

# VISITOR USE PATTERNS AND SATISFACTION ALONG THE ROGUE-UMPQUA SCENIC BYWAY, OREGON

---

Suresh K. Shrestha  
Ph.D. student  
Recreation, Parks and Tourism Resources  
Division of Forestry and Natural Resources  
West Virginia University  
Morgantown WV 26506-6125  
sshresth@mix.wvu.edu

Robert C. Burns  
West Virginia University

Alan R. Graefe  
The Pennsylvania State University

Kevin R. Gaydos  
West Virginia University

---

**Abstract.**—Face-to-face interviews were conducted with 232 visitors/groups along Oregon’s Rogue-Umpqua Scenic Byway (RUSB) to identify recreation use patterns and assess visitor satisfaction with various attributes of the Byway. Study participants were most likely to be over 50 years old, to be visiting overnight, and to be repeat visitors from Oregon who were there with family members and/or friends. For most, RUSB was their primary destination. Their most common recreational activities on the trip were sightseeing, viewing scenery/nature, hiking/walking, camping, pleasure driving, fishing, and viewing waterfalls. Performance-based satisfaction analysis indicated that the visitors were very satisfied with their overall experience and with the facilities and services offered along the Byway. Stepwise regression analysis found that satisfaction with seven attributes explained approximately 45 percent of the variance in satisfaction with the overall experience. Safety/security and educational interpretation were the most important components of overall visitor satisfaction.

Recommended improvements include better drinking water facilities and enhanced security along the Byway.

---

## 1.0 STUDY BACKGROUND

This study was conducted along the Rogue-Umpqua Scenic Byway (RUSB or Byway), located in the High Cascades of south-central Oregon near Crater Lake National Park. The 172-mile-long Byway lies primarily in the Umpqua and Rogue River National Forests. It passes through diverse river settings and mountain landscapes that include oak-covered hills, towering coniferous forests, white water rapids, and inter-canyon lava flows. Along the Byway and at waysides nearby are several parks, waterfalls, springs, and lakes, each with a variety of recreational opportunities including world-class fisheries (National Scenic Byway Program 2008). Every summer, thousands of visitors from both Oregon and out-of-state come to the area to enjoy the attractions.

The bottom line of sustainable management of any recreation area is maintaining visitor satisfaction by providing a quality experience (Lucas and Stankey 1974, Floyd 1997). Achieving this objective requires managers to have some basic information about the area’s features, visitor use patterns and preferences, and the extent of visitors’ satisfaction with their experience of the area. However, no study has been done before in the RUSB area to collect this vital information. Therefore, RUSB resource managers had very little understanding of who visitors were, why they came there, how satisfied they were with the existing condition of the natural and physical resources, and whether or not they appreciated the role of management and staff in providing quality visitor experiences. RUSB managers believed that information related to recreation along the Byway and

the quality of visitors' experiences would help them evaluate their existing programs and take actions to maximize visitor satisfaction while maintaining the natural and aesthetic quality of the area.

## 2.0 OBJECTIVES

The purpose of the study was to collect some basic information on recreation along the Byway and the quality of visitors' experiences. The specific objectives of the study were to:

- Identify the characteristics of RUSB visitors
- Determine visitors' trip characteristics and recreational use patterns along the RUSB
- Assess visitor satisfaction with various attributes of the RUSB
- Understand visitors' spending patterns along the RUSB

## 3.0 METHODOLOGY

On-site face-to-face interviews using a questionnaire were conducted to obtain the data needed for meeting the study objectives. The interviews were held at 23 pre-identified survey sites along the RUSB for 30 sample days in the summer of 2007. Students who were trained by the researchers about the contents and meanings of the questionnaire conducted the interviews. Each day, interviewers spent 1 hour at each of five different sites along the Byway on a rotating basis. All visitors who agreed to participate in the survey during that period were interviewed. The response rate was very encouraging. A total of 232 visitors/groups completed the survey for a response rate of 92 percent. As suggested by Biemer and Lyberg (2003), an adult was selected to participate from each group based on having a birthday nearest to the interview date.

