginners (6.88); $F=17.96$, $p < .0001$). The ANOVA R-square was .052.

The "Management Issues" factor showed the same linear trend, in the same direction, as "Challenges". The factor mean for experts was 7.69, followed by veterans (5.79), collectors (4.93), locals (4.46), and beginners (4.00); $F=72.08$, $p < .0001$). The R-square was .182, accounting for the most variance of the four factors.

Table 41. Means of Factors by Experience Level Group and Experts

Group	N	Mean	Std Dev	Minimum	Maximum
Factor 1: Tourist Experience					
Beginner	602	4.09	1.46	1.00	8.75
Local	296	3.97	1.40	1.12	8.35
Collector	177	3.39	1.26	1.06	7.82
Veterans	153	3.32	1.18	1.29	7.50
Expert	78	2.95	1.01	1.29	5.29
ANOVA Factor 1=Experience Group F=24.14 P=0.0001 R-square=0.069					
Factor 2: Park Experience					
Beginner	602	7.77	1.32	2.00	10.00
Local	296	7.99	1.20	4.31	10.00
Collector	177	8.09	1.17	4.31	10.00
Veteran	153	8.20	1.22	5.15	10.00
Expert	78	7.03	1.05	4.23	9.15
ANOVA Factor 2=Experience Group F=14.59 P=0.0001 R-square=0.043					
Factor 3: Challenges					
Beginner	602	6.88	1.59	1.79	10.00
Local	296	7.07	1.50	2.93	9.86
Collector	177	7.47	1.40	3.36	9.93
Veteran	153	7.71	1.23	3.64	9.79
Expert	78	7.91	1.12	3.15	9.57
ANOVA Factor 3=Experience Group F=17.96 P=0.0001 R-square=0.052					
Factor 4: Management Issues					
Beginner	599	4.00	2.02	1.00	10.00
Local	296	4.46	2.03	1.00	10.00
Collector	176	4.93	2.15	1.00	10.00
Veteran	152	5.79	2.14	1.00	10.00
Expert	78	7.69	1.70	3.33	10.00
ANOVA Factor 4=Experience Group F=72.08 P=0.0001 R-square=0.182					

The "Park Experience" factor showed the same linear trend as the other factors, with one exception. The factor mean differences were statistically significant among experience level groups ($F=14.59$, $p < .0001$). In this factor the mean was lowest for experts (7.03) but highest for veterans (8.20), followed by collectors (8.09), locals (7.99), and beginners (7.77). The ANOVA R-square was .043.

In summary, there was a linear difference in the factor means which was closely associated with an assumed amount of knowledge and experience of the experience group. This linearity was such that attitudes towards management issues and challenges were more positive the more experienced the group, while attitudes were less positive for tourist experiences the more experienced the group. The one departure from this linearity was in the park experience factor means. Here, the experts rated park experience less positively than the other groups, while the positive linear relationship with experience held for the other groups. This may be attributed to the experts' protective attitudes towards the park's features and resources.

Regression Analysis of Factor Scores

Several experience-level variables were included in the questionnaire, consistent with the literature on recreation research (Schreyer, et al., 1984; Williams, et al., 1990). Each of these experience variables was regressed against the mean factor scores.

Attitudes are expected to be determined in part by knowledge and experience (Fishbein & Ajzen, 1975); the purpose of the regression analysis was to determine which experience level variable, if any,

usually predict attitudinal ratings, and how much of the variance experience level variables might account for. A negative finding would indicate that the particular experience level variable does not adequately predict attitudes towards the factors or, overall, the items making them up.

In general, the variance accounted for by the experience level variables was statistically significant with the exception of Factor Two: Park Experiences, which was non-significant in three cases. Table 42 displays the R-squares and significance level for all experience level variables and factors.

The experience level variable "How many times have you visited the Smokies?" had an overall R-square of .0273 for the four-factor solution. Single factor solutions showed that Factor Two, Park Experiences and Factor Three, Challenges, were statistically non-significant. Factor One, Tourist Experiences, and Factor Four, Management Issues, were statistically significant but only accounted for about one percent of the variance each.

The variable "How many times per year do you visit National or State parks?" had an overall R-square of .0569 for the four-factor solution. Single factor solutions were all statistically significant but only accounted for three percent, or less, of the variance.

The variable "What other National Parks or other wilderness recreation areas have you visited?" had the highest R-square (.1648) for the four factor equation, accounting for more variance than any other experience level variable. Factor Four, Management Issues, accounted for the most variance of the single factor equations, with an

Table 42. Regression Analysis of Experience Level Variables.

Experience Variables				
	Times Visit Smokies		Times Visit Per Year	
	R-square	P	R-square	P
4-Factor	.0273	.0001	.0569	.0001
Factor One	.0145	.0005	.0189	.0001
Factor Two	.0004	.5438	.0046	.0252
Factor Three	.0020	.1974	.0284	.0001
Factor Four	.0131	.0009	.0320	.0001
	Other Parks Visited		Composite Variable	
	R-square	P	R-square	P
4-Factor	.1648	.0001	.0596	.0001
Factor One	.0584	.0001	.0250	.0001
Factor Two	.0016	.2014	.0000	.9629
Factor Three	.0325	.0001	.0064	.0080
Factor Four	.1162	.0001	.0416	.0001

R-square of .1162. Factor Two, Park Experiences was statistically non-significant.

A composite variable summing all the experience level variables actually performed more poorly (overall R-square = .0596) than did the single experience level variable, "What other National Parks or other wilderness recreation areas have you visited?"; adding the other variables into the composite variable actually reduced its predictive effectiveness.

In summary, only one experience level variable, "What other National Parks or other wilderness recreation areas have you visited", predicted attitudes with any practical usefulness. Other experience level variables, often used in previous research, did not account for very large amounts of variance in the Stevens-rated attitude scales used in this research.

CHAPTER 7

ANALYSIS OF OPEN ENDED ITEMS

Method Used for Analysis

Open-ended items were included as a qualitative measure of visitor attitudes towards (or perceptions of) several specific situations in GSMNP. The intention of these items was to assess visitor attitudes or perceptions of various situations in the park, their expectations, and perceptions of their experiences, using a method which would not force a particular response, but would instead allow the participant to respond with whatever first came to mind.

To classify responses to each question, a method was used that was similar to the one used for analyzing phenomenological data by Colaizzi (1978) but modified for use in open-ended responses rather than phenomenological interviews. In using this method all responses for a question were read through in their entirety before any decisions were made about any possible themes in these responses. On a second reading responses were initially categorized into common themes. A third reading was used to confirm that individual responses to an item initially placed in a theme was correct. Individual responses that were initially placed in an "other" category were reexamined to determine if an additional theme was present or the response might belong in another category.

Most open-ended items had few responses which did not fall into a specific theme with the exception of "People who feed animal in the

National Park", which had a high percentage of "other" responses (19.9% overall). Responses to this item were so varied that it was sometimes difficult to place a response in any particular category.

The author and two undergraduate students thematized all responses. The students were thoroughly trained by the author in how to interpret themes from responses; student analyses were checked for interrater reliability by the author thematizing the same set of responses as the students. This reliability check was performed for each student for all questions, on a random basis; interrater reliability was found to be about 90%.

Thematic Analysis of Responses

The nine open-ended items were thematically analyzed and common responses for each item were grouped into categories. The discussion below defines each category of responses for each item. The examples of responses given for each item and category are not exhaustive, but serve as examples of the types of responses included in a given category. Percentage of responses falling into each thematic category, by user group, are discussed for each item. Percentages of responses in each thematic category also are presented for each user group, and overall, on separate tables for each open-ended question. A summary of responses before the discussion of each questions is not feasible for these questions because the reader must have read the definition of each theme in order to understand the discussion of the results.

When in the wilderness

Eight themes emerged from the item "When in the wilderness a person should": 1) protect, 2) caution, 3) prepare, 4) personal, 5) activity, 6) respect, 7) beauty, 8) observant. Category definitions and examples of responses for each are discussed below. The percentages of responses are presented for each user group in Table 43.

Responses in the "protect" category reflected the theme of protection and respect for the natural environment of the park. Many responses referred to not disturbing the wilderness, leaving nature alone, and leaving things undisturbed and natural. Also included in this category were responses such as protecting the environment, protecting the animals, and taking everything brought in back out.

Responses in the "caution" category reflected visitors concerns for personal safety while in the "wilderness" of the park. Responses also reflected an awareness of the possible dangers which could be encountered in the park. Examples of responses in this category include "never be alone", "use caution", "use extreme caution", "be with a group", "be careful", "watch out for animals and snakes", "be on the lookout", "stay on the trails so you won't get lost", "leave a mark so you can get back", and "I'm not going in the wilderness."

The ideas of self preparation and safety awareness were reflected in the "prepare" category. Examples of responses in this category were "be prepared for it", "practice safety regulations", "be ready to rough it", "carry water", "dress for the elements", "be alert and knowledgeable about the surroundings", and "be well equipped".

Table 43. Thematic Categories for "When in the wilderness a person should"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Protect	57.7	55.1	52.0	38.6	27.8	44.2	45.2	31.8
Caution	1.3	3.7	16.4	23.8	20.4	24.2	19.4	27.3
Prepare	5.1	10.3	9.9	13.9	16.7	11.6	16.1	22.7
Personal	9.0	13.2	6.4	5.5	13.9	6.3	6.5	3.6
Activity	1.3	1.5	1.2	.6	.9	.5	0	0
Respect	11.5	7.4	2.9	4.9	4.6	3.2	0	0
Beauty	7.7	6.6	7.0	7.8	5.6	5.8	9.7	4.5
Observant	5.1	2.2	4.1	4.2	7.4	3.7	3.2	0

Personal and psychological experiences were reflected in the "personal" category. These experiences or feelings were those brought on by being in the natural environment of the park and being aware of the psychological benefits it offers. Examples of responses in this category include "enjoy nature," "feel at peace," "relax," "enjoy the wild," "be in tune with nature," "enjoy the beautiful world God created," "feel free," and "become one with nature."

Using the park for activities and fun was the theme of the "activity" category. Responses included "hike a trail," "roam around," "take advantages of its many resources," "camp," and "spend time with friends."

Responses in the "respect" category referred to respect for other visitors to the park. Responses included "be quiet and don't disturb others' enjoyment," "be considerate of other visitors," "respect the rights of others," "be a good citizen and leave other people alone," and "be unobtrusive and helpful to others."

