

AN ABSTRACT OF THE THESIS OF

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Title: Management Implications of Displacement and Product Shift: Longitudinal Research on the Rogue River

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While resource managers often rely on feedback from recreation users on which to base long-term decisions, *displacement* (when users dissatisfied with crowding or resource impacts move on to more remote sites) and *product shift* (users respond to increased densities by changing their definition of the recreation experience) are viewed as elements which may confound the reliability of this information. Concerned that these processes may obscure broad social and environmental changes that occur over time, researchers have sought to explain contributory factors. However, single study cross-sectional research makes it difficult to measure impacts on the changing user. Instead, longitudinal research has a greater capacity to determine specific reasons for displacement and to analyze the factors contributing to product shift.

This thesis uses findings from longitudinal research (one 14-year panel study and two successive cross-sectional studies) to examine displacement and product shift among floaters on the Wild and Scenic Rogue River in Southwest Oregon.

Displacement results largely supported five hypotheses: (1) on-site social, resource,

and management factors are displacers, (2) external influences that are out of managerial control can cause use to be discontinued or decreased, (3) individual visitor characteristics influence succession-displacement decisions and are useful as indicators, (4) the river's permit system is an involuntary displacer and fosters alternative strategies for running the river, and (5) users employ behavioral coping mechanisms to avoid encounters.

Previous product shift research suggests that as use levels increase (1) visitors will cognitively adjust their experience definitions rather than become dissatisfied, (2) perceived crowding will not change, (3) encounter norms will increase to accommodate additional contacts, and (4) satisfaction will remain high. Findings generally supported the hypotheses, although several incongruities exposed by the panel data suggest that there may be limits on product shift assumptions. Long-term repeat visitors did not shift their encounter norms and their satisfaction ratings decreased over the 14-year study period.

In addition to the research findings, benefits of using the longitudinal methodology and implications for management are discussed.

**Management Implications of Displacement and Product Shift:
Longitudinal Research on the Rogue River**

by

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A THESIS

submitted to

Oregon State University

**in partial fulfillment of the
requirements for the degree of**

Doctor of Philosophy

Completed September 7, 1993

Commencement June, 1994

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MANAGEMENT IMPLICATIONS OF DISPLACEMENT AND PRODUCT SHIFT: LONGITUDINAL RESEARCH ON THE ROGUE RIVER

CHAPTER 1. INTRODUCTION

Resource managers frequently seek feedback from recreation users as an important source of information on which to base long-term natural resource decisions. The assessment of public perceptions of site conditions and preferences for management has become an integral part of the overall recreation planning process. Visitor information is most often obtained through survey research -- usually by on-site interviews or from questionnaires mailed to study participants. But two factors, *visitor displacement* and *product shift*, can obscure broad ecological and social changes that occur at outdoor recreation sites over time. Understanding the nature of these phenomena is essential for managers who must interpret public views into decisions which protect the quality of both recreation experiences and the natural resource.

Recreational displacement describes a situation where dissatisfied users move to a more satisfactory setting. It is a behavioral adjustment requiring two factors: unacceptable change(s) in the chosen recreation setting (Schreyer, 1979) and reasonable substitute sites to which the user can relocate (Becker, 1981). The majority of research suggests a concern for social influences like crowding as a primary motive for users seeking a more remote or less impacted setting (e.g. Nielsen and Endo, 1977; Vaske, Donnelly, and Heberlein, 1980; Becker, 1981; Shelby, Bregenzer, & Johnson, 1988; Kuentzel & Heberlein, 1992). But other factors such as

deteriorating resource conditions (Schreyer, 1979; Anderson & Brown, 1984) or administrative decisions like those that allow motorized boating on designated wild and scenic rivers (Schreyer, 1979; Shelby et al. 1988) are also viewed as contributors. A basic tenet of displacement theory is that less discriminating visitors fill the void of those who choose to leave a site, resulting in a succession of visitors through time (Clark, Hendee, and Campbell, 1971).

Product shift describes a different user reaction to unexpected or adverse conditions. It is a cognitive adaptation in which the visitor redefines the recreation experience to better reflect the actual situation found on site (Heberlein & Shelby, 1977; Hendee, Stankey & Lucas, 1978). For example, the visitor changes his or her attitude in response to unanticipated use levels (crowding), which leads to a redefinition of the experience to some acceptable higher-density category. In the case of a wilderness river trip where many more floaters are encountered than anticipated, the user adjusts his view of the experience to reflect something else -- perhaps a semi-primitive rather than a primitive river trip. Through this rationalization process, the recreation experience (the product) is redefined (shifted) because of conditions which were unacceptable within the context of the original expectations (Johnson, Shelby & Bregenzer, 1990). Thus, product shift accommodates a need to feel satisfied with the choice of recreation activities. It is assumed that product shift contributes to greater tolerance for social and ecological impacts, but the long-term effects on site choice and acceptance of resource conditions have not been well defined.

The nature of displacement and product shift make them difficult topics to research. Because of the influx of new (more tolerant) visitors, and users' tendency to adjust expectations to meet existing conditions, Vaske and others (1980) suggest that single study cross-sectional survey research will repeatedly find a majority of satisfied customers. These user "snapshots" of a point in time may not be representative of either the changing nature of the resource or of the recreation activity (Schreyer and Roggenbuck, 1978). Noting the lack of long term biological research, Magnuson (1990) argued that operating in this "invisible present" leads us to underestimate the degree of change to our natural ecosystems. Because we are unable to directly sense slow changes in environmental settings, we have difficulty interpreting cause-and-effect relationships. Unless we can view the setting over time, misjudgments will occur in our attempts to predict change and manage the resource.

Most recreation research is limited by the tentative, cross-sectional nature of analysis. It is difficult to measure impacts upon the changing user when information is obtained from one-time studies involving separate sample populations or different sites. Arguing in support of time series analysis in environmental research, Treadway (1985) reported that findings from longitudinal and single cross-sectional studies were often quite different. Social statisticians even suggest single study cross-sectional data provides untrustworthy evidence of changes (Weisberg, Krosnick and Bowen, 1989). In order to adequately understand the temporal effects of displacement and product shift on recreation sites, longitudinal research is required.

Two types of longitudinal studies are appropriate for the recreation issues described here. First, successive cross-sectional surveys that use the same sampling procedure for the same site can compare perception and attitude change in the user public (Weisberg et al. 1989). Identified as a trend study by Babbie (1992), this design is useful for assessing net change over time. Second, panel research is the best method for measuring gross attitude change because it utilizes the same set of people and the same sampling procedure to analyze precise patterns. Therefore, the crucial test of displacement and product shift processes is longitudinal analysis, with panel research offering the most comprehensive data.

Study Description

Thus far, wildland settings have been the primary research sites concerning displacement and product shift issues. Because designated wilderness areas and wild and scenic rivers carry certain expectations about untrammelled resources and opportunities for solitude, changes in the attributes of these settings are of interest to users and managers alike. This dissertation uses the findings from two longitudinal studies (successive cross-sectional studies and a separate panel study) to examine displacement and product shift and describe their implications for wildland resource management. Both projects involved whitewater floaters on the Wild and Scenic Rogue River in Southwest Oregon.

The first study examines panel data gathered over a 14 year period in an attempt to gain precise measures of behavioral and attitudinal changes in whitewater floaters. The study compares responses from a panel of private and commercially

outfitted floaters who were first surveyed on the Wild Rogue River in 1977 (see Shelby and Colvin, 1979). Using extensive search procedures, panel members were contacted again in 1991 and asked to complete a questionnaire about their continued use (or nonuse) of the Rogue. The 1991 survey was modeled after measures used in the earlier study to obtain as much comparative data as possible. Respondents were asked about river use patterns, perceptions of ecological and social impacts, current experience descriptions, and factors affecting their return visits to the river.

The second study uses two cross-sectional studies to measure floaters' perceptions of the same river segment during the high-use recreation season. It compares responses from a sample of private and commercial floaters who ran the Wild Rogue River during the 1991 summer season with the original Shelby and Colvin sample from 1977. Again, the 1991 survey instrument was designed to obtain comparative information as well as feedback on current river management issues. The use of successive cross-sections is similar to a previous study by Shelby, Bregenzer and Johnson (1988). They sampled private floaters on the Rogue in 1984 and also compared responses with the private floaters from Shelby and Colvin's 1977 study. To date, the work by Shelby, Bregenzer, and Johnson (1988) provides the largest base of empirical evidence for both the displacement and product shift concepts.

The current research represents the logical progression of the work of Shelby and Colvin (1977) and Shelby et al. (1988). It was designed to extend the line of displacement and product shift research and to more extensively document these

processes using panel data. This dissertation tracks the short history of displacement and product shift research, tests initial assumptions made by previous researchers, examines behavioral and cognitive coping processes, and discusses the implications for management. The longitudinal methodology allows comparison of visitors' attitudes toward ecological, social, and management conditions as well as the effects of life-cycle activity on their recreational participation. This research gives legitimacy to the concerns of managers that displacement and product shift processes result in a changing visitor clientele, thus hindering their ability to maintain resource standards and regulate use.

