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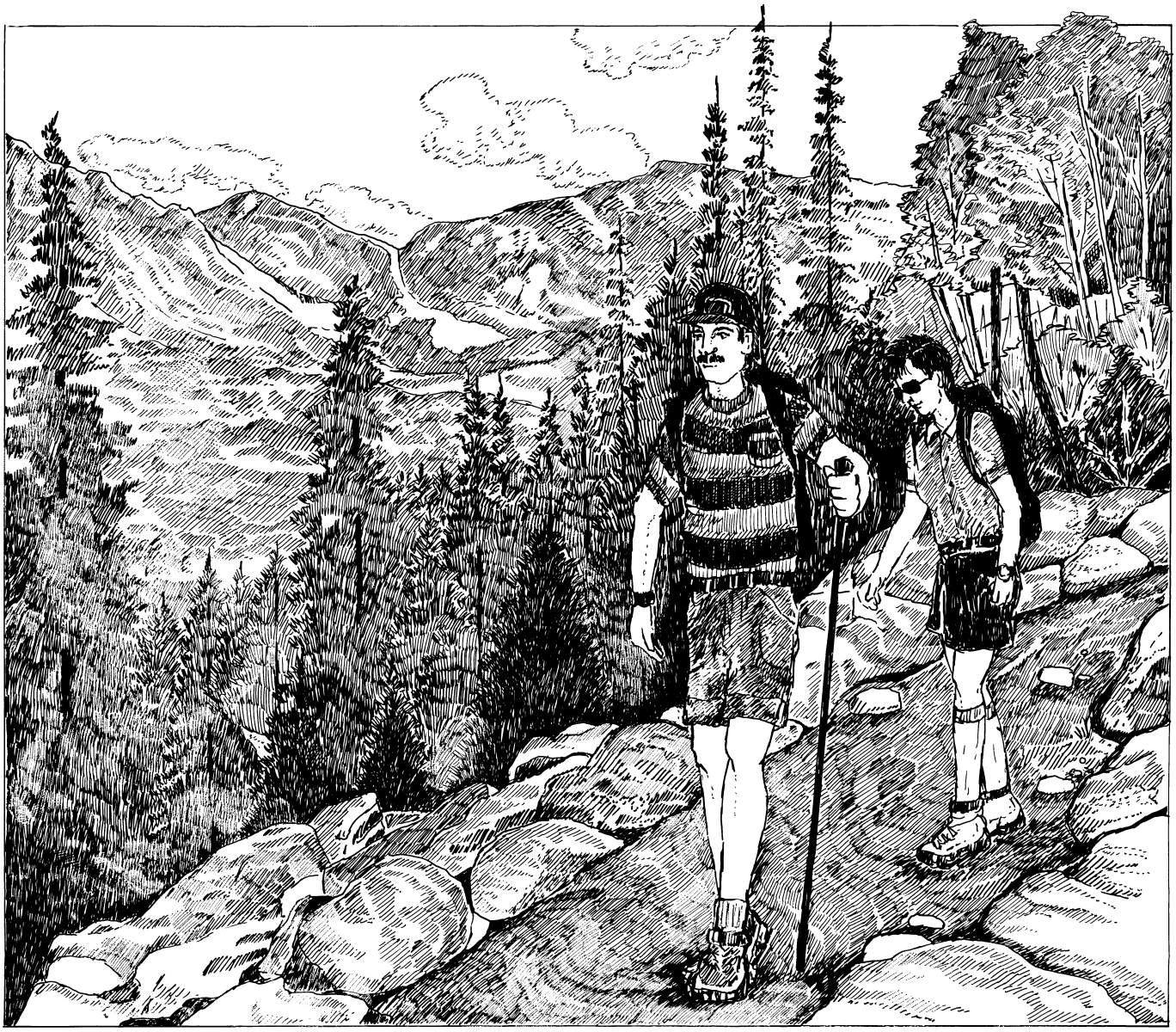
Day Users in Wilderness: How Different Are They?

David N. Cole



Abstract

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This study describes the trip and visitor characteristics, evaluations, and preferences of day users in wilderness, by contrasting them with overnight users. Data from the Three Sisters (OR), Desolation (CA), Bob Marshall (MT), Charles Deam (IN), Caney Creek (AR), Shining Rock (NC), and Cohutta (GA) Wildernesses are presented. Primary conclusions were that: (1) day users and overnight users are not profoundly different; (2) day users are more tolerant of relatively crowded conditions and less likely to see an immediate need to limit use (at least in places that receive substantial day use); (3) day users are typically as experienced in wilderness travel, and as attached to wilderness and supportive of wilderness protection as overnight users; (4) day users may be as interested in a wilderness experience as overnight users, although there is some evidence to the contrary; and (5) day use of wilderness might be considered less wilderness dependent than overnight use. Implications related to meeting the needs and desires of day users and the management of wilderness trails and destinations that receive heavy day use are discussed.

Keywords: day use, management preferences, recreation management, visitor characteristics, visitor surveys, wilderness management

The Author

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Contents

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David N. Cole

Introduction

Day use of wilderness has largely been ignored despite reports that day use is a large and growing proportion of wilderness use and that day users may be creating more problems than overnight users (Roggenbuck and others 1994). The authors of such reports suggest that day users should no longer be neglected. Day users and their impacts should be managed to the same degree—and for the same reasons—as overnight users (Papenfuse and others 2000). However, in several recent planning efforts initiated by the Forest Service for wilderness areas in the Pacific Northwest (such as in the Mount Hood and Alpine Lakes Wildernesses), suggestions that day use be more tightly restricted in high-use locations have proven highly controversial.

Clearly we need to know more about day use in wilderness. Claims that day users are a significant clientele in wilderness appear well founded, despite relatively sparse, rigorously collected data. However, few—if any—managers of wildernesses routinely collect the data that would provide accurate assessments of amount of day use. The National Park Service, for example, reports relatively accurate estimates of overnight backcountry use—usually collected from permit data; they collect and report nothing about day use of the backcountry. For about 30 wildernesses, we do have one-time estimates of day use as a proportion of total wilderness visits, obtained from visitor surveys. Day use constitutes a majority of visits in about one-half of these wildernesses (Hall 1996; Hendee and others 1990). Most of these studies were conducted in large Western wildernesses. Because it is likely that day use is especially prominent in smaller, less remote wildernesses, it is likely that day use constitutes a majority of wilderness visits in most wildernesses. In a recent survey of National Park Service backcountry managers (Marion and others 1993), managers of about 70 percent of the parks thought they had more day users than overnight users.

Although it is likely that most wildernesses get more day use visits than overnight use visits, one should not conclude that most wilderness use is day use. Overnight users account for a majority of the time-weighted visitation (for example, recreation-visitor-days) in most wildernesses. The average length of stay for overnight users is usually about 2.5 days (Hendee and others 1990). Assuming an average day visit of 6 hours (10 percent of the length of an overnight visit), the proportion of visits by day users would have to exceed 90 percent (10 times the proportion of overnight visits) before day use would account for the majority of time-weighted visitation. Unless the proportion of visits by day users exceeds 71 percent (2.5 times the proportion of overnight visits), there will usually be more overnight users than day users in the wilderness even during the hours of peak day use. Moreover, in most wildernesses, overnight users are the primary or exclusive visitors in most places. However, most of the use in areas close to trailheads is likely to be day use.

Substantial evidence shows that day use of wilderness is increasing more rapidly than overnight use, but estimates of the magnitude of difference are unreliable given the limitations of available data. In the Bob Marshall Wilderness complex, MT, in one of the few studies to use rigorous and comparable methods at two different points in time, Lucas (1985) reported that day use increased from 20 percent of visits in 1970 to 22 percent in 1982. Studies of visitors to the Desolation and Shining Rock Wildernesses, in California and North Carolina (Cole and others 1995), and the Three Sisters, Mount Jefferson, and Eagle Cap Wildernesses in Oregon (Hall and Shelby 1998) suggest more dramatic increases in day use. However, in these places, more accurate methods for counting day users were used in the followup study. Nevertheless, some of these estimates of change are so large—day use increasing from 26 percent in 1980 to 70 percent in 1993 in the Eagle Cap Wilderness—as to suggest that sizeable increases have occurred, at least in some wildernesses. More rigorous data are needed to assess how universal and substantial this shift toward day use has been.

The primary objective of this report is to develop a better understanding of wilderness day users, by contrasting their characteristics with those of overnight users. This understanding is critical to management designed to meet the needs of day users. Rather than attempt new data collection on this topic, I took advantage of existing data sets. I performed original analyses using information obtained

between 1982 and 1990 from day and overnight visitors to seven wildernesses located in different parts of the country. These results, along with those of a few earlier studies of day and overnight users, are used to identify differences between day and overnight users of wilderness.

Much of the interest in better understanding day users stems from concern about how to manage popular trails and destinations close to the wilderness boundary. Many wildernesses, particularly those close to urban areas, have at least a few trails and destinations (such as waterfalls, lakes, or scenic vistas) that attract large numbers of day users, particularly on fair-weather weekends. For example, Cole and others (1997b) reported that on an average weekend hike to Snow Lake (3 miles into the Alpine Lakes Wilderness, WA) other groups were encountered every 3.2 minutes, with another 10 groups at the lake. Although heavy day use has been largely ignored in the past, more managers are asking whether day use of such places should be limited in order to provide a different visitor experience. Wilderness users and advocates have divergent opinions on the desirability of limiting day use. Therefore, **the second objective of this paper is to explore the crowding perceptions and management preferences of day users**.

Debate exists about the extent to which the perceptions and preferences of day users should be considered when deciding how to manage places that receive heavy day use. Some argue that the opinions of day users are less valid than those of overnight users because day users are novices who are not really interested in having a wilderness experience. **The third objective of this paper, then, is to explore evidence that, compared to overnight users, day users are (1) less experienced with, less knowledgeable about, and less attached to wilderness, or (2) seeking an experience that is not as consistent with the idea of wilderness.**

Finally, there may be situations where the interests of day users and overnight users are in conflict to some degree. In such situations, a generally accepted principle of wilderness management is to emphasize uses that are more wilderness dependent. Some argue that if heavy day use adversely affects the experience of overnight users, the experiences of overnight users should be given greater consideration because their experiences are more wilderness dependent. **The fourth objective, therefore, is to explore the relative wilderness dependence of day and overnight use.**

The first two objectives can be addressed well with the data collected in the visitor surveys. The final two objectives require assessments of the wilderness experience. Because little information about the actual experience was obtained from the visitor surveys, explorations of the degree to which day experiences are consistent with and dependent on wilderness are more speculative.

Previous Studies

Before presenting the new study, it is worthwhile reviewing the few earlier studies of day users that have been conducted. Burde and Daum (1990) report select characteristics of day users in the backcountry of Great Smoky Mountains National Park. They found that day users were satisfied with their hike. They were similar to backpackers in terms of group size but were typically older, more likely to be a child and/or female, more likely to be part of a family group, and a repeat visitor.

Manning and others (1999) conducted a much more extensive survey of day users to the backcountry at Grand Canyon National Park. They report the sociodemographics and experience level of day hikers, as well as their preparedness, information sources, trip characteristics, experience, perceptions and evaluations of crowding, and attitude toward management. User and trip characteristics were highly variable, but most day hikes were 2 to 5 miles long, lasting 2 to 4 hours, and most hiking groups consisted of two to three family members. Compared to the U.S. population, the typical day hiker is more likely to be older, male, from a large urban area, highly educated, and financially well off—the same characteristics of overnight users. Most day hikers were satisfied with their visit and felt they were able to attain the experiences they were seeking. Although they saw more people than they preferred, most visitors did not see more people than they consider acceptable.

More similar to the objectives of my report are studies that compare day users to overnight users. The most complete and rigorous study of this type was conducted in the wilderness and backcountry of Shenandoah National Park, VA (Hockett and Hall 1998; Papenfuse and others 2000). Results from this study will be discussed throughout the manuscript, as this study can be considered an additional case study.

In a few studies of wilderness visitors, though they usually report the pooled results of overnight and day users, authors have commented on differences between day and overnight users. For example, in nine wildernesses in the West, Lucas (1980) noted that day users reported participation in fewer activities than overnight users. Day users were more often in a family group, somewhat older, less concerned about solitude, more interested in scenic beauty, and—in about half the areas—more satisfied with their trip. Grossa (1979) used Lucas' data to test a series of hypotheses about day users being less "purist" and more activity oriented

than wilderness oriented. He found modest support for both hypotheses, with day users more likely to support "conveniences" such as bridges over small streams, which "purists" might consider inappropriate. When asked in an open-ended format why they chose to visit, day users were more likely to list activities, such as to fish or hike, and less likely to list wilderness attributes, such as primitiveness, naturalness, or solitude.

