

What Draws People to Yellowstone's Backcountry?

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Hikers on Observation Peak trail (above), and backcountry camp (left). Solitude and scenery both rated as important elements of a quality backcountry experience for many survey respondents.

EACH YEAR, Yellowstone National Park receives around three million visitors, making it one of the busiest national parks. Most of these visitors drive the more than 300 miles of park roads known as the Grand Loop, while seeing the traditional sites of Old Faithful, Yellowstone Lake, Mammoth Hot Springs, and the Canyon area. The roads are certainly one path for unparalleled outdoor recreation. But for many others, the roads with their busy traffic are not the transportation method of choice. Rather, they choose to hike in Yellowstone's incomparable backcountry. For thousands annually (in 2005, 5,089 permits were issued representing 39,344 person use nights), it is the backcountry that captivates their interest and motivates them to take the road less traveled. These are individuals who choose a different experience, a different approach to outdoor recreation. Who are they? What do they seek? What kind of park management preferences do they have?

This study, conducted as part of a master's thesis project by Tim Oosterhous, was consistent with the objectives of the National Park Service (NPS) Social Science Program: "to conduct and promote state-of-the-art social science related to the mission of the National Park Service and deliver usable

knowledge to NPS managers and to the public." This project originated with a personal and academic interest that Tim developed as he hiked hundreds of miles of trails during the three summers and one winter season he spent working as a backcountry ranger in Yellowstone.

Methods

The purpose of this study was to investigate salient features of the backcountry experience for unguided backcountry users. We focused on visitors who appeared at one of the designated offices to obtain a backcountry permit, excluding outfitters and guides who go through a separate permit process. These visitors are required to obtain a permit for overnight camping in the backcountry (permits are not required for day use). Backcountry permits are free of charge (advance reservations, offered since 1996, can be made for a \$20 fee) and are available at 10 ranger stations and visitor centers throughout the park. After obtaining the backcountry permit, visitors are required to watch a 15-minute video about regulations and possible dangers in Yellowstone's backcountry. They also complete a form that provides demographic information used for

park statistics and in case of an emergency. With the help of the permit issuer, visitors select one or more campsites from more than 300 possibilities throughout the park. Camping is allowed only in designated campsites and within size limits that range from 4 to 25 individuals per party, depending on the location. Access to backcountry campsites may be permissible by foot, stock, motorized boat, and/or non-motorized boat.

A questionnaire developed after consultation with backcountry managers was pre-tested with potential backcountry users and modified based on their feedback. Data collection began in June 1999, and lasted two months. Staff and volunteers at each of the 10 ranger stations and visitor centers that regularly issue backcountry permits helped in the data collection. After backcountry visitors completed the permit process, one person from the party who was at least age 18 was asked to participate in a study regarding the backcountry experience. Willing participants provided their name and mailing address on a sign-up sheet. The sheets were collected weekly, and each participant was mailed a questionnaire following standard mail protocol, along with a cover letter explaining the purpose of the study. A postage-paid, return envelope was provided. The initial response rate was about 50% and after a second mailing was sent to non-respondents, the response rate increased 11%, yielding a final response rate of 61%. A total of 646 usable questionnaires were analyzed.

Results

Demographics

While we cannot claim that our respondents are entirely typical of Yellowstone backcountry users, we know that this information provides important, new insights into who backcountry users are and what their perceptions are. Based on Tim's personal experience and professional knowledge, the sample demographics appear to reasonably reflect the population of backcountry campers.

Demographically, 71% of our respondents were male, 94% were Caucasian, 46% were married, 55% were age 35 or younger, 73% had completed college, 49% had an annual family income of greater than \$60,000, and 20% came from metropolitan areas with a population of more than one million people.

Backcountry Trip

For purposes of the study, the park was divided into 13 sections divided by major drainages. We asked participants to indicate in which sections they had camped at least one night. The top five were: Canyon (15.8%), Yellowstone River/Hellroaring (14.0%), Shoshone Lake (12.9%), Yellowstone Lake (12.2%), and Old Faithful (10.8%); almost two-thirds of respondents camped in these locations. Five areas (Bechler,