Management Issues

Many wildland recreation sites have special and unique qualities that make them popular places to visit. Managing these sites is a complex assignment in that responsibilities include (1) ensuring public access for recreation opportunities and (2) protecting natural resource quality through effective visitor and land use policies. Problems arise when our management systems are ineffective at determining whether these special sites are maintained at levels which continue to meet wildland recreation criteria. As displacement or product shift processes occur, the site values preferred by many users can suffer and monitoring environmental change becomes more difficult.

The first management responsibility implies that as long as recreation use levels are increasing and the customers are satisfied, then the public provision goal has been met. But at popular settings it is easy to be insensitive to user displacement

because visitor numbers remain high, and on a limited use river like the Rogue, permit applications continue to roll in. On face value, the site remains a popular place. However, dissatisfied users may have been displaced, effectively removing themselves from the available pool of site constituents. In addition, users voluntarily choose recreation activities and sites, and they are likely to select those that will be satisfying. But even when these experience expectations are not met, people frequently employ coping strategies to reduce dissonance (Festinger, 1957); rather than be unhappy or disappointed, it is easier to relabel the experience and remain satisfied.

Manning and Ciali (1980) observed that the use of coping techniques like product shift are perhaps more pronounced in activities involving significant commitments of time or personal finances than in more common, less expensive activities. Multi-day river trips fit the significant commitment description. Private floaters may have had to wait several years to obtain a permit through a lottery system or commercial passengers have paid a substantial fee to join a whitewater trip. In these situations, river runners might "refuse to be easily be disappointed" (Manning, 1986); the high personal cost involved suggests that people will report being satisfied. Aronson and Mills (1959) even theorized that the higher the personal investment, the greater the stake participants have in *self-deception* about a deterioration of resources. Simply surveying for customer satisfaction then, is a poor criterion for recreation management decisions (Shelby and Heberlein, 1986; Graefe, Vaske, and Kuss, 1984).

Managers' second mandated responsibility -- to protect natural resource quality -- becomes more difficult when current users appear satisfied regardless of the use level or resource conditions present. Not only are typical user surveys inadequate at documenting deteriorated conditions, but as high-use sites with substantial impacts continue to be used, most current users come to view these impacted conditions as the accepted resource standard (Shindler, 1992). Managers run the risk of long-term deterioration of popular sites through a "diminishing standards" effect. Under such a default system, recreation settings shift more easily toward the higher-density, higher development end of the recreation opportunity spectrum (Shelby et al. 1988). Opportunities at the low-density end of the spectrum may be systematically eliminated. User adaptation to deteriorating recreation environments works to management's ultimate disadvantage in attempts to maintain high quality sites (Marion & Lime, 1986).

The issue is not whether user succession-displacement and product shift occur. There is sufficient evidence to indicate they exist. For management, the critical issues are the outcomes produced by these processes and the need for effective, public supported measures to combat resulting conditions. In some cases this may mean maintaining the existing natural conditions, in others it could mean taking steps to improve or rejuvenate sites. Relevant questions are raised about which factors contribute the most to user migration and to shifting perceptions of the resource. Information about which users are more likely to move on to other sites and which ones will adapt to conditions may be useful in crafting solutions. If users are to be

incorporated into planning processes, understanding their concerns and how to best involve them is essential. Overall, management's ability to find responsive solutions is limited; there will be many on-site factors they can effectively address, but other user-related factors are likely to be out of their control.

Finally, finding appropriate measures which address these issues ultimately affects users. Management objectives and keeping impacts within specified standards often require regulating visitor use. But while managers tend to see regulations as tools to reach land use goals, users often view them as impediments to their recreation activity (Lucas, 1979). Additional limits on access to areas or use within those settings will undergo public scrutiny. Relevant interpretations of displacement and product shift findings will help managers target problems and identify acceptable alternatives.

Organization of Dissertation

The two longitudinal studies outlined above provided data for this dissertation. To ease the task of describing these two studies and report findings, discussions of the 14-year floater panel will be referred to as the panel study. Comparisons of the successive 1977 and 1991 cross-sectional studies will be referred to as the cross-sectional study.

Chapter one of this dissertation provides an introduction to the research topic, briefly describing the displacement and product shift concepts and the potential influences they have on recreation site management. A discussion of management

issues helps provide a research context by outlining the importance of these phenomena to resource management agencies.

Chapter two is a broader review of the displacement and product shift research given for background purposes. Previous research provides the basis for a list of research hypotheses presented here. The third chapter describes the research methodology used for both the panel and cross-sectional study.

The fourth chapter presents and discusses findings on displacement; the fifth chapter does the same for product shift. Data tables and figures have been integrated into the text in both chapters.

The sixth chapter discusses the methodological approach and benefits derived from using longitudinal research. In the final chapter, management implications of the findings are discussed. Appendices provide copies of the survey instruments used in both studies.

CHAPTER 2. BACKGROUND AND HYPOTHESES

Displacement and product shift are separate, but related user adjustments to changes in conditions at recreation sites. Displacement is a behavioral approach to solving an unacceptable situation -- users move to a new site which is better suited to their personal objectives. Product shift describes a cognitive strategy involving changing the label applied to the experience. Together, they can conceal slow changes in recreation sites and the type of experiences offered by those settings. Because of the need to better understand these two phenomena, researchers began in the 1970's to study both as legitimate factors affecting recreational resource use. Thus far, displacement has a broader research base than product shift, no doubt because of the physical and behavioral elements involved. It is the more tangible concept of the two, and may be more easily understood. In contrast, empirical evidence of product shift is extremely limited. Since it involves cognitive shifts in social norms, measures are more difficult to obtain and ostensibly less reliable than the physical changes inherent in displacement. An overview of research on the two concepts will help provide a context for the studies described in this dissertation.

Displacement

The displacement hypothesis was suggested as early as 1971 by Clark, Hendee and Campbell (1971) in their study of camping behaviors and visitor conflict. Since then research efforts to define user displacement in recreation settings have most often attempted to do so in terms of **social conditions**. Displacement was frequently

described as people leaving an area because of crowding for a setting offering a lower density experience. Recreational rivers and lakes affected by social impacts were particular targets for evaluation.

The displacement concept was broadened to include any change in the environment that visitors saw as a threat to their satisfaction (Schreyer, 1979). These changes included **resource conditions** like litter and site overuse and **managerial conditions** such as the constraints of a permit system and the presence of too few or too many facilities for personal tastes. Numerous researchers have studied some combination of social, resource, and managerial factors as elements in the displacement process. Subsequently, a secondary distinction about displacement developed. An intermediate reaction, termed within-site or intrasite displacement, was identified where visitors altered participation patterns by seeking more remote sites within the same general recreation area (Anderson, 1980). Both types of displacement describe behavioral adjustments caused by perceptions of adverse changes in the recreation environment. As a result, displacement came to be described as "a move away from an unacceptable situation rather than a move toward an optimal one" (Becker 1981, p.262).

Although Schreyer (1979) did not conduct empirical research on displacement, he summarized a good deal of the theory on which today's assumptions are based. One of the key contributions is the assertion that displacement often depends on the characteristics of the user as much as the setting. Parallel research in recreational choice behavior has explored influences inherent to the individual participants by

examining such issues as user experience level, attachment to place, differences in private and commercially outfitted use, and life cycle changes in the user.

Participant characteristics might ultimately influence site succession or displacement decisions, but few attempts have been made to connect them empirically.

It is natural that managers have more control over certain situations than others. These generally include the on-site social, resource, and managerial conditions (Shelby et al. 1988). It is unlikely that managers have much control over participant characteristics; however, understanding the sum of influences might help in assessments of changing conditions and in planning realistic strategies. Thus, relevant research in these four areas is reviewed as background on the displacement process.

Social Conditions

Although relatively plentiful, studies correlating displacement with crowding have provided mixed results. Two likely reasons describe the elusive nature of this line of research. First, empirical data are difficult to obtain because displacers by definition are no longer at the study site. Adequately tracking users over time requires panel studies, but they are costly and few have been conducted. Second is the complexity of the crowding issue itself. Perceptions of crowding involve normative evaluations that are contingent on appropriate use levels in conjunction with specific activities and settings (Shelby & Heberlein, 1986). Each individual's evaluation relates to a socially prescribed expectation of the appropriate use of that resource (Shelby, Heberlein, Vaske, and Alfano, 1983; Stankey, 1989) and is

bounded by the context of the situation. Thus, crowding is not simply a matter of use level, but relates to the number of expected or preferred encounters being exceeded by the number of actual contacts (Shelby et al. 1983).

Diverse methods have been used to obtain feedback on potential displacers. Dekker (1976) and Nielsen and Endo (1977) both sampled experienced river runners using addresses supplied from National Park Service permit lists. About a quarter of Dekker's (1976) Colorado River respondents indicated that certain conditions would keep them from returning to rivers they had previously run, with crowding being the most frequent response. Nielsen and Endo (1977) also found indications of displacement from crowded conditions on the Colorado, but hypothesized that other variables also played a role -- notably a lack of suitable alternatives, a willingness to trade solitude for the chance to run big whitewater, and seeking out new challenges or different river experiences. In separate studies of the Lower St. Croix and the Upper Mississippi, Becker (1981) found no evidence of displacement; but when he treated the rivers as a system, he found displacers on the Mississippi who previously had favored the now more crowded St. Croix.