Appreciation of the beauty and existence of the park was the theme reflected in the "beauty" category. Examples of responses to this item were "enjoy the beauty," "appreciate the beauty," "absorb the surrounding beauty," "enjoy the surroundings," "recognize the sacredness of nature and life on the planet," "enjoy nature's view," "enjoy God's nature" and "appreciate nature."

Being aware and observant of one's surroundings was the theme of the "observant" category. Responses in this category included "observe surroundings," "use all senses," "be aware of surroundings," "be observant," "use one's senses to be alert to the happenings around,"

"pay close attention," "keep your eyes open" and "be alert to what is around."

The category that received the highest percentage of responses was "protect" with 43.6% of overall responses. The group with the highest percentage in this category was the experts (57.7%), followed by backpackers (55.1%) and dayhikers (52.0%). The groups with the lowest percentages were the picnickers (27.8%) and visitors to the Sinks (31.8%).

Overall 18.8% of visitors gave responses which fell into the "caution" category. Those visitor groups with a lot of knowledge about the park did not give responses typical of this category while those visitor groups who likely had less knowledge did. The groups with the highest percentages of responses in this category were the visitors to the Sinks (27.3%), windshield tourists (24.2%) and campers (23.8%). Only 1.3% of experts and 3.7% of backpackers gave responses which fell into this category.

Responses which fell into the "prepared" category came primarily from visitors to the Sinks, picnickers, Elkmont cabin users, and campers (22.7%, 16.7%, 16.1%, and 13.9%, respectively). Only 5.1% of responses by experts fell into this category.

Picnickers, backpackers, and experts had the highest percentages of responses which fell into the "personal" category (13.9%, 13.2%, and 9.0%, respectively). The Sinks group had the lowest percentage at 3.6%.

Having respect for others in the park received 11.5% of responses from the expert group, 7.4% from the backpackers, and very little from

the other groups. Enjoying the beauty received 7.0% of responses to this item ranging from 4.5% from the Sinks users to 9.7% from the Elkmont cabin users. Specific activities accounted for very little of the total responses for this item at only .8% overall. Being observant also received only a few responses from most user groups at 4.1% overall.

The most dangerous thing in the National Park

Seven themes emerged from this item: 1) people, 2) animals, 3) drivers, 4) falling, 5) carelessness, 6) fires, 7) lost/unprepared. Percentages of responses by user group for each theme are presented in Table 44.

Problems with people damaging the environment and ignorance of wildlands ethics was the theme of the "people" category. This theme was different from most other themes of this item, in that it reflected things which are dangerous to the park itself rather than things in the park which are dangerous to people. Examples of responses which defined this category were "people," "other people," "man," "people who threaten the resource," "stupid tourists," "visitors," "uneducated visitors," "careless tourists," "people who do not think before they act," and "the humans who visit."

Problems with or fear of animals was the theme of the "animals" category. Typical responses in this category were "bears," "snakes" or "poisonous snakes" (a very common response), "wild animals," "encountering an animal," "skunks in the campground," and "feeding wild animals or bears."

Table 44. Thematic Categories for "The most dangerous thing in the National Park is"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
People	47.4	41.4	37.0	37.9	27.8	36.8	20.0	36.0
Animals	0	11.0	19.7	22.0	33.3	23.2	23.3	16.0
Drivers	15.8	9.0	6.4	12.6	15.7	9.2	16.7	32.0
Falling	0	4.8	14.5	3.8	5.6	11.4	3.3	4.0
Carelessness	23.7	9.0	6.4	8.4	5.6	5.9	10.0	4.0
Fires	1.3	2.1	2.3	2.1	3.7	2.7	6.7	4.0
Unprepared	3.9	14.5	7.5	5.0	4.6	7.0	13.3	0

Responses in the "drivers" category reflected a concern with people driving in the park, primarily other drivers. Examples of responses which defined this category were "other drivers," "automobile traffic," "cars," "drunk drivers," "heavy traffic," "drivers from Ohio/Indiana/Florida," "bad drivers," and "getting run over by a tourist."

Fears about falling off mountains or cliffs was the theme of the "falling" category. Examples of responses to this item were "falling," "falling off the mountain," "falling off cliffs," "high places," "climbing where falling is possible," "falling off the road," "slippery rocks and trails," and "rock ledges."

Responses that reflected the theme of personal carelessness or endangerment and ignorance defined the "carelessness" category. Typical responses in this category were "carelessness," "not using your brain," "ignorance," "careless campers/hikers," "ignorant people/visitors," "not respecting how precarious some situations are," and "careless preparations."

A concern with forest fires was the theme of the "fires" category. Almost all responses were just the words "fire," "forest fire," or "unattended campfires."

Responses that indicated a concern with becoming lost or being unprepared made up the "lost/unprepared" category. Examples of responses are "being lost," "getting lost," "being unprepared for the conditions," "hypothermia when you're not prepared for bad weather," "getting off designated trails," "not knowing what to do," "getting

lost in the backcountry," and "not being prepared for activities you are not used to doing."

Nearly half of the experts (47.4%) considered people to be the most dangerous thing in the national park. Backpackers were close behind at 41.4%. The overall percentage for this response was the highest of all responses at 37.2%. The high percentage of this theme indicates that a large number of visitors consider the threat of people to the park itself, rather than personal threats to themselves, to be the most dangerous thing in the park.

Danger from the animals in the park, especially snakes and bears, was a common response for some groups but not others. No experts thought animals were the most dangerous thing in the park but the overall percentage for this theme was 20.1%. Picnickers had the highest percent of this response (33.3%), and most of these responses were about snakes. Bears were more frequently mentioned by dayhikers and backpackers than were snakes.

Several groups of visitors thought drivers were the most dangerous thing in the park (11.7% overall). Carelessness was a theme common to the experts (23.7%) but not as much for other groups (8.4% overall). Falling off the mountain or off cliffs was a concern for dayhikers (14.5%) and windshield tourists (11.4%). Being unprepared received the highest percentage from backpackers (14.5%) reflecting the necessity to be well prepared in the backcountry. Only 2.5% overall mentioned fires as a concern.

Animals in the National Park

Responses to this item fell into seven categories: 1) protected, 2) left alone, 3) free, 4) wild, 5) natural, 6) observed, 7) list of animals. Some responses were worded differently but still reflected the theme of the category in which it was placed. The percentages of responses of these themes are presented in Table 45 for each user group.

Responses in the "protected" category included those which showed a concern that the animals needed to be protected from outside influences. Responses included "protected," "preserved," "protected from humans or visitors," and "kept from harm."

Responses in the "left alone" category included those that indicated that visitors feel that animals in the park should be left alone and not bothered. Examples include "left alone," "not bothered," "untouched by humans," "not fed," "left to their own devices," and "left alone where they are."

Responses placed in the "free" category were those which reflected the theme of an animal's freedom and included responses such as "free," "free to roam," and "free to live as they should."

Responses in the "wild" category included those which reflected the theme of an animal's "wildness" such as "wild," "untamed," "not caged," and "left wild."

Responses in the "natural" category reflected visitors' concern that animals in the park should be in as natural state as possible and included responses such as "native," "natural," "allowed to exist in a natural state," "not introduced," and "kept as natural as possible."

Table 45. Thematic Categories for "Animals in the National Park should be"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Protected	28.2	21.9	16.8	28.3	24.1	24.2	24.4	40.7
Left alone	12.8	32.0	28.6	23.2	20.5	12.9	24.4	25.9
Free	16.7	10.1	26.5	20.0	17.9	25.3	31.7	18.5
Wild	17.9	10.7	9.7	8.3	8.0	7.7	0	11.1
Natural	11.5	7.7	4.3	4.7	4.5	5.2	0	0
Observed	9.0	7.1	3.2	4.7	7.1	3.1	0	0
List	0	1.8	.5	1.8	.9	3.6	0	0

Responses in the "observed" category reflected the idea of watching animals as an unobtrusive observer and included responses such as "observed," "observed from a distance," "watched," "photographed," "looked at," and "admired."

Some people responded with a list of animals such as deer, bear, raccoons, etc. that they thought should be in the park. These responses made up the "list of animals" category.

The themes "protected", "left alone", and "free" were the predominate response themes receiving 25.0%, 22.8%, and 20.4% of responses, respectively. Visitors to the Sinks gave the highest percentage of responses in the protected theme at 40.7%, followed by campers (28.3%), and experts (28.2%). Left alone received the highest percentage of responses from backpackers (32.0%), followed by dayhikers (28.6%). These two groups tend to have more opportunity for animal contact than some other groups because they are on the trails. Elkmont cabin users, dayhikers, and windshield tourists had the highest percentages of responses for the free theme (31.7%, 26.5%, and 25.3%, respectively).

"Wildness" was a theme most frequently expressed by experts (17.9%) as was "naturalness" (11.5%). Overall wildness received 9.0% of responses and naturalness received 5.2%. That animals should be observed from a distance was the theme of responses for 4.8% of visitors overall, with the highest being from experts (9.0%). Some visitors responded with a list of animals (only 1.6% overall), mostly from windshield tourists (3.6%).

Encountering a black bear

Responses to "Encountering a black bear in the park" fell into six major themes: 1) exciting, 2) scary, 3) caution, 4) occurrence, 5) commonality, 6) like or dislike. Table 46 presents the percentages of responses for each user group.

Responses that expressed excitement, fun, or a thrilling experience when encountering a bear defined the "exciting" category. Typical responses to this item include is "very exciting," "is a great experience," "is a thrill," "is awesome," "is fun," and "would be the experience of a lifetime."

Responses in the "scary" category reflected fear in encountering a bear in the park. Examples of responses in this category include "scary," "bad," "run away," "fearful," "I'd run for my life," "I would be scared," "is apprehensive," "would add some excitement I could live without," "is dangerous," and "get in your car."

Responses in the "caution" category differed from the "scary" category in that caution was expressed but not fear. Examples of responses include "be careful," "use caution," "keep quiet and the bear will move on," "respect and keep distant," "leave alone," "keep away," "do not feed," and "should be handled in a cautious manner."

The "occurrence" category consisted of responses which stated that a bear was either encountered or not encountered. Examples of responses include "it happened to me," "it didn't happen to me," "was a dream," "never," "I never have," "none," "no," and "yes."