In three wildernesses in North Carolina, Roggenbuck and others (1979) found few pronounced differences between day and overnight users. Although results were not consistent between wildernesses, day users were sometimes less likely to consider litter and crowding a problem, somewhat more tolerant of encountering more people, and less supportive of controlling use. In the Bob Marshall Wilderness complex, in contrast, Yang (1986) found that day users were more supportive of certain use restrictions—particularly those that would primarily affect overnight users (assigning campsites, closing some areas to stock, and prohibiting wood fires where wood is scarce). There was no difference in support for such restrictions as limiting use generally, limiting party size, or requiring registration.

Hall (1996) tested a series of hypotheses related to differences between day and overnight users to several high-use destinations in the Mount Jefferson and Three Sisters Wildernesses, OR. Her primary hypotheses were that, in comparison to overnight users, day users will notice fewer impacts, be less bothered by the impacts they notice, and be less supportive of regulations and actions taken to deal with problems. She found that, indeed, day users were less likely to notice impacts than overnight users—either because they are less perceptive of them or because they are less exposed to them (spend less time, visit fewer places). However, day users were not bothered substantially less by the impacts they did notice. Moreover, day users were no less supportive of management actions needed to protect the wilderness resource. In fact, as Yang (1986) found in the Bob Marshall, they were often more supportive of restrictions. Perhaps this is not surprising given that many of the costs of restrictions would accrue primarily to overnight users.

Fazio (1979) and McCool and Cole (2000) report differences between day and overnight wilderness users to the Selway-Bitterroot Wilderness in relation to their attention to and knowledge about low-impact messages. In both studies, day users knew less about low-impact techniques than overnight users. They were less likely to stop at bulletin boards to read posted low-impact messages and less likely to comprehend the messages they read. However, perhaps because they were less knowledgeable initially, day users' knowledge increased more than overnight users if they did read the messages.

Study Areas and Methods

The rest of this report consists of secondary analysis of data collected in the Three Sisters, Desolation, Bob Marshall-Great Bear-Scapegoat, Caney Creek, Charles C. Deam, Cohutta, and Shining Rock Wildernesses in visitor surveys coordinated by Bob Lucas, Alan Watson, or Joe Roggenbuck. With the exception of Caney Creek and Cohutta, each of these surveys was conducted for a different reason and utilized a different questionnaire. However, questionnaire content was often generally similar and, in fact, many questions are identical. All of these surveys were conducted in Forest Service wilderness in the late 1980s and early 1990s, with the exception of the Bob Marshall Wilderness complex study, which was conducted in 1982. Although these seven wildernesses vary greatly in size and are distributed throughout the contiguous 48 States, results may be applicable primarily to mountainous National Forest Wilderness. One drawback of the secondary analysis approach is that differences between day and overnight users might have changed in the decade or more since these studies were conducted. However, there is little in the literature review just presented to suggest such a change.

Three Sisters Wilderness Study

The Three Sisters Wilderness consists of 286,708 acres in the Cascade Mountains, between Eugene and Bend, in west-central Oregon. Dominated by high, snow-capped volcanoes, the wilderness consists of high lava plateaus in the east, falling off to lush lower elevation forests in deep canyons to the west. There are more than 50 trailheads and 260 miles of official trail. Most of the more popular and scenic destinations are accessible on day trips. Hall and Shelby (1998) estimated a use level of about 33,000 recreation visitor days (RVDs) in 1991 or just 0.12 RVD per acre. This contrasts with the use estimate of 128,000 recreation visitor days the Forest Service provided for 1991, illustrating the lack of confidence one should have in use estimates that are not based on rigorous data collection (as is the case for all other study areas except Desolation). While certain scenic high-elevation destinations—particularly those with lakes and the trail ascending the South Sister—are heavily used, most portions of the wilderness are not frequently visited. Since 1991, permits have been required for both day and overnight visits, with the number of permits limited since 1997 in one small portion of the wilderness. In 1992, about 75 percent of all visits were day visits (Hall and Shelby 1998).

In 1991, under the oversight of Alan Watson, separate systematic samples of day and overnight user permits, starting with a randomly selected permit, were conducted. Questionnaires were sent to sampled

permit holders after their trip. This yielded 630 usable surveys, of which 483 (77 percent) were day users and 147 (23 percent) were overnight users. The overall response rate was 82 percent. No attempt was made to include party members or visitors who did not obtain permits in the sample.

Desolation Wilderness Study

The Desolation Wilderness consists of 63,475 acres in the central Sierra Nevada in California. It is adjacent to Lake Tahoe and is well known for relatively easy hiking, spectacular mountain scenery, and about 130 lakes, most of which are stocked with trout. Access is provided by 15 trailheads and facilitated by approximately 100 miles of official trail. Most parts of the wilderness are accessible to ambitious day hikers. Since the 1960s, use has been heavy on a per acre basis. With typical recent use levels of more than 300,000 RVDs per year, Desolation is one of the more densely used wildernesses in the country (4.7 RVDs per acre). Permits were required for entry beginning in 1971, with the number of permits issued to overnight users limited since 1978. Day users are required to obtain a permit but their numbers are not limited. Recently, about 70 to 75 percent of all visits have been day visits.

In 1990, under the oversight of Alan Watson, separate systematic samples of day and overnight user permits, starting with a randomly selected permit, were taken. Permit holders were sent questionnaires and also asked for the names of group members. These group members were also sent a questionnaire. This resulted in 438 surveys from permit holders and 81 from group members, for a response rate of 82 percent. Of those surveyed, 56 percent were day users, with less than 1 percent of visitors traveling with stock. Although group members are clearly underrepresented in the sample, few differences between group members and permit holders were substantial (Cole and others 1995). In addition groups without permits, when contacted by rangers inside the wilderness, were asked a short set of questions. Generally, people without permits were not much different from those with permits (Watson 1993). This suggests that the differences reported here should be representative of all visitors not just those who obtained permits. Refer to Cole and others (1995) for further detail on sampling.

Bob Marshall Wilderness Complex Study

The Bob Marshall complex consists of three contiguous wildernesses in northwestern Montana—the Bob Marshall (1,009,356 acres), Great Bear (286,700 acres), and Scapegoat (239,936 acres). These wildernesses, because they are so large, contain exceptionally wild and remote lands. Most day use occurs in a small proportion of the complex. Stock, commercial, and hunting use are heavier here than normal for wilderness. Access is provided from over 50 trailheads and there are well over 1,000 miles of trail. Use was estimated by the Forest Service at about 200,000 RVDs in 1995, suggesting an overall use density (0.13 RVDs per acre) that exceeds that in the Three Sisters Wilderness. This seems unlikely given the distance from these wildernesses to population centers. In 1982, about 22 percent of visitors were day users.

In summer and fall of 1982, under the oversight of Bob Lucas, field workers contacted all visitors over the age of 15 entering or leaving at 34 trailheads for the purpose of sending them a questionnaire after their trip. Names were also obtained from portable trail registers positioned at another 14 lightly used trailheads. This yielded 785 usable surveys, for an overall response rate of 82 percent. In contrast to some of the studies conducted elsewhere, these results more accurately portray all visitors—not just permit holders. Refer to Lucas (1985) for more detail on sampling.

Caney Creek Wilderness Study

The Caney Creek Wilderness consists of 14,460 acres in the Ouachita Mountains of western Arkansas. The landscape consists of rugged forested ridges and valleys with shady creeks. There are four trailheads and less than 20 miles of trail, so day users can easily access the entire wilderness. Use was estimated at about 14,000 RVDs in 1995, a use density of almost 1 RVD per acre. About 40 percent of visits were for day use (Watson and others 1992).

In spring, summer, and fall of 1989, under the oversight of Alan Watson, entering and exiting visitors over the age of 15 were contacted at trailheads on 94 days. Questionnaires were sent to each visitor within 2 weeks of his or her trip. This resulted in 152 usable surveys and a response rate of 82 percent. Day users constituted 20 percent of the sample. Refer to Watson and others (1992) for more detail.

Charles C. Deam Wilderness Study

The Charles C. Deam Wilderness consists of 12,945 acres in south-central Indiana. Former farms and old roads are common in the hilly, forested area. Rather small to start with, the effective size of this wilderness is further diminished by a road that bisects the area and is excluded from the wilderness. Horse use is common in the wilderness, with many riders staying overnight at developed Blackwell Campground at the end of the cross-wilderness road, just day riding within the wilderness. Use was estimated at 30,000 RVDs in 1993, a use density of 2.3 RVDs per acre. In 1990, about 31 percent of visits were day visits, which includes those who camped overnight at Blackwell Campground.

Sampling was conducted each month from July 1990 through June 1991, under the oversight of Alan Watson. Given the paucity of developed trailheads with parking, potential visitors were contacted along the cross-wilderness road. Those visiting the wilderness were sent questionnaires. Over 500 usable surveys were returned for a response rate of 70 percent. Refer to Watson and others (1993) for more detail.

Cohutta Wilderness Study

The Cohutta Wilderness, at 36,977 acres, is relatively large for a wilderness east of the Rocky Mountains. It is in the southern Appalachian Mountains in northern Georgia and southern Tennessee, about a 2.5 hour drive from Atlanta. The wilderness has more than 10 trailheads and over 70 miles of trail. The most popular trails follow trout streams in the bottom of rocky gorges. Use was estimated at 74,000 RVDs in 1994, a use density of 2.0 RVDs per acre. In 1989, 55 percent of visits were for day use (Watson and others 1992). Even moderately ambitious day users can reach every place in the wilderness that is accessible by trail.

In spring, summer, and fall of 1989, under the oversight of Alan Watson, entering and exiting visitors over the age of 15 were contacted at trailheads on 95 days. Questionnaires, identical to those administered at Caney Creek Wilderness, were sent to each visitor within 2 weeks of his or her trip. This resulted in 444 usable surveys and a response rate of 68 percent. Refer to Watson and others (1992) for more detail.

Shining Rock Wilderness Study

The Shining Rock Wilderness consists of 18,500 acres in the Appalachian Mountains of western North Carolina. The area is characterized by forested, rugged topography much of which was logged in the 1800s and early 1900s and some of which was farmed. Although most of the area is heavily forested, a few grassy balds occur on ridgetops and saddles, and these areas provide the most popular destinations for visitors. There are eight trailheads and more than 30 miles of trail, with all trailed portions of the wilderness readily accessible to day users. Use was estimated at 32,000 RVDs in 1995—1.7 RVDs per acre. In 1990, 46 percent of visits were for day use (Cole and others 1995).

In 1990, under the oversight of Joe Roggenbuck, entering and exiting visitors over the age of 15 were contacted at trailheads on sample days. Questionnaires were sent to each visitor within 2 weeks of his or her trip. This resulted in 439 usable surveys and a response rate of 75 percent. Refer to Cole and others (1995) for more detail.

Data Analysis

Analysis involved developing descriptive statistics separately for visitors who spent at least 1 night in the wilderness and for those who did not. Chi-square and t-tests were used to statistically assess confidence in apparent differences between these two groups. Results are organized by subject matter rather than by wilderness, with sections on trip characteristics, visitor characteristics, visitor evaluations and preferences for social conditions, resource impacts, and management actions.

Readers should note that the two groups being compared are those participating in a day visit and those participating in an overnight visit. Within the group of people participating in a day visit there may be important differences between those who have also taken overnight trips into wilderness and those who have not. There may also be people contacted while on an overnight trip who are more commonly day users of wilderness. Although there may be reasons to expect more difference between people who are exclusively day users and those who are exclusively overnight users (Roggenbuck and others 1979), this comparison cannot be made with existing data.

The limitation of not being able to do this may not be serious, however. In the Shining Rock, Cohutta, and Caney Creek Wildernesses, a question about typical length of stay was asked. In all three wildernesses, 85 to 90 percent of visitors reported that their typical visit was the same type (either day or overnight) as their current visit. On “threshold” and “primitive” trails at Grand Canyon National Park—those most similar to most wilderness—24 to 38 percent of day hikers said they more commonly took overnight trips; about 25 to 35 percent of day hikers said they almost always day hiked (Manning and others 1999). Moreover, because wilderness managers will not be able to manage exclusive day users as a group separate from other users, distinctions based on the current visit seem of most managerial significance anyway.

