

**Use and Users  
of the Cranberry Backcountry  
in West Virginia:  
insights for eastern  
backcountry management**

**by Herbert E. Echelberger  
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# **Use and Users of the Cranberry Backcountry in West Virginia: insights for eastern backcountry management**

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## **ABSTRACT**

Management of backcountry recreation areas in the eastern United States should be based in part on information about the identity of backcountry users and what they seek in their backcountry experiences. Because little of this kind of information is now available, managers may be adopting some strategies with inadequate knowledge of the consequences of their decisions. Results of a study of users of the Cranberry Backcountry in West Virginia describe the potential impact of several management alternatives. Cranberry Backcountry visitors and western Wilderness Area visitors are compared.

**Keywords:** Dispersed recreation, visitor survey, wilderness areas, backcountry management

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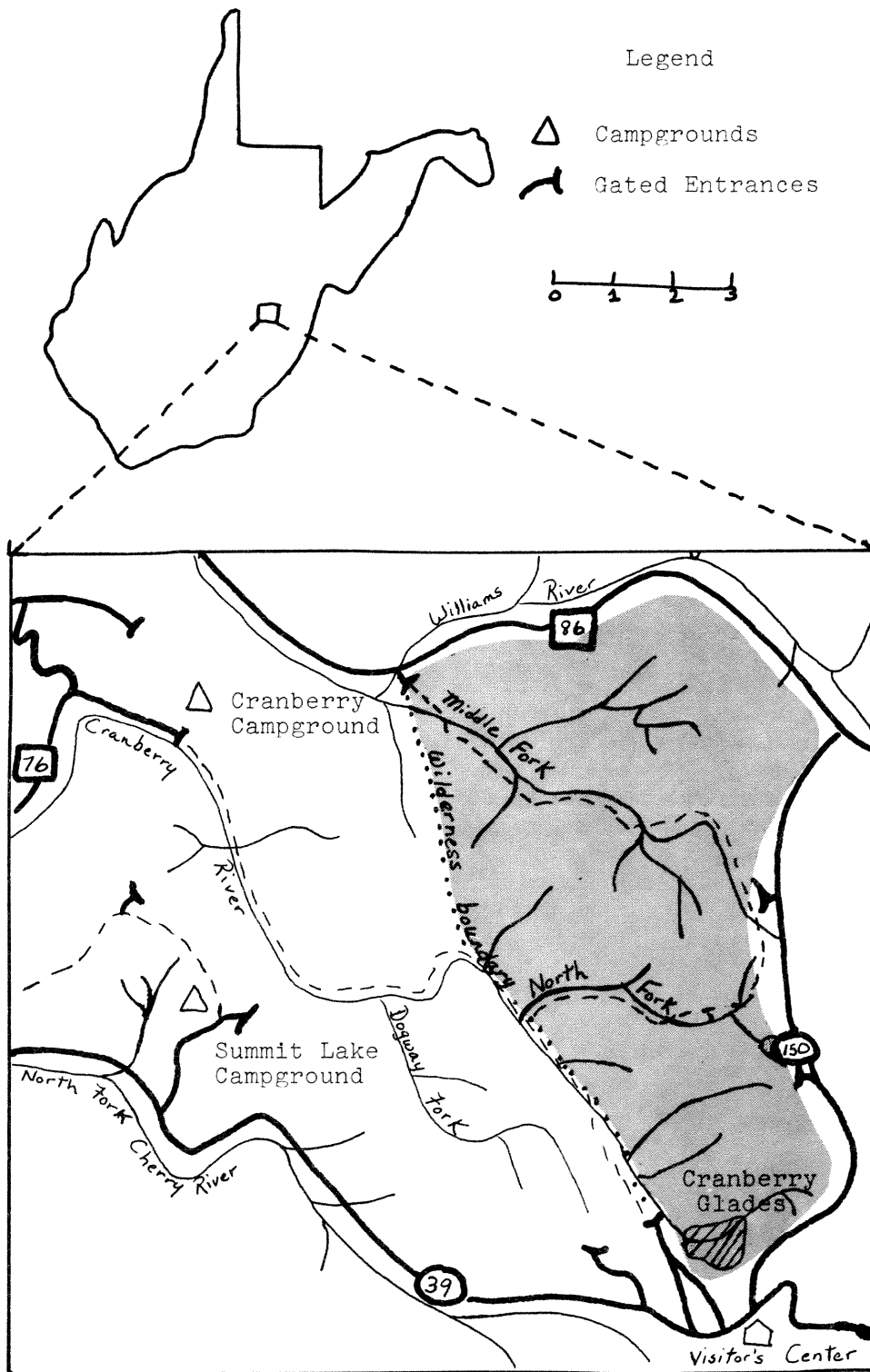