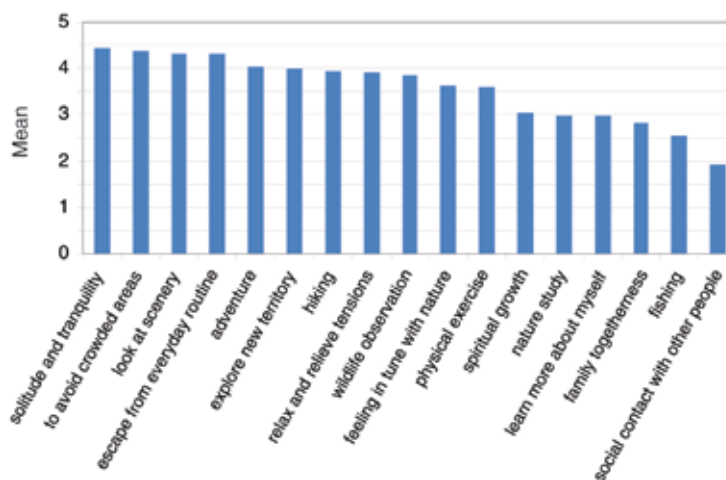


Figure 1. Importance of backcountry experience factors.

Pelican Valley, Lamar, Heart Lake, and Thorofare) received relatively few backcountry users; combined, they represented only 19.6% of the respondents. About 83% of the respondents traveled by foot, while others traveled by horse, llama, motor boat, and non-motorized boat. About 10% traveled alone, while 82% traveled in parties of four or fewer. Party size ranged from 1 to 25; mean party size was 3.3. Parties averaged a little over two nights per trip itinerary under study, and 91% indicated that they spent four or fewer nights in the backcountry. Just over 50% of backcountry users had not spent a night in the Yellowstone backcountry before this trip, while one in six backcountry users had experienced 10 or more overnight trips in the Yellowstone backcountry. Overall, respondents were experienced backcountry hikers; 60% had experienced 10 or more overnight backcountry or wilderness trips outside of Yellowstone prior to this trip.

More than two-thirds of respondents indicated they saw five or fewer groups during their trip; about 11% saw more than 10 groups. To get a better indication of their experience, we also asked about their reaction to the number of groups they saw. More than three-quarters said the number of groups was "about right," while 20% indicated they saw too many other groups. It is interesting to note that of those individuals who saw 11 or more groups, 52% said the number of groups was "too many" and of those who saw 6 to 10 groups, 37% indicated that the number of groups was "too many."

Importance of Backcountry Experiences

We asked respondents to rate the importance (on a scale of 1 to 5, with 1 being very unimportant and 5 being extremely important) for 17 factors related to the backcountry experience (Table 1). Six factors (solitude and tranquility, to avoid crowded areas, look at scenery, escape from everyday routine, adventure, and explore new territory) averaged above four on the scale. The data suggest that there is a great deal of uniformity

Backcountry Experience Factor	Gender	Age	Marital Status	Family Income	Education	Previous YNP Trips	Employee or Visitor
Wildlife observation	females	36–75			<college degree	1	visitor
Escape from everyday routine							employee
Solitude and tranquility						1	
Explore new territory	females	18–35	single	<\$60K		0	
Relax and relieve tensions	females						employee
Learn more about myself	females	18–35	single	<\$60K			employee
Feeling in tune with nature	females	18–35	single				employee
Look at scenery	females					0	
Social contact with other people			single		<college degree	1	employee
Family togetherness		36–75	married	≥\$60K	≥college degree		visitor
Fishing	males	36–75	married	≥\$60K		1	visitor
Hiking	females	18–35	single	<\$60K		0	
Nature study	females			≥\$60K			
Physical exercise	females			≥\$60K			
Adventure	females	18–35	single	\$60K			
Spiritual growth	females	18–35	single	≥\$60K	<college degree		
To avoid crowded areas				\$60K		1	

Table 1. Analysis of backcountry experience factors by socio-demographics.

on these issues. In fact, 88% of the respondents marked solitude and tranquility as extremely important. In contrast, nature study, learning about oneself, family togetherness, fishing, and social contact with others were thought to be relatively unimportant.