Results from the visitor surveys are reported in three general categories: trip characteristics, visitor characteristics, and visitor evaluations and preferences. In each category, results from the seven study areas are presented first. Related results from other studies are reported next. Discussion of inconsistencies and interpretation of findings are left for the concluding section.

Trip Characteristics

Wilderness trips can be described in terms of their length, timing, location, method of travel, group characteristics, activities, and trip focus or motivation.

Trip Length, Timing, and Location

By definition, day trips do not last as long as overnight trips. The typical length of day trips—while highly variable between groups—is probably not highly variable between wildernesses. For example, the median day trip length at Shining Rock, Deam, and the Three Sisters was about 5 to 6 hours, while the median day trip length at Caney Creek and Cohutta was about 3 to 4 hours. In contrast, typical length of overnight trip is highly variable between wildernesses. Most overnight users to Shining Rock and Caney Creek spent just 1 night in the wilderness. The median length of overnight stay at Desolation, Deam, and Cohutta is 2 nights, while the median at Bob Marshall is 5 nights. The difference in length of stay between day and overnight users, then, varies from Shining Rock (where the median overnight user stays five times as long as the median day user) to the Bob Marshall (where the median overnight user stays about 20 to 25 times as long).

Despite this pronounced difference in length of stay, differences in distance traveled are less pronounced. While the typical day trip is shorter than the typical overnight trip, some day users travel farther than the typical overnight user. In Desolation, for example, the mean distance traveled was 7 miles for day users and 17 miles for overnight users. Three percent of day users reported that they traveled more than 17 miles on their trip. In wildernesses smaller than Desolation, average overnight trip distance is probably even shorter, and a larger proportion of day users are likely to travel farther than the typical overnight user. In the Bob Marshall, in contrast, the mean distance traveled was 10 miles for day users and 33 miles for overnight users.

Season of use (summer versus fall) was assessed at Shining Rock and the Bob Marshall. In both wildernesses, most use occurred during the summer, and day and overnight users did not differ significantly in use distribution between June and October. One might suspect that day users would be more likely than overnight users to visit on weekends than on weekdays. This possibility was only assessed at Shining Rock, where day and overnight visits were both equally distributed between weekdays and weekends. The most pronounced difference occurred on holiday weekends. Nineteen percent of day use visits occurred on holiday weekends, compared to just 12 percent of overnight visits, suggesting that day users contribute disproportionately to crowding on holidays. This phenomenon—as well as the possibility of heavier use on weekends generally—might be more pronounced at wilderness located closer to large urban areas.

We might also suspect that day users are more highly concentrated spatially than overnight users. This follows logically from the fact that they typically do not access as large a proportion of large wildernesses. In addition, at the Bob Marshall at least, day users are more highly concentrated at a few trailheads. The five most popular trailheads with day users accounted for 50 percent of day use, while the five most popular trailheads for overnight users accounted for only 31 percent of overnight use. Interestingly, only two of the trailheads most popular with day users are among the five most popular with overnight users. Such findings are likely to vary widely between wildernesses but can provide crucial insights into management strategies. At the Bob Marshall, day use contributes disproportionately to crowding on a few trails, but many of the trails most crowded with day users are not as popular with overnight users. This might be considered evidence that heavy day use displaces overnight users. Alternatively, the trails that access the most attractive day use destinations may simply be different from the trails that access the most popular overnight destinations.

Group Characteristics

Method of travel did not differ consistently between day and overnight users. In the Desolation, Caney Creek, Cohutta, and Shining Rock Wildernesses, virtually all travel—whether for the day or overnight—is by foot. In the Three Sisters Wilderness, most users travel on foot, but a substantial proportion (10 percent of our sample) travel with stock. Day and overnight users were equally likely to be traveling with stock. Stock use was even more common in the Bob Marshall Wilderness, where about 40 percent of visitors traveled with stock. Here, day users were significantly more likely to hike (85 percent hiked) than overnight users (55 percent hiked). Stock use was also common (29 percent of our sample) in the Charles Deam Wilderness. However, in contrast to the Bob Marshall, day users were significantly more likely to be traveling with stock (33 percent did) than overnight users (19 percent with stock). Previous research has shown that people traveling with stock differ substantially from those traveling on foot, in their sociodemographic characteristics, knowledge, attitudes, and preferences (Cole and others 1997a; Watson and others 1993). In the Bob Marshall and Charles Deam Wildernesses, therefore, differences between day and overnight users in these variables (reported in subsequent sections) may be confounded with these differences in mode of travel.

In all seven wildernesses, the mean group size of the day use sample was smaller than mean group size of the overnight use sample (fig. 1); differences were only statistically significant in the Bob Marshall, Caney Creek, and Shining Rock. This contrasts with

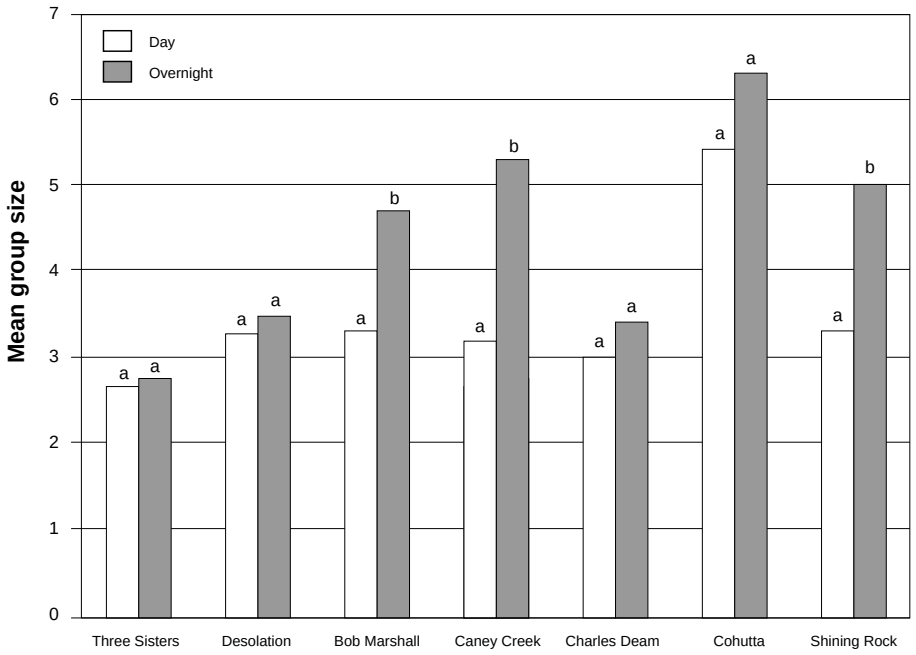

Figure 1—Mean size of groups on day and overnight visits to wilderness. Columns with different letters, within the same wilderness, are significantly different from each other ($p \leq 0.05$).

Shenandoah, where groups of day users were larger (mean of 3.3 people) than overnight groups (mean of 2.7 people) (Hockett and Hall 1998). At Great Smoky Mountains National Park, mean group size was 3.3 people for both day users and overnight users (Burde and Daum 1990).

There were also consistent differences in the constitution of groups. Day users were more likely to be traveling alone or traveling with family members (table 1). The greater likelihood that day use groups contain family members was also reported at Great Smoky Mountains National Park (Burde and Daum 1990). Day users were less likely to be part of an organized group. Although there is only one exception to these tendencies (more day users were with organized groups in Cohutta), many of these differences are not statistically significant. Moreover, few of these differences are large or managerially relevant. The most striking exception is Caney Creek, where 90 percent of day users are with family members (the other 10 percent of "groups" are solo visitors), while 35 percent of overnight groups are organized groups.

Activity Participation

Lucas (1980) reported that day users participated in fewer activities than overnight users. This is not surprising because they have only a small fraction of the time that overnight users have. In most of these wildernesses, overnight users are more likely than day users to participate in photography, fishing, swimming, and climbing (table 2). Overall, however, it appears that day and overnight users do the same sorts of things. Participation rates are comparable for viewing scenery and nature study. Day users are more likely to report that they picnicked while overnight users are more likely to report that they hiked—although it is probable that virtually every overnight group picnicked and most day groups hiked. Hunting is significantly more common among overnight users in the Bob Marshall and among day users at Shining Rock.

In an attempt to understand more generally how visitors think about what they did on their trip, visitors to Caney Creek, Charles Deam, and Cohutta Wildernesses were asked to report how much they agreed with a series of statements describing their recent trip. The primary distinction between day and overnight users was that overnight users tended to attach much more importance to utilizing and improving their outdoor skills. Significantly more overnight users agreed with the following statements in at least one of these wildernesses: (1) "I focused a lot of my attention on outdoor activities and skills," (2) "I thought a lot about how I could apply my outdoor skills," (3) "I felt good about how much I was able to use my outdoor skills," and (4) "I spent most of my time improving my skills in outdoor activities that are important to me." In addition, significantly more overnight users agreed with the statement "I really enjoyed sharing the experience with my companion(s)." There were no

significant differences in responses to the 10 other statements related to examining the environment or the lay of the land, exploring the place, or spending time with and experiencing solitude with companions.

Trip Focus and Motivation

At Caney Creek and Cohutta, questions were asked regarding the focus of the trip—on place, activity, or companionship. Visitors were asked to choose between three potentially important reasons for their visit: (1) "because I enjoy this place itself," (2) "because this is a good place to do the outdoor activities I enjoy," or (3) "because I wanted to spend more time with my companions." At Caney Creek, day users were significantly more focused on the place and less focused on the activity than overnight users (table 3). The focus of day and overnight trips did not differ at Cohutta, however.

In the Bob Marshall, visitors were asked to rate the importance of 10 potential reasons for choosing to take the trip they did. They could rate as many of these reasons as important as they wanted. Overnight users were substantially more likely than day users to respond that fishing, developing backcountry skills, and facing the challenge of wild country were important reasons (the proportion of overnight users rating the reason as important was at least 10 percent greater than for day users). This seems to reinforce the findings at Caney Creek, Cohutta, and Charles Deam that utilization and improvement of outdoor skills is a more significant trip motivation for overnight users. The only reason more commonly considered important by day users was to exercise and get in shape. Overnight users were also significantly more likely to consider escaping civilization and avoiding mechanized recreation to be important, but differences were small. Hunting, enjoying scenic beauty, relaxing, and experiencing solitude were equally important to day and overnight users.

At Shenandoah National Park, Hockett and Hall (1998) also found generally similar trip motivations, when respondents were allowed to choose as many motivations as they wish. They found day users to be slightly more likely to agree that they were seeking recreation with friends and family and somewhat less likely to agree that they were seeking a trip into the wilderness, but at least 80 percent of both day and overnight visitors agreed with each of these trip motivations.

A more pronounced difference between day and overnight users at Shenandoah emerged when visitors were forced to choose a single motivation for their trip. Most overnight users (56 percent) reported their primary purpose was a trip in the wilderness. In contrast, day users were more likely to choose a more specific purpose—with choices rather evenly split between hiking in the woods, being with friends/family, exercise, viewing scenery, and taking a wilderness trip. In an earlier related effort in the Bob Marshall, Grossa (1979) used responses to an open-ended question about primary reasons for taking this trip to classify visitors as fishermen, hunters, or "wilderness quality types" (those who gave reasons such as solitude, primitive, natural, or nonmotorized). His hypothesis was that day users would be more activity oriented (that is more likely to be fishers or hunters) and less likely to be wilderness oriented. His results were not very compelling. The wilderness quality types were split equally between day and overnight users. Day users were more likely than expected to be fishermen, while overnight users were more likely to be hunters or wilderness quality types. Differences were small, however, and in no case more than 10 percent greater than expected.

Summary for Trip Characteristics

These results suggest that the most pronounced difference between day and overnight trips is that day trips are shorter and more concentrated spatially. Groups of day users differ somewhat from overnight user groups. A day user is more likely to be going alone, in a smaller group, and with family members, and less likely to be going in an organized group. Day and overnight users do not differ much in what they do on their trips or in the multitude of motivations that lead them to make a trip. Day users typically participate in fewer activities than overnight users, probably because they have less time. They attach less importance to utilizing and improving their outdoor skills and more importance, at least in the Bob Marshall, to exercising. Both day and overnight users are motivated to participate in various activities, in primitive, natural, scenic settings and to experience solitude, tranquility, and social interaction within their group. Both state that they are there to have a wilderness experience.