Figure 1.—Cranberry Backcountry.

## INTRODUCTION

**A**MONG THE MANY goods and services provided by National Forests in the eastern United States is the opportunity for a backcountry recreation experience. This experience might be characterized as one of solitude, exploration, and challenge in a setting that has little evidence of man's impact. Few studies have been done to describe the recreationists who seek this kind of experience on eastern National Forests. Such information is badly needed to develop backcountry management alternatives. This paper seeks to provide descriptive information about visitors to a specific backcountry area and to summarize their opinions about management of the area.

### The Study Area

The Cranberry Backcountry is a 53,000-acre parcel of the Monongahela National Forest in West Virginia (fig. 1). The topography is hilly to mountainous, with elevations ranging from less than 2500 feet to more than 4500 feet. The Backcountry contains the headwaters of the Cranberry River and provides some of the finest trout fishing in West Virginia. Primitive camping, hiking, nature study, and hunting are also favored recreational activities.

The "Back Country" was established in 1936 when roads through the area were gated and officially closed to all entry as a fire-prevention measure. This closure was terminated in 1945, and from then until 1975 the area was under the Forest Service's multiple-use/sustained-yield forest management. On January 3, 1975, the Cranberry Wilderness Study Area was established under Public Law 93-622. This law set aside 36,300 acres in the eastern portion of the Cranberry Backcountry to be studied for possible inclusion in the National Wilderness Preservation System.

Although there is a secondary road system within the Cranberry Backcountry, it is used only for administrative purposes. Public access is provided through nine gated entrances that are evenly distributed around the boundary. There is a fairly well-developed trail system throughout the Backcountry. Recreational travel is restricted to hiking, bicycling, and

horseback riding. Recreational use of the Cranberry Backcountry was estimated at about 40,000 visitor-days in 1972.

### The Visitor Survey

In response to a need for information about dispersed recreation in the Backcountry, the Forest Service developed the Cranberry Backcountry Visitor Survey. This survey took place between April 1 and December 15, 1972. Self-registration boxes were set up at each gated entrance point and all visitors 16 years or older were asked to register (fig. 2). Every 18th registered visitor was mailed a questionnaire that asked the visitor's opinions of his Backcountry experience and of present Backcountry management, about possible solutions to recognized problems, about the level of facility development in and adjacent to the Backcountry, and about himself.

On randomly selected days, a person was stationed inside the Cranberry Campground entrance gate to check registration rates. This one gate has traditionally contributed about 60 percent of the total use of the Backcountry. Whenever someone did not register at the self-registration box, the checker would ask him to register. Reasons given for not registering at the box were: in a hurry; will register on way out;

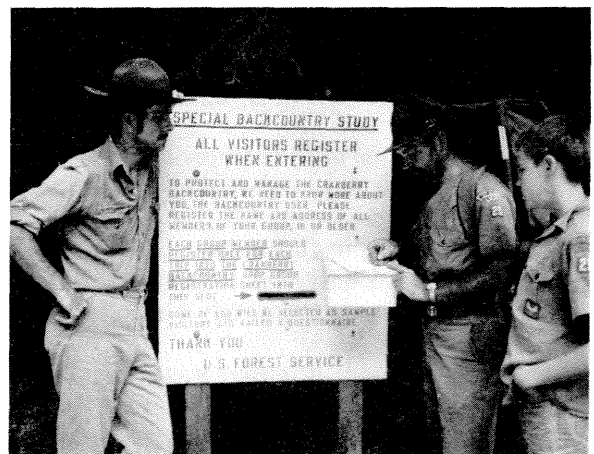


Figure 2.—Visitors were asked to register each time they entered the Backcountry.

too wet; too lazy; etc. No one refused to register when asked to do so. A separate list of these "non-volunteer registrants" was compiled and every fourth non-volunteer registrant was mailed a questionnaire.