Table 46. Thematic Categories for "Encountering a black bear in the park"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Exciting	75.6	55.6	43.7	51.2	33.3	35.1	34.4	45.8
Scary	6.4	17.8	33.3	19.5	36.3	23.8	40.6	20.8
Caution	5.1	7.4	10.3	15.0	17.6	14.6	9.4	29.2
Occurance	2.6	8.2	6.3	8.4	6.9	14.6	9.4	4.2
Commonality	6.4	5.1	2.3	2.8	1.0	1.1	3.1	0
Like/dislike	0	3.7	1.2	2.0	2.0	3.2	3.1	0

The "commonality" category included responses which stated that seeing a bear was either common or rare. Examples include "is to be expected," "is common," "is rare," "is not that common," "is a fact of life," "is not done very often," "is unusual in the woods," and "seldom in the last few years."

Responses in the "like or dislike" category reflected a person's either liking or disliking the idea of a bear encounter. No fear or caution statements were included, simply a like/dislike response. Typical responses include "would like to see one," "would not like to see one," "is what I would like," and "is something I'm looking forward to."

Excitement and fun when encountering a black bear in the park was the predominate theme overall at 47.7% but the percentages varied considerably among groups. The experts, by far, had the highest percent in this theme at 75.6%. Picnickers (33.3%), Elkmont cabin users (34.4%), and windshield tourists (35.1%) were not as excited at the thought of encountering a bear. For Elkmont cabin users and picnickers fear outweighed excitement as the "scary" theme was the most frequent for these groups (40.6% and 36.3%, respectively). Only 6.4% of experts thought encountering a bear was scary.

Caution was a major theme for visitors to the Sinks at 29.2% which is more than twice the overall percentage for this theme (13.2%). Only 5.1% of experts and 7.4% of backpackers gave a caution response. The other themes which emerged from this item, occurrence, commonality, and like/dislike received few responses overall (8.5%, 2.8%, and 2.1% overall, respectively).

Feeding animals in the National Park

Eleven categories of responses emerged from the item "People who feed animals in the National Park": 1) fined, 2) uneducated, 3) shot, 4) careful, 5) stupid, 6) hurt animal, 7) danger, 8) shouldn't, 9) kind, 10) break rules, 11) kick out. Some of these categories could be combined in that they are part of a larger theme, but it was felt that it was more meaningful to break the large themes into smaller units. Percentages of responses for each user group are presented on Table 47.

Responses which indicated that a person feeding animals should be punished for breaking a law were included in the "fined" category. Typical responses included "fined," "arrested," "punished," "prosecuted," and "ticketed."

The idea that people feed animals because they are uneducated or do not know any better was the theme reflected in the "uneducated" category. Examples of responses included "are uneducated," "are uninformed," "do not understand," "don't know any better," and "need to be educated."

Extreme forms of punishment were included in the "shot" category. Examples of responses which fit into this category included "shot," "tarred and feathered," "scalped," "horsewhipped," "eaten by the animal," and "tied to a tree with honey smeared on them."

Responses in the "careful" category did not indicate that feeding animals is wrong but rather expressed the sentiment that if people are going to do so they should be careful. Examples of responses in this category include "better be careful," "should be careful," "be cautious," and "should use caution."

Table 47. Thematic Categories for "People who feed animals in the National Park"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Fined	32.1	17.0	13.4	23.2	10.8	15.3	9.4	19.2
Uneducated	9.0	5.7	1.7	2.2	.9	2.0	6.3	0
Shot	15.4	8.5	4.7	7.2	7.2	6.1	0	11.5
Careful	0	2.1	5.8	2.8	5.4	4.6	9.4	7.7
Stupid	15.4	14.9	12.2	14.6	19.8	13.8	6.3	3.8
Hurt animal	7.7	7.8	4.1	6.8	3.6	3.6	3.1	15.4
Danger	1.3	10.6	11.0	6.8	14.4	7.7	15.6	0
Shouldn't	2.6	9.9	12.8	9.4	9.0	13.8	12.5	15.4
Kind	0	.7	6.4	1.8	5.4	2.0	12.5	7.7
Break rule	0	1.4	2.9	3.8	.9	1.5	3.1	0
Kick out	0	2.1	3.5	3.2	5.4	3.6	0	0
Other	16.7	19.1	21.5	18.2	17.1	26.0	21.9	19.2

Responses in the "stupid" category indicated that a person feeding an animal was not acting in an intelligent manner. Typical responses included "are stupid," "are dumb," "are idiots," "are ignorant," and "are brainless."

The idea that feeding animals in the park is detrimental to the animal was reflected in the responses in the "hurt animal" category. Examples of responses included "do not realize the harm they are doing to the animal," "are doing them a disservice," "don't understand the consequences for the animals," "should realize they are harming the animals," and "are hurting the animals."

The dangers involved in feeding wild animals, especially bears, was the theme of responses in the "danger" category. Typical responses included "is dangerous," "don't understand the personal danger," "can lose an arm," "may get bitten," "are endangering everyone around them," "dangerous," "may be attacked," and "do so at their own peril."

Responses in the "shouldn't" category were those which stated that people should not feed animals in the park. No mention of harm to themselves or others or the illegality of the practice was made in these responses. Examples of responses were "should not," "shouldn't do it," and "should not feed bears."

The idea that it is alright to feed animals in the park was reflected in responses included in the "kind" category. Examples of responses in this category included "are kind," "care about animals," "are nice people," "are OK," "like animals," "are helping the animals," and "are no problem."

Responses which indicated that feeding animals is illegal were included in the "break rules" category. Examples of responses were "are breaking the rules," "are doing something illegal," "do not care if they break rules," and "are breaking the law."

The "kick out" category was included as a specific punishment as this response occurred frequently. Typical responses included "should be kicked out," "should be escorted out of the park," "be thrown out of the park," "not be allowed to return," "should get the boot," and "should be barred."

Response percentages for the themes that emerged from this item were widely distributed with no one theme receiving a large percentage of responses. There was a large "other" category (19.9% overall) which contained responses which could not be placed in any of the themes. There were no other themes which could be constructed from the "other" category as the responses were so diverse.

The theme that received the most response overall was "fined" (18.9%). This theme was the most frequent for the experts (32.1%) followed by campers (23.2%). The experts also had the most frequent response for the "uneducated" theme (9.0%) which only received 2.9% of responses overall. The experts were also the most brutal giving the highest percent of responses for the "shot" theme (15.4%) followed by visitors to the Sinks (11.5%).

Stupidity ranked high for picnickers (19.8%), experts (15.4%), backpackers (14.9%), and campers (14.6%). The danger theme was revealed in responses from 15.6% of Elkmont cabin users, 13.8% of windshield tourists, 12.8% of dayhikers, and 12.5% of Elkmont cabin

users. The Elkmont cabin users gave the highest percentage of responses for the "kind" theme (12.5%) followed by visitors to the Sinks (7.7%), and dayhikers (6.4%). There were no experts who thought feeding animals was alright.

Smoky Mountains expectations

Seven expectation themes emerged from the item "When I come to the Smoky Mountains I expect": 1) see park, 2) feelings, 3) retreat/learn, 4) activity, 5) respect, 6) negative, 7) religious. Table 48 presents the percentages of responses for each user group.

Visual experiences is the theme of the "see park" category. Responses indicated that people expect to see the beauty of the mountains and to see various features of the park. Examples of responses included "to see wilderness beauty," "to see scenery," "beauty in its natural form," "to see animals/bears/wildlife," "natural beauty of trees and streams," "a beautiful scenery," and "to see nature."

Personal feelings brought on by being in the park is the theme of the "feelings" category. Responses which fit into this category reflected the sensory and psychological enjoyment gained from the park experience. Examples of responses included "have fun," "enjoy the wilderness," "to enjoy myself," "to be moved," "to experience the wonders of nature," "to have a good time," "to enjoy the outdoors," "to have a positive recreational experience," and "to enjoy nature."

Responses in the "retreat/learn" category, while they may incorporate feelings, reflect a bond or connection to nature, a desire

Table 48. Thematic Categories for "When I come to the Smokies I expect": Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
See park	19.0	27.1	43.7	33.3	32.1	56.4	46.9	36.0
Feelings	7.6	21.8	24.1	35.4	39.4	21.0	21.9	36.0
Retreat/learn	11.4	21.1	9.2	13.3	11.9	5.6	9.4	12.0
Activity	7.6	9.0	4.0	3.9	3.7	5.6	3.1	0
Respect	25.3	11.3	12.6	7.0	5.5	6.2	6.3	12.0
Negative	29.1	7.5	2.9	5.7	7.3	3.6	9.4	4.0
Religious	0	2.3	3.4	1.4	0	1.5	3.1	0

to learn more about nature and a desire to retreat to nature from the everyday world. Examples of responses in this category included "to relax and do some soul searching," "to feel peaceful," "a back to nature experience," "find serenity," "a chance to clear and focus my mind," "clear the cobwebs," "solitude," "peace and quiet," "to be able to get away," "to find the solitude of the mountains," "a reconciliation with nature," and "to learn from/about nature."

Responses in the "activity" category were those which indicated that a specific activity was expected when visiting the park. Examples of responses included "hiking trails," "exercise," "to go hiking," "camping," "tube in the river," "sightseeing," and "go backpacking."

The expectation that people will not disturb or destroy the park or bother other people is the theme in the "respect" category. Examples of responses included "people be courteous toward each other and towards the wilderness," "unspoiled surroundings," "to see the untouched beauty of our earth," "to be clean of trash," "orderly conduct by visitors," and "to find the environment intact."

Negative expectations were included in the "negative" category. This category included responses such as "too many people," "traffic jams," "big crowds of people," "crowded roads and trails," "rain," and "commercialism."

Responses which had a religious or spiritual theme were included in the "religious" category. Examples of responses in this category were "to have a spiritual experience," "this is God's little acre to me," "to get closer to God," "to think of how beautiful Jehovah made everything," and "to see God's creation."

The theme of expecting to see the beauty of the park received the highest percentage of responses overall at 37.1%. The windshield tourists had the highest percent (56.4%), followed by Elkmont cabin users (46.9%), and dayhikers (43.7%). The experts had the lowest percentage of responses for this theme (19.0%).

The personal feelings theme received 28.3% of responses overall. Picnickers had the highest percent (39.4%) followed by visitors to the Sinks (36.0%), and campers (35.4%). Only 7.6% of experts had responses which could be placed into this theme.

Backpackers had the highest percentage of responses in the retreat and learn about nature theme (21.1%) probably reflecting the expectation of going into the backcountry to get away from everyday life and be in a natural environment. The windshield tourists had the lowest percentage of responses (5.6%). This group's purpose in the park was more to "see" the park rather than for a back to nature experience, which is indicated by their high percentage of responses in the "see park" theme.