A migration of whitewater floaters from the well traveled Rogue to the lesser used neighboring Illinois River, provided Shelby et al. (1988) an opportunity to question users about displacement decisions. Of those who had run both rivers (n=146), 36% reported they now ran the Rogue less frequently because of too many people being on the river. Another 19% cited competition over campsites as a reason for lesser use of the Rogue. Although less conclusive because of the speculative

nature, three-fourths of the Illinois floaters indicated they would alter future use patterns (go midweek or earlier in the season) in order to have fewer encounters with others.

In Wisconsin, two studies used the same panel of Apostle Islands boaters to measure different aspects of the displacement process. Kuentzel and Heberlein (1992) tested the relationship of perceived crowding to behavioral and attitude changes among visitors. They introduced a three-tiered coping model which proposed that boaters who felt *less* crowded would use few or no coping strategies, those who felt *more* crowded would gravitate to lesser used locations in the same general area, and the *most* crowded boaters would leave the setting altogether. Generally, results failed to support the model; however, findings indicated intrasite displacement techniques (avoiding crowded locations within the same setting) were used by boaters as an effective alternative. In other research using the same Apostle Island panel, Heberlein and Ervin (1990) demonstrated that visitors who felt crowded in 1975 were actually *more* likely to return in 1985 than those who did not.

Explanations offered for findings from the two Apostle Islands studies suggest displacement is site specific and difficult to quantify: 1) the Apostle Islands may not be sufficiently crowded to cause displacement, 2) there may be a lack of substitutes for the Apostle Islands experience, 3) boaters may have a strong psychological attachment to the islands as a special place, and 4) a financial commitment to boating in general may influence boat owners to continue in their activity (Heberlein & Ervin, 1990; Kuentzel & Heberlein, 1992).

Several studies investigated use patterns within a single backcountry setting to specifically examine coping behaviors involving intrasite techniques. Anderson and Brown (1984) focused on individuals who had visited the Boundary Waters Canoe Area at least five times and found that repeat users often altered their point of entry, changed their campsite, and visited on different days of the week. Although these tactics were in response to a variety of impacts -- noise, visual encounters, litter and site overuse -- findings indicate that resource impacts were viewed more negatively than were social impacts. In a similar study of floaters on Ozark National Scenic Riverways, Anderson and Foster (1985) reported that 40% of all repeat visitors surveyed altered their use in some manner to avoid crowded conditions. Stankey (1980) also found that backpackers used avoidance methods in response to threats of increased density. In two separate wilderness areas, hikers reported changing trip route or length to avoid encounters. Likewise, Hammitt and Patterson (1991) recorded use of six physical coping behaviors (e.g. avoiding popular trails and peak use times, camping out of sight and sound of others) as important methods for obtaining solitude among backpackers in the Great Smokey Mountains National Park.

Resource Conditions

User displacement from resource impacts usually has been examined as part of larger displacement studies, many of them described in the previous section. Visitors expressed sensitivity to ecological impacts at the Apostle Islands (Vaske, Donnelly, and Heberlein, 1980), on the Lower St. Croix and Upper Mississippi Rivers (Becker, 1981), and on Wyoming's Green River (Nielsen, Nordstrom, and Pratt, 1992).

Although these studies reported reactions to excessive litter, water pollution, and overused sites, a causal relationship between these impacts and displacement could not be substantiated.

More direct results regarding resource impacts were obtained from three other studies. As previously mentioned, physical deterioration was responsible for canoeists in the Boundary Waters selecting alternate entry points and campsites (Anderson and Brown, 1984). In the Shelby et al. (1988) study of the Rogue and Illinois Rivers, almost one-fourth (25%) of those floaters who had run both said they were visiting the Rogue less frequently because of environmental damage. At central Iowa's Lake Red Rock, Robertson and Colletti (1991) attributed increased siltation for displacing up to 45% of the recreational boaters. In this case, managerial concern was for economic impacts to local rural communities dependent on water-based recreation and tourism.

Management Conditions

Displacement because of managerial conditions is most frequently attributed to one of two policy decisions: 1) the implementation of a permit system or 2) a management decision to allow motorized use in areas where some users feel it is inappropriate.

The advent of permit systems introduced a different type of displacement than had been considered previously -- users who were willing to accept the conditions present on site, but were *involuntarily* displaced because they could not obtain a permit (in contrast to other users who may be voluntarily displaced because they

chose to avoid the effort involved in securing a permit) (Shelby, Goodwin, Brunson, and Anderson, 1989). Rather than seeking substitute sites like a traditionally displaced user, the involuntarily displaced visitor may react differently by employing *strategic* or *temporal* substitution tactics (Shelby and Vaske, 1991). He can seek access to the same site at the same time (strategic) by showing up to secure an unclaimed permit, or he may try to visit the same site at a different time (temporal) by scheduling a trip with an outfitter or by going in the off season. The latter method is similar to the within-site displacement strategy described earlier (Anderson and Brown, 1984). In any case, the user is attempting to retain the important features of his original choice of recreation sites (Shelby and Vaske, 1991). Each of these alternative strategies subsequently impacts the management system in some way (Brunson and Shelby, 1993). Thus, allocation systems have created a new dimension of displacement issues which have just begun to be addressed.

To date, permit systems have been implemented in few designated wilderness areas. However, one study has produced empirical research regarding affected backpackers. In the initial year of use limits for the Alpine Lakes Wilderness Area, Shelby, et al. (1989) reported 13% of the applicants did not receive a permit. One-fourth of this group was still able to obtain a permit through alternate procedures, leaving even fewer who were involuntarily displaced. Study findings showed a dramatic reduction in use of the wilderness area for the following year. Although data were insufficient to draw a conclusion, the hypothesis was that substantial

voluntary displacement to other sites occurred during the second year because of the Alpine Lakes permit system.

Permit systems for rivers are well established on many sites and use level data are available for the Rogue River. Each year only about 12% of the initial applicants are successful in obtaining a Rogue permit through the lottery system (USDA Forest Service, 1991). Within the same float season, a small minority of rejected applicants can secure permits because of "no-shows," but most are displaced to other sites. Results from the Illinois River (Shelby et al. 1988) showed that the Rogue permit system has caused some frustration; 37% said they ran the neighboring Rogue less often because of the difficulty in getting a permit. Although data do not specify such, the implication was that some of these floaters were voluntarily displaced by the permit system.

Reports of user dissatisfaction over decisions to allow motorized boating are more prevalent. Such use has prompted claims of displacement, but empirical data confirming such suspicions are sparse. Floaters reported negative impacts from motorized use on the Colorado River (Shelby & Nielsen, 1976; D. Cole, 1989), the Deschutes River (Shelby, Whittaker, Speaker, and Starkey, 1987), the Snake River (M. Cole, 1989), and several rivers in Alaska's Susitna Basin (Whittaker, 1992). Only two studies could confirm any actual displacement. One-third of the Illinois/Rogue River floaters reported less frequent use of the Rogue because of jet boats (Shelby et al. 1988), and Boundary Waters canoeists reported changing their use

(times, entry points, campsite locations) also because of the presence of motor boats (Anderson and Brown, 1984).

Participant Characteristics

Researchers have recognized that expectations vary across groups of users and that users react differently to both on-site and off-site stimuli (Schreyer, 1979; Shelby et al. 1983; Stankey, 1989). In analyzing results from 35 separate studies, Shelby Vaske, and Heberlein (1989) reported that user perceptions of conditions (crowding) varied by season of use, resource availability, accessibility, and management strategy to regulate use. These observations underscore the importance of recreation participation patterns, or what LaPage and Ragain (1974) described as the evolution of the individual's participation-involvement cycle. Various characteristics like user type or experience level are important in recreational choice behavior, and while little research specifically addresses the connection these factors may ultimately influence displacement decisions (Schreyer, 1979).

A primary characteristic factor may involve differences between private and commercially outfitted users. Although research on private/commercial differences is sparse and none of it ties to the displacement question, findings suggest that user type is a significant contributor to other preferences. Behaviorist Edward Lawler (1973) noted that preferences and expectations greatly depend on variables such as past experiences and the influence of one's reference group. This seems to describe observed differences between private and commercially outfitted floaters. Shelby and Nielsen (1976) found that private boaters on the Colorado River were more

experienced, traveled in smaller groups on longer trips, and preferred more remote experiences than did their commercial counterparts. In analyzing 25 river studies, Heywood (1987) observed that private groups were more likely to seek a quiet/escape experience than were commercially outfitted groups. More recently, Cole (1989) noted that commercial trips on the Colorado River tended to be larger and more social events and sometimes led to aggravated feelings among private boaters looking for solitude in the river canyon.

Other private/commercial differences relate to motives and environmental concerns. It has been suggested that advertising by outfitters inflates the demand for river trips by attracting people who otherwise would not take one (Lime, Knopf, and Peterson, 1981). Often, this trip is a commercial passenger's first whitewater experience and represents only a single episode among a variety of other trips and activities. For these reasons, Lime (1981) speculated that these river runners may have a more complacent attitude toward the need to manage river resources. Nielsen (1992) added to this notion in finding that more experienced, private floaters on Wyoming's Green River tended to be more sensitive to environmental impacts.