More than 550 questionnaires were mailed. After two reminders had been sent, 413 of the questionnaires were returned. Response rates were 80 percent for volunteer registrants and 70 percent for non-volunteer registrants. A comparison of questionnaires from the two groups showed no significant differences in responses, except that a greater percentage of the non-volunteer registrants listed as their major reason for visiting the Cranberry Backcountry fishing, and fewer listed hiking, nature study, or camping.

## **SURVEY RESULTS**

Results of the survey are descriptive. Reported percentages generally had a deviation of  $\pm 10$  percent; measurement error was considered where appropriate. Chi-square tests were utilized in some cases in which results might otherwise have been ambiguous. Confidence levels are reported in these instances.

### **The Cranberry Backcountry Visitor**

A trout fisherman under 30 years old from West Virginia is a description of nearly 60 percent of the Cranberry Backcountry visitors. About one-quarter of all users were female. Most visitors came with one to three friends or family members and stayed either a few hours or a couple of days. Just over half the respondents indicated less than a day's stay; 45 percent stayed between 1 and 3 days. The remaining 4 percent stayed 4 to 15 days.

About a quarter of the respondents indicated that they had not previously visited the Cranberry Backcountry. Of those who had visited the area, 3 in 10 had been coming to the Cranberry Backcountry for 10 years or more; 2 in 10 for 6 to 9 years; and nearly 4 in 10 for 2 to 5 years.

Only one respondent in four was a member of an outdoor organization. Hunting and fishing organizations accounted for 45 percent of those who had such organizational affiliations, whereas youth groups (i.e., scouts, 4-H, etc.) ac-

counted for 32 percent. Conservation and outing clubs accounted for the remaining 23 percent of the affiliations. About a quarter of these affiliated respondents belonged to more than one organization.

Results of past wilderness surveys have characterized western wilderness users as highly educated. Hendee et al. (1968) reported the distribution of educational attainment among western wilderness users; about one-third had less than 13 years education, about one-third had a college degree or some college education, and almost one-third had done postgraduate work. Cranberry Backcountry users were different; 64 percent had less than 13 years education, 26 percent had some college or had finished college, and only 11 percent had done postgraduate work. The differences in these distributions may be due, in part, to differences in the ages of respondents in the two studies. Hendee reports that 22 percent of the respondents in his study were under 24 years old, whereas 30 percent of the respondents in the Cranberry Backcountry Survey were under 24 years old. In spite of the differences in the two distributions, the educational levels for Cranberry Backcountry respondents still compare very favorably with U.S. educational levels. Table 1 shows a comparison of these two distributions. Note, again, the age discrepancy.

Although the distribution of educational attainment among Cranberry Backcountry visitors is not the same as Hendee's distribution, Cranberry Backcountry visitors do appear to be more highly educated than the U.S. population as a whole. Educational attainment and occupation were highly correlated. White-collar occupations were reported by 36 percent of the Cranberry Backcountry respondents and blue-collar occupations by 40 percent; 23 percent of the respondents were students, housewives, or retirees. One percent were unemployed.

Nearly 90 percent of the respondents answered the question about total family income. The distribution of incomes is shown in table 1, along with data for the U.S. and for West Virginia. The income distributions indicate that Cranberry Backcountry visitors are slightly more affluent than the U.S. population in general and considerably more affluent than most residents of West Virginia. These observations are similar to those at western Wilderness Areas (Stankey 1971).