When asked to pick a single trip motivation, however, day users at Shenandoah were much less likely than overnight users to choose "a trip into the wilderness." Many more day users chose a specific activity (such as hiking or getting exercise). This result might provide evidence—as Papenfuse and others (2000) suggest—that day users, in contrast to overnight users, are seeking something other than a wilderness experience. Alternatively, this response can be interpreted as having more to do with the type of experience day users expect than with the experience they want. These same respondents said they were seeking a wilderness experience when they were not forced to select a single motivation. However, they may approach

a day trip with specific goals they know can be fulfilled (such as getting exercise or spending time with family) and few illusions that they are likely to have the diverse and more extraordinary "wilderness experiences" they have come to expect from an overnight trip.

Table 1—Percent of groups taking day and overnight trips into wilderness that contain just one person, that were assembled by an organization, and that contain multiple members of the same family.

Wilderness	Solo visitors			Organized groups			Groups with family members		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent of groups								
Three Sisters	16	9	0.04	1.7	4.0	0.10	58	48	0.03
Desolation	12	9	.28	1.0	4.4	.02	61	50	.02
Bob Marshall	11	5	.01	0	4.2	<.01	66	52	<.01
Caney Creek	10	6	.40	0	35.0	<.01	90	36	<.01
Charles Deam	17	15	.51	0.3	1.8	.06	41	36	.28
Cohutta	7	6	.64	4.9	3.6	.48	43	37	.25
Shining Rock	9	5	.08	3.4	14.0	<.01	58	33	<.01

*In this and subsequent tables, p is the significance level for Chi-square or t-tests of differences between day and overnight users (p estimates the likelihood of falsely concluding there is a difference between day and overnight users).

Table 2—Percent of day and overnight users who participated in various activities.

Activity	Three Sisters	Desolation	Bob Marshall	Caney Creek	Charles Deam	Cohutta	Shining Rock
	percent						
Hiking							
Day	85	96	67[a]	93	44[a]	79[a]	99
Overnight	83	94	77[a]	98	58[a]	90[a]	98
Viewing scenery							
Day	82	91	—	—	64	—	—
Overnight	83	92	—	—	69	—	—
Nature study							
Day	47	51	33	57	29	30	65
Overnight	53	46	28	53	37	37	69
Photography							
Day	42	51	46[a]	67	14[a]	35[a]	51
Overnight	45	60	65[a]	66	29[a]	53[a]	52
Picnicking							
Day	33[a]	45[a]	—	33	18	40[a]	—
Overnight	15[a]	16[a]	—	23	24	22[a]	—
Fishing							
Day	14[a]	14[a]	31[a]	10	12[a]	18[a]	8[a]
Overnight	36[a]	40[a]	57[a]	10	27[a]	30[a]	3[a]
Swimming							
Day	12[a]	17[a]	5[a]	13[a]	6[a]	39	27
Overnight	28[a]	44[a]	20[a]	36[a]	16[a]	43	34
Hunting							
Day	6	2	12[a]	7	23	12	5[a]
Overnight	9	4	22[a]	3	32	8	1[a]
Climbing							
Day	10	5	0	17	—	11[a]	3
Overnight	14	7	1	20	—	18[a]	6

[a]Significantly different (Chi-square, $p < 0.05$).

Table 3—Focus of trip—on place, activities, or companionship—for day and overnight users.

I came here because:	Caney Creek		Cohutta	
	Day	Overnight	Day	Overnight
	- - - - - - - - - - - - - - *percent* - - - - - - - - - - - - - -			
I enjoy this place itself	48	25	32	33
This is a good place to do outdoor activities I enjoy	38	59	54	55
I wanted to spend more time with my companions	14	16	14	12
	Chi-square, p = 0.05		Chi-square, p = 0.79	

Visitor Characteristics

Wilderness visitors can be described in terms of their sociodemographic characteristics, their wilderness experience, and their attachment to place and to wilderness generally.

Sociodemographic Characteristics

Both day and overnight users are typically highly educated and have substantial household incomes (table 4). At Caney Creek, the median educational attainment of day users is significantly lower than that of overnight users. However, even among day users at Caney Creek, 30 percent have some graduate education compared to less than 10 percent of the U.S. population. No other difference between day and overnight users is statistically significant. Both day and overnight users are more likely to be from an urban area than the general U.S. population. Generally, it appears that day users are somewhat more likely to be from smaller communities than overnight users (table 5). Except in Desolation, the proportion residing in rural communities and small towns is always greater among day users, while the proportion residing in large cities is always greater among overnight users. These differences were only statistically significant at Shining Rock, however. This difference may reflect local residents making up a larger proportion of the population of day users. There are similar—but even less pronounced—differences in the population of the places where day and overnight users grew up.

Day users were typically older than overnight users in four of the six wildernesses where age was assessed (table 4). Age did not vary significantly in the Charles Deam or Cohutta Wildernesses. In the other four wildernesses, the mean age of overnight users (32 to 38 years) is close to that of the general U.S. population, while the mean age of day users (39 to 44 years) is substantially (5 to 10 years) higher than that of the general population. Day users were also somewhat older than overnight visitors in Montana wildernesses (Lucas 1980), Great Smoky Mountains National Park (Burde and Daum 1990), and Shenandoah National Park (Hockett and Hall 1998).

Males are more common than females, both for day and for overnight users (table 6). These results likely overemphasize the proportion of males because in most cases they pertain to the proportion of permit holders rather than the proportion of group members (and males are more likely than females to be the permit holder). In all seven wildernesses, females comprise a larger proportion of day users than of overnight users, although differences are statistically significant ($p < 0.05$) in only four of the areas (table 6). At Caney Creek, more day users (77 percent) than overnight users (56 percent) were married, but more overnight users (29 percent) than day users (7 percent) had children between 5 and 17 years of age. More day users (20 percent) than overnight users (12 percent) had children under the age of five, but this difference was not statistically significant. At Cohutta, however, the other wilderness where such questions were asked, there were no differences in marital status or children in the household. Females also comprised a larger proportion of day users than of overnight users at Great Smoky Mountains (Burde and Daum 1990) and at Shenandoah (Hockett and Hall 1998).

Employment status differed slightly (but significantly) in three of the five wildernesses where it was assessed. At Desolation, Caney Creek, and Shining Rock, more day users were retired or homemakers, as opposed to being students or working outside the home. In all of these areas except Cohutta, a larger proportion of overnight users are students (table 6). This difference is only statistically significant at Three Sisters, Charles Deam, and Shining Rock. More overnight users belong to conservation organizations in six of the seven wildernesses (table 6).

Past Wilderness Experience

When considering wilderness experience, it can be useful to distinguish between those with substantial experience at the wilderness under study and those with broad experience in many wilderness areas.

Another aspect of experience concerns the frequency of wilderness visits. This third aspect relates as well to the degree to which wilderness travel is a "central life interest" (Jacob and Schreyer 1980).

There were no substantial differences between day and overnight users in any of these aspects of wilderness experience. At Desolation, significantly more day users (11 percent) than overnight users (2 percent) were on their first wilderness visit (table 7), but first timers were slightly more common among overnight users in four of the other areas. At Desolation and Caney Creek, overnight users were significantly more likely than day users to have visited other wildernesses; however, in two wildernesses, more day users had visited other wildernesses (table 7). The number of other wildernesses visited was greater for overnight users in four of six wildernesses, but this difference was significant only at Desolation, where day users typically had visited four other wildernesses, while overnight users had visited five. General wilderness experience also did not differ substantially between day and overnight users of Shenandoah National Park (Hockett and Hall 1998).

Day users consistently have slightly more localized, place-specific wilderness experience than overnight visitors. First-time visitors to the wilderness under study were more common among overnight users, significantly so at Caney Creek and Cohutta (table 8), as well as at Shenandoah National Park (Hockett and Hall 1998). The only exception was Desolation, where first-time visitors were significantly more common among day users. Day users had made more previous visits to the wilderness under study in all seven wildernesses (significant at $p < 0.05$ in Charles Deam and Cohutta), as well as at Shenandoah (Hockett and Hall 1998) and in several wildernesses in Oregon (Hall 1996). In the Bob Marshall, significantly more day users (24 percent) than overnight users (16 percent) were visiting places they had visited previously, rather than visiting new places. Hockett and Hall (1998) also reported that day users were significantly more likely to have previously hiked the specific trail on which they were contacted.

As for frequency of visitation, there were no significant differences between day and overnight users in response to a question about the typical frequency of wilderness trips since they first visited wilderness. In three of four wildernesses, day users had made more frequent trips in the past 12 months, although differences were only statistically significant for the Bob Marshall (table 8). In contrast, overnight users had spent significantly more days in wilderness in the past 12 months, in the three wildernesses where this question was asked (Three Sisters, Desolation, Bob Marshall). At Shenandoah, overnight users reported taking more wilderness trips per year than day users (Hockett and Hall 1998).

Wilderness and Place Attachment

In the traditional view of day users, some have suggested that day users are less attached to wilderness than overnight users. They purportedly do not attach the same level of importance to wilderness that overnight users do. This hypothesis was tested at Caney Creek and Cohutta, where visitors were asked the extent to which they agree with five statements designed to assess wilderness attachment (William and others 1992) (for example, "I find that a lot of my life is organized around wilderness use"). There were no significant differences between day and overnight users for any of the questions. Mean attachment was only slightly higher for overnight users at Caney Creek and there was no difference in mean scores at Cohutta (table 9). Similarly, in the Bob Marshall, there was no significant difference in response to a question about "how important wilderness was to you," though more overnight users (75 percent) than day users (69 percent) said it was "very important."

Differences in attachment to the specific place under study appear to be more pronounced, at least in some wildernesses. Visitor responses to 14 statements (such as "This place means a lot to me"), designed by Williams and others (1992) to assess place attachment, were compared. At Caney Creek, day users differed significantly from overnight users on 4 of the 14 statements—always in the direction of higher place attachment. They were more likely to agree with the statements "This place means a lot to me," "I identify strongly with this place," and "This area is the best place for what I like to do," and to disagree with the statement "The time I spent here could have just as easily been spent elsewhere." Despite these differences for individual items, mean place attachment scores, while higher for day users, did not differ significantly at Caney Creek (table 9) and there were no significant differences at Cohutta.

At Shenandoah, Hockett and Hall (1998) found that both overnight and day users have a high degree of attachment to wilderness generally and to Shenandoah specifically. However, overnight users appear slightly more attached than day users to wilderness generally, while day users appear slightly more attached to Shenandoah specifically.

Summary for Visitor Characteristics

These results show that both day and overnight users consist disproportionately of highly educated, relatively well off, urbanites. The population of day users may be somewhat more diverse—with more old participants, more females, more retirees and homemakers, and fewer students. Day users were typically as experienced and as attached to wilderness (consider it important) as overnight users. At Shenandoah

(Hockett and Hall 1998), day users often had slightly less general wilderness experience and slightly more experience with the local wilderness under study. This mirrors suggestive evidence, at least in some wildernesses, that day users are more place attached and more likely to visit places they have visited before.

None of these differences is substantial, however, suggesting that day and overnight users are largely drawn from the same population. It may be that most wilderness visitors take both day and overnight trips. For example, only 15 percent of Shenandoah day users had never been on an overnight wilderness trip (Hockett and Hall 1998). It may also be that people tend to choose a wilderness close to home for a day trip and a wilderness farther from home for an overnight trip. This would explain the somewhat higher levels of localized wilderness experience and place attachment among day users. When on day trips, people tend to repeatedly visit the same wilderness and even the same place within that wilderness. When on overnight trips, they are somewhat more exploratory, being more likely to visit a number of different wildernesses and to visit different portions of wildernesses they have visited before.

Table 4—Age, education, and income of people taking day and overnight trips into wilderness.

	Mean age			Median educational attainment			Median income		
Wilderness	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**
	years			*years*			*dollars*		
Three Sisters	44	38	<0.01	16	16	0.20	—	—	—
Desolation	40	36	<.01	16	16	.89	42,000	42,000	0.28
Bob Marshall	—	—	—	16	15	.15	—	—	—
Caney Creek	46	35	<.01	13	16	.01	34,000	39,000	.99
Charles Deam	35	36	.34	13	13	.43	29,000	29,000	.94
Cohutta	31	33	.25	14	16	.17	36,000	35,000	.65
Shining Rock	39	32	<.01	16	16	.81	39,000	36,000	.98

Significance tested by t-test (age) or Chi-square (education, income).

Table 5—Proportion of day and overnight users currently residing in (1) small communities or (2) large cities.