The questionnaire contained both open- and close-ended questions. The questions covered various aspects of visitors' personal information, trip characteristics (first time or repeat visitor, number of visits, group composition, day or overnight trip, length of trip, primary destination), participation in recreation activities, primary recreation activities, reasons for

visiting, satisfaction with the entire experience, and attributes of the Byway.

Questions requested information about participation in 33 different recreation activities. Most of the activities were modified from a list in the National Visitor Use Monitoring (NVUM) survey, but some activities not available in the study area were omitted and others not on the NVUM list were added (Table 1). Respondents were also asked what their primary activity during the trip was. Motivation to visit the Byway was measured using 13 items. Respondents were asked to indicate how important each of the 13 items was for them on a 5-point Likert scale, where 1 meant "not important at all" and 5 meant "extremely important." Respondents were then asked to select their most important reason for visiting the Byway among four choices: 1) I enjoy the place itself; 2) It is a good place to do outdoor activities that I enjoy; 3) I wanted to spend more time with my companions; and 4) It is close to my home.

Borrie and Birzell (2001) noted that *importance-performance measures* (assessments of the quality of various attributes and assessments of the quality of attribute delivery) and *experience-based approaches* (more direct assessments of the overall experience) are widely used to measure the quality of outdoor recreation experiences. However, Absher (1998) reported that, in many cases, only *performance-based approaches* are applied. In the performance-based approach, the quality of the experience is measured in terms of user satisfaction (Outdoor Recreation Resources Review Commission 1962, Borrie and Birzell 2001). This study used both of these approaches to assess the quality of visitors' recreation experiences. Respondents were asked to rate their level of satisfaction with facilities and services, their satisfaction with the overall experience, and their satisfaction with the quality of various attributes of the RUSB. To assess satisfaction with facilities and services, respondents were asked to what extent they agreed with 27 statements related to services and facilities available along the Byway using a 5-point Likert scale. A score of "1" meant "strongly disagree" (lowest rating) and "5" represented "strongly agree"

(highest rating). Likewise, satisfaction with the overall experience was assessed using a 10-point scale, where “1” was the lowest ranking and “10” was the highest. The quality of seven attributes was measured on a 5-point Likert scale, where “1” represented the lowest rating and “5” represented the highest rating. To identify the various attributes’ effects on overall experience, overall experience was regressed on perception of seven attributes.

## 4.0 RESULTS

### 4.1 Visitor Characteristics

The mean age of the respondents was 43 years and 48 percent were more than 50 years old. The number of male respondents (55 percent) was slightly higher than the number of female respondents. About 70 percent were from Oregon and the rest were from other states; only 1 percent was from another country.

### 4.2 Trip Characteristics

At the time of the survey, the RUSB was attracting both repeat and new visitors. Most of the respondents to the Byway survey were repeat visitors (65 percent) while there was also a good contingent of first-time visitors. The median first year of visiting RUSB was 1995.

The majority of the respondents were visiting in social groups (92 percent), such as with family members (51 percent), with friends (22 percent), or with both family members and friends (19 percent). Approximately 8 percent of respondents reported that they were visiting alone and less than 1 percent of the respondents came in organized groups. Figure 1 displays the percentage of respondents by group type.

Overnight trip visitors (69 percent) were far more common than day-trippers. The mean length of overnight trips was about 5 days and 75 percent of multi-day visitors had spent more than 3 days in the area. The RUSB was the primary trip destination for the majority of the visitors (76 percent); two-thirds of them (67 percent) were visiting just the Byway while 33 percent also visited other national parks or national forests during the trip. Three-fourths of the respondents (76 percent) reported that they had