The highest percentages of responses to this item from experts fell into the "negative" theme (29.1%) and the "respect" theme (25.3). No other groups had percentages nearly that high for the negative theme. Apparently experts, who have high levels of experience in the park, are rather pessimistic or cynical in their expectations about what they will find when coming to the park. Although the experts had the highest percentage, expectations for respect for both the park and others was the theme for 12.6% of dayhikers, 12.0% of visitors to the Sinks, and 11.3% of backpackers.

Hiking on the trails in the Smokies

Ten themes emerged from the item "Hiking on the trails in the Smokies": 1) enjoyment, 2) benefit, 3) challenge, 4) don't hike, 5) caution, 6) conditional enjoyment, 7) prepare, 8) exposure, 9) roles, 10) dos and don'ts. The percentages of responses for each theme are presented in Table 49 for each user group.

Personal enjoyment or a good time was the theme expressed in the "enjoyment" category. Examples of responses included "is a good experience," "is great," "is fun," "is a wonderful outdoor experience," "is a pleasure," "gives me a great high," "is terrific," and "is enjoyable."

Psychological, educational, and physical benefits to the hiker was the theme expressed in the "benefit" category. Responses indicated that the person derived some form of benefit from the hiking experience. Examples of responses included "is a peaceful experience," "is relaxing," "is exhilarating," "is educational and refreshing," "is a wonderful form of exercise," "is good for the soul," "is a tranquil experience," "clears your mind," "brings me back to life," and "is very therapeutic."

The fact that hiking in the mountains is frequently difficult was the theme reflected in the "challenge" category. Typical responses in this category were "was tough," "is hard," "difficult," "is hard work but worth the labor," "is strenuous," "is tiring, and "is a lot of uphill."

Responses which expressed the fact that some people do not hike were included in the "don't hike" category. Examples of responses

Table 49. Thematic Categories for "Hiking on the trails in the Smokies "; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Enjoyment	38.2	55.9	60.0	51.9	45.3	57.5	45.2	50.0
Benefit	15.8	16.9	10.9	11.6	12.3	6.6	12.9	20.8
Challenge	5.3	12.5	15.4	11.4	8.5	8.3	22.6	4.2
Don't hike	1.3	0	0	3.3	3.8	8.8	0	4.2
Caution	0	.7	5.1	4.5	8.5	5.0	0	4.2
Conditional	11.8	2.9	2.3	3.9	6.6	2.8	3.2	4.2
Prepare	1.3	.7	0	1.7	5.7	1.1	3.2	0
Exposure	2.6	2.2	1.7	2.5	3.8	1.1	6.5	0
Roles	7.9	4.4	3.4	3.1	1.9	0	3.2	4.2
Dos & Don'ts	15.8	3.7	1.1	6.2	3.8	8.8	3.2	8.3

which fell into this category were "I'm not physically able," "not interested," "don't hike," "no," "I don't like hiking," "never have," and "is not for me."

The idea that hiking in the mountains may contain an element of danger was the theme of the "caution" category. Examples of responses included "is dangerous so you should know where you are going," "is dangerous alone," "always go in groups," "use caution and stay on trails," "be careful," "is scary," "is dangerous unless guided," and "watch out for animals."

The idea that hiking is enjoyable only if certain conditions are present is the theme expressed in the "conditional enjoyment" category. Examples of responses in this category included "is OK as long as safety regulations are followed," "would be great if you didn't see other peoples' trash," "can be a lot of fun if the trails are well kept," "is very enjoyable as long as there aren't hoards of other hikers," "is miserable if it is a horse trail," and "is fun if the trails are not too long."

The theme of preparedness for hiking was expressed in the "prepare" category. Examples of responses which fell into this category were "is OK if you are prepared," "have the right footwear," "leave a schedule," "be prepared," and "know the area."

Some responses indicated that hiking offers the opportunity to be exposed to different things than one is normally exposed to. These responses were included in the "exposure" category. Examples of responses were "is neat to see plants and animals," "provides a look at nature and beauty," "has provided a source of enjoyment and variety for

this Ohio flatlander," "allows you to view the wilds as they are," "you can experience the joy of endurance," "the magnificent trees, animals, water and nature at its best," and "is every time an adventure to see new and exciting things."

Hiking the trails plays many roles or offers different functions which differ between people. The expression of these different roles made up the "roles" category. Examples of responses included "provides a look at nature and beauty," "represents freedom and solitude," "allows access," "is a privilege," "enables one to seek solitude," "is quiet, peaceful, and exhausting," "is a way to avoid large crowds," "is a great way to escape the stressful world," "puts people back in the wilderness," "is an adventure," and "is a good way to spend a fall Saturday."

Many people stated things you should or shouldn't do while hiking trails. These responses were included in the "dos and don'ts" category. Examples of responses included "should be slow and enjoyable," "should be special," "should be available to all," "should be promoted," "do not trash them," "should follow the rules," "please don't litter," "one should be clean," "permitted only where designated areas are," "should be protected," "no shortcuts," "horses should not be on trails," "do not leave the trail," and "should only be done by experienced hikers."

The "enjoyment" theme in hiking the trails contained most of the responses overall (52.7%). Dayhikers (60.0%), windshield tourists (57.5%), backpackers (55.9%), campers (51.9%), and visitors to the Sinks (50.0%) all had 50% or more of their responses fall into this

theme. Experts had the lowest percentage in this theme (38.2%) but had the highest percentage in the "conditional enjoyment" theme (11.8%). This indicates that enjoyment is an important theme for the experts but sometimes certain conditions must be met in order to be able to enjoy the experience.

Benefits from hiking received 11.9% of responses to this item overall. Visitors to the Sinks had the highest percentage of responses in this theme (20.8%), followed by backpackers (16.9%) and experts (15.8%). The physical challenge of hiking was the theme expressed by 22.6% of the Elkmont cabin users, 15.4% of dayhikers, and 12.5% of backpackers. Experts were most likely to give dos and don'ts advice, having 15.8% of their responses fall into this theme. Only 3.1% of respondents indicated that they didn't hike with the highest percentage being the windshield tourists at 8.8%. Responses which conveyed using caution while hiking were primarily from picnickers (8.5%), dayhikers (5.1%) and windshield tourists (5.0%). There were no responses indicating caution from the experts and only one from the backpackers.

Best experiences in the Great Smoky Mountains National Park

Ten categories emerged from the "My best experience in the Great Smoky Mountains National Park was" item: 1) recreational experience, 2) specific areas, 3) scenery, 4) social, 5) wildlife, 6) sightseeing, 7) water activities, 8) peace, 9) fall colors, 10) photography. Table 50 presents the percentages of responses for each theme by user group.

Responses included in the "recreational experience" category were those which named specific recreational activities one would engage in

Table 50. Thematic Categories for "My best experience in Great Smoky
Mtns. National Park was": Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
Recreation	38.8	40.9	36.3	34.6	33.0	24.5	33.3	21.7
Specific area	20.0	27.0	25.6	19.3	15.6	11.7	10.0	8.7
Scenery	3.8	5.1	9.5	6.5	6.4	29.3	6.7	8.7
Social	5.0	5.1	4.8	12.0	18.3	3.7	30.0	8.7
Wildlife	6.3	5.1	7.1	13.0	9.2	4.8	10.0	17.4
Sightseeing	0	0	0	2.2	3.7	7.4	0	0
Water	7.5	4.4	7.7	2.9	1.8	1.6	3.3	17.4
Peace	12.5	1.5	1.8	2.0	0	2.1	3.3	8.7
Fall colors	0	.7	.6	1.0	4.6	4.8	0	4.3
Photography	0	1.5	.6	.2	0	1.1	3.3	0

while visiting the Smokies. These included responses such as "hiking," "camping," and "having a picnic."

Responses in the "specific areas" category were those which referred to a best experience being going to a specific area in the park such as Cades Cove or a specific hiking trail. Examples of responses are "Cades Cove," "hiking to the Chimneys," "Clingmans Dome," and "camping at Icewater Springs."

Responses in the "scenery" category included those such as "the scenery," "the views," "seeing the mountains," and "spectacular scenery." Responses in this category were different from those in the "sightseeing" category in that they referred to the scenery of the park itself. "Sightseeing" was more activity related and often just consisted of the word "sightseeing" or the response showed activity such as "driving through the park to see the sights".

Responses that reflected a social or being with others theme made up the "social" category. Items included in this category were responses such as "my honeymoon," "being with family," "spending time with friends," "being with my children in the park," and "camping or hiking with my spouse."

Responses that referred to animals were included in the "wildlife" category. Responses included "seeing wild animals," "seeing bears," "watching deer," and just names of animals (deer, bear).

Responses in the "water activities" category consisted of those involving the creeks and rivers in the park. Examples of response in this category are "swimming at the Sinks", "playing in the creek", or "tubing on the river".

Responses that reflected feelings of peace, quiet, tranquility, and solitude made up the "peace" category. Most responses were single words such as those above. Other responses were sentences which incorporated one of the above words such as "enjoying the tranquility".

Responses in the "fall colors" category were responses which specifically noted the colors of the trees in the fall season. Typical responses included "seeing the fall colors," "the colors of the trees," and "the beautiful fall colors."

Responses in the "photography" category were those which mentioned taking pictures in the park. Responses included "taking pictures" and "photographing the views."

Specific recreational activities which fell into the "recreation" theme made up the majority of responses to this item overall (33.8%). The highest percentages came from backpackers (40.9%), the experts (38.8%), and dayhikers (36.3%). Hiking trails was the specific recreational activity most mentioned by all three of these groups.

Specific areas of the park were best experiences for 19.2% of visitors overall. Backpackers (27.0%), dayhikers (25.6%), and experts (20.0%) again had the highest percentages for this theme. The specific locations mentioned by these groups were frequently specific trails, backcountry locations, or destinations at the end of a trail.

Three "scenery" themes were the most frequent responses from windshield tourists: "scenery" (29.3%), "sightseeing" (7.4%), and "fall colors" (4.8%). All other groups had response percentages under 10% in the scenery theme and under 4% in the sightseeing theme.

Picnickers and visitors to the Sinks were the only other groups that had percentages over 4% in the fall colors theme.

Elkmont cabin users had the highest percentage of responses in the "social" theme (30.0%), followed by picnickers (18.3%), and campers (12.0%). For these groups activities that included being with other people was their best experience in the park.

Wildlife encounters or seeing wildlife was the best experience for 17.4% of visitors to the Sinks, 13.0% of campers, and 10.0% of Elkmont cabin users. All other groups had percentages in this theme under 10.0%. Water activities had the highest percentage of responses from the visitors to the Sinks (17.4%) and lowest from the windshield tourists (1.6%). The "peace" theme only received a substantial percent of responses from experts (12.5%) and visitors to the Sinks (8.7%).