Current residence	**Desolation**	**Bob Marshall**	**Caney Creek**	**Charles Deam**	**Cohutta**	**Shining Rock**
Rural/small towns[a]						
Day (percent)	14	47	27	49	34	36
Overnight (percent)	16	40	21	44	29	25
p	0.58	0.08	0.49	0.24	0.38	0.02
Large cities[b]						
Day (percent)	24	5	13	7	24	8
Overnight (percent)	28	8	23	10	30	19
p	0.36	0.12	0.23	0.33	0.20	<0.01

[a]Small town defined as population less than 5,000, except in Caney Creek, Cohutta, and Shining Rock, where defined as population less than 2,500.

[b]Large city defined as population greater than 1 million, except in Shining Rock, where defined as greater than 100,000.

Table 6—Proportion of day and overnight users who are female, students, or members of conservation organizations.

Wilderness	Females			Students			Conservation organization members		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent								
Three Sisters	41[a]	27[a]	<0.01	11	25	<0.01	36	32	0.35
Desolation	37	21	<.01	19	25	.14	34	41	.05
Bob Marshall	38[a]	22[a]	<.01	14	18	.12	21	28	.06
Caney Creek	40	29	.12	4	8	.41	20	49	<.01
Charles Deam	15	14	.77	19	29	.02	39	41	.77
Cohutta	30	22	.07	19	12	.05	28	40	.01
Shining Rock	39	24	<.01	8	23	<.01	34	43	.05

[a]Mean percent of group that was female—rather than percent of respondents.

Table 7—General wilderness experience of day and overnight users.

Wilderness	First-time wilderness visitors			Have visited other wildernesses			Number of other wildernesses visited		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent			*percent*			*mean*		
Three Sisters	4	7	0.23	96	93	0.23	11	13	0.67
Desolation	11	2	<.01	83	93	<.01	4	5	<.01
Bob Marshall	17	19	.60	83	81	.60	—	—	—
Caney Creek	8	5	.54	67	90	<.01	6	8	.56
Charles Deam	1	3	.06	81	84	.33	3	3	.55
Cohutta	4	6	.35	82	82	.99	4	5	.51
Shining Rock	16	11	.14	77	78	.71	4	4	.16

Table 8—Wilderness-specific experience and frequency of wilderness visits for day and overnight users.

Wilderness	First-time visitors to this wilderness			Number of prior visits to this wilderness			Number of wilderness visits in last 12 months		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent			*percent*			*mean*		
Three Sisters	18	21	0.37	13	12	0.81	—	—	—
Desolation	37	18	<.01	12	4	.59	4	4	0.30
Bob Marshall	38	40	.54	11	8	.15	4	3	.05
Caney Creek	22	43	.05	9	7	.63	—	—	—
Charles Deam	9	10	.87	52	35	.03	12	10	.15
Cohutta	26	37	.02	16	10	.02	—	—	—
Shining Rock	31	36	.24	16	10	.07	11	9	.40

Table 9—Wilderness and place attachment[a] of day and overnight users.

Wilderness	Wilderness attachment score			Place attachment score		
	Day	Overnight	p	Day	Overnight	p
Caney Creek	3.7	3.8	0.31	3.5	3.3	0.09
Cohutta	3.8	3.8	.74	3.4	3.4	.74

[a]Mean score on multi-item, five-point, Likert-type scale (Williams and others 1992), with 5.0 defining the highest degree of attachment.

Visitor Evaluations and Preferences

Wilderness visitors vary in their expectations, their evaluations of the conditions they find, and their preferences for conditions and for management. The sections that follow report visitor evaluations of the overall quality of their trip, the number of other groups and social conditions they encountered, the impacts of recreational use that they experienced, and the appropriateness of various management actions.

General Trip Evaluations

In all four wildernesses where visitors were asked to assess the overall quality of their trip (or their total satisfaction), quality ratings were even higher among day users than overnight users (table 10), with differences statistically significant ($p < 0.05$) at Desolation and the Bob Marshall. Lucas (1980) also found higher levels of trip satisfaction among day users in a number of Montana wildernesses. In the Bob Marshall, however, overnight users were more likely to agree with the following statements about trip quality: (1) "This Wilderness trip was better than any other Wilderness trip I remember," (2) "This Wilderness trip was better than any other outdoor recreation experience I remember," and (3)" This Wilderness trip was so good I would like to take it again."

At Caney Creek, Charles Deam, and Cohutta, visitors were asked how much they care about various "things" they might encounter on their visit. The question was an attempt to assess which types of things (from numbers of people, to noise, litter, or vegetation impact) most influence the quality of the wilderness experience. The relative importance of these influential factors did not vary substantially between day and overnight users (table 11). In fact, there were only a few statistically significant differences for individual factors. Overnight users were somewhat more likely to consider the number of groups (at Caney Creek and Cohutta) or the number of people (at Charles Deam) met along the trail to be important. Overnight users (not surprisingly because they are the ones to stay the night) are more likely to feel they would be influenced by light originating outside the wilderness.

Encounters and Social Conditions

In five of these wildernesses, visitors were asked about their trail encounter preferences—the number of hiking groups, hikers, large groups, and horse groups they prefer to meet along the trail each day. They were also asked about the maximum number of encounters they consider to be acceptable. Day users preferred more encounters than overnight users at Desolation and fewer encounters at Caney Creek; there were no differences at Charles Deam, Cohutta, or Shining Rock (table 12). Acceptability judgments (which some refer to as social norms) were also higher for day users at Desolation and for overnight users at Caney Creek (table 13). At Shenandoah, day users were also more tolerant of encounters than overnight users (Hockett and Hall 1998).

Visitors to Three Sisters, Desolation, and Shining Rock were asked about their expectations regarding encounters with other people. There were few pronounced differences between day and overnight users. Regarding number of hikers seen, day users at Three Sisters and Desolation were slightly less likely to have expectations and slightly less likely to report seeing more hikers than expected, but differences were generally not statistically significant (table 14). For both day and overnight users, only 20 to 25 percent saw more hikers than they expected. At Shining Rock, however, 27 percent of day users saw more hikers than they expected compared to 47 percent of overnight users. This difference between day and overnight users probably reflects the fact that about one-half of overnight users camp at Shining Rock Gap, which is notorious for frequent encounters between groups (Roggenbuck and Stubbs 1991). Expectations regarding horse groups were virtually identical. Day users were less likely to have expectations regarding number of large groups and, at Shining Rock, were less likely to report seeing more large groups than expected.

Visitor evaluations of encounters were assessed by asking them how they felt about the number of people they saw (Desolation, Bob Marshall, and Shining Rock), by asking them to rate crowding on a scale from 1 to 9 (Three Sisters), and by asking visitors if they enjoyed or disliked encountering other groups on their visit (Charles Deam). In the Desolation, Bob Marshall, and Shining Rock, substantially fewer day users reported that they saw too many other people (table 15). At Desolation and Bob Marshall, more day users also reported that the number of people they saw did not matter to them. In the Bob Marshall, only 11 percent of day users reported that they felt crowded, compared with 19 percent of overnight users ($p < 0.01$). These are some of the more pronounced and consistent differences between day and overnight users. However, at Charles Deam, there were no significant differences in the proportion of day and overnight users who enjoyed or disliked meeting other groups. Moreover, when asked if the behavior of others had interfered with their trip, the proportion that responded "yes" did not differ significantly ($p = 0.14$) between day users (34 percent) and overnight users (41 percent).

In the Three Sisters, only 15 percent of day users reported that some places were congested, compared to 30 percent of overnight users ($p < 0.01$). However, median scores on the crowding scale were 2 (between "not at all" and "slightly crowded") for both day and overnight users. At Shenandoah, few day or overnight users felt very crowded (Hockett and Hall 1998); however, mean crowding scores were higher for day users than for overnight users.

Finally, visitors at Three Sisters, Desolation, Charles Deam, and Shining Rock were asked if they thought certain aspects of the social setting had been problems on their trip. At Charles Deam and Shining Rock, visitors were provided with an "I don't know" response option, and day users, particularly at Shining Rock, were more likely to select this response. At Desolation and Shining Rock—the two most densely used wildernesses in this study—differences between day and overnight users were consistent and substantial (table 16). Day users were significantly less likely to consider too many people, large groups, noisy or rowdy people, or dogs to be a problem. At Desolation, even among overnight users, only a small minority considered these to be problems; at Shining Rock, however, more than half of the overnight users felt there were problems with certain aspects of the social setting. At Charles Deam, day users were significantly less likely to consider "too many people" to be a problem, but there were no differences in evaluations of large groups, noisy people, dogs, or horses. This latter result may reflect the fact that a larger proportion of day users than of overnight users are on horseback at the Deam Wilderness.

Recreation Impacts

At Three Sisters, visitors were asked if they noticed various impacts caused by recreational use. If visitors noticed impacts, they were asked about the extent to which those impacts detracted from the quality of their experience. Day users were consistently less likely to notice most types of impact, as well as less likely to report that those impacts detracted from their experience (table 17). Some of this difference can be explained by noting that day users—because their trip is so much shorter—are less likely to be exposed to impacts, particularly those on campsites. However, both day and overnight users are equally exposed to worn trails, and a few more overnight users notice the wear and are bothered by it. In a question regarding expectations about "the number of places that were impacted by previous visitors (litter, footprints, damaged vegetation)," significantly more day users (7 percent) than overnight users (1 percent) had no expectations. Fewer day users (17 percent) than overnight users (22 percent) saw more impacted places than expected, but this difference was not statistically significant ($p = 0.16$).

In Desolation and the Bob Marshall, visitors were asked to evaluate the extent of "wear and tear from use (erosion and loss of vegetation)" and litter on their trip. For both impact types, in both wildernesses, 60 to 80 percent of both day and overnight users rated conditions "good" or "very good." However, day users generally rated conditions better than overnight users. Differences were statistically significant at Desolation, but not in the Bob Marshall. Day users at Joyce Kilmer-Slickrock Wilderness also considered litter problems to be less serious than overnight visitors (Roggenbuck and others 1979)

Finally, visitors at Three Sisters, Desolation, Charles Deam, and Shining Rock were asked if they thought certain resource impacts had been problems on their trip. At Charles Deam and Shining Rock, visitors were provided with an "I don't know" response option, and day users, particularly at Shining Rock, were more likely to select this response. Only at Desolation were differences between day and overnight users consistent and substantial (table 18). However, wherever there were differences, day users were always less likely to consider impacts to be a problem. Differences between wildernesses were much more pronounced, with most visitors at Charles Deam and Shining Rock—both day and overnight—expressing concern about litter and most visitors at Shining Rock expressing concern about campsite impacts (table 18). Again, it is unclear whether these results indicate that day users are more tolerant of impacts or that they were less exposed to impacts.

Management Actions

Visitor opinions about current or potential management actions and programs were assessed at all wildernesses other than Caney Creek and Cohutta. Visitors were asked questions about the extent of their support for various management options and the degree to which they consider current management programs to be a problem. When asked about whether they support the general concept of limiting use, most users—day or overnight—expressed support (table 19). Only at Desolation was support among overnight users (94 percent) significantly greater than support among day users (72 percent). This difference probably reflects the fact that only overnight use at Desolation is currently limited. At Three Sisters, Charles Deam, and Shining Rock, visitors were asked a more specific question, for their opinion about whether current conditions justify limiting use (table 19). In all three wildernesses, fewer day users supported limiting or reducing use now. However, although differences were statistically significant at Charles Deam

and Shining Rock, only at Shining Rock does there appear to be a meaningful difference in opinion between day and overnight users. Interestingly, at Shining Rock in 1978, there was no difference between day and overnight users regarding support for limiting use now (Roggenbuck and others 1979). Support for limiting use now declined between 1978 and 1990 among day users while remaining constant among overnight users. In 1978, at Linville Gorge Wilderness, support for limiting use now was greater among overnight users (Roggenbuck and others 1979).

Unfortunately, support for limiting day use was only assessed at Desolation. Not surprisingly, significantly fewer day users (17 percent) than overnight users (39 percent) supported day use limits. Perhaps the more surprising finding is that most overnight users—despite having their access restricted—do not support restricting access for day users. Similarly, at Denali National Park, only 9 percent of overnight users (who had to obtain one of a limited number of permits) supported a requirement that day hikers obtain permits (Bultena and others 1981).

Except at Charles Deam, most users—both day and overnight—support limits on group size. There were no significant differences between day and overnight users in magnitude of support. Neither were there differences in the mean group size limits that were suggested—generally a maximum of about 9 or 10 people per group.