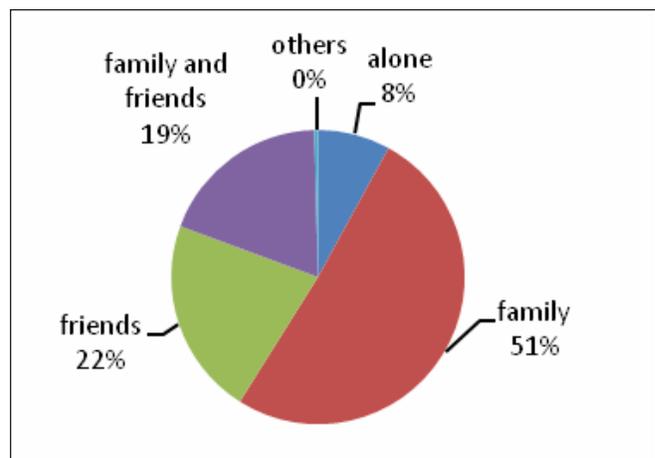


Figure 1.—Group composition of respondents.

visited or were visiting only part of the RUSB while 24 percent said that they had traveled or were traveling the entire length of the Byway. The average length of stay along the Byway was 2.8 days.

### 4.3 Activity Participation

Of the 33 activities listed on the survey, sightseeing and viewing scenery/nature along the RUSB were the most popular; more than 75 percent of the respondents reported participating in these activities. Between 50 percent and 65 percent of respondents participated in hiking/walking, camping, photography, pleasure driving, fishing, and viewing waterfalls. Between 15 percent and 37 percent of the respondents participated in picnicking, restaurant dining, rafting, shopping, and mountain biking (Table 1).

Camping was the primary activity for about a quarter of the respondents (23 percent), followed by sightseeing (17 percent), fishing (11 percent), viewing scenery/nature (11 percent), rafting (10 percent), pleasure driving (6 percent), and hiking/walking (5 percent).

### 4.4 Motivation to Visit

As in other scenic areas, the main motivations for visiting RUSB were to experience scenic vistas and nature, to be outdoors, to seek relaxation, and to escape from routines and crowds (Fig. 2). Improving social ties (for example, with family and friends) was another important motivation. As expected from

**Table 1.—Respondents' activity participation and self-identified primary activity**

| Recreation activity                                 | Percent of respondents<br>(they could choose<br>multiple activities) | Percent of respondents<br>saying this was<br>their primary activity<br>(one selection per respondent) |
|---|--|---|
| Sightseeing   | 75.9   | 17.0  |
| Viewing scenery/nature                              | 75.4   | 11.0  |
| Hiking/walking                                      | 63.4   | 4.6   |
| Taking photographs                                  | 62.1   | 0.9   |
| Camping   | 62.1   | 23.4  |
| Pleasure driving                                    | 61.2   | 6.6   |
| Viewing waterfalls                                  | 53.4   | 3.2   |
| Fishing   | 52.6   | 11.5  |
| Picnicking  | 36.6   | 1.4   |
| Visiting educational/interpretive facilities        | 31.5   | 0.0   |
| Dining in restaurants                               | 26.8   | 0   |
| Shopping for other goods                            | 19.8   | 0   |
| Rafting/kayaking/canoeing                           | 19.8   | 9.6   |
| Bicycling (mountain bike)                           | 14.7   | 0.0   |
| Bicycling (road bike)                               | 13.4   | 0.9   |
| Automobile touring                                  | 12.5   | 0   |
| Visiting historic sites/museums                     | 12.5   | 0.5   |
| Shopping for art, souvenirs, crafts, antiques, etc. | 11.6   | 0   |
| Using barrier-free trails                           | 10.8   | 0   |
| Other (specify)                                     | 5.6  | 4.1   |
| Rock collecting                                     | 4.7  | 0   |
| Horseback riding                                    | 3.9  | 0   |
| Special event attendance                            | 3.0  | 0   |
| Motorcycle touring                                  | 2.6  | 1.4   |
| Using barrier-free recreation sites                 | 2.2  | 0   |
| Commercial lodging (motel, bed and breakfast, etc.) | 1.7  | 0   |
| Gaming  | 1.7  | 0.9   |
| Climbing/caving                                     | 1.7  | 1.4   |
| Resort lodging                                      | 1.3  | 0   |
| Driving off-road/4WD vehicles                       | 1.3  | 0   |
| Hunting   | 0.9  | 0   |
| Golfing   | 0.4  | 0   |
| Bus touring   | 0  | 0.5   |

a scenic byway, physical/health benefits (exercise), sports participation, and developing skills were relatively low-rated motivations.