User experience level has long been considered a key factor in choice behavior. Schreyer, Lime, and Williams (1984) used previous studies of 13 rivers to summarize the influence of past experience on behavior and to characterize experience use history (EUH). Findings indicate that EUH can influence perceptions of crowding, resource impacts, and management strategies. Like other researchers (e.g. Nielsen, Shelby, and Hass, 1977; Vaske, Donnelly, and Heberlein, 1980), Schreyer et

al. (1984) suggested that a visitor's experience history represents the frame of reference for participation and serves as an indicator of motives and attitudes. Although the research did not directly link user experience with displacement, collectively it implies an association.

More recently, Kuentzel and McDonald (1992) summarized past research regarding the effects of user experience and commitment on river recreation participation. Citing difficulties with multiple dimensionality of the experience construct and complexities in the specialization process, few conclusions could be substantiated empirically. Methodological issues such as cross-sectional survey techniques were seen as additional constraints, which probably accounts for such little application of the specific experience/displacement correlation in the literature. Only Roggenbuck and others (1980) and Nielsen et al. (1992) hypothesized that more experienced, committed river runners were more likely to be displaced to other rivers when faced with adverse conditions. In both cases, weak relationships between crowding and displacement provided little evidence regarding repeat visits.

A third participant characteristic involves the user's attachment to place. McCool, Stankey, and Clark (1985) pointed out that recreation settings are central to a user's wildland recreation experiences. Research suggests that strong place attachment is associated with two factors: previous experience and user's focus on the setting as opposed to their specific activity or companion group (Williams, Patterson, Roggenbuck, and Watson, 1992). Special settings can carry emotional, symbolic and even spiritual value that need to be recognized as important resource

management issues (Salwasser, 1990). Rather than contributing to displacement however, attachment and sense of place seem more important as contributors to people continuing to visit a recreation area. Brunson and Shelby (1993) suggested these "attachment-oriented" users could be significant because of their proprietary attitudes and shared belief that few substitutes are readily available.

When the recreation place is viewed as a commodity (Peterson, Stynes, Rosenthal, and Dwyer, 1985), Hirschman's (1970) observations of customer/product relationships help explain some of the attachment phenomena. He suggests that those who care the most about the quality of a product are those who will likely be the first to leave in case of its deterioration. However, Hirschman (1970) also cites a paradox at work -- often the most quality conscious consumer has developed a high consumer surplus (attachments) and may be hesitant to change place or product loyalties. In corroboration, Williams et al. (1992) found that long time backpackers developed strong emotional and symbolic ties to certain wildland settings. While this consumer loyalty may neutralize within certain limits the tendency to leave an important setting, both Hirschman (1970) and Williams et al. (1992) noted that the nature of this loyalty may depend on the closeness of available substitute sites.

A final participant-intrinsic component indicates user succession is influenced by life-cycle events which have little to do with the original recreation setting. Not necessarily categorized as displacers, ordinary life course changes are recognized as affecting site and activity choice (LaPage and Ragain, 1974; Schreyer, 1979). These events include family growth, evolving social networks, the aging process, place of

residence, and employment shifts. Heberlein and Ervin (1990) pursued this issue empirically as an alternative explanation for panel participants leaving the Apostle Islands. Controlling for marital status and ages of children, they found more support for life-cycle events than crowding as primary reasons for change of location.

An earlier panel study by LaPage and Ragain (1974) found that the aging process, shifts in residence and job requirements, and limits on time were twice as likely to affect camping activity than were on-site environmental reasons. Cross-sectional research identified these same items, plus a breakdown in the social network and loss of interest, as leading factors on a list of 43 reasons for quitting a sports activity (Boothby, Tungatt, and Townsend, 1981). Overall, the normal course of user lifestyles may play a significant role in recreation choice.

Schreyer (1979) raised the issue of mistaking the process of user evolution and expansion for displacement. For example, he questioned whether one time floaters who move on to other activities have actually been displaced. We tend to forget that recreation services are frequently in competition with a far ranging, and often uncontrollable, set of off-site factors. Recognizing the extent of these external influences on participation might help managers who assume their migrating public has been "displaced." In many cases, management manipulation of on-site resources will have little or no effect on user decisions about making a repeat visit or doing something else altogether.

Product Shift

The notion of product shift as a psychological construct most likely evolves from Simon's theories (1955, 1956) on rational choice and the structure of the environment. He asserted that as humans, when faced with choice situations where we have incomplete information about alternatives as well as limited time, skills, and resources, we choose a "satisficing" path -- a path that permits satisfaction at some level of all our needs. When satisficing, we select a satisfactory solution rather than spending time and effort searching for the optimum one. Under this "bounded" rationality (Forester, 1984), the world looks different and a person's standards for conditions help define the situation. Behaviorist Charles Perrow (1972) summarized the implications of this bounded rationality on decision-makers:

Given the limits on rationality, what does the individual in fact do when confronted with a choice situation? He constructs a simplified model of the situation. This "definition of the situation," as sociologists call it, is built out of past experience (it includes prejudices and stereotypes) and highly particularized, selective views of present stimuli. Most of his responses are "routine"; he invokes solutions he has used before. Sometimes he must engage in problem solving. When he does so, he conducts a limited search for alternatives along familiar and well-worn paths, selecting the first satisfactory one that comes along. He does not examine all possible alternatives nor does he keep searching for the optimum one. He "satisfices" instead of "optimizes." That is, he selects the first satisfactory solution rather than search for the optimum. His very standards for satisfactory solutions are part of the definition of the situation. They go up and down with positive and negative experience. As solutions are easier to find, the standards are raised; as they are harder to find, the standards fall (p.149).

Perrow's practical point is that expected conditions, opportunities, obstacles, and thus strategies, vary according to the situation but are limited (bounded) by the immediate circumstances. Adaptive behavior depends not only on the psychological makeup of

the individual, but equally on the structure of the environment one finds himself in (Simon, 1956).

The product shift terminology probably was adapted from business applications and consumer research. In the study of recreation behavior, the concept has been presented by numerous authors but few have conducted research to test its hypothesis. Much of the early discussion stems from Lawler's (1973) expectancy theory -- the expectation that certain acts have particular outcomes -- and that expectations are learned from the settings in which experiences occur. For recreation settings, the expectancy issue becomes problematic when user evaluations, or standards, are based on prior experience or a first visit to a site (Nielsen et al. 1977; Vaske et al. 1980). In order to maintain feelings of privacy in a changing environment, people shift their expectations to reduce the discrepancy between desired and achieved outcomes (Altman, 1975). Simply, recreation visitors learn to accept the actual circumstances they find on site and their behavior represents a best attempt to deal with the world around them.

Early research postulated that product shift occurred in wildland recreation settings chiefly as a reaction to increasing user densities (Heberlein & Shelby, 1977; Hendee et al. 1978; Shelby, 1980). This work stemmed from inquiries about user satisfaction and what Altman (1975) described as an individual's adjustment mechanisms to cope with unanticipated levels of interaction. Stankey (1973, 1980) illuminated the concept by correlating perceptions of crowding with user satisfaction in different wilderness areas. Finding that satisfaction levels were actually greater in

higher use areas, he hypothesized that visitors adjusted their encounter norms in these situations, in effect, making the sites a different type of place than the users had originally expected.

Numerous authors have examined the density/satisfaction relationship which Graefe et al. (1984) synthesized in a review of 14 studies on the topic. Findings indicate that satisfaction was not related to changes in crowding, in fact, the only significant correlations (two) between these variables were in the opposite direction from those normally expected. At the same time, researchers went on to draw similar conclusions regarding the relationship between satisfaction and other resource impacts like litter and campsite deterioration (Graefe et al. 1984; Shelby & Heberlein, 1986). Two research summaries (Stankey, 1989; Shelby & Heberlein, 1986) reported that visitor norms for recreation settings were being mediated by both a variety of variables in the situation and psychological factors in the individual visitor. This suggests that normative evaluations of crowding and other resource impacts reflect more than just an ability to adapt to current conditions -- they are also contingent on perceptions of appropriate use levels for specific recreation activities and settings (Shelby & Heberlein, 1986). When impacted sites continue to be used, these conditions become the accepted standard.

Understanding that product shift involves both a process and an outcome (Shelby et al. 1988) is helpful. The process occurs at the individual level: as site impacts increase, there is an initial shift in visitor perception of conditions, which is followed by shifts in use level expectations and personal norms for evaluating the

experience. These shifts result in a change in behavior so the visitor achieves satisfaction (Heberlein & Shelby, 1977; Hendee et al. 1978; Schreyer, 1979). Over time, it is these individual changes that account for a cognitive adaptation to environmental impacts. Of greater concern to resource managers, however, may be the outcome at the aggregate level. This is the collective judgment of all users, and represents the (new) definition of the recreation experience and the social norms which describe it (Shelby et al, 1988). User adaptation, in this sense, results in outcomes that work against management efforts to maintain high quality recreation environments.