Worst experiences in Great Smoky Mountains National Park

Nine themes emerged from the item "My worst experience in Great Smoky Mountains National Park was": 1) none, 2) traffic, 3) weather, 4) people, 5) wildlife, 6) management, 7) bad hike, 8) injury, 9) trash. Some categories may fit into a larger theme but it was thought to be more meaningful to keep them separate. The percentage of responses for these themes is presented in Table 51 for each user group.

Responses which indicated that a person had no bad experiences in the park made up the "none" category. Typical responses included "none," "have had no bad experiences," "can't think of any bad experience," and "have only had good experiences."

Table 51. Thematic Categories for "My worst experience in Great Smoky
Mtns. National Park was"; Response Percentages by User Group.

Category	Exp	Bck	Day	Cmp	Pic	Wnd	Cab	Snk
None	2.6	18.5	21.1	13.4	24.5	35.8	13.3	27.3
Traffic	25.0	9.2	12.5	16.3	33.0	15.6	36.7	27.3
Weather	5.3	23.5	14.5	15.4	4.3	9.5	10.0	4.5
People	36.8	12.6	15.8	12.4	9.6	9.5	10.0	13.6
Wildlife	5.3	9.2	9.2	10.8	14.9	4.5	13.3	9.1
Management	9.2	6.7	4.6	16.7	6.4	2.8	6.7	0
Bad hikes	3.9	10.9	6.6	2.2	1.1	5.0	0	0
Injury	2.6	3.3	9.2	6.1	5.4	6.7	6.6	13.6
Trash	9.2	3.4	5.9	2.6	0	6.1	3.3	4.5

Having to deal with heavy traffic in the park, problems with other drivers, or problems with a car, was the theme of the "traffic" category. Examples of responses which fell into this category were "traffic," "cars," "driving around the loop in Cades Cove bumper to bumper and the gas line is below empty," "drivers," "driving the mountain roads," "I ran out of gas," "stuck in a traffic jam," "driving through Gatlinburg to get there," "stupid tourist drivers," "drivers from Illinois/Florida/Ohio," and "moron drivers who kill the fun of going to the Smokies."

Encountering inclement weather was the theme of the "weather" category. Examples of responses included "rain," "being rained on for days on end," "getting rained on when the tent blew down," "camping out overnight in a thunderstorm," "cold," "getting stuck in the snow," "at Rich Mountain shelter when the temperature dropped - we froze," "August 7, 1989 - Mt. Collins shelter - 25 degrees," and "hiking in a late spring snow."

Problems with other people was a worst experience for many and these response were included in the "people" category. Examples of responses for this category included "other people," "encountering disrespectful wilderness users," "meeting rude day hikers," "rude and trashy people," "too many people," "encountering overweight suburbanites with boom boxes," "being around dozens of tourists asking stupid questions," "impolite other visitors," "people who do not consider others," "people playing loud radios," "a camper chopping wood at 6 a.m.," and "people drinking and being obnoxious."

Encounters with animals caused some worst experiences and were included in the "wildlife" category. Examples of response in this category included "when a bear scratched my new car," "seeing a deer that was obviously diseased," "being bitten by a rattlesnake," "bears ruining supplies," "seeing a large snake - a very large snake," "the night we were attacked by gnats," "being sprayed by a skunk," "meeting a bear," "yellow jackets," "having a bear in my tent," "when a mouse ate a hole in my backpack and stole my car keys," "seeing dead animals in the woods," "when skunks came to our table," and "when a bear ate my food."

Management practices or lack of maintenance in the park sometimes caused bad experiences for people. Responses which indicated management problems were included in the "management" category. Examples of responses were "traveling through maintained areas that were not maintained," "rest rooms," "when congress shut down the park in October," "being made to leave the park when it was closed down," "not having showers in the campgrounds," "no electricity," "overbearing rangers," "campground reservation system," "getting turned away from campgrounds," "the backcountry shelters," "ranger needlessly pushing me on my own campsite because a bear was a substantial distance away," "rangers not enforcing quiet hours," "not being able to shave because there was no electricity," and "not enough parking available."

A bad hiking experience was the worst experience for some people and these responses were included in the "bad hike" category. Examples of responses were "the long hiking trails to most of the falls," "trying to climb Clingmans Dome and realizing how pathetically out of

shape I am," "hiking to the Chimneys," "being caught on a trail after dark," "backpacking," "when someone destroyed a trailhead sign and we hiked an additional 10 miles and I lost my big toenail," "unmaintained trails," "backpacking on a horse trail," "having to carry a tired 3-year old on a trail," and "getting tired when hiking."

Physical injuries or illness while in the park were worst experiences expressed in the "injury" category. Examples of responses in this category were "falling on rocks," "when I fell and hurt my knee," "getting sick riding around curves," "being ill," "twisting my ankle," "shin splints," "blisters," "poison ivy," "falling out of the motor home," "tubing and hurting my back," and "broken ankle playing in the stream."

Awareness of the detrimental human impact on the natural beauty of the park, seeing litter and trash, and finding areas which people have damaged was a worst experience for some people and made the theme of the "trash" category. Examples of responses included "seeing litter in great abundance," "trashy backcountry sites," "finding trampled rare plant habitat at the top of cliffs," "seeing horseback rider impact on the trails," "seeing the effects of acid rain and pollution on the trees," "finding garbage on the trail - horrible," and "having to clean up after someone else."

Nineteen percent of visitors overall indicated they have had no bad experiences while in the park. The highest percentage of no bad experiences was from the windshield tourists (35.8%) and the lowest was from the experts (2.6%). Experience level probably plays a role in this wide range between percentages of these two groups. Experts are

in the park more often, are more aware of problems, and have much more contact with the park than do windshield tourists. If one drives a car through the park with little contact otherwise it is more difficult to have a bad experience.

Traffic was the number one bad experience for several user groups: Elkmont cabin users (36.7%), picnickers (33.0%), visitors to the Sinks (27.3%), and windshield tourists (15.6%). Traffic was the second worst experience for the experts (25.0%) and campers (16.3%).

Backpackers had the highest percentage of responses in the "weather" theme (23.5). Weather also was the number one bad experience for backpackers, usually involving getting caught in cold or rainy weather while far into the backcountry. Weather was a bad experience for 15.4% of campers and 14.5% of dayhikers.

Other people and the effects of people was by far the most frequently stated worst experience for the experts (36.8%). This is much higher than the overall percentage for this theme (13.8%). Experts are much more likely to be aware of the effects of other people on the environment of the park. Also those experts who work in GSMNP are likely to have very cynical attitudes towards visitors who they have to work with all day, and therefore find being around other people a bad experience in a recreational setting.

Encounters with wildlife were bad experiences for 14.9% of picnickers, who probably lost their picnics to animals. Elkmont cabin users had 13.3% of their bad experiences with animals, usually problem bears, and 10.8% of campers had bad experiences with animals, mostly skunks.

Bad experiences caused by park management accounted for 16.7% of bad experiences by campers, this group's largest percentage.

Campgrounds lack electricity and showers and this frequently was mentioned as a bad experience by campers. Also the campground reservation system was mentioned as a frustrating, bad experience.

One other bad experience mentioned by several groups was the closing of the park for budget reasons at the end of the fiscal year in 1990. Several people were made to pack up and leave for a day which they reported as their worst experience.

Backpackers reported a worst experience being a specific hike in 10.9% of their responses to this item. Dayhikers had 6.6% of responses fall into this theme. The injury theme had few responses except by visitors to the Sinks (13.6%) which were mostly falling on the rocks type of injuries. Trash and litter was a bad experience for 9.2% of experts, who were probably more aware of its impact than other groups.

CHAPTER 8

DISCUSSION

Summary of Goals

Several goals were stated at the outset of the present research, the first being to identify and explore differences in attitudes and perceptions of different user groups visiting GSMNP. It was hypothesized that attitudes and perceptions towards features and activities in GSMNP would differ among different user groups. The second goal of this study was to determine how attitudes and perceptions of visitor groups differ from people who have expertise in natural environments. It was hypothesized that a group of experts in natural environments would have attitudes and perceptions towards wildland recreation areas that differed from novice visitor groups. The third goal of this research was to examine the effect of previous experience on attitudes and perceptions of visitors to GSMNP independent of user group. It was hypothesized that visitors with a high level of previous experience in wildland recreation areas would differ in attitudes and perceptions from visitors with lower levels of experience. The final goal of this study was to examine the activities in which user groups and experts engage while in a wildland recreation area such as GSMNP. It was hypothesized that different user groups would come to a wildland recreation area such as GSMNP for different recreational activities.

Discussion of Findings

The first goal was to identify and explore differences in attitudes and perceptions of different user groups visiting GSMNP. Findings from prior research have shown that people differ in their attitudes towards and perceptions of natural environments such as GSMNP based on differences in knowledge and experience (for example, Hammitt & McDonald, 1983; Ittelson, et al., 1976; Knopf, 1981). Attitudinal and perceptual differences among user groups were expected in the present study based on the assumption that the different groups would have different levels of knowledge about wildland recreation areas or different motivations for coming to GSMNP. Neither knowledge level nor motivation was directly measured but the assumption can be made that they differ among user groups.

Factor analysis of the attitudinal items used in the survey revealed that although the user groups all had similar attitudinal factor structures -- meaning that they 'grouped' the attitude items into similar constructs -- they also had different mean responses both to the factors and to the items making up the factors. Thus, present results support the hypothesis that there are statistically significant differences in attitudes towards and perceptions of features and activities in the natural environment of GSMNP among different user groups.

Analysis of mean responses to Stevens scaled items revealed that some user groups such as backpackers, who tend to have direct personal contact with the environment in more remote areas of the park, have attitudes towards features and management issues in the park and

towards the tourist communities almost opposite to those expressed by other user groups such as windshield tourists, who have only superficial contact with the park environment. For example, backpackers rated the practice of killing wild hogs in the park much more positively than did groups such as windshield tourists, users of the Sinks, and picnickers. Backpackers' activities take them into the backcountry of the park where hog damage is more apparent, so they are more likely to be in support of a management practice which on the surface appears to be counter to the protection philosophy of the park. User groups less personally involved with the environment of the park react to killing pigs affectively and rate the practice more negatively.