In order to look at market segmentation with regard to the backcountry experience, we ran a series of analyses on the 17 backcountry factors by 8 socio-demographic variables: gender, age, marital status, race, family income, education, number of previous Yellowstone backcountry trips, and employment status (visitor or employee). All of the variables except race produced significant group differences. Gender yielded the most

differences. Though fishing was ranked relatively low overall, males placed considerably greater importance on fishing than women. Women placed greater importance on wildlife observation, exploring new territory, relaxing, learning about themselves, feeling in tune with nature, looking at scenery, hiking, studying nature, physical exercise, adventure, and spiritual growth. Family income, age, marital status, number of previous Yellowstone backcountry trips, and employee status each produced at least nine significant group differences. Looking at the backcountry experience factors themselves reveals interesting patterns. For 6 of the 17 factors (escape from everyday routine, solitude and tranquility, look at scenery, nature study,

physical exercise, and avoid crowded areas), the socio-demographic variables made little difference (only one or two significant differences); this suggests a sense of universality—that many different types of individuals from different backgrounds and lifestyles are seeking the same experiences. On the other hand, 7 of the 17 factors were associated with at least five significant differences among groups (wildlife observation, explore new territory, learn more about myself, family togetherness, fishing, hiking, and spiritual growth). This pattern indicates that some experiences are more specialized; that is, there is a more specialized population of backcountry users. Of special note is fishing, which produced the most significant differences. Placing high importance on fishing are somewhat older, relatively affluent, married male visitors who are experienced in the Yellowstone backcountry.

To further analyze patterns in responses, we performed a principal components analysis with Varimax rotation on these 17 factors. This procedure identified five components that empirically stood out in explaining variance in the data. They cumulatively explained more than 57% of the data variance: 1) winding down (which includes escape from everyday routine, solitude and tranquility, relax and relieve tensions, and avoid crowded areas); 2) activity (physical exercise, hiking, adventure, and explore new territory); 3) personal growth (learn more about oneself, spiritual growth, and feeling in tune with nature); 4) wildlife observation; and 5) fishing and family togetherness. Of the 17 original factors, only three did not appear in one of the five components (nature study, look at scenery, and social contact with other people).

Conclusions and Recommendations

So who are backcountry users and what are they seeking? Demographically, the typical user is a relatively young, unmarried, white male, but there appears

to be a great deal of diversity among these users in many ways. While solitude is the top experience desired, they also place high importance on avoiding crowded areas, looking at scenery, escaping from everyday routine, adventure, and exploring new territory. These are outdoor recreationists, desiring to be off of the roads and short hikes that lead past the famous geysers and thermal features and away from the large crowds. Instead, they desire a quiet, perhaps private experience. Therefore, one of the obvious management implications arising from this study pertains to the location of designated campsites. Campsites that are well-screened and adequately spaced from other sites would accommodate the strong desire for solitude. Moreover, because respondents placed high importance on the quality of campsites (data not shown here; respondents were asked to rate the importance of facilities and other aspects of the backcountry experience), we suggest that photos of campsites or camping units be available at permit stations to facilitate making appropriate choices for the parties based on their needs and preferences. We also recommend that pit toilets be more carefully and regularly maintained to ensure sanitary conditions (some commercial enterprises post the last date or time that a restroom has been cleaned). And finally, regarding campsite locations, we recommend that GPS information for trails and campsite locations be given to backcountry hikers if they have GPS equipment and access. This information could help hikers and park staff in a number of ways.

A minority of respondents indicated that they placed great importance on fishing and family togetherness; they combine relative solitude with a specialized recreational pursuit and family togetherness. Parents were there teaching children about Yellowstone scenery and ecosystems, implanting in children a respect and sensitivity to the natural world of Yellowstone. Furthermore, it is clear that Yellowstone has power of place—a capability to bring

families together through a common recreational pursuit. As this is the first study of its kind, we recommend that researchers conduct the survey again in 2009 to learn about changes in backcountry hikers and campers as well as the backcountry experience. We do not know what changes would be observed, but that would be another interesting adventure.

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COURTESY OF AUTHOR

Tim Oosterhous holds an MS in Forest Recreation from Stephen F. Austin State University. He is the Recreation Program Manager for the Ouachita National Forest in Arkansas. At Yellowstone, he worked three summer seasons and one winter season as a backcountry ranger in the Old Faithful area, and he worked one summer season as a backcountry office assistant in the central backcountry office in Mammoth. **Mike Legg** is the Minton Distinguished Professor of Forestry in the Arthur Temple College of Forestry and Agriculture. He has a PhD from Michigan State University. His research interests include forest recreation and interpretation, having led the university to develop, in conjunction with the National Park Service, the only master's degree in resource interpretation in the nation. **Ray Darville**, professor of sociology, is the former chair of the department of sociology and is an associate faculty member in the Arthur Temple College of Forestry and Agriculture. He holds a PhD in Sociology from the University of North Texas. His areas of expertise include social science research methods and data analysis.