**Table 1.—Respondents in Cranberry Backcountry study compared with national and state averages on education and income (in percent of respondents)**

| Category                      | Cranberry<br>(age 16 and over) | U.S.<br>(age 25 and over) | W. Va.          |
|-------------------------------|--------------------------------|---------------------------|-----------------|
| EDUCATION (years)             |                                |                           |                 |
| Less than 12                  | 22                             | 45 <sup>a</sup>           | —               |
| 12                            | 41                             | 34                        | —               |
| 13 to 15                      | 15                             | 10                        | —               |
| 16 or more                    | 22                             | 11                        | —               |
| TOTAL FAMILY INCOME (dollars) |                                |                           |                 |
| Less than 3,000               | 4 <sup>b</sup>                 | 9 <sup>c</sup>            | 17 <sup>d</sup> |
| 3,000 to 6,999                | 16                             | 22                        | 29              |
| 7,000 to 9,999                | 24                             | 20                        | 24              |
| 10,000 to 14,999              | 35                             | 27                        | 20              |
| 15,000 or more                | 21                             | 22                        | 10              |

<sup>a</sup>Source: U.S. Bureau of the Census 1972.

<sup>b</sup>Although the study was done in 1972, replies probably reflect 1971 income.

<sup>c</sup>Source: U. S. Bureau of the Census 1975 (reflects incomes in 1970)

<sup>d</sup>Source: U.S. Bureau of the Census 1970

## The Cranberry Backcountry Experience

Knowledge of user characteristics and past experiences is necessary to forecast future Backcountry use. But administrators also need information about how visitors feel toward present management. Backcountry visitors were asked if the area was overused in relation to their primary reason for visiting it. More than half believed it was, and 15 percent felt the area was greatly overused for their primary activity.

Recreational facilities in the Cranberry Backcountry consist of pit toilets, a few open-faced shelters (figure 3), and maintained trails. This level of development tends to insure a primitive type of recreation experience. We were interested in whether visitors felt they had had a wilderness experience. Nearly three-quarters of the respondents felt that the Backcountry had provided them with a wilderness experience. Furthermore, the overall quality of the recreation experience was rated as pleasant or very pleasant by 9 of 10 respondents.

When asked to comment on what they liked about their Cranberry Backcountry visit, respondents most often specified the solitude, peace, and quietness of the area and its natural scenic beauty (table 2). On the negative side, overcrowding and lack of camping facilities

were mentioned most often. About 12 percent of the respondents specifically mentioned that evidence of logging and related activities had detracted from their Backcountry experience. Four of ten respondents offered no negative comments, which suggests that decisions to change existing facilities or management of the Cranberry Backcountry may meet with considerable public resistance.

Respondents were also asked to rate the in-



**Figure 3.—Facility development in the Cranberry Backcountry promotes primitive recreational experiences.**

**Table 2.—Most and least liked characteristics of the Cranberry Backcountry (in percent of respondents)**

| Characteristic                         | Percentage of respondents |
|----------------------------------------|---------------------------|
| <b>MOST LIKED</b>                      |                           |
| Solitude and natural scenic beauty     | 63                        |
| Fishing and hunting                    | 20                        |
| Exclusion of motor vehicles            | 7                         |
| Other                                  | 2                         |
| No response                            | 8                         |
| <b>LEAST LIKED</b>                     |                           |
| Overcrowding                           | 16                        |
| Logging                                | 12                        |
| Littering                              | 11                        |
| Poor fishing                           | 10                        |
| Dusty, rough roads                     | 5                         |
| Other                                  | 2                         |
| No dislikes or no response to question | 44                        |

fluence of 10 current conditions in the Backcountry on their overall experience (table 3). The condition that detracted most from the quality of their experience was evidence of logging (38 percent), but an even larger number (43 percent) said they had not encountered evidence of logging or that it had not affected them.

Overcrowding was cited as the second most important condition detracting from Backcountry visits, but more half the respondents did not

encounter overcrowding or were not affected by it. Other conditions that detracted from the enjoyment of some respondents were vehicular traffic, stocking of fish in the Cranberry River (although 27 percent of respondents said fish stocking enhanced the quality of their visits), and the lack of facilities.