#### 4.5 Most Important Reason for Visiting

The setting and other features of the area were important reasons for survey respondents to visit (Fig. 3). About 40 percent of the respondents thought that the RUSB was a good place to engage in outdoor activities that they enjoyed while 31 percent enjoyed the place itself. To 21 percent of visitors, social needs, such as spending time with companions, were the most important reason to visit the Byway. About 9 percent indicated that closeness to home was their main reason for visiting the Byway.

#### 4.6 Satisfaction

##### 4.6.1 Satisfaction with Facilities and Services

In general, the respondents were very satisfied with the various facilities and services on their RUSB trip (Table 2). Respondents' average score for satisfaction-related statements about facilities and services was above 4 on a 5-point scale. Five features of the Scenic Byway received very high ratings (over 4.75): compatibility of recreation activities with the natural environment, prices of the services, condition of the facilities, safety from dangers, and accessibility for people with disabilities and special needs. Relatively low-rated facilities and services (mean rating of less than 4.2) included interpretation education services, availability of drinking water, friendliness of staff, and

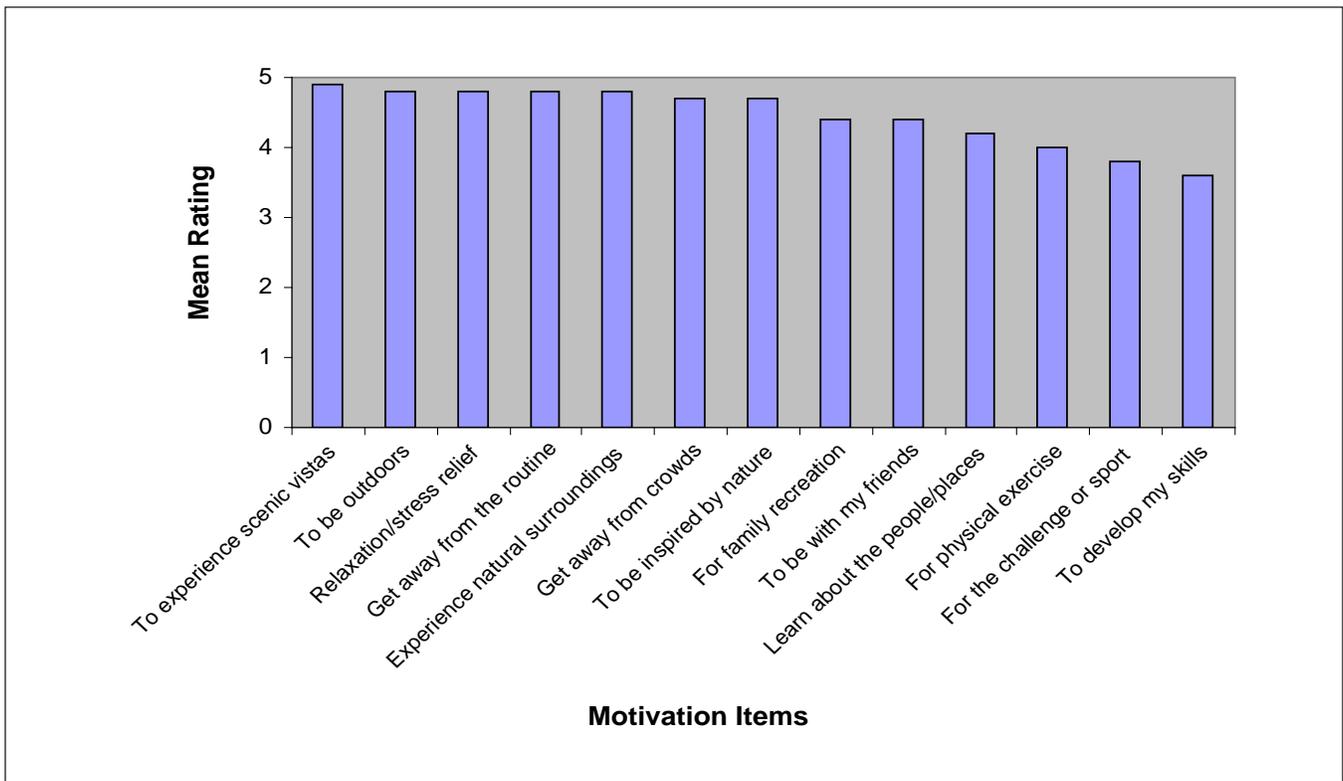


Figure 2.—Respondents’ mean rating of various motivation items in RUSB.

safety while driving along the byway. The rest of the features scored in between those two groups.

#### 4.6.2 Satisfaction with Overall Experience

Like the individual facilities and services, visitors’ perceptions of their overall RUSB trip experience were very positive (Fig. 4). The mean ranking for the overall experience was 9.28 on the 10-point scale. Almost 95 percent of respondents rated their experience as highly satisfactory and none rated their experience below 6.

#### 4.6.3 Satisfaction with Various Attributes

The RUSB visitors were very happy with the area’s attributes, rating all of them higher than 4.5 on a 5-point scale (Fig. 5). “Recreation setting” was highest, indicating their great level of satisfaction with the natural environment of the area. Kent (1993) also found that people considered visual characteristics of scenic routes to be more important than other attributes and gave high ratings to the natural setting. He concluded that people enjoy scenic drives for various reasons but that opportunities to experience natural

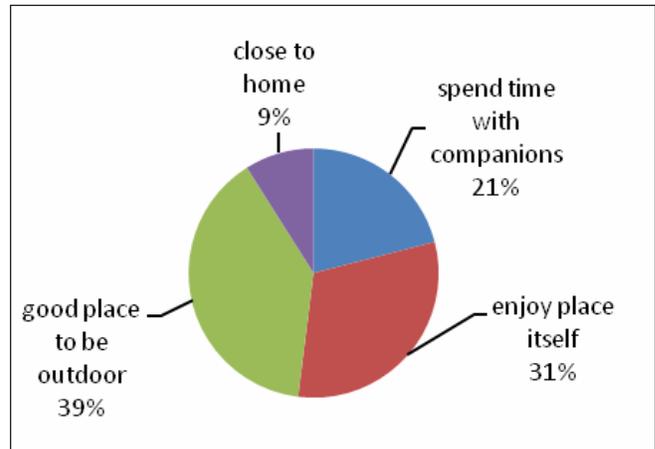


Figure 3.—Percentage of respondents who selected various primary reasons for visiting.