Recent Research

While speculation about product shift is great, little research is available to substantiate its effects. The major longitudinal research on product shift was accomplished by Shelby et al. (1988) in successive cross-sectional studies of private floaters on the Rogue River in 1977 and 1984. Findings suggest product shift outcomes at the aggregate level: (1) as use increased, aggregate experience definitions shifted to accommodate higher contact levels and high density experiences, (2) while encounter norms changed, perceived crowding did not change, and (3) even when use and encounter levels increased, satisfaction remained high. An additional attempt was made to quantify product shift by asking the 1977 visitors who saw more people than expected if, as a result, they had "changed the way they thought about the Rogue, deciding it was less remote than they had believed?" Results showed 34% said "yes", which when linked with ratings of high satisfaction further supported the product shift

hypothesis. A panel study was recommended in order to document changes at the individual level and provide evidence of the product shift process.

In subsequent research, Kuentzel and Heberlein (1992) suggested that repeat visitors use cognitive coping strategies to alter previously established evaluative standards for the Apostle Islands. They failed, however, in attempts to link an increased sensitivity to crowding with greater cognitive adjustments. Similarly, Hammitt and Patterson (1991) hypothesized that more experienced backpackers in the Great Smokey Mountains would engage in certain social (e.g. avoid talking to others) and physical (e.g. camp out of sight and other groups) coping mechanisms to regulate interactions with others. When no relationship was found between past experience and using the physical coping measures, product shift was given as a possible explanation. One interpretation was that because long-term users had a broader background and richer set of wilderness experiences, they had the need (and ability) to redefine the criteria required for an acceptable backcountry trip. In effect, the more experienced users were able to make cognitive adjustments more easily. If this assertion is true, greater credence would accrue to the product shift notion.

Hypotheses

The purpose of this dissertation is twofold. First, it examines longitudinal data to extend the collective research on displacement and product shift. Second, it discusses findings in the context of implications for managing wildland recreation settings. In addressing the initial purpose, a number of hypotheses can be tested.

The study further examines several hypotheses put forth by Shelby et al. (1988) and

specifically uses panel data to explore additional hypotheses which other studies, by methodological limitations, were incapable of addressing.

- H₁: Displacement results from each of three on-site factors: social, resource, and management conditions.
- H₂: External influences (which are out of managerial control) will cause decreased use (or nonuse) of a recreation site.
- H₃: Participant characteristics (e.g. user experience, private/commercial use type) can influence succession-displacement decisions. These characteristics can be useful as indicators in the displacement process.
- H₄: The permit system will serve as an involuntary displacement mechanism and as such will foster strategies for alternative means to run the river.
- H₅: Users will practice behavioral coping techniques to avoid social encounters, thereby altering river use patterns.
- H₆: Rather than be dissatisfied when faced with unanticipated encounter levels, visitors will use cognitive coping techniques to adapt to conditions. These adjustments are the basis for the product shift theory.
- H₇: Even though use levels have increased, perceived crowding will not change, encounter norms will increase to accommodate additional contacts, and satisfaction will remain high.
- H₈: As use increases over time, individual users who remain on site will change their definition of the experience to reflect a higher density setting.

H₉: As use increases over time, aggregate experience definitions will change to higher density experiences.

CHAPTER 3. RESEARCH METHODS

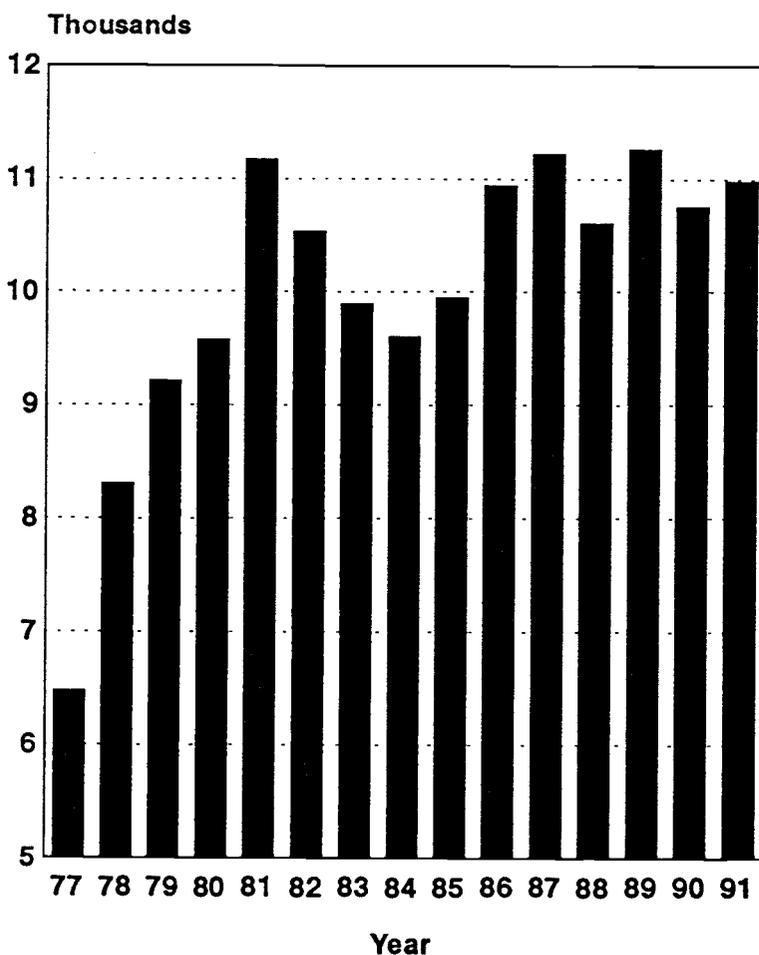
Research Setting

The wild section of the Rogue River is jointly managed by the U.S. Forest Service and the Bureau of Land Management. This 40-mile river segment offers a combination of excellent scenery, moderately difficult whitewater, and numerous natural and historic sites. This segment begins at the confluence with Grave Creek (about 25 miles northwest of Grants Pass) and continues to Watson Creek, just upstream from the take-out landing at Foster Bar. Much of the lower half of the wild section is surrounded by the Wild Rogue Wilderness, although the river itself is not part of the designation.

A typical float trip through the wild section lasts three to four days; private floaters generally camp overnight on sandbars along the river, while outfitters offer both lodge and camping trips to their clientele. A controlled river, the Rogue can be run at almost any time of year, although peak demand occurs during the permit season and the two to three week period afterward when no permits are necessary and the weather is still summer-like. From June to September, floaters share the final 12 miles of the wild reach with excursion jet boats making the 52-mile trip upriver from Gold Beach on the Oregon coast. Jet boat operators are limited to six boat trips per day.

Testing for displacement and product shift requires that use levels at the recreation site increase over time. Wild section summer season use levels between 1977 and 1991 are shown in Figure 1-1. Based on Forest Service records, total use

increased dramatically during the first five years (1977 to 1981) from 6,475 floaters to 11,174. Use then fell slightly for several years, and settled in around 11,000 users per season beginning in 1986. Overall use levels reflect similar increases on other Oregon rivers (Shelby, Whittaker, Speaker, and Starkey, 1987; Johnson, Shelby, and Moore, 1989).



Source: USDA Forest Service (1991)

Figure 1-1. Rogue River Use Levels.

One early management solution to increased crowding was to set limits on river use. In 1977, commercially guided trips were limited to 60 people per day, while private trips were unregulated. The following year, a permit system was put in place limiting use to 120 people per day -- 60 private and 60 commercial floaters -- with permits allocated through a lottery procedure. Initially, the permit season was set from Memorial Day to Labor Day, but in 1985 was adjusted to run from June 1 to September 15.

Overall, seasonal use increased by 70 percent between 1977 and 1991. However, a relatively small fluctuation (6%) in visitation during the last six years suggests the permit cap now has the greatest influence on use levels. On a per day basis, use averaged 64 floaters in 1977 and has averaged around 103 floaters over the last six years (1986-91). Although use is still below the maximum 120 floaters permitted each day, it does not mean that trip demand is less than the permit supply. There are nine applicants for every permit allocated through the lottery. Instead, the figures represent the number of actual river runners after accounting for the "no shows" and cancellations which river managers are unable to reassign through a backup system.

Sample

Panel Survey

Participants for the panel study came from Shelby and Colvin's 1977 survey of Rogue River floaters (Shelby and Colvin, 1979). They conducted stratified (by use) random sampling over a two-month period during the summer high-use rafting

season. Research field personnel accompanied 34 commercial float trips downriver and at Foster Bar (where trips conclude) administered a short on-site survey to collect name, address, and basic user information. Using the same one-page form, they also surveyed participants from the next noncommercial (private) trip to land at Foster Bar. In the fall of 1977, those contacted were sent a more detailed follow-up questionnaire in the mail. This technique minimized the interruption of the visitor's recreation experience and provided an opportunity to use a more extensive, in-depth questionnaire. Of the 485 users in the initial sample, 387 completed and returned mailed questionnaires for a response rate of 80%. Respondents included 138 private floaters and 249 commercial floaters whose response rates were 83% and 78% respectively.

In the summer of 1991, a follow-up study was initiated. No contact had been made with the floater group in 14 years. Armed with panel members' names and addresses, an extensive search strategy was devised which resulted in locating 265 (68%) of the original respondents, of whom 12 were deceased. From the useable sample of 253 names, 249 respondents completed questionnaires for an adjusted 98% response rate.