The same type of attitudinal differences were found between visitors to GSMNP and visitors to the adjacent tourist community of Gatlinburg (some of whom didn't even know where the park was) by Franz, et al. (1990). In that study the only park user group surveyed and interviewed was campers, but the differences found between this user group and Gatlinburg tourists were pronounced. Results from the present study, both in terms of the Stevens scale and the analysis of the open-ended items, support the idea that there is no "generic park user"; different user groups have significant differences in their attitudes towards various features of the park, management decisions, and activities available in the park. Present results support Shafer (1969) who found, in a study of campground users in New York campgrounds, that there is no "average camper". Results of Shafer's

study revealed that not only do campers differ from one campground to another, but also by season, even within a campground.

Differences found among different user groups, to GSMNP and to other wildland recreation areas, are given support by Gibson's (1977) theory of affordances, which notes that the natural environment of the park affords different things to different people. How different features of GSMNP afford different things to different people is revealed in some responses to open-ended statements. For example; while it may be stretching Gibson's theory to include emotional states in what an object affords, it was found that black bears are perceived as exciting to some user groups -- such as experts, backpackers and campers -- but are perceived as dangerous to other groups -- primarily the Elkmont cabin users and picnickers. The way in which different user groups perceive the trails in the park provides another example. The open-ended item "Hiking on the trails in the Smokies" had a wide variety of responses from different user groups reflecting differences in what a trail affords a person. Hiking trails affords benefits such as physical conditioning or psychological well being to some, but fear or danger to others (trails contain features that could cause harm such as cliffs or snakes).

Williams' (1986) discussion of how different groups categorize features of environments such as national parks also receives support from the findings of the present study. Williams states that specific environments or objects in environments are perceived as a particular instance of a large class of environments or objects, but how these specific objects are categorized for an individual varies between

people. A specific feature in the park may be categorized quite differently by a park manager, visitor, forester, or landscape architect, depending on the individual's category of what defines a national park, and what is contained in that category. Different user groups in GSMNP most likely have different categories which affects both what they perceive in the park and their attitudes.

The second goal of this study was to determine how attitudes and perceptions of visitor groups differ from people who have expertise in natural environments and those who do not. Kaplan and Kaplan (1989) found that professional experts in land use perceive the environment in terms of categories and perceptual processes developed by professional training that a novice to the land does not have. The results of the present study support this and other previous studies on expertise, which have shown that expert perceptions differ from those of novices (for example, Buhyoff & Leuschner, 1978; Iso-Ahola, 1980; Hammitt & Cole, 1987). The second hypothesis, that experts in natural environments have different attitudes and perceptions of GSMNP from most user groups to the park, was supported by the above mentioned items and factor mean scores and the accompanying analysis of variance F-tests.

Thematic analysis of open-ended responses also disclosed important differences between experts and members of other groups. In responses to the item "When in the wilderness a person should...", experts gave more responses in the "protect" and "respect others" categories than did individuals in other groups; they also gave fewer "be prepared" and "use caution" responses. These differences would seem to indicate a

greater knowledge and ease in the park environment, as well as a more protective attitude towards it and a greater respect and concern for the experiences of others in that setting. In addition, while a fifth of respondents indicated that animals were the most dangerous thing in the park, no experts felt that was the case, preferring to state that people were the most dangerous thing. More experts than members of other groups felt that carelessness was the most dangerous thing in the park. A higher proportion of experts than any other group felt native animals should be "wild" and "left alone", but non-native animals, such as hogs, should be removed. Far more than any other group, three quarters of the experts responded that encountering a bear would be exciting and fun, while fewer experts than in any other group felt it would be frightening or scary, or that caution would be needed. Regarding people feeding animals, experts were far more likely than members of any other group to feel that offenders should be fined or punished.

Fewer experts than any other group reported expectations of coming to the park to see its beauty or to experience positive personal feelings, perhaps reflecting the fact that for some of them it is their workplace. More experts than individuals in any other group responded to the expectation items with a negative reply, expecting others to do negative things to the park. They were higher in the "respect" category, the expectation that others would not or should not damage or destroy the park. Experts were least likely to report enjoying hiking on the trails but most likely to report "conditional enjoyment". Experts were least likely to report having had no bad experiences in

the park, and were by far most likely to report that other people and the effects other people had on the park were their worst experiences. It is possible that because experts have a large degree of respect for the park and a knowledge of it, they are so protective of it they are less able to simply enjoy it.

The third goal of this research was to examine the effect of previous experience on attitudes and perceptions of visitors to GSMNP independent of user group. Previous studies used an experience use history variable to examine differences among users with varying levels of experience in wildland recreation areas (Schreyer, et al., 1984). The present study used similar experience use history variables, modeled after those in the literature.

Results of the current study confirmed the hypothesis that visitors with a high level of previous experience visiting wildland recreation areas (GSMNP or other areas) have different attitudes and perceptions than visitors with a lower level of previous experience. For example, consistent with Hammitt and McDonald's (1983) findings, visitors who have been to several parks are more supportive of management initiatives and concerns than are those who have visited fewer parks. They tended to rate park features and experiences more positively than did those who had visited fewer parks and to rate the 'typical tourist experience' more negatively. This suggests a need to educate the less-traveled visitors to management concerns and to the affordances of the park experience, and vice versa.

The present study also found that visitors who had a great deal of experience in wildland recreation areas had attitudes and perceptions

that differed from visitors who had little overall experience and from those who had a high amount of local experience but little experience anywhere else. In the present study, visitors were classified as veterans, collectors, locals, and beginners. It was found that these groups differed in ratings on the Stevens scaled items in almost a linear manner by level of experience. For example, ratings on tourist items were highest for beginners and decreased linearly with experience level to lowest for veterans. Other items, such as those involving management practices and backcountry activities, showed a reverse trend with high ratings given by experienced groups and lower ratings by less experienced groups.

The final goal of this study was to examine activities in which user groups, experts, and experience level groups engage while in a wildland recreation area such as the Smokies. Results of the present study confirmed the hypothesis that different user groups, experts, and experience level groups come to GSMNP for different activities. These results also support the results of other studies which have found that activities engaged in while visiting wildland areas vary among user groups (for example, Franz, et al., 1990; Roggenbuck & Lucas, 1987).

User groups who had more direct personal contact with the environment of the park -- such as backpackers, campers, and experts -- came to GSMNP seeking solitude and an opportunity to become close to nature more than did user groups who had less direct personal contact with the park, such as windshield tourists and picnickers. This distinction is also present for experience level groups, with veterans seeking solitude and being close to nature more frequently than

beginners. The same linear trend by experience level seen in the attitude items was present for these two activities and other personal growth activities, with high experience level groups rating these items highest with lower experience levels rating them less highly. This trend is also seen in the activities which require physical exertion, such as hiking and backpacking, with the more experienced groups being more likely to engage in physical activities than less experienced groups.

Activities in the tourist communities were more valued by the less experienced groups, although the linear trend with experience level was not as pronounced for these types of activities. In general, the less experienced groups are more likely to want to do tourist activities such as shop and go to amusement parks than are groups with higher levels of experience. Activities such as seeing local arts and crafts and interest in the local culture, included in the "tourist experience" category, did not show any trend either across user or experience level groups.

Implications of the Present Research to Park Managers

The understanding of user knowledge, perceptions, and attitudes is essential to understanding and perhaps predicting user behaviors in natural recreational environments. To manage a wildland recreational area effectively, the protection of the natural environment must be balanced with its use by the public. Protection policy is frequently implemented by restricting use. This often has the effect of people feeling a loss of freedom in their recreation endeavors and a

subsequent loss of satisfaction with their experience (Iso-Ahola, 1980). While this strategy may protect the environment, it does little to enhance the quality of visitor experiences, and rarely does it educate the public as to why the policy was devised.

Since most of these lands are public use areas, state parks, national parks, or national forests, environmental protection should be accomplished while still allowing visitor use, if possible. Effective protection should come from a thorough understanding of the users of the recreation environment, and managing visitor use, not eliminating it.

In addition to protecting the environment in natural recreation areas, managers are responsible for assuring that the areas offer quality recreational experiences to visitors. Results from research, such as the present study, provide managers of wildland areas a better picture of visitor attitudes, perceptions, expectations and experiences while visiting the area than is otherwise available. Research results also should enable management to predict behaviors that may be detrimental to the environment and to develop and deliver effective interventions.

Without data considering visitor experiences, attitudes, expectations, and perceptions, the National Park Service does not have any basis for identifying and quantifying changing visitor interests and expectations, or for predicting future requirements for visitor services which would insure a quality visitor experience (Briceland, 1990). For managers of wildland recreation areas to make sound decisions that fulfill their dual mission of protecting the natural

resources of their park and of providing quality use opportunities for visitors, psychological and other social science research is a necessity.

Roggenbuck and Lucas (1987) discuss the importance of a thorough knowledge of park users in order for management to make sound decisions. The authors state that there are five characteristics of visitors managers must understand: 1) basic demographic descriptions of visitors, 2) number and characteristics of visits, 3) motives for and benefits of use, 4) perceptions, attitudes, and behavior of visitors, and 5) trends and projections in use and user variables. The present study addressed the majority of these issues. The fifth issue, trends and projections, can be addressed by repeating the survey in the future and discovering in changes in perceptions or attitudes or changes in the characteristics of the user groups.

It is also important for managers of natural recreation environments to be aware of differences in knowledge that exist among their visitors. Those who have little knowledge about the type of recreational area they are visiting have the potential both to harm the environment through ignorance of the impacts caused by their behaviors and to harm themselves through a lack of perception of possible dangers. The level of experience and knowledge that visitors have has been found to influence their tendency to respond to management suggestions (Roggenbuck and Lucas, 1987). Therefore, managers should know the level of knowledge and experience of their visitors to be sensitive to how well policy changes may be accepted by various user groups. Once areas of knowledge deficiencies are determined,

interpretive programs can be developed to increase the knowledge of visitors and other users to the wildland recreation environment, changing their attitudes and behaviors, as well as their receptiveness to management policy directives. This is important to managers of these areas because increased knowledge decreases adverse impacts and injury.

Limitations of the Present Study

One limitation of the present study is that it was designed with a resource management bias. Therefore, the questions were constructed to assess attitudes which were directly relevant to park managers. The results were presented with this same bias -- looking for differences between knowledgeable groups, who park managers can use as a standard, and less knowledgeable groups, who can be targeted for programs to increase their knowledge about the park. By having this bias there are several aspects about park visitors that are neglected. This study does not address the issue of the meaning of the park for the different user groups. The study also does not acknowledge that inexperienced or less knowledgeable user groups may enjoy the activities they select in the park just as much as the more experienced groups. Satisfaction with individuals' park experiences was not directly measured, although there were open-ended questions that asked for best and worst experiences.