beauty and rural scenery are especially appreciated. In the current study, the rest of the attributes were also rated very high (mean above 4.5), but managers still have some opportunity to improve the facilities and services in such areas as health and cleanliness, safety, staff responsiveness, and condition of the facilities.

**Table 2.—Perception (level of agreement) of quality of services and facilities at RUSB.**

| Quality Attribute  | Mean Rating |
|--|-------------|
| Drinking water is available  | 4.13        |
| Recreation use is compatible with the environment                        | 4.72        |
| Reasonable prices for traveler services are available                    | 4.26        |
| Facilities are in good condition   | 4.56        |
| Recreation sites are free of dangerous conditions                        | 4.54        |
| Facilities are accessible for persons with disabilities or special needs | 4.18        |
| Garbage does not exceed container capacity                               | 4.48        |
| I have the opportunity to be inspired by natural settings                | 4.81        |
| Views from rec areas free of obstruction by buildings or development     | 4.84        |
| Roadside signs and directions make recreation sites easy to find.        | 4.74        |
| Restrooms/Toilets are clean and free of odor                             | 4.14        |
| Parking spaces are plentiful   | 4.46        |
| I feel safe at the recreation areas                                      | 4.73        |
| Adequate scenic turnouts (frequency, safety) are available               | 4.47        |
| I am able to find comfortable, good quality accommodations               | 4.65        |
| Wildlife can be found to observe   | 4.48        |
| Roads and trails are in good repair                                      | 4.68        |
| Rules and regulations are clearly posted and easy to understand          | 4.75        |
| Roadways are safe and well-maintained                                    | 4.63        |
| The area is free from litter   | 4.66        |
| Adequate trip planning information                                       | 4.56        |
| Educational interpretation of area natural features is available         | 4.56        |
| Supplies (gas, food, other supplies are available                        | 4.23        |
| Educa.interpretat. of area cultural customs, social events is available  | 4.29        |
| I feel good when I get home after driving on the scenic byway            | 4.85        |
| I feel safe when driving along the scenic byway                          | 4.66        |
| People who serve travelers are friendly and helpful                      | 4.8         |