Weisberg et al. (1989) recognized that panel studies provide the best evidence of change, but are conducted infrequently because they are costly and difficult to implement. Because panel studies are rare, data collection methods are usually an interesting aspect of the overall study. Search methodologies appropriate to the Rogue sample were selected from previous panel research (Crider, Willits, and

Bealer, 1971; Claridge, Sheehy, and Hauser, 1977; Aneshensel, Belerra, Fielder, and Schuler, 1989). However, as with most panel studies, the best overall strategy proved to be researcher persistence and ingenuity (Claridge et al. 1978).

Initially, an introductory letter and questionnaire were sent by certified mail (with return receipt requested) to verify residency and take advantage of post office forwarding services. This step was also used to get as many responses as possible through the traditional direct mail approach. Once addresses were verified, standard Dillman (1976) follow-up routines were used; this method accounted for 57% of the total response.

Next, the Oregon State University library was used to scour in-state city telephone directories and out-of-state phone fiche to obtain addresses for individuals who had moved, but were still residing in the same general vicinity. This technique netted 14% of the response.

A similar, but more expensive, strategy used directory assistance in the same manner. Since this method provided only telephone numbers, followup calls were necessary to verify that individuals were indeed panel members, to enlist their help in the survey, and to secure updated addresses. As anticipated, some of these calls led to relatives who were able to provide updated information for panel participants. Of all the methods used, this one was the greatest test of communication skills -- it involved cultivating a cooperative spirit with family members for the release of telephone numbers and addresses. Although time consuming and somewhat costly

because of directory assistance and long distance charges, these steps paid dividends by accounting for 25% of the overall response.

Finally, two other techniques were employed in last attempts to round up missing respondents. Using university authorized access, a computer check of Oregon DMV records produced minimal results (3% of the total). This method initially seemed like a good strategy, but the service was relatively expensive and the dated information (14 years old) for each individual did little to help DMV operators in their record search. The original survey forms often contained shortened names or nicknames, with no guarantee they had been spelled correctly in the original study, and earlier efforts had already shown the addresses were no longer valid. Finally, at the tail end of the search process, a data base was obtained from the Oregon State Parks and Recreation Department which contained the names of 15,000 applicants for whitewater passes on the Deschutes River in central Oregon. This again seemed like new fertile territory, but netted only 1% of the total response.

As with any panel study, nonresponse bias was considered. To test for potential bias in the panel generated through the search procedures, this group's 1977 scores were measured against the 1977 scores of the group who could not be found (Weisberg et al. 1989). In the case of the 1977 variables used in the current research, there were no significant differences in the responses of the two groups. In addition, the proportion of private (34%) and commercial (66%) respondents in 1991 was almost identical to the makeup of the 1977 study (35% and 65% respectively).

Results indicate that the 1991 panel of 249 respondents was representative of the original 1977 sample.

Cross-sectional Survey

Data for the cross-sectional research came from Shelby and Colvin's 1977 sample and a new Rogue River survey conducted in 1991 for the U.S. Forest Service and the BLM which included floaters, anglers, jet boaters, and hikers. The latter survey included a stratified random sample of private and commercial floaters taken during the summer permit season. Floaters were contacted at Foster Bar using the short on-site survey to inform them of the study and to collect initial user information. In the fall, a more extensive follow-up questionnaire was mailed to the 448 sample members; Dillman (1978) procedures were used to obtain completed responses from 381 for an 85% response rate. Of the respondents, 233 were private floaters (88% response) and 148 were commercial floaters (81% response).

Although the 1977 and 1991 samples are relatively the same in terms of total numbers (387 and 381 respectively) and response rates (80% and 85%), the makeup of each was different. More commercial floaters were in the 1977 study, while more private boaters were in the 1991 project. To account for these differences in analytical procedures, aggregate data for each study were weighted proportionately. However, in the cases where comparison of private and commercial differences were conducted, the weighting scheme did not apply.

Measures

Both the panel and cross-sectional surveys were modeled after measures used in the 1977 study to obtain as much comparative data as possible. Panel members were asked questions about their most recent trip and responses were compared with their 1977 visit. Cross-sectional comparisons were made between the 1991 and 1977 samples. Additional lines of inquiry provided information on current use patterns and demographics, reaction to the permit system, and preferences for river management. Chi-square analysis was used to test for significance in frequency distributions and t-tests were used in analyzing central tendencies. Because responses for the panel are paired rather than independent, paired t-tests were used in comparing 1977 and 1991 responses for this group. An advantage of paired data is that it typically reduces variability that might otherwise obscure small but significant differences (Devore and Peck, 1986). For other appropriate measures, zero order correlations between variables were computed to determine significant associations.

Displacement

The panel study provided the best opportunities to look for direct causes of displacement. Initially, it was determined who had made return visits to the Rogue and who had not. A concession regarding time of last visit was necessary in order to analyze data for the collective group of returnees. Not everyone had made their most recent visit in 1991, but more than two-thirds (69%) had been to the Rogue in the last five years (1987-91) -- a period in which use had stabilized at a consistent level.

Thus, responses for the returnee group are information reported for the most recent trip and are considered to generally reflect current conditions.

Three methods were used to explore reasons why some floaters returned to the Rogue while others did not. First, to isolate potential causes of displacement (and identify potential predictors), the original 1977 survey responses of the returnees and nonreturnees were examined. Comparisons were made to determine if certain social, resource, managerial, or participant characteristics were associated with individuals not making a return visit.

Second, the 1991 survey provided the opportunity to ask all respondents specifically about decreased use of the Rogue. Those who had not returned in the 14 year period were asked what factors were involved in this decision. The same question was posed to returnees who may still be visiting the Rogue, but with less frequency than they had in the past. A list of reasons included social conditions (e.g. too many people, competition over campsites) resource conditions (e.g. environmental damage), managerial conditions (e.g. use of jet boats on the river, too difficult to get a permit), and personal characteristics (e.g. too far to travel, family situations). Participants in the longitudinal study were asked this same question in regards to anticipated future use of the Rogue. Although their question was phrased hypothetically, it could provide some insight into the displacement issue.

A third step tested the hypothesis that user characteristics are associated with displacement decisions. Five characteristics were identified as potentially important variables: floater type (private and commercial), experience level, degree of

attachment to river running and to the Rogue River, travel distance, and age. These five measures were treated as independent variables; a return trip to the Rogue and the list of reasons for displacement from above were treated as dependent variables. Zero order correlations were compared to determine differential effects among all panel participants who had either not returned or whose use of the Rogue had decreased over time. The 1991 cross-sectional respondents were not included in this analysis because their responses were about anticipated rather than actual behaviors.

The coding scheme is important to interpreting the correlations, particularly in cases of dummy variables and composite measures. All dependent variable responses -- made a return trip and the reasons for decreasing use or nonuse -- were coded similarly (0 = no and 1 = yes). Where necessary, the independent variables were similarly coded. First, floater type was delineated by 1 = private and 2 = commercial. Second, three measures were combined to create the experience level index: user made a repeat visit to the Rogue since 1977 (1 = no, 2 = yes), user made trips to other whitewater rivers (1 = no, 2 = yes), and the number of rivers floated in a typical year. The attachment variable was a composite of two Likert-type measures: visitor feelings about river running (1 = no longer go river running to 5 = it is one of the best things in my life) and visitor feelings about the Rogue River (1 = below average compared to other recreation places to 4 = my favorite recreation place). The final two independent variables were distance from the Rogue and participant age.

Specific attention was given to the role of the permit system on user displacement. Panel returnees and cross-sectional respondents were asked if they had ever been denied a permit and if so, what they did instead. The question of interest was if they were displaced to other rivers or to other activities, or if they found alternative means to run the Rogue. Support for several management alternatives was also measured.

Respondents in both studies were also asked to describe their use of coping behaviors (intrasite displacement strategies) as a tactic for avoiding undesired river and camp encounters. Methods such as avoiding others by speeding up or slowing down, passing up planned stops, or changing a campsite may be alternatives preferable to being displaced altogether. In addition, respondents were asked about their willingness to use strategies like following a launch or campsite schedule and taking a trip in the spring or fall. These are alternatives which management could implement to help spread floaters out without having to further limit overall use.

The importance of user experience and user type (private/commercial) was also explored by partitioning responses based on these variables. The influence of substitute experiences was examined by asking respondents what they would do if it were not possible to run the Rogue and to list other rivers that offered similar experiences.

Product Shift

Panel data provided the opportunity to observe the product shift process and document cognitive shifts of perceptions at the individual level. Both the panel and

cross-sectional studies presented data for assessing shift outcomes (experience definitions) for all floaters at the aggregate level.

Users were asked how they would react to seeing more people on the river than expected. Those who saw more than anticipated answered "yes" or "no" to each of three likely reactions: did they (1) become unhappy or dissatisfied, (2) change the way they thought about the Rogue, deciding it was less remote than they had believed, and (3) decide to go somewhere more remote next time? The first two are cognitive adaptations which have implications for product shift. The third is a cognition, which if acted upon leads directly to displacement. If the visitor instead makes a return trip, a product shift may be indicated.