Tables 20 and 21 show support, among day and overnight users, for trail management, provision of information, general wilderness management, and management of destination areas. Response formats differed slightly between wildernesses. Values in tables 20 and 21 for Three Sisters are the percent of visitors who "favor" or "strongly favor" the action. At Desolation, values are the percent who "support" or "strongly support" the action. At the Bob Marshall, values are those finding the action "desirable." At Shining Rock, values are the percentage who "somewhat support" or "strongly support" the action.

There are a few differences, between day and overnight users, in support for trail management, provision of information, or general wilderness management. The most pronounced differences relate to opinions about trails in wilderness. More day users than overnight users support building more trails (and do not support keeping some areas trailless), building bridges over small creeks (where the effect of the bridge is only to avoid getting your feet wet), and using chainsaws to clear trails (table 20). Day users are also significantly more likely to support placing natural or cultural history signs along the trail. At Shenandoah, day users were also more likely to support building more trails and having interpretive signs (Hockett and Hall 1998). These opinions can be interpreted as being less "purist" than those of overnight users, but they are largely restricted to trail management. Day users are equally "purist" (or unpurist) in their views about such general management issues as maintaining a natural fishery or allowing fire to play a more natural role in the ecosystem (table 20).

Differences in the management of destination areas are more pronounced and consistent. Day users are generally much more supportive of a variety of management techniques that reduce impacts in destination areas (table 21). They are more supportive of facilities and regulations that result in concentration of use and impact—outhouses, fire rings, pole corrals, and designated campsites. They are more supportive of prohibitions on campfires, camping close to water, and grazing. These results might be interpreted as suggesting that day users are more "purist" than overnight users. "Purism" could be argued either way for many of these actions, however. Pole corrals, for example, serve to reduce impact but also are a human imprint and convenience. Designating sites also reduces impact but interferes with visitors' freedom. It is not clear whether the greater support of day users should be attributed to more concern with reducing impact or less concern about the appropriateness of facilities or behavioral restrictions as means of reducing impact. Moreover, most of the "costs" of destination area management will be borne by overnight users. Therefore, the alternative interpretation—as noted by Yang (1986), Hall (1996), and Hockett and Hall (1998)—is that differences are explained by the reluctance of overnight users to support restrictions on their own freedom.

Finally, visitors at Three Sisters, Desolation, and Shining Rock were asked if they thought certain aspects of the current management program had been problems on their trip. At Shining Rock, visitors were provided with an "I don't know" response option and day users were more likely to select this response. With few exceptions, differences between day and overnight users were not dramatic (table 22). More overnight users at Three Sisters—where overnight users are more tightly regulated than day users—felt there were too many rules and regulations. Elsewhere, however, opinions about regulations did not differ, perhaps because degree of regulation was similar. Consistent with results in table 20, more overnight users at Desolation felt there were too many trails, and more day users at Shining Rock felt there were too few bridges and signs.

The more pronounced differences relate to questions—mostly asked at Shining Rock—about the adequacy of information provided to the visitor. Overnight users were much more concerned than day users about inadequate information about where people are

and where and when heavy use occurs. Day users, in contrast, were much more concerned about inadequate information about the location and condition of trails. At Shining Rock, at least, day and overnight users differ in the type of information most relevant to them. One potential explanation for this difference stems from earlier comments about the day user's experience being more focused on trail hiking, while the overnight user's experience is more multidimensional.

Summary for Visitor Evaluations and Preferences

The vast majority of both day and overnight users rate the quality of their trip very highly. There is some evidence—at least in some places—that overnight users are more likely than day users to be critical of the social and resource conditions they find. Reasons for this include being exposed to worse conditions, being more likely to notice conditions, having more stringent expectations, and having more stringent personal evaluative standards. If the populations of day users and overnight users are largely the same—as is suggested by the minimal differences in visitor characteristics—this suggest that, when on a day trip, a visitor is somewhat more tolerant of "problems" than when on an overnight trip.

There are a number of substantial differences between day and overnight users regarding management preferences. Generally, day users appear more supportive of several trail-related conveniences—building more trails, building more bridges, and having trailside interpretive signs. They are also more supportive of facilities that reduce impacts at destination areas (although some of these—outhouses and corrals—may be perceived as conveniences) and restrictions at destination areas. There is little difference between day and overnight users in their support for a wide range of general policies from use limitation to restoring natural fire or natural fisheries. This suggests that differences in "purism" are slight, focused on specific issues, and often determined by self-interest. Overnight users generally do not support restrictions on day use, even when their numbers are limited.

Table 10—Satisfaction of day and overnight users—percent of respondents rating the overall quality of their trip highly.

Wilderness	Day	Overnight	p
		percent	
Three Sisters[a]	66	62	0.54
Desolation[b]	70	62	.01
Bob Marshall[b]	92	89	.05
Shining Rock[c]	78	68	.07

[a]Ratings of 8 to 10 on 10-point scale, with 10 "as good or better than all previous wilderness trips."
[b]Ratings of 4 "good" or 5 "very good" on 5-point scale.
[c]Ratings of 1 "extremely satisfied" or 2 "very satisfied" on 7-point scale.

Table 11—Perceptions of day and overnight users about factors that influence the quality of their experience—percent responding that they care “very much” or “extremely” about the factor.

	Caney Creek			Charles Deam			Cohutta		
Percent who care a lot about:	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**
Number of hiking groups along the trail	31	33	0.02	15	16	0.22	34	38	0.03
Number of people hiking along the trail	38	37	.20	12	17	.03	37	40	.08
Time in sight of people on the trail	45	43	.63	21	24	.71	44	44	.41
Number of large groups along the trail	41	53	.58	20	23	.43	46	51	.41
Human noise within the wilderness	79	75	.24	—	—	—	64	75	.13
Human noise from outside the wilderness	66	79	.24	—	—	—	64	74	.14
Vegetation loss at campsites	79	58	.17	—	—	—	59	66	.15
Tree damage at campsites	93	81	.28	—	—	—	81	86	.45
Number of campfire rings	69	52	.23	—	—	—	48	50	.43
Amount of litter	96	91	.19	—	—	—	90	93	.32
Light from outside the wilderness	41	53	.30	—	—	—	36	49	.01

p value is for Chi-square test using all six response categories from “not at all” to “extremely.”

Table 12—Preferences of day and overnight users regarding number of encounters per day with other people in wilderness.

	Mean preferred number of encounters per day with:											
	Hiking groups			Hikers			Large groups			Horse groups		
Wilderness	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**
Desolation	9	6	<0.01	—	—	—	3	1	<0.01	—	—	—
Caney Creek	7	5	.06	4	11	<0.01	1	3	.10	1	4	0.04
Charles Deam	5	5	.57	10	8	.19	4	4	.60	6	5	.42
Cohutta	4	5	.64	11	11	.47	3	3	.52	3	2	.03
Shining Rock	7	6	.90	—	—	—	3	2	.14	3	2	.10

Table 13—Acceptability judgments of day and overnight users regarding number of encounters per day with other people in wilderness.

	Mean maximum acceptable number of encounters per day with:											
	Hiking groups			Hikers			Large groups			Horse groups		
Wilderness	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**	**Day**	**Overnight**	**p**
Desolation	16	12	<0.01	—	—	—	5	4	<0.01	—	—	—
Caney Creek	11	9	.45	12	17	0.04	3	5	.04	2	4	0.06
Charles Deam	16	15	.45	31	30	.45	9	9	.74	7	7	.10
Cohutta	8	9	.68	18	18	.94	5	6	.70	6	4	.09
Shining Rock	12	12	.18	—	—	—	5	5	.15	6	5	.67

Table 14—Expectations of day and overnight users regarding number of encounters with other people in the wilderness.

Expectations regarding:	Three Sisters			Desolation			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent								
Number of hikers seen									
Had no expectations	6	3	0.15	5	2	0.04	3	3	0.77
Saw more[a] than expected	18	20	.66	22	25	.49	27	47	<.01
Number of horse groups seen									
Had no expectations	22	16	.11	—	—	—	46	46	.98
Saw more[a] than expected	12	14	.74	—	—	—	11	14	.45
Number of large groups seen									
Had no expectations	—	—	—	29	13	<.01	25	16	.01
Saw more[a] than expected	—	—	—	15	19	.42	21	47	<.01

[a]Percent responding they saw “more” or “way more” than expected.

Table 15—Evaluations of day and overnight users regarding number of encounters with other people in the wilderness.

The number of people seen:	Desolation			Bob Marshall			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent								
“Did not matter”	14	5	<0.01	19	12	0.01	12	11	0.55
Was “too many” or “way too many”	22	39	<.01	17	30	<.01	33	63	<.01

Table 16—Day and overnight user assessments of problems with other visitors on their trip.

Percent responding that the following is “a problem”	Three Sisters			Desolation			Charles Deam			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent											
Too many people in whole area	—	—	—	20	32	<0.01	24	33	0.05	38	61	<0.01[a]
Too many people in certain areas	—	—	—	—	—	—	34	44	.04	46	66	<.01
Too many day hikers	—	—	—	10	29	<.01	—	—	—	—	—	—
Large groups	17	23	0.11	12	22	<.01	25	27	.72	30	54	<.01[a]
Noisy/rowdy people	—	—	—	12	26	<.01	33	38	.28[a]	25	44	<.01[a]
Dogs	19	16	.33	16	24	.04	28	27	.79	19	26	.08[a]
Horses	34	26	.06	—	—	—	31	32	.78	—	—	—
Aircraft	10	17	.05	12	28	<.01	16	26	.02	7	11	.19[a]
Sonic booms	—	—	—	6	12	.02	9	18	.01	4	3	.32[a]

[a]For these “problems,” day users were significantly ($p < 0.05$) more likely to respond “I don’t know” (Deam and Shining Rock only).

Table 17—Proportion of day and overnight users at the Three Sisters Wilderness who noticed recreation impacts and responded that those impacts detracted[a] from their experience.

Impact	Day	Overnight	p
	- - - - - - - *percent*		- - - - -
Worn trails			
Noticed	58	67	0.05
Detracted	57	58	.62
Side trails			
Noticed	43	44	.79
Detracted	61	63	.42
Vegetation loss at campsites			
Noticed	39	73	<.01
Detracted	73	70	.28
Tree damage by humans			
Noticed	21	43	<.01
Detracted	65	84	.01
Tree damage by horses			
Noticed	21	31	<.01
Detracted	62	75	.21
Litter			
Noticed	37	58	<.01
Detracted	77	84	<.01
Human waste			
Noticed	10	21	<.01
Detracted	50	71	.06

[a]Percent of those who noticed impact responding that it detracted "a little" or "a lot" from their enjoyment.

Table 18—Day and overnight user assessments of problems with biophysical impacts on their trip.

Percent responding that the following is "a problem"	Three Sisters			Desolation			Charles Deam			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	- *percent* -											
Human impact to vegetation	—	—	—	—	—	—	45	55	0.04	—	—	—
Vegetation damage at campsites	39	41	0.62	26	46	<0.01	—	—	—	60	68	0.16[a]
Too many obvious campsites	—	—	—	20	42	<.01	—	—	—	64	67	.53[a]
Too many fire rings	22	21	.79	15	41	<.01	—	—	—	49	57	.10[a]
Trashy fire rings	27	26	.79	12	38	<.01	—	—	—	68	62	.26[a]
Built-up fire rings	—	—	—	12	36	<.01	—	—	—	43	55	.05[a]
Litter	34	39	.32	19	45	<.01	74	83	.02	71	77	.17
Human waste	16	24	.04	16	20	.22	26	26	.78	41	40	.74[a]
Polluted waters	—	—	—	12	21	<.01	35	45	.05	28	27	.71

[a]For these "problems," day users were significantly ($p < 0.05$) more likely to respond "I don't know" (Deam and Shining Rock only).

Table 19—Day and overnight user support for limits on use and group size.