## User Reactions to Management Alternatives

Planning for the management of public land and water recreation resources is a dynamic process. To respond to changing public demands, planning must involve input from many "publics." To learn how users felt, we asked them to react to several possible changes in Cranberry Backcountry management.

Table 4 summarizes responses toward facility development alternatives. More interpretive signs, picnic tables, shelters along the Cranberry River, and parking areas at entrance gates were desired by as many as half the respondents. However, half the respondents or more expressed no opinion or were opposed to adding more of these facilities.

About one-third of the respondents wanted more small water impoundments, shelters along hiking trails, walk-in primitive campgrounds, foot trails, and bridges over rivers. Two-thirds expressed no opinions or were opposed to adding more of these facilities.

**Table 3.—Influence of conditions on the overall quality of visit (in percent of respondents)**

| Condition               | Detracted from experience | Enhanced experience | No effect | Did not encounter | No opinion |
|-------------------------|---------------------------|---------------------|-----------|-------------------|------------|
| Logging                 | 38                        | 2                   | 7         | 36                | 17         |
| Overcrowding            | 29                        | 2                   | 15        | 37                | 17         |
| Vehicular traffic       | 18                        | 4                   | 17        | 41                | 20         |
| Fish stocking           | 16                        | 27                  | 10        | 25                | 22         |
| Lack of facilities      | 14                        | 17                  | 20        | 28                | 21         |
| Mining                  | 10                        | 1                   | 3         | 68                | 18         |
| Noise                   | 9                         | 2                   | 15        | 56                | 18         |
| Inadequate access       | 7                         | 21                  | 14        | 32                | 26         |
| Lack of law enforcement | 6                         | 5                   | 19        | 48                | 22         |
| Hunting                 | 2                         | 6                   | 8         | 57                | 27         |



**Table 4.—Percentage of respondents with certain opinions about adding facilities to the Cranberry Backcountry**

| Possible addition                | Add more | Don't change | Reduce existing number | Remove existing number | No opinion |
|----------------------------------|----------|--------------|------------------------|------------------------|------------|
| Interpretive signs               | 50       | 25           | 1                      | 1                      | 23         |
| Picnic tables                    | 48       | 30           | 1                      | 3                      | 18         |
| Shelters along Cranberry River   | 47       | 37           | 1                      | 3                      | 12         |
| Parking areas at entrance points | 46       | 39           | 1                      | 1                      | 13         |
| Small water impoundments         | 36       | 29           | 1                      | 2                      | 32         |
| Shelters along hiking trails     | 35       | 29           | 1                      | 2                      | 33         |
| Walk-in primitive campgrounds    | 34       | 32           | 1                      | 2                      | 31         |
| Foot trails                      | 33       | 39           | 1                      | 1                      | 26         |
| Bridges over rivers              | 30       | 45           | 2                      | 3                      | 20         |
| Foot bridges along trails        | 23       | 37           | 1                      | 2                      | 37         |
| Areas with no trails             | 18       | 40           | 3                      | 1                      | 38         |

At least half the respondents did not favor adding more facilities to the Cranberry Backcountry. These results, coupled with the finding that 44 percent of the respondents had no dislikes about the Cranberry Backcountry or did not respond to the question (table 2), suggest that any additional facilities, although increasing the durability of the site, may tend to reduce the satisfaction of individual users or even the total satisfaction of all users. Such additions are apparently desired by less than a majority of current Backcountry users. They are especially not wanted by those whose expectations were "solitude and natural scenic beauty of the area."

The second set of alternatives dealt with opinions about suggested changes in management policy (table 5). A majority of respondents felt that 6 of the 12 suggested policy changes would reduce the overall quality of their Backcountry experience. Payment of an entrance fee, camping only in designated areas, and restricting the use of certain areas by issuing trip permits would reduce the quality of experience for nearly half the visitors. Rangers regularly patrolling the Backcountry and man-

datory registration would improve the quality of experience for most visitors. A little over one-third of the visitors would like to see a portion of the Cranberry River set aside for fly fishing.

Our overall impression from reactions to the two sets of management alternatives is that the current level of facility development and the existing management policies provide most Backcountry visitors with the kind of recreation experience they desire.