Perceived crowding was measured on the widely used nine-point response scale which rates recreation sites from "not at all crowded" to "extremely crowded" (see Shelby, Vaske, & Heberlein, 1989). The scale has been used in over 60 studies in a fifteen year period to help standardize crowding measures. The instrument was a part of the 1977 Rogue study and was used again in 1991 to help document acceptance of increased visitation levels.

To clarify perceptions of social and environmental conditions over time, all users were asked to assess a series of statements regarding their trip on the Rogue. Using a 5-point Likert-type scale (strongly disagree to strongly agree), social assessments were made for items such as "the Rogue is too crowded to be considered wilderness" and "our trip traveled at a leisurely pace." Shifts in perceived environmental conditions from 1977 to 1991 were measured by user assessments of

resource deterioration including excessive litter, trampled vegetation, and attraction site and campsite overuse.

Shifts in encounter norms were measured by asking users to indicate the number of encounters they would tolerate in various river situations before their experience became unpleasant: (1) number of encounters with other parties while floating the river each day, (2) number of jet boat encounters each day, (3) total amount of time in sight of other parties each day, (4) number of stops (out of 5) at which to meet another group, and (5) number of nights (out of 5) to camp within sight or sound of another party. Comparison of 1977 and 1991 responses will help determine if users have increased their norm tolerances to accommodate additional contacts.

To further test the satisfaction model, users were asked to indicate their level of overall satisfaction by rating their trip on a six-point scale from "poor" to "perfect."

Product shift processes and outcomes were assessed by comparing responses for experience descriptions from 1977 and 1991. Users were asked what kind of experience the river *currently* provided given three alternatives: (1) wilderness, a place generally unaffected by the presence of man, (2) semi-wilderness, where complete solitude is not expected, or (3) undeveloped recreation, where meeting other people is part of the experience. A followup question asked which of these three experiences the river *should* provide.

CHAPTER 4. RESULTS AND DISCUSSION: DISPLACEMENT

Results

This chapter presents results on visitor use and displacement processes followed by a discussion of the research findings. The results are organized around data from the 14 year panel study. Where appropriate, data from the 1991 longitudinal study are also reported; these latter findings are particularly relevant in identifying substitute sites for the Rogue and in observing effects of the permit system on trip choice.

Five of the study hypotheses pertain to displacement issues and will be referenced in this chapter. Hypothesis 1 stated that displacement results from three on-site factors (social, resource, and management conditions). Hypothesis 2 predicted that external influences would cause decreased use (or nonuse) of a recreation site. Hypothesis 3 said participant characteristics like experience level and type of use can influence succession-displacement decisions. Hypothesis 4 predicted the permit system would act as an involuntary displacement mechanism, fostering strategies for alternative means to run the river. Finally, hypothesis 5 stated that visitors will use behavioral coping techniques, or within-site (intrasite) strategies, to avoid social encounters, thereby altering river use patterns.

Repeat Visits

The floater panel was comprised of 84 private and 165 commercial floaters who completed questionnaires in 1991. Initially, these 249 panel respondents were asked if they had made at least one trip on the wild section of the Rogue since 1977.

Frequencies in Table 2-1 indicate that 89 (36%) made at least one repeat visit. Of these, 63% were private floaters and 37% were commercial boaters (reversing the makeup of the original sample of 249). Most returnees (69%) made their most recent trip during the last five years (1987-91) when rising use levels on the river had peaked at around 11,000 floaters per season. Repeat visitors averaged five trips each to the Rogue during the 14-year term of the study.

For the cross-sectional group, 43% made their first Rogue trip in 1991. On average, repeat floaters in this study have been visiting the Rogue for seven years and have made four river trips each.

Table 2-1. Floater Panel

1991 panel respondents	249
Private	84 (34%)
Commercial	165 (66%)
Respondents making at least one Rogue trip since 1977	89 (36%)
Private	56 (63%)
Commercial	33 (37%)
Returnee's most recent trip	
1987-91	61 (69%)
1982-86	12 (13%)
1978-81	16 (18%)
Number of trips since 1977 (median)	5

Substitute Sites

An important aspect of displacement is the user's perception that other settings exist that can provide the same experience and serve as a substitute site for the

original setting. Table 2-2 lists the rivers that panel and cross-sectional respondents actually visited that they judged as offering an experience similar to the Rogue. Overall, about two thirds of the panel (n = 170) had run rivers other than the Rogue and 61% of the cross-sectional respondents (n = 231) had done the same. Of these, 95% overall listed a river which offered an experience similar to the Rogue. Some noted more than one. Leading the list of potential substitutes was the Salmon (a favored river among private floaters) and the American, Colorado, and Toulumne Rivers (where outfitted trips are popular).

Table 2-2. Rogue River Substitutes
Rivers offering experiences similar to the Rogue*

	Panel	Cross-sectional
N	170	231
	(%)	(%)
Salmon	27	33
American	24	n/a
Colorado	17	10
Toulumne	14	n/a
Deschutes	11	25
Klamath	11	23
Illinois	8	10
Snake	8	17
No. Umpqua	4	14
Other rivers	51	39

*Excludes individuals who have taken only one float trip.

Note: Respondents could name more than one river.

Potential/Reported Displacers

The initial screening allowed panel respondents to be partitioned into nonreturnees (n=160) and returnees (n=89) for many of the displacement analyses.

These figures alone suggest evidence of displacement -- 64% did not make a return trip. In an effort to isolate potential causes of displacement, the original 1977 survey responses for the two groups were examined. Comparisons were made of the groups' reactions to a variety of on-site social, resource, and management conditions, as well as personal characteristics which might affect river running behavior. Results are reported in Table 2-3.

A substantial percentage of both nonreturnees and returnees were negatively influenced by potential displacers in each of the three on-site categories: *social conditions* like feeling crowded (62% and 60% respectively) and the trip being less enjoyable because of jet boats (57% and 60%), *resource conditions* like seeing environmental damage (40% and 39%) and campsite overuse (21% and 26%), and *management conditions* such as preferring a ban on jet boats (82% and 75%). Although overall scores indicate that sufficient conditions for displacement exist, few significant differences emerged to indicate immediately why one set of visitors would return and another would not. In all, only two evaluations of potential on-site displacers were significantly different. In one of these cases, excessive litter on the river, *more* returnees noted this condition than nonreturnees.

Frequencies in the final category, *participant characteristics*, were the first indication of major differences between the two groups (8 of 10 differences were significant). A composite picture of the nonreturnees suggests they were largely commercial floaters (83%) whose first whitewater experience was their 1977 Rogue trip (55%); for many (33%) it was also their only whitewater trip. Almost half

**Table 2-3. Comparison of 1977 Responses
for Causes of Succession-Displacement
Panel Study**

Responses from 1977 survey (unless noted)	Nonreturnees (N = 160)	Returnees (N = 89)	Test Statistic ¹
<i>Social Conditions</i>			
Felt some level of crowding	62 %	60 %	0.2
Bothered by seeing so many people on river	27 %	24 %	0.3
Prefer to see fewer people on trip	36 %	37 %	0.1
Trip was less enjoyable by meeting jet boaters	57 %	60 %	4.0
Meeting others changes character of the Rogue	50 %	42 %	1.8
Saw more parties on the river than expected	22 %	30 %	1.3
Rogue is too crowded to be considered wilderness	27 %	36 %	2.6
<i>Resource Conditions</i>			
Rogue environment is damaged by overuse	40 %	39 %	0.1
Excessive litter on river	13 %	26 %	5.6*
Trampled natural vegetation exists	15 %	22 %	1.7
Overuse of campsites exists	21 %	26 %	1.1
Overuse of attraction sites exists	23 %	21 %	0.2
Rogue is relatively unaffected by man	43 %	43 %	0.0
<i>Management Conditions</i>			
Motorized boats are inappropriate in wild section	99 %	92 %	4.5
Roads are inappropriate for the wild section	94 %	100 %	4.3
Campsites w/ tables & fireplaces are inappropriate	76 %	73 %	0.2
Campsites w/ outhouses are appropriate	76 %	61 %	5.0*
Preference for better camping facilities	10 %	8 %	1.3
Preference for banning jet boats	82 %	75 %	1.5
<i>Participant Characteristics</i>			
Private floaters	17 %	63 %	42.1***
Commercial floaters	83 %	37 %	42.1***
1977 Rogue trip was first whitewater experience	55 %	20 %	26.5***
1977 Rogue trip was only whitewater experience	33 %	0 %	19.7***
No longer go river running (1991)	48 %	9 %	20.8***
Live more than 200 miles from Rogue	84 %	50 %	26.5*
Married	48 %	57 %	1.5
Number of children	0.7	1.5	3.1*
Under 30 years of age	48 %	33 %	4.7*
Over 55 years of age	4 %	1 %	1.0

¹Chi-square tests were used to compare frequency distributions; T-tests were used to compare means.

*Significant at $p < .05$; **Significant at $p < .01$.

(48%) no longer go river running. In 1977, the majority of this group (84%) lived more than 200 miles from the Rogue, 48% were under 30 years of age, and few had children. In contrast, the majority of returning floaters were private boaters (63%) with considerably more whitewater experience. Their commitment to the sport is much greater in that 91% are still running rivers. Half (50%) lived within 200 miles of the river in 1977, 33% were under 30 years of age, and they had twice as many children as the nonreturnees.