Limit	Three Sisters			Desolation			Bob Marshall			Charles Deam			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
Support for limiting use if the wilderness is being used beyond capacity (percent)	—	—	—	72	94	0.05	82	80	0.17	—	—	—	—	—	—
Support for limiting overall use (percent)	—	—	—	—	—	—	—	—	—	—	—	—	66	66	0.60
Support for limiting or reducing use now (percent)	34	39	0.30	—	—	—	—	—	—	10	17	0.02	38	52	<.01
Support for limiting day use (percent)	—	—	—	17	39	<.01	—	—	—	—	—	—	—	—	—
Support for limiting the size of groups[a] (percent)	70	75	.28	67	76	.26	58	61	.54	31	24	.27	72	73	.43
Mean maximum suggested group size (people)	9	9	.66	11	10	.70	—	—	—	10	9	.48	9	9	.78

[a]Support for group size limits was gauged by asking if there should be a limit (Three Sisters and Charles Deam), asking about degree of support on a 5- or 6-point scale (Desolation and Shining Rock) or asking about degree of support for a limit of 12 people on a 5-point scale (Bob Marshall).

Table 20—Day and overnight user support for trail management and general wilderness management.

Percent who support[a] the following:	Three Sisters			Desolation			Bob Marshall			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent											
High standard trails	—	—	—	38	29	0.12	23	30	0.08	—	—	—
Low standard trails	—	—	—	65	59	.32	57	52	.32	—	—	—
Leaving some areas trailless	—	—	—	63	76	<.01	67	70	.11	—	—	—
Building more trails	28	20	0.01	—	—	—	—	—	—	48	36	0.08
Leaving a few downed trees across trails	—	—	—	26	24	.90	23	20	.38	—	—	—
Bridges across small creeks	—	—	—	51	37	<.01	30	27	<.01	—	—	—
Bridges across dangerous rivers	—	—	—	91	81	.02	72	67	.07	—	—	—
Requiring dogs to be on leash	49	38	.12	43	36	.09	—	—	—	—	—	—
Prohibiting dogs	29	31	.48	23	30	.36	—	—	—	—	—	—
Providing information on heavy use	90	95	.16	—	—	—	—	—	—	90	93	.50
Natural or cultural history signs along the trail	—	—	—	57	27	<.01	46	36	<.01	—	—	—
Chain saw use to clear trails	—	—	—	39	33	.08	37	36	<.01	—	—	—
A natural fishery, no stocking	—	—	—	20	19	.08	28	28	.97	—	—	—
Allowing fires started by lightning to burn	55	60	.47	35	38	.31	51	49	.60	—	—	—

[a]Percent responding that each action was "favored" or "strongly favored" (Three Sisters), "supported" or "strongly supported" (Desolation), "desirable" (Bob Marshall), and "somewhat supported" or "strongly supported" (Shining Rock). p value is for Chi-square test based on four to five categories.

Table 21—Day and overnight user support for management of destination areas.

Percent who support[a] the following:	Three Sisters			Desolation			Bob Marshall			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent											
Outhouses	36	19	<0.01	—	—	—	14	11	<0.01	—	—	—
Cemented rock fireplaces	—	—	—	25	7	<0.01	9	5	<.01	—	—	—
Small, loose fire rings	—	—	—	80	61	<.01	48	32	<.01	—	—	—
Pole corrals	—	—	—	—	—	—	27	24	<.01	—	—	—
Bulletin boards at popular destinations	63	49	<.01	—	—	—	—	—	—	—	—	—
Prohibiting fires where wood is scarce	—	—	—	80	77	<.01	39	37	<.01	—	—	—
Prohibiting camping close to water	—	—	—	63	59	.11	34	25	.03	—	—	—
Assigning or designating campsites	55	25	<.01	14	8	<.01	—	—	—	37	22	<0.01
Confining traffic with string/stakes	44	43	.80	—	—	—	—	—	—	—	—	—
Revegetation of impacted sites	85	82	.66	—	—	—	—	—	—	—	—	—
Prohibiting grazing	—	—	—	—	—	—	32	25	<.01	—	—	—
Separating day and overnight use	25	23	.97	—	—	—	—	—	—	—	—	—

[a]Percent responding that each action was "favored" or "strongly favored" (Three Sisters), "supported" or "strongly supported" (Desolation), "desirable" (Bob Marshall), and "somewhat supported" or "strongly supported" (Shining Rock). p value is for Chi-square test based on four to five categories.

Table 22—Day and overnight user assessments of problems with current management programs.

Percent responding that the following is a problem:	Three Sisters			Desolation			Shining Rock		
	Day	Overnight	p	Day	Overnight	p	Day	Overnight	p
	percent								
Too many rules/regulations	17	28	<0.01	7	10	0.18	6	4	0.25
Not enough parking	11	10	.75	36	31	.19	43	35	.09
Trails poorly maintained	26	22	.45	8	11	.23	47	48	.87
Trails poorly marked	—	—	—	24	24	.98	57	55	.74[a]
Too many trails	—	—	—	4	10	<.01	20	21	.74
Too few bridges	—	—	—	—	—	—	21	12	.01
Too few signs	—	—	—	—	—	—	40	29	.02
Inadequate information on:									
Where people are	—	—	—	17	28	<.01	35	56	<.01[a]
Where heavy use occurs	—	—	—	—	—	—	44	60	<.01[a]
Trail locations	—	—	—	—	—	—	55	41	<.01[a]
Trail conditions	—	—	—	—	—	—	47	35	.01

[a]For these "problems," day users were significantly ($p < 0.05$) more likely to respond "I don't know" (Shining Rock only).

Discussion and Conclusions

Synthesis

Of necessity, this research has taken a case study approach. The primary goal of the project was to describe differences between day and overnight users that might be consistent across the National Wilderness Preservation System. An understanding of such differences might provide insights into how to manage day users, their impacts, and the portions of wilderness they visit in substantial numbers. Obviously, the ability to do this is limited by having only seven case studies available, as well as the fact that certain attributes were only assessed in some of these wildernesses. Nevertheless, the seven case studies represent a diverse set of wildernesses spanning much of the United States. Moreover, this number can be amplified by comparing results to those from previously published studies at Great Smoky Mountains National Park (Burde and Daum 1990) and Shenandoah National Park (Hockett and Hall 1998; Papenfuse and others 2000).

In generalizing about differences between day and overnight users, both the consistency and magnitude of differences are relevant. Consequently, I have grouped variables into one of four classes as follows:

- Large Consistent Differences: The direction of difference between day and overnight users is the same in at least two-thirds of wildernesses, differences are statistically significant in at least several wildernesses, and the magnitude of difference is substantial.
- Small Consistent Differences: The direction of difference between day and overnight users is the same in at least two-thirds of wildernesses, differences are statistically significant in at least several wildernesses, but the magnitude of difference is not substantial.
- Inconsistent Differences: The direction of difference between day and overnight users is variable, with at least one statistically significant difference in each opposing direction.
- No Difference: The direction of difference between day and overnight users is variable and few differences are statistically significant.

Large Consistent Differences—Day wilderness users consistently and substantially differ from overnight users in a number of ways. The groups that day users travel in are:

- Typically smaller and more likely to consist of just one person.
- More likely to contain women.
- More likely to contain family members.
- Less likely to be an organized group.

The trips day users take:

- Are much shorter in duration.
- Typically involve fewer different activities.

Day users' trip evaluations differ in that they are:

- Less likely to feel that they saw too many people or feel that the number of encounters they had with other people was a problem.

Small Consistent Differences—Day wilderness users consistently differ from overnight users in a number of other ways, but the magnitude of these differences seems small. Day users typically are slightly:

- Older.
- More likely to live in a small community and less likely to live in a large city (this probably means they are more likely to live close to the wilderness).
- Less likely to belong to a conservation organization.

Day users, in thinking generally about their trip, are slightly:

- Less concerned about the number of other people they might encounter on their trip.
- Less likely to have expectations about the number of other people they might encounter on their trip.

Day users' trip evaluations differ in that they are slightly:

- More satisfied with the overall quality of their trip.
- Less likely to have seen more other people than they expected.
- Less likely to feel that biophysical recreation impacts are a problem.

Day users' management preferences differ in that they are slightly:

- More supportive of "conveniences" and facilities, such as more trails, more highly developed trails, bridges, outhouses, fire rings, pole corrals, and signs and information provided inside the wilderness.
- More supportive of management actions that reduce biophysical impacts, particularly in destination areas, such as by providing facilities that contain impacts, designating campsites, and prohibiting campfires and grazing. Some of this support may reflect more comfort with the provision of facilities and the fact that day users will not bear the costs of restrictions on overnight use.

Inconsistent Differences—For a number of variables, day and overnight users differed from each other, but the direction of difference varied between wildernesses. The following statements summarize these inconsistencies:

- Day users are usually less likely to be students but, in the Cohutta, day users were more likely to be students.
- Day users are likely to be somewhat more experienced in the wilderness being studied and to have less experience visiting other wildernesses, although there are exceptions to this generalization.
- Day users are likely to have made slightly more wilderness trips—but spent fewer days in wilderness—during the past year.
- Day users' preferences for encounter levels may be lower, higher, or the same as those of overnight users, depending on the wilderness.
- Day users' acceptability judgments (sometimes referred to as norms) for encounter levels may be lower, higher, or the same as those of overnight users, depending on the wilderness.

Conclusions are also inconsistent regarding differences between day and overnight users in how "purist" and supportive of restriction they are. Such differences result not from differences between wildernesses but in the criteria used to define "purism" and "restrictiveness."

- The wilderness "purism" of day users can be considered higher, lower, or the same as for overnight users—depending on whether the purism criterion is support for facilities in wilderness (day users are less purist—they are more supportive of facilities), management actions that will reduce recreation impacts (day users are more purist—more supportive of some actions), or general wilderness management policies (level of purism is similar).
- The support of day users for restrictions can be considered higher or lower than for overnight users—depending on whether the criterion is support for behavioral restrictions (day users are more supportive, particularly of restrictions that only affect overnight users) or access restrictions (day users are less supportive).

No Difference—Day and overnight wilderness users are similar regarding:

- Their high level of educational attainment.
- Their high level of income.
- The high level of importance of wilderness to them personally (wilderness attachment).
- The importance of the place they were visiting to them personally (place attachment).
- Their support for general wilderness management policies, such as the need for rules and regulations, the need to limit use to avoid overuse, and the desirability of maintaining natural conditions and processes (such as natural fisheries and fire regimes).

Conclusions

The primary objective of this report was to contrast the characteristics, evaluations, and preferences of day users and overnight users and the trips that they take. The principal finding of this study is that most wilderness day users are not very different from most overnight users. There are numerous statistically significant differences between day and overnight users, but the magnitude of differences is generally small, and few seem of great managerial significance. There is substantial diversity in the characteristics, evaluations, and preferences of wilderness visitors, but

variation within day users and within overnight users seems greater than differences between day and overnight users. This conclusion is similar to that drawn by Roggenbuck and others (1979) and by Papenfuse and others (2000).

Day users are not that different from overnight users in terms of who they are, their past wilderness experience, the importance they attach to wilderness, the things that influence the quality of their experience, their preferences for conditions, or their support for management. One likely explanation for the paucity of profound differences between day and overnight users is that both samples are largely drawn from the same population. There are probably few overnight users who never take day trips and most day users also take overnight trips in wilderness. On the wilderness-like trails at Grand Canyon, for example, only 25 to 35 percent of day hikers stated that they never take overnight hikes (Manning and others 1999). This suggests that the vast majority of any sample of day users or of overnight users will consist of people who do both. Even if there are pronounced differences between those who never stay overnight and those who seldom day hike, one should not expect profound differences between the mean characteristics of people sampled on day and overnight trips.

Day and overnight users differ most in the characteristics of the groups they typically travel with, their support for facilities and behavioral restrictions in wilderness, and in how they respond to encounters with other groups. These latter differences are relevant to considerations about how to manage high-use trails and destinations close to the wilderness perimeter. Day users are typically more supportive of higher levels of trail development, as well as facilities such as outhouses, fireplaces, pole corrals, and bulletin boards.

Greater support for facilities provides evidence to support the assertion (for example, Grossa 1979) that day users are less "purist" and more convenience oriented than overnight users. While this assertion may be true, other interpretations of the data are possible. Visitor surveys (for example, Cole and others 1997) show that both day and overnight visitors (1) believe that heavy recreational use of portions of wilderness can be acceptable, (2) believe that resource impacts need to be minimal even in heavily used places, and (3) recognize that trails and other facilities concentrate use and impact and are effective means of minimizing impact in heavily used places. If most visitors to heavily used portions of wilderness—day or overnight user—are more likely to express greater support for more and better trails and for other facilities that minimize impact, the apparent difference between day and overnight users may simply reflect more day users spending more of their trip in heavily used places. This latter interpretation is reinforced by the finding that day users are typically more supportive of behavioral restrictions on grazing, fires, and camping.