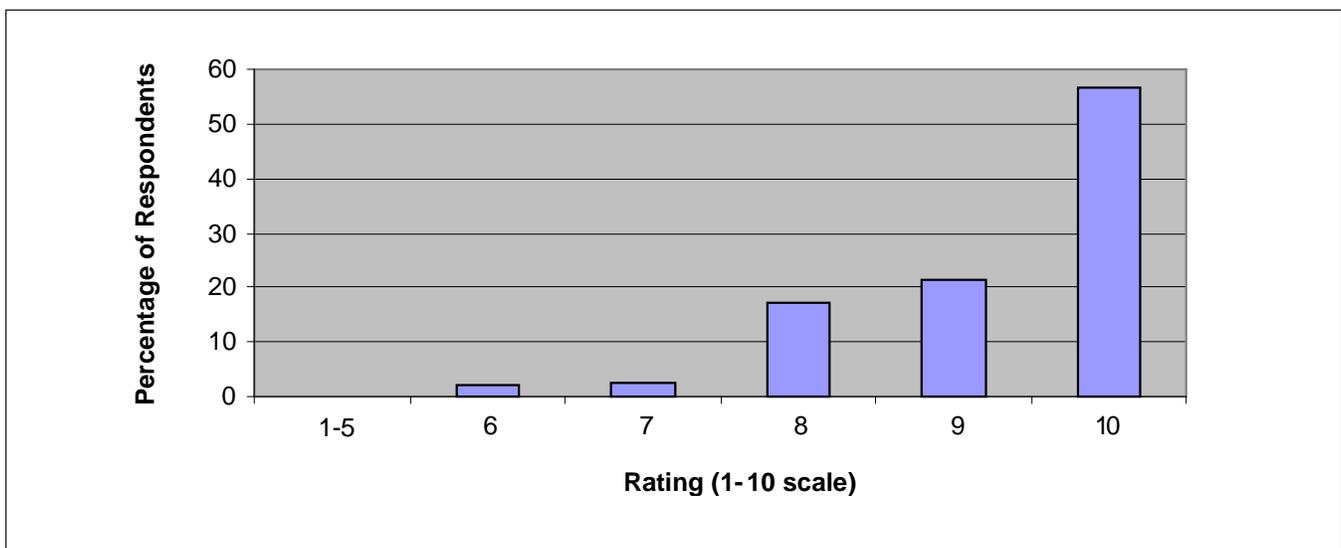


Figure 4.—Rating of overall experience along the Rogue-Umpqua Scenic Byway (mean rating = 9.28).