## **A MANAGEMENT PREFERENCE PROFILE**

A management preference profile of respondents was developed to provide a better data base of visitor expectations and desires. This information may be of value in decisions about management or operating policies. The profile was developed to determine what proportion of respondents would prefer (a) a more primitive backcountry experience, (b) a less primitive backcountry experience, and (c) to keep the present level of primitive backcountry experience available in the Cranberry Backcountry.

**Table 5.—Expected effects of changes in management policies on quality of experience (in percent of respondents)**

| Suggested change in policy                                     | Reduce quality | Improve quality | No effect | No opinion |
|----------------------------------------------------------------|----------------|-----------------|-----------|------------|
| Allow public use of motorized vehicles in backcountry          | 84             | 4               | 2         | 10         |
| Allow deep mining                                              | 82             | 1               | 2         | 15         |
| Provide vehicle access points closer to Cranberry River        | 71             | 12              | 4         | 13         |
| Allow public vehicle access only during deer season            | 64             | 11              | 5         | 20         |
| Allow snowmobiles in Backcountry during winter                 | 63             | 11              | 5         | 21         |
| Allow bear hunting in Backcountry                              | 56             | 11              | 6         | 27         |
| Collect an entrance fee                                        | 45             | 15              | 15        | 25         |
| Allow camping only in designated areas                         | 42             | 33              | 9         | 16         |
| Issue trip permits to restrict number of visitors in an area   | 42             | 21              | 11        | 26         |
| Set aside portion of Cranberry River for fly fishing only      | 22             | 35              | 15        | 28         |
| Have Forest Ranger regularly patrol the Backcountry            | 6              | 63              | 15        | 16         |
| Require all visitors to register when entering the Backcountry | 6              | 54              | 26        | 14         |

Profiles were based on respondents' answers to 22 questions about present conditions encountered in the Backcountry, preferred level of facility development, and preferred operating policies. Responses for each of the questions were assigned a score from 1 to 3, with 1 representing an interest in less primitive conditions, and 3 representing an interest in more primitive conditions. A "no opinion" or "non-response" was scored as 2. Total scores could range from 22 to 66.

Actual scores ranged from 34 to 58, and the distribution within these limits approximated a normal (bell-shaped) curve. Respondents whose scores were within one standard deviation (4 points) of the actual midpoint of the distribution (46) were considered to have mid-range preferences. A total of 70 percent of the respondents fell in this category; 14 percent had scores less than 42 and were designated as preferring less primitive conditions, and 16 percent had scores of 51 or more and were designated as preferring more primitive conditions.

It is possible that the number of respondents who preferred more primitive conditions is slightly inflated when compared with the total number of Cranberry Backcountry users. Of the

413 responses to the questionnaire, 243 were from visitors who had registered voluntarily at the gated entrances. Twenty-one percent of these volunteer registrants preferred more primitive conditions (table 6). Only 9 percent of the respondents who did not register voluntarily but were asked to register preferred more primitive conditions. Although more visitors registered voluntarily than did not, those who preferred more primitive conditions were significantly more likely to register voluntarily than those who preferred less primitive conditions ( $p < .05$ ).

Preference scores for volunteer registrants were also analyzed by season (table 6). More summer visitors preferred more primitive conditions than did spring or fall visitors ( $p < .05$ ). Spring and fall visitors to the Cranberry Backcountry are more likely to arrive with specific activities in mind (fishing and hunting, respectively) and are, consequently, likely to be less concerned with the other primitive recreation opportunities available in the area. A greater proportion of summer visitors arrive with hopes of finding a wildernesslike experience and they are more likely to desire facilities and management that foster this kind of experience.