An understanding of the crowding perceptions and management preferences of day users is also critical to gaining insight into effective management of popular day use areas. The encounter preferences of day and overnight users are similar; both groups prefer few encounters in wilderness. However, day users often reported less crowding, less of a problem with the number of people they encountered, less likelihood to report they had more encounters than expected (even though they often saw more people), and a higher degree of satisfaction with the quality of their trip. Both day and overnight users support limiting use when an area is overused; however, they differed somewhat in their definitions of overuse. Day users were less likely to support immediate limits on use to maintain or reduce use levels. Therefore, there is strong evidence that day users are generally more tolerant of crowded conditions and less supportive of restrictions on access.

Another objective of the paper relates to the past wilderness experience, wilderness attachment, and concern for wilderness protection of day users. This is relevant to the assertion of some that day users are less experienced with, attached to, and concerned about wilderness than overnight users and, therefore, that their opinions should be given less credence when deciding about appropriate management. The data presented in this report show that—in contrast to common myths—day users are typically as experienced and as attached to and protective of wilderness as overnight users. Therefore, there is little to suggest that their opinions are any less valid than those of overnight users. The likelihood that samples of day users and overnight users are largely drawn from the same general population amplifies this point.

The final objectives of this paper involve exploring differences in the types of experiences day and overnight users are seeking and how dependent those experiences are on wilderness. Although persons on day trips into wilderness are not very different from those on overnight trips, the nature of a day trip into wilderness is very different from that of an overnight trip. When someone enters wilderness on a day trip they typically come in a different sort of group, do fewer and somewhat different things, and probably think differently about what they are doing, why they are doing it, and what they expect from their visit. The nature of this different "mindset" cannot be empirically described with existing data. However, reasoned speculation about differences between day and overnight trips might suggest possible explanations for some of the differences between day and overnight users found in this study—particularly the findings

that day users were more satisfied with their trip, less concerned about numbers of other people encountered, and less likely to consider number of encounters or resource impacts to be a problem. It can also be suggestive about the wilderness dependence of day and overnight use.

In considering the nature of day and overnight visits, one obvious difference is in the time investment involved, both in trip preparation and in the wilderness visit itself. On a typical trip, day users are likely to spend only 5 to 20 percent as long in the wilderness as an overnight user. Planning horizons and the time devoted to planning a day trip are also likely to be short. The shorter planning horizon and lesser time investment may partially explain the increased likelihood of a day user going alone, in a smaller group and with family members, and the reduced likelihood of going in an organized group. It may also partially explain some of the contradictory evidence about differences in trip motivations between day and overnight users.

When asked to give a single, most important trip motivation, day users are more likely to provide specific activities as reasons for their trip while overnight users are more likely to report "trip in the wilderness" or wilderness attributes such as "primitive, natural or solitude" as the reason for their visit. This finding has been reported as indicative that "day users…are visiting the wilderness for recreational activities and other pursuits which are not dependent exclusively on a truly wilderness environment" (Grossa 1979, p. 125), that "few day visitors see the trip as primarily a wilderness one" (Papenfuse and others 2000, p. 152), and that "day visitors were seeking something other than a wilderness trip" (Papenfuse and others 2000, p. 153). As reported here, however, overnight users are at least as activity oriented as day users. They are more likely to participate in more activities and to list skill development and activity participation as what they focused on during their wilderness visit.

It may be that day and overnight users differ more in the simplicity and clarity of their trip motivations than in the nature of those motivations. Outdoor activities and conducting those activities in wilderness are likely to be important to both day and overnight users. This is apparent in the finding that—when allowed to choose as many motivations as were important to them—differences between day and overnight users were minimal. When thinking about a day trip of a few hours, it is likely that day users will have well-developed, easily articulated motives—perhaps to get exercise or to catch fish or to spend some time with their daughter. When asked to give a single trip motivation, it is not surprising that day users often identify a specific motivation or activity. However, this ability to state a specific reason does not necessarily mean that they are any less interested in doing that activity in wilderness or in having a wilderness experience.

In contrast, overnight users contemplating a multiday trip may have many different motives for their trip. Their hope may simply be that something extraordinary happens (Arnould and Price 1993), rather than that any specific motivation be fulfilled. If their motives are diverse, emergent, and poorly articulated, they are better captured in the general response category "to be in wilderness" than in any of the specific categories. However, this does not mean that such specific motives as getting exercise or spending time with friends are any less important to overnight users than they are to day users. Clearly, given the profound differences in the nature of day and overnight trips, there are likely to be differences in trip motivations. However, until more definitive work is conducted, we should be careful about concluding that day users are less interested in a wilderness experience than overnight users. There is little evidence that day users are seeking experiences that are any less consistent with the idea of wilderness than what overnight users are seeking.

It may be that differences in trip expectations are much more profound than differences in motivations—that day users differ from overnight visitors more in what they expect from their trip than in what they want. Given their considerable past wilderness experience, it seems reasonable to assume that many day users are aware of the more crowded and impacted conditions of the places that are readily accessible to them. Therefore, their expectations regarding conditions are likely to not be as great as those of overnight users. Most day users are probably also aware of the limits on what they are likely to experience in a few hours. Compared to an overnight trip, a day trip typically involves fewer activities and, because of its shorter length, does not provide as much opportunity for the transcendent, restorative, and extraordinary experiences that are possible in wilderness (Arnould and Price 1993; Feingold 1979; Kaplan and Kaplan 1989). Day users may be much more likely to view their trip as one of entering and then leaving the wilderness, as opposed to leaving civilization behind and living there for awhile. All wilderness trips provide a contrast to what is found outside wilderness and in everyday life—greater opportunities for solitude, contemplation, and communion with nature, for example. However, I hypothesize that day visits typically provide less contrast, and most day users expect an experience that is less different from everyday experience than an overnight trip.

Differences in expectations might explain why day users appear to be more tolerant of "problems," particularly those related to encounters and social

conditions. With more limited expectations, day users are more likely to accomplish their goals, less likely to have goal achievement compromised by setting attributes (too many people, too much impact, or too many regulations), and less likely to perceive problems or to be dissatisfied. People on a day trip are likely to be more tolerant of the conditions they encounter—not because they are different people with different values but simply because they have learned to expect less from a day trip.

The preceding discussion of possible experiential differences between day and overnight trips is also suggestive of the wilderness dependence of the two. I have been arguing that, while it is not clear that day users are seeking less of a wilderness experience than overnight visitors, day users do appear to expect and to be satisfied with less of a wilderness experience. They are more willing to define their trip motivation in terms of activities, and they are more likely to report a high degree of trip satisfaction despite encountering conditions that are far from their preferred conditions and the types of conditions that are close to the wilderness ideal of few encounters and minimal impact. This suggests that day trips are less dependent on wilderness than overnight trips. The needs and desires of those taking day trips in wilderness could be more easily met outside wilderness than the needs and desires of those taking overnight trips in wilderness.

Management Implications

The primary conclusions of this study are that:

1. Day users and overnight users are not profoundly different, perhaps because to a substantial degree they are the same people.
2. Most day users are tolerant of relatively crowded conditions and unlikely to see an immediate need to limit use (at least in places that receive substantial day use).
3. Day users are typically as experienced in wilderness travel, and as attached to wilderness and supportive of wilderness protection as overnight users.
4. Day users may be as interested in a wilderness experience as overnight users, although the finding that most day users identify a specific activity as their primary trip motivation (rather than the general category of taking "a trip in wilderness") can be considered as evidence otherwise.
5. Day use of wilderness is typically less wilderness dependent than overnight use.

A primary motivation for this study was to contribute to an improved ability to meet the needs and desires of the day user, while protecting wilderness resources from impacts associated with day use of wilderness. Study results suggest that there is little reason to think that the needs and desires of most wilderness day users are much different from those of most overnight users. This suggests little reason to alter management specifically to cater to the day user. If anything, day users appear even more satisfied with their wilderness experiences than overnight users.

The more challenging question concerns how to manage day visitation such that wilderness resources—both biophysical and experiential—are protected. Particularly thorny is the question of whether or not to limit day use and, if so, to what level and on what basis. This question is most relevant to management of heavily used peripheral portions of wilderness.

We did not study the effects of day visitation on biophysical resources. In studies of several wilderness destination areas that are popular with both day and overnight users, biophysical impacts were found to be substantial but still confined to a small portion of the landscape (Cole and others 1997b). Resource impacts were limited through effective site management programs using the strategies of use containment (particularly carefully delineated trails) and site restoration. Wildlife disturbance was the only impact of potential significance at large spatial scales, and even for wildlife, such disturbance would not be significant as long as high-use areas are small and widely distributed, as is usually the case. Further research on the biophysical impacts of day use, particularly on wildlife, seems warranted. Evidence of unacceptable levels of biophysical impact might provide a justification for limitations on day use, if those impacts cannot be controlled through alternative management actions.

Day users to wilderness—while preferring to see few other people—are generally tolerant of meeting many other people. When given a choice, most would prefer having to cope with many encounters to having their access restricted. From the perspective of meeting the interests of the day user, then, there seems little reason to limit amount of day use in most situations. This seems particularly true as long as there continue to be less popular places in wilderness for the day user who is particularly motivated to seek out an uncrowded place.

Ultimately, however, there must be a limit to how much use any place can tolerate. Further research is needed to suggest an appropriate basis for such limits. Traditional wilderness concerns about solitude and the number of groups encountered—while clearly relevant in more lightly used portions of wilderness—are less helpful as a basis for setting use limits where use is heavy. More helpful in heavily used places might be concern about competition for space—at vistas, close to attractions, perhaps at toilets—and about the potential for competition to result in conflict and mental stress (worrying about whether there will be any space). Use limits could be based on a need to limit the

potential for competition and physical conflict between groups or the likelihood that people will engage in unsafe behavior.

In some situations, however, it may be appropriate to limit day use, not on the basis of the experience of day users, but to protect the experience of overnight users. This would be the case if day use had significant adverse effects on the experiences of overnight visitors and managers wanted to give priority to the more wilderness-dependent use. Such an approach might be most appropriate where wildernesses are small and outstanding camping destinations receive heavy day visitation or where there are numerous alternative locations for day use. Results from visitor surveys provide little general support for this approach. At Desolation, where overnight use is already limited, 39 percent of overnight users (and only 17 percent of day users) supported limiting day use. At Shenandoah, most day and overnight users supported a zoning management approach in which solitude would be provided on some wilderness trails but not everywhere (Hockett and Hall 1998). Nevertheless, managers may want to consider this option, despite lack of visitor support.

Clearly, day users are an important and neglected component of wilderness recreation use. Day use needs to be better understood, assessed, considered, and managed. This study suggests that most wilderness day users are not very different from overnight users—to a great extent because they are the same people. It is the day visit that differs from the overnight visit—more than the day user differing from the overnight user. There are many reasons to suspect that someone embarking on a day trip typically has more limited expectations than someone embarking on an overnight trip—about the conditions they will encounter and the experiences they will have. Consequently, day visits may prove more satisfactory than overnight trips, despite fewer extraordinary experiences and more frequent detracting conditions. The same person, questioned after a wilderness day trip, may have different attitudes and preferences than when questioned following an overnight trip to the same wilderness.

This suggests, as Hockett and Hall (1998) report for Shenandoah National Park, that most visitors—both day and overnight—support the concept of wilderness management zoning. Most visitors prefer a regime that restricts use to low levels in some places and allows relatively unrestricted use in other places—presumably those frequented by day users. Rather than manage all wilderness identically, managers are more likely to serve the needs and desires of both day and overnight users by managing different portions of wilderness in different ways and to different standards. Day use of wilderness should no longer be ignored. However, it does seem appropriate to use different standards for judging the quality of day and overnight visits and for judging the appropriateness of conditions in portions of wilderness used primarily by day users.

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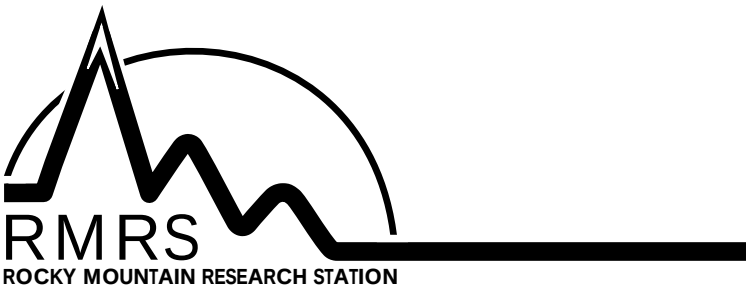

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