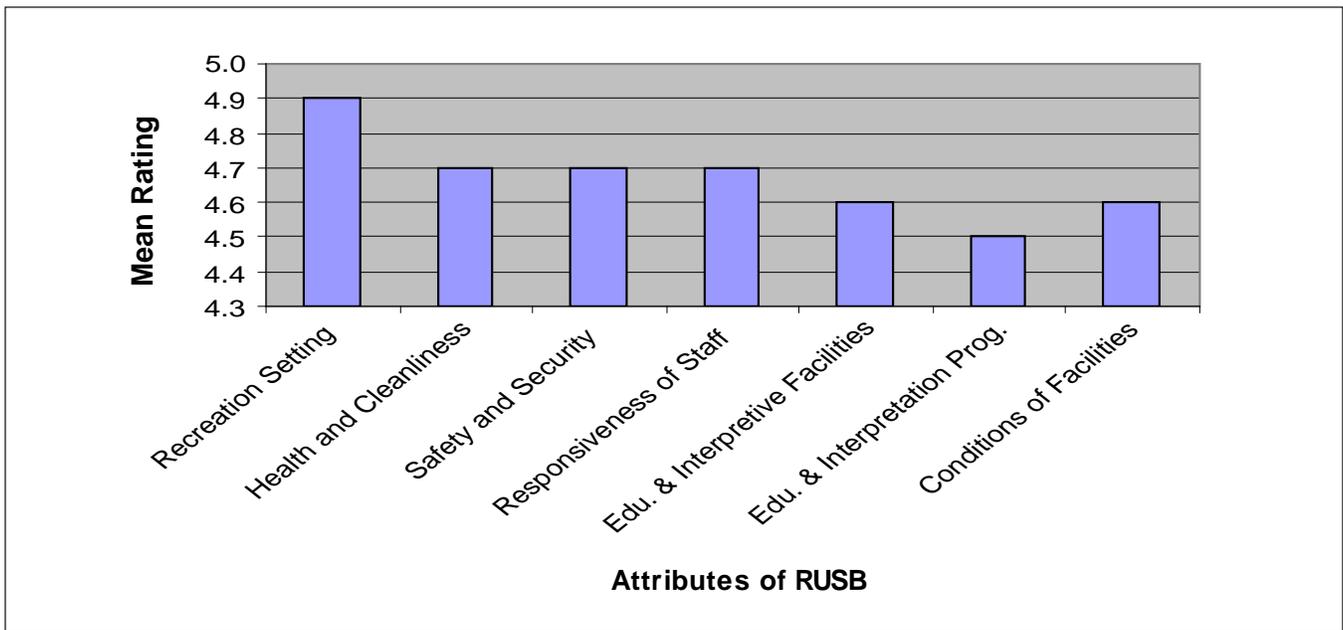


Figure 5.—Rating of various attributes of the Rogue-Umpqua Scenic Byway.

#### 4.7 Role of Various Attributes in Overall Satisfaction

In order to determine the effects of various RUSB attributes on overall visitor experience, overall experience was regressed on perception of seven attributes (Table 3). The result was that the perception of seven attributes could significantly explain 45 percent of the variance in overall experience ( $R^2_{adj} .45$ ,  $F = 12.387$ ,  $d.f. 97$ ,  $sig .000$ ). Of the seven attributes, only safety and security and educational interpretation programs made significant contributions to explaining overall experience. Considering the loneliness and isolation of scenic byways, the importance of safety and security is not very surprising. Educational

interpretation programs can also enhance the visitor experience by providing much needed information about the available physical and cultural resources.

#### 4.8. Expenditure Pattern

Visitors' mean expenditures within 50 miles of the RUSB was \$157 per person/group, which included about \$90 for food and accommodations, \$32 for gasoline and oil, and \$15 for parking and use fees (Table 4). The purchase of souvenirs, clothing, and other items accounted for approximately \$16. Considering that the average length of stay in the area was 5 days, this expenditure is very low. One explanation is that the visitors were interviewed while

Table 3.—Regression coefficients showing relation between overall experience and attributes of the Rogue-Umpqua Scenic Byway

|                                     | $\beta$ | Std. $\beta$ | t      | sig    |
|-------------------------------------|---------|--------------|--------|--------|
| Constant                            | 4.455   |              | 4.463  | .000** |
| Health and cleanliness              | -.638   | -.331        | -1.814 | .073   |
| Safety and security                 | .646    | .392         | 3.409  | .001*  |
| Condition of facilities             | .341    | .188         | 1.339  | .184   |
| Responsive staff                    | .110    | .063         | .554   | .581   |
| Recreation setting                  | -.053   | -.020        | -.189  | .851   |
| Educational/interpretive programs   | .552    | .448         | 3.139  | .002** |
| Educational/interpretive facilities | .093    | .064         | .392   | .696   |