Table 6.—Management preferences of groups of visitors

| Group                    | More primitive conditions | Present conditions | Less primitive conditions | N          |
|--------------------------|---------------------------|--------------------|---------------------------|------------|
| Voluntary registrants    | 21.2                      | 64.4               | 14.4                      | 243        |
| Involuntary registrants  | 9.4                       | 76.5               | 14.1                      | 170        |
|                          |                           |                    |                           | <u>413</u> |
| Spring visitors          | 16.8                      | 67.2               | 16.0                      | 131        |
| Summer visitors          | 29.7                      | 60.4               | 9.9                       | 91         |
| Fall visitors            | 14.3                      | 61.9               | 23.8                      | 21         |
|                          |                           |                    |                           | <u>243</u> |
| Fishing-gate entrants    | 23.4                      | 60.4               | 16.2                      | 192        |
| Nonfishing-gate entrants | 13.7                      | 78.5               | 7.8                       | 51         |
|                          |                           |                    |                           | <u>243</u> |

In our analysis of visitors who entered the Backcountry through gates that provided access to the fishing opportunities, we expected that fishing-gate entrants would prefer less primitive conditions and that nonfishing-gate entrants would prefer more primitive conditions. The preferences shown in table 6, however, lead to rejection of this hypothesis.

Another purpose of categorizing users was to identify differences in group characteristics. A discriminant analysis comparing visitors who preferred more primitive conditions with those who preferred less primitive conditions showed that the latter were often younger and lived in larger cities and were more likely to be white-collar workers than blue-collar workers. This finding is probably correlated with the slightly higher educational and annual income levels of the visitors who preferred more primitive conditions ( $p < .01$ ). We describe the visitor with this constellation of characteristics as "cosmopolitan."

The information from the management preference profile should be useful in deciding on the future management of the Cranberry Backcountry. For example, if residents of the eastern United States become more "cosmopolitan," management might expect the proportion of Backcountry visitors who prefer more primitive recreation experiences to increase. On the other hand, if a greater number of less "cosmopolitan" users should visit the Backcountry, management might expect to experience greater demand for site development and

policies that promote less primitive recreation experiences.

## CONCLUSIONS

Most visitors to the Cranberry Backcountry are well satisfied with present levels of facility development and present operating policies. Any increase in the area's physical capability to accommodate more visitors may attract more visitors than the present users want to encounter. A decision to alter the present operating policy to one that excludes any of the present uses of the Backcountry may upset the present balance of visitor expectations and satisfactions.

The present mix of satisfied visitors, those who want more primitive conditions and those who want less primitive conditions, may not be stable. What is likely to disturb its proportions is a change in user characteristics. In time, users may become more urbanized and educated; this would result in a greater proportion of visitors who would prefer a more primitive backcountry experience.

When our information is compared with that about western Wilderness Area users (*Hendee et al. 1968, Merriam and Ammons 1967, Stankey 1971*), questions arise about similarities and differences between eastern and western backcountry users. Although visitors to the Cranberry Backcountry represent a very limited sample of all eastern backcountry visitors, their characteristics, expectations, and

satisfactions do not differ much from those found in the West. In both cases, many backcountry recreationists come in small groups, stay for short periods, and make several trips per year. In both cases, they may fairly be characterized as young to middle-aged adults with slightly more education and income than the population from which they come. And in both regions, less than a third of the respondents to the surveys belong to organized conservation groups.

Most Cranberry Backcountry fishermen, campers, hikers, etc. anticipated a set of experiences before they entered the Backcountry, and came away satisfied. What remains unknown is how these expectations and satisfactions compare with those of visitors to western Wilderness Areas. Although user desires for facility development and management policies may be universal throughout the National Wilderness Preservation System, we lack sufficient knowledge of what motivates visitors to visit specific wilderness areas and what benefits they derive from a trip to a Wilderness Area, especially in the East. Managers don't know what user expectations are or whether they can be met by eastern Wilderness. The Cranberry Backcountry provided a "wilderness experience" for nearly three-quarters of our respondents, but the Cranberry Backcountry is only 53,000

acres. Is a wilderness experience in the Cranberry Backcountry equivalent to a wilderness experience in the Glacier Peaks of Washington? And how would the experience of the Glacier Peak Wilderness (452,020 acres) compare with that provided by the 2,570-acre Gee Creek Wilderness in Tennessee, or the 1,500-acre Wambaw Swamp in South Carolina? For some, these acreage differences are irrelevant, for others, they may be paramount.

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