A second limitation of this study is that the survey and the methodology used could not directly assess knowledge so that a direct tie with attitudes could be made. Instead, experience variables and

user group affiliations were used as a surrogate for direct measurement of knowledge, with the assumption that high levels of experience in wildland areas and affiliation with groups in more direct contact with the environment would correlate with knowledge.

This assumption was supported by the data when comparing groups with assumed knowledge with a group of experts whose knowledge levels were known. Those visitors with high levels of experience (veterans, backpackers) had attitudes similar to those of the experts in most instances. Still, a more direct measure of knowledge would have given more support to the hypothesis that knowledge directly affects attitudes. In future studies it may be possible to assess knowledge with in-depth phenomenological interviews or with questions which ask more directly for levels of knowledge.

Another limitation is with the subject-to-variable ratio in the factor analysis. Two groups, Sinks users and Elkmont cabin users, were dropped altogether from the analysis because there were less than 50 in each group. Factor analysis was performed on all other groups although for some the sample size was also too small for a truly valid analysis (less than 100). Ideally, the sample size for all groups should have been over 200 for this analysis. Therefore, results of the factor analysis should be interpreted with caution.

Recommendations for Future Research

Because of changes in education, leisure time activities, family dynamics, and changes in cultural attitudes towards the environment over time, people's perceptions, attitudes, knowledge, and experiences

surrounding natural/wilderness recreational environments also are likely to change over time. One hundred years ago, wilderness areas were perceived by many people to be strange, foreboding places to be avoided like the plague; today, they are a source of escape, renewal and growth (Nash, 1982). In the future other such changes may occur.

Changes in attitudes resulting from an educational effort can also be more directly assessed than has been common in the recreation literature. The Stevens-scaled attitude items may be used as a pre-training and post-training assessment on campers who attend an educational program to determine whether there is any change. Depending on the interval of the post-test, it can be determined whether changes are enduring or of only a short duration.

The Factor analysis used in the present study supported the structure of items (categories) chosen for the Stevens scale. This research, however, should only be considered baseline data in a long-term program of monitoring visitor attitudes and perceptions. Since the population and/or attitudes, perceptions and expectations may shift, future attitude scales used in studies of visitor attitudes, and this scale used in the future, should continue to be factor analyzed to detect any change in the structure of responses.

The rapid development of technology and changing life styles are modifying leisure activities in parks and wildland areas. The Park Service tends to classify visitor behaviors that are not necessarily dependent upon park resources or that do not conform to traditional uses as "nontraditional", and to view these behaviors as less appropriate in a park environment. Most of the behaviors classified as

nontraditional are based on changes in technology, such as hang-gliding, or result from changes in societal norms, such as nude sunbathing. Visitors, in contrast with the Park Service, have a different conception of the meaning of a park and of desired park experiences, and may not necessarily consider nontraditional behaviors inappropriate (Heywood, 1986). These types of changes should be assessed in future research and kept in mind when looking for trends and changes in a long-term monitoring program of research.

Recommendations for using Qualitative Methods

Qualitative research takes place in the 'real world' and usually examines a single phenomenon, such as a person's experience in a natural recreational environment. This is a naturalistic way of studying humans and the meaning they get out of life, by systematically eliciting phenomenological information and avoiding manipulation of their environment (Howe, 1985).

The phenomenological method was successful in revealing differences between visitors to the National Park and visitors to Gatlinburg (Franz, et al, 1990). An example of differences in themes that emerged from that study is that of sensory awareness. In Gatlinburg, people were aware of sights - Gatlinburg is a very visual town - while in the National Park, visitors were aware of sounds and smells of nature and much less of sights (even though people report they go 'sightseeing' in the park).

The current research and most other studies discussed in this dissertation used primarily traditional quantitative methods for

collecting data about visitors to wildland recreation areas. The present research did include a qualitative measure by using open-ended questions; however, a different phenomenological method could have been used. While quantitative methods used in this and other studies have revealed a lot of interesting facts about visitor perceptions, attitudes, and behaviors, as well as demographic and trip characteristics, there are few studies which have concerned peoples' experiences in natural recreation environments. Quantitative methods do not lend themselves as well to collecting experiential data; for this, qualitative methods are necessary (Cohen, 1988; Howe, 1985, 1988; Franz, et al, 1990).

For some of the information desired, such as basic demographic and trip characteristic data (where did you go, how long did you stay, have you been here before...) quantitative methods are appropriate. If knowledge about the way in which people rate the importance of certain information is desired, again quantitative methods are useful. For other information, however, such as understanding the experience a person had in a wildland area (like being alone on a mountain top on a foggy morning), a quantitative method such as rating scale will not be as effective at obtaining the kind of information desired.

Howe (1985) states that leisure is not an activity, but an experiential state; the state of being that underlies activity. To understand the experiential state of leisure, psychological conceptualizations should be discovered using qualitative methods. Looking at subjective factors of a leisure experience would account for both individual and situational differences in leisure, giving a more

complete picture of the leisure phenomenon. Howe goes on to point out that it is not what people do or how they do it that is important but rather the meaning that underlies their behavior, in this case leisure, that is important to explore. Schreyer (1988) discusses the need for experiential data if park managers are to be able to understand visitors to their parks.

The foregoing discussion of the need for qualitative research does not, of course, negate the qualitative data collected in this study. Several open-ended questions in this study examined people's attitudes towards the park and its environment, towards its animals, towards people who feed the animals and towards hiking on the trails; other items examine expectations and users' best and worst experiences in the park. These items revealed important attitudinal differences among groups as well as important themes related to best and worst experiences. However, it is felt that collecting more experiential data in the future is a necessity to obtain a more thorough picture of visitors to GSMNP.

Conclusion

The present study has found differences in attitudes, perceptions, and activity participation among different groups of visitors to GSMNP, differences which vary reliably with experience. Differences found can provide useful data for understanding the various groups studied and for policy formulation. However, the present data do not permit an examination of whether it is experience and knowledge or attitude and belief which predominate on perception for particular groups.

The Fishbein and Ajzen (1978) model linking experience and attitudes goes beyond just perceptual differences between experts and novices. It is based on the idea that experience and knowledge (differences between experts and novices) affects not only perception but attitudes and beliefs as well, which will ultimately affect one's intentions and behaviors. For an expert, experience and knowledge weigh more heavily than attitude and belief on perception. For a novice, attitude and belief weigh more heavily than experience and knowledge on perception. For novices, attitude and belief are likely to be based on incorrect assumptions because they are based on incomplete knowledge and scanty experience (Fishbein & Azjen, 1978).

Roggenbuck and Ham (1986) report that the Fishbein and Azjen model has been used in the past to examine the relationship between degree of knowledge and the likelihood that visitors will engage in behaviors that are managerially desirable. The present research provides baseline data on visitor attitudes towards a number of park features and management initiatives, and should be adequate for formulating educational programs to increase the knowledge levels of various groups. However, Roggenbuck and Ham report that results of educational programs used to increase knowledge levels have thus far resulted in mixed results, and that further research into this relationship is warranted. Perhaps what is missing in these studies is a direct assessment of whether these educational programs significantly affected knowledge and attitudes. Research is needed, perhaps aided by the scales developed and tested in this study, to measure more directly the effects of educational programs on knowledge and attitudes.

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APPENDICES

APPENDIX A
Survey Instrument for Visitors

PLEASE READ EACH OF THE FOLLOWING ITEMS AND RATE THEM ON A SCALE OF 1 TO 10 WITH '1' BEING A **VERY NEGATIVE FEELING OR ATTITUDE** TOWARDS THE ITEM AND '10' BEING A **VERY POSITIVE FEELING OR ATTITUDE**. USE ANY NUMBER BETWEEN '1' AND '10'.

VERY NEGATIVE FEELING		NEUTRAL		VERY POSITIVE FEELING
1	2	3	4	5
				6
				7
				8
				9
				10

HOW DO YOU FEEL ABOUT THE FOLLOWING?

- _____ Digging plants in the National Park to take home
- _____ National Park Rangers
- _____ Seeing animals in the wild
- _____ Hiking 10 miles in the mountains
- _____ Bears in the backcountry
- _____ Having a picnic in the National Park
- _____ Attractions in Pigeon Forge
- _____ Views from your car while driving in the park
- _____ Camping in a commercial campground
- _____ Walking alone in the woods
- _____ Shopping in Gatlinburg
- _____ Visiting local craft shops
- _____ Hiking a short nature trail in the National Park
- _____ Feeding bears in the National Park
- _____ Trout fishing
- _____ Camping in the National Park in a motor home or trailer
- _____ Seeing local cultural exhibits
- _____ Mountain roads
- _____ The National Park Service
- _____ Interpretive programs in the National Park
- _____ Seeing wild animals like black bears in cages
- _____ Tent camping in the National Park
- _____ Backpacking overnight in the National Park
- _____ Horseback riding on the trails in the National Park
- _____ Rock climbing in the National Park
- _____ Playing miniature golf
- _____ Wilderness solitude

- _____ Small private airplanes flying over the park
- _____ Snakes in the National Park
- _____ Billboards with local information
- _____ Souvenir shops
- _____ Helicopter tours of the National Park
- _____ Cutting trees for firewood in the National Park
- _____ Playing around in a cold mountain stream
- _____ Photographing the mountains from roadside pull-offs
- _____ Removing non-native plants from National Parks
- _____ Stopping at the Visitor Center in the National Park
- _____ Feeding squirrels in the National Park
- _____ Cherokee, North Carolina
- _____ Reintroducing the Red Wolf into the Smokies
- _____ Snow skiing
- _____ The Sierra Club
- _____ Killing non-native wild hogs in the National Park
- _____ People who bring their pets camping
- _____ Tour buses in the National Park
- _____ Harvesting trees in National Forests
- _____ Permitting alcohol in picnic grounds and campgrounds
- _____ Vacationing with family or friends in the National Park
- _____ Engaging in challenging physical activities

BELOW YOU WILL FIND A SERIES OF OPEN-ENDED STATEMENTS. PLEASE COMPLETE EACH SENTENCE WITH THE FIRST THOUGHT THAT COMES TO MIND. DO NOT THINK ABOUT ANY ONE STATEMENT FOR TOO LONG A PERIOD OF TIME. JUST WRITE THE FIRST THING YOU THINK ABOUT.