**Table 4.—Mean Expenditures by Respondents/  
Groups within 50 Miles of RUSB**

| Expenditure                            | Amount in \$ |
|--|--------------|
| Privately-owned lodging                | 8.50         |
| Government-owned lodging               | 20.70        |
| Food and drink in restaurants and bars | 30.61        |
| Food and drink in other places         | 27.62        |
| Fuel                                   | 32.00        |
| Other transportation costs             | 1.00         |
| Fees, guides, and gear                 | 4.82         |
| Parking and use fee                    | 15.31        |
| Souvenirs and clothing                 | 7.20         |
| Other items                            | 9.43         |

they were still in the area and had not yet completed their expenditures for the trip. However, the low expenditure rate suggests that there may be a need for expanded and more diversified retail or commercial offerings in the area.

## 5.0 CONCLUSIONS

The RUSB received repeat visitors but also attracted many new visitors. Most of them came in social groups, mainly with family and friends. The Byway was the primary destination for more than three-quarters of the visitors and the majority of them spent 3 to 4 days in the area. The most common recreational activities along the Byway were sightseeing, viewing nature, hiking, camping, photography, driving, fishing, and viewing waterfalls. A majority of study participants were motivated to take the trip to view the scenery or be in a natural setting; next in importance was seeking relaxation and escaping from crowds and routines. The major reasons for coming to the RUSB were to enjoy the place and to recreate there. The visitors were very satisfied with their overall experiences as well as with the natural and physical attributes of the area. They had limited opportunities to spend money in the Byway area, which suggests that there may be a need for more facilities to provide local accommodations and other necessities. Other areas for improvement include safety and security features and quality of available drinking water. Safety and security, condition of the facilities, and interpretation programs were important factors in overall visitor satisfaction.

## 6.0 MANAGEMENT IMPLICATIONS

RUSB managers now have the first-ever baseline data about visitor use and preferences. Although the data were collected only during the summer season, they provide a wealth of information about RUSB users. Understanding visitor motivations and satisfaction levels confirms that the resource managers are indeed meeting the needs of their users. In the future, continued high fuel costs may have a negative impact on the use patterns along the Byway, and managers will be able to collect data to determine whether changes have occurred in people's visitation patterns.

## 7.0 CITATIONS

- Absher, J.D. (1998). **Customer service measures for national forest recreation.** *Journal of Park and Recreation Administration*, 16(3), 31-42.
- Biemer, P.P., and Lyberg, L.E. (2003). **Introduction to Survey Quality.** New York: John Wiley and Sons, Inc.
- Borrie, W.T., and Birtzell, R.M. (2001). **Approaches to Measuring Quality of the Wilderness Experience.** In: Freimund, W.A., and Cole, D.N., comps. *Visitor use density and wilderness experience: proceedings.* June 1-3, 2000: Missoula, MT. Proc. RMRS-P-20. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 29-38.
- Floyd, M. (1997). **Pleasure, arousal and dominance: Exploring affective determinants of recreation satisfaction.** *Leisure Sciences*, 19, 83-96.
- Kent, R.L. (1993). **Attributes, features and reasons for enjoyment of scenic routes: a comparison of experts, residents, and citizens.** *Landscape Research*, 18(2), 92-102.

Lucas, R.C., and Stankey, G.H. (1974). **Social carrying capacity for backcountry recreation.** In: Outdoor Recreation Research: Applying the results. USDA Forest Service Gen. Tech. Rep. NC-9. June 19-21, 1973: Marquette, MI. St. Paul, MN: USDA Forest Service, North Central Forest Experiment Station: 14-23.

National Scenic Byway Program. (2008). **Rogue-Umpqua Scenic Byway, Oregon.** National Scenic Byway Program. Accessed June 14, 2008 at <http://byways.org/explore/byways/2147/>.

Outdoor Recreation Resources Review Commission. (1964). **Outdoor recreation for America.** Washington, DC: U.S. Government Printing Office.