Animals in a National Park should be

My best experience in the Great Smoky Mountains National Park was

When in the wilderness a person should

Hiking on the trails in the Smokies

My worst experience in Great Smoky Mountains National Park was

Encountering a black bear in the park

When I come to the Smoky Mountains I expect

People who feed animals in the National Park

The most dangerous thing in the National Park is

PLEASE CHECK ALL OF THE FOLLOWING REASONS THAT YOU ARE HERE FOR ON YOUR VISIT TO THIS REGION. LEAVE BLANK THOSE THAT DO NOT APPLY TO YOU.

- | | |
|------------------------------------|-----------------------------------|
| _____ Family vacation | _____ Get closer to nature |
| _____ Escape from everyday routine | _____ Look at the scenery |
| _____ Business trip | _____ Hike the trails |
| _____ Shop/window shop | _____ Interest in local cultures |
| _____ Amusement park | _____ Camp in the campgrounds |
| _____ See animals | _____ Auto tour |
| _____ Camp in the backcountry | _____ Become more nature educated |
| _____ Swim in the rivers | _____ Go fishing |
| _____ Seek solitude | _____ Be with my close friends |
| _____ Explore new territory | _____ Be physically active |
| _____ Relax and relieve tensions | _____ Be adventurous |
| _____ Meet new people | _____ Avoid crowded areas |
| _____ Bird watch | _____ Party |
| _____ Visit relatives | _____ Just passing through area |
| _____ See local arts and crafts | _____ Spiritual growth |
| _____ Learn more about myself | _____ Go on a picnic |

PLEASE FILL IN THE FOLLOWING INFORMATION ABOUT YOURSELF

Age _____ Gender (M/F) _____ Home State _____

Occupation _____ Zip Code _____

Local to this area? ☐ YES ☐ NO

Education:	☐ 8th grade or less ☐ Some High School ☐ High School Graduate ☐ Junior College Graduate ☐ Technical or Trade School ☐ Some College ☐ College Graduate ☐ Some Graduate School ☐ Advanced College Degree	Family Status:	☐ Married with children ☐ Married/no children ☐ Single with children ☐ Single
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Income:	☐ less than \$5,000 ☐ \$5,000 - \$10,000 ☐ \$10,000 - \$15,000 ☐ \$15,000 - \$20,000 ☐ \$20,000 - \$25,000 ☐ \$25,000 - \$30,000	☐ \$30,000 - \$35,000 ☐ \$35,000 - \$40,000 ☐ \$40,000 - \$45,000 ☐ \$45,000 - \$50,000 ☐ \$50,000 - \$75,000 ☐ \$75,000 and above
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Race or cultural category:	Type of group you are traveling with:
☐ Caucasian/white ☐ Black ☐ Hispanic ☐ American Indian ☐ Asian or Pacific Islander ☐ Other _____	☐ Family ☐ Friends ☐ Both Family and Friends ☐ Organized group or tour ☐ Alone ☐ Other _____

PLEASE ANSWER THE FOLLOWING ABOUT YOUR TRIP:

Is this your first visit? ☐ YES ☐ NO

How many times have you visited the Smokies? _____

How many days will you spend in the Smokies? _____

How many times per year do you visit National or State Parks? _____

What other National Parks or other wilderness recreation areas have you visited? _____

APPENDIX B

Survey Instrument for Experts

PLEASE READ EACH OF THE FOLLOWING ITEMS AND RATE THEM ON A SCALE OF 1 TO 10 WITH '1' BEING A **VERY NEGATIVE FEELING OR ATTITUDE** TOWARDS THE ITEM AND '10' BEING A **VERY POSITIVE FEELING OR ATTITUDE**. USE ANY NUMBER BETWEEN '1' AND '10'.

VERY NEGATIVE FEELING		NEUTRAL		VERY POSITIVE FEELING
1	2	3	4	5
				6
				7
				8
				9
				10

HOW DO YOU FEEL ABOUT THE FOLLOWING?

- _____ Digging plants in the National Park to take home
- _____ National Park Rangers
- _____ Seeing animals in the wild
- _____ Hiking 10 miles in the mountains
- _____ Bears in the backcountry
- _____ Having a picnic in the National Park
- _____ Attractions in Pigeon Forge
- _____ Views from your car while driving in the park
- _____ Camping in a commercial campground
- _____ Walking alone in the woods
- _____ Shopping in Gatlinburg
- _____ Visiting local craft shops
- _____ Hiking a short nature trail in the National Park
- _____ Feeding bears in the National Park
- _____ Trout fishing
- _____ Camping in the National Park in a motor home or trailer
- _____ Seeing local cultural exhibits
- _____ Mountain roads
- _____ The National Park Service
- _____ Interpretive programs in the National Park
- _____ Seeing wild animals like black bears in cages
- _____ Tent camping in the National Park
- _____ Backpacking overnight in the National Park
- _____ Horseback riding on the trails in the National Park
- _____ Rock climbing in the National Park
- _____ Playing miniature golf
- _____ Wilderness solitude

- _____ Small private airplanes flying over the park
- _____ Snakes in the National Park
- _____ Billboards with local information
- _____ Souvenir shops
- _____ Helicopter tours of the National Park
- _____ Cutting trees for firewood in the National Park
- _____ Playing around in a cold mountain stream
- _____ Photographing the mountains from roadside pulloffs
- _____ Removing non-native plants from National Parks
- _____ Stopping at the Visitor Center in the National Park
- _____ Feeding squirrels in the National Park
- _____ Cherokee, North Carolina
- _____ Reintroducing the Red Wolf into the Smokies
- _____ Snow skiing
- _____ The Sierra Club
- _____ Killing non-native wild hogs in the National Park
- _____ People who bring their pets camping
- _____ Tour buses in the National Park
- _____ Harvesting trees in National Forests
- _____ Permitting alcohol in picnic grounds and campgrounds
- _____ Vacationing with family or friends in the National Park
- _____ Engaging in challenging physical activities

BELOW YOU WILL FIND A SERIES OF OPEN-ENDED STATEMENTS. PLEASE COMPLETE EACH SENTENCE WITH THE FIRST THOUGHT THAT COMES TO MIND. DO NOT THINK ABOUT ANY ONE STATEMENT FOR TOO LONG A PERIOD OF TIME. JUST WRITE THE FIRST THING YOU THINK ABOUT.

Animals in a National Park should be

My best experience in a natural recreation area was

When in the wilderness a person should

Hiking on trails in natural recreation areas

My worst experience in a natural recreation area was

Encountering a black bear in a natural area

When I visit a National Park, such as the Smokies, I expect

People who feed animals in a National Park

The most dangerous thing in a National Park is

PLEASE CHECK ALL OF THE FOLLOWING REASONS THAT YOU FEEL ARE IMPORTANT TO YOU WHEN PLANNING LEISURE ACTIVITIES IN A NATURAL RECREATION AREA SUCH AS THE SMOKY MOUNTAIN REGION. LEAVE BLANK THOSE THAT DO NOT APPLY TO YOU.

- | | |
|------------------------------------|-----------------------------------|
| _____ Family vacation | _____ Get closer to nature |
| _____ Escape from everyday routine | _____ Look at the scenery |
| _____ Business trip | _____ Hike the trails |
| _____ Shop/window shop | _____ Interest in local cultures |
| _____ Go to amusement parks | _____ Camp in the campgrounds |
| _____ See animals | _____ Auto tour |
| _____ Camp in the backcountry | _____ Become more nature educated |
| _____ Swim in the rivers | _____ Go fishing |
| _____ Seek solitude | _____ Be with my close friends |
| _____ Explore new territory | _____ Be physically active |
| _____ Relax and relieve tensions | _____ Be adventurous |
| _____ Meet new people | _____ Avoid crowded areas |
| _____ Bird watch | _____ Party |
| _____ Visit relatives | _____ Just passing through area |
| _____ See local arts and crafts | _____ Spiritual growth |
| _____ Learn more about myself | _____ Go on a picnic |

PLEASE FILL IN THE FOLLOWING INFORMATION ABOUT YOURSELF

Age _____ Gender (M/F) _____ Home State _____

Occupation _____ Zip Code _____

Local to this area? ☐ YES ☐ NO

Education: ☐ 8th grade or less
☐ Some High School
☐ High School Graduate
☐ Junior College Graduate
☐ Technical or Trade School
☐ Some College
☐ College Graduate
☐ Some Graduate School
☐ Advanced College Degree

Family Status:
☐ Married with children
☐ Married/no children
☐ Single with children
☐ Single

Income: ☐ less than \$5,000 ☐ \$30,000 - \$35,000
☐ \$5,000 - \$10,000 ☐ \$35,000 - \$40,000
☐ \$10,000 - \$15,000 ☐ \$40,000 - \$45,000
☐ \$15,000 - \$20,000 ☐ \$45,000 - \$50,000
☐ \$20,000 - \$25,000 ☐ \$50,000 - \$75,000
☐ \$25,000 - \$30,000 ☐ \$75,000 and above

Race or cultural category:

Type of group you like to travel with:

☐ Caucasian/white
☐ Black
☐ Hispanic
☐ American Indian
☐ Asian or Pacific Islander
☐ Other _____

☐ Family
☐ Friends
☐ Both Family and Friends
☐ Organized group or tour
☐ Alone
☐ Other _____

PLEASE ANSWER THE FOLLOWING ABOUT YOUR EXPERIENCE WITH NATURAL AREAS:

How many times per year do you visit National Parks or other natural recreation areas? _____

What National Parks or natural recreation areas have you visited?

VITA

Rebecca Lynne Redding Van Cleave was born January 26, 1950, in Columbus, Ohio, to Richard W. and Barbara J. Redding. She married A. Kent Van Cleave, Jr. on September 4, 1970. Their daughter, Debbie, was born March 28, 1973. Rebecca received twin Bachelors' degrees in Psychology and Social Work from the University of West Florida in 1980, followed by a Masters degree in Psychology in 1983 from the same institution.

Rebecca moved to Knoxville, Tennessee in 1984, for doctoral studies at the University of Tennessee. Beginning in 1985, she worked for the National Park Service in the Great Smoky Mountains National Park, first as a Park Ranger, then as a social science researcher at the Uplands Field Research Laboratory. Her dissertation topic was a natural outgrowth of her research in the park. She received a Doctor of Philosophy degree in Psychology in December of 1992.

Rebecca has taught a wide range of psychology courses since first entering the graduate program at the University of Tennessee and will continue teaching after graduation. Her favorite recreational activity is flying small airplanes; she is an instrument-rated private pilot. She also enjoys the wildland recreations, like camping and hiking, which were central to her dissertation research.