In a more direct approach to the displacement question, all panel respondents were asked in 1991 about their nonuse (or decreased use) of the Rogue. This question was framed to ask nonreturnees why they had not been back, but it also allowed the returnees to give reasons for any decreasing use in recent years. Of the returnees, 69% (n=61) reported some level of decreased use over the 14 year study period. The same question was posed to the cross-sectional study respondents in 1991. Among this group, 16% (n=63) anticipated decreased use (or nonuse) of the Rogue in the future. Respondents were given a list of 13 possible reasons (15 in the cross-sectional study) for not returning or for decreased use of the Rogue and were asked to check those that applied to them. Frequencies for the three subsamples are reported in Table 2-4.

Among those who have never been back to the Rogue (nonreturnees), most cited external influences as reasons: 62% said the Rogue was too far away, 33% indicated their family situation made trips more difficult, 28% said they did not have as much time for multi-day trips, and 17% indicated a trip was too costly. One on-

site condition, the use of motorized boats, was mentioned by 29% of the nonreturnees as a displacement factor. Although a few respondents listed other social, resource, and management conditions, they were not major reasons for displacement among this group.

Table 2-4. Succession-Displacement Factors
Panel and Cross-sectional Respondents

Reasons for Decreased Use of the Rogue ¹	Panel		Cross-sectional ³
	Nonreturnees	Returnees ²	
N	160	61	63
<i>Social Conditions</i>	(%)	(%)	(%)
Too many people	7	15	21
Competition for campsites	7	25	24
<i>Resource Conditions</i>			
Too difficult to reach access points	2	2	0
Shuttle is too long	1	5	1
Environment damaged by overuse	4	12	16
<i>Management Conditions</i>			
Too hard to get a permit	7	39	25
Don't like use of motorized boats	29	23	53
<i>External Influences</i>			
Rogue is too far away	62	28	22
Family situation makes trips more difficult	33	33	16
Don't have as much time for multi-day trips	28	30	14
Costs too much	17	2	13
Rogue is below my skill level	2	7	12
Rogue is above my skill level	2	0	2
This was a once-in-a-lifetime experience	n/a	n/a	12
Now that I've run the Rogue, I'd like to try other rivers	n/a	n/a	50

¹Respondents could select more than one reason.

²Includes 69% of returnees who reported decreasing use of the Rogue.

³Includes 16% of the respondents who expected to visit Rogue less often or not at all in the future.

About one-third (31%) of the returnees reported no decline in their use of the river. For the other two-thirds, a range of responses was given for decreased use.

Among the on-site factors, campsite competition (25%), difficulty in getting a permit (39%), and the use of motorized boats (23%) played primary displacement roles. To a lesser extent, too many people (15%) and environmental damage (12%) were also factors in decreased use. Several external influences also prompted a substantial decline in use for this group. Being too far away (28%), family situations (33%), and personal time constraints (30%) were major contributors.

The panel findings quantify the displacement process. Overall, these results give empirical evidence of on-site social, resource, and management conditions being reasons for displacement which support hypothesis 1. They also identify external factors as contributing to decisions for discontinuing or decreasing use and support hypothesis 2.

Respondents in the cross-sectional study also provided evidence of displacement, although findings are speculative at this point because for this group the question referred to anticipated future use. Substantial contributors to displacement included two social conditions (too many people and campsite competition), one resource condition (environmental damage), and two management conditions (difficulty in getting a permit and policies which allow the use of motorized boats). All external influences were also cited in varying degrees, including one Schreyer (1979) noted as a likely response among "river collectors" -- half of the respondents said they wanted to try other rivers now that they had run the Rogue. Again, results lend support to both hypotheses 1 and 2.

Participant Characteristics as Influences

Both Table 2-3 and 2-4 suggest that for the panel, individual participant characteristics may make a substantial contribution to displacement decisions. It was anticipated that important characteristics included the type of floater, experience level, attachment to the river setting, travel distance, and age (Lime, 1981). Table 2-5 reports correlations for these five participant characteristic dimensions with (1) did not make a return visit to the Rogue and (2) the list of reasons for displacement for those who did not return or reported decreased use. Correlations differed significantly from zero at $r \leq -.14$ or $\geq .14$. Findings by participant characteristic are as follows:

Type. User type differed significantly from zero in correlations with not returning to the Rogue and with six displacement factors. Significant positive relationships indicate commercial use is correlated with not making a return trip and displacement from the use of motorized boats, living too far away, and the cost of trips. Significant negative correlations indicate a relationship between private floaters and displacement from competition over campsites, environmental damage, and difficulty in getting a permit. Based on these findings, more specific relationships with type of use were examined for nonreturnees and returnees (Appendix A). However, sample sizes were smaller and controlling for user type failed to reveal further associations.

Experience. The experience level dimension also differed significantly in correlations with not returning to the Rogue and with five displacement factors. Significant negative relationships indicate that less experience is correlated with

Table 2-5. Zero Order Correlations Between Participant Characteristics and Displacement Factors

Dependent Variables	Type	Experience	Attachment	Distance	Age
No return trips to Rogue	.46 ^{***}	-.65 ^{***}	-.37 ^{***}	.33 ^{***}	-.08
<i>Social Conditions</i>					
Too many people	-.10	.05	-.03	-.16*	-.01
Competition for campsites	-.16*	.17*	.13	-.16*	-.10
<i>Resource Conditions</i>					
Damaged environment	-.21 ^{***}	.24 ^{***}	-.01	-.06	.06
Shuttle too long	-.13	.04	-.01	.07	.02
<i>Management Conditions</i>					
Too hard to get permit	-.53 ^{***}	.29 ^{***}	.14*	-.33 ^{***}	.03
Use of motorized boats	.20 ^{***}	.02	-.01	.01	.13
<i>External Influences</i>					
Too far away	.43 ^{***}	-.29 ^{***}	-.19*	.41 ^{***}	-.08
Family situation	-.01	-.09	-.13	.06	-.10
No longer have time	-.01	.03	-.02	.15*	-.16*
Too costly	.22 ^{***}	-.23 ^{***}	-.01	.05	.27 ^{***}
Hard to find companions	.04	.08	.01	.10	-.13
Below skill level	.08	.18*	.12	.12	-.02
Above skill level	-.03	-.07	.01	-.06	-.03

* Correlations significant at $p < .05$; ^{***} significant at $p < .01$.

Participant Characteristic codes

Type: (1 = private, 2 = commercial)

Experience: (made a repeat visit to the Rogue; 1 = no, 2 = yes) + (made trips to other rivers; 1 = no, 2 = yes) + (number of rivers floated in a typical year)

Attachment: (1 = no longer go river running to 5 = it is one of the best things in life) +

(1 = the Rogue is below average compared to other recreation place to 4 = the Rogue is my favorite recreation place).

Distance: miles from home to Rogue

Age: age in years

Dependent Variable codes

(0 = no, 1 = yes)

making no return trips and displacement because of living too far away and the cost of trips. More experience was significantly correlated with displacement from campsite competition, a damaged environment, and difficulty in getting a permit.

Attachment. The attachment dimension differed significantly in correlations with no return trips and two reasons for displacement. A significant negative association indicates low level attachment is correlated with not returning and displacement from living too far away. Stronger user attachment was significantly correlated with displacement from permit difficulties.

Distance. Distance from the Rogue differed significantly in correlations with not making a return trip and five reasons for displacement. Significant positive relationships indicate greater travel distance is correlated with making no return trips and displacement from being too far away and not having time for trips. Significant negative correlations indicate an association between less travel distance and displacement from too many people, competition for campsites, and difficulty in getting a permit.

Age. Age was not significantly correlated with returning to the Rogue. However, a significant negative correlation indicates younger users were more likely to be displaced because of the cost involved in a trip.

For a different perspective, the results can also be summarized by the displacement factors. Among the social on-site displacers, crowding was associated only with those who lived closer, while competition over campsites was a significant factor for private floaters, more experienced boaters, and users with greater attachments. A damaged environment was significant for private and experienced users. Among the management conditions, the permit system was associated with displacement for private floaters, experienced boaters, more attached users, and those

who live closer. The use of motorized boats was significantly correlated with commercial boaters.

In summarizing external factors, living too far away was associated with commercial floaters, those less experienced, and those less attached to the river. Not having enough time was significant only for those living a greater distance. Cost was a significant factor for commercial floaters and less experienced boaters. The river being below the user's skill level was associated with more experienced visitors.

Collectively, these findings give considerable support to participant characteristics as influencers in decisions about succession and user displacement (hypothesis 3).

Effects of the Permit System

An additional line of questioning made it possible to examine the effects of the current permit system on displacement processes. In both the panel and cross-sectional studies, respondents were asked if they had ever been denied a permit to run the Rogue and if so, what they did instead. Results in Table 2-6 show that 60% of the panel returnees and 34% of the cross-sectional respondents had been unsuccessful in a previous attempt to obtain a permit. Through alternative means, most of those denied a permit (67% and 64% respectively) were still able to run the river during same year. Favored strategies for both groups included showing up and waiting for an unclaimed permit, making a trip with a successful applicant, and running the river outside of the permit season -- alternatives which have been described as strategic and temporal substitution (Shelby and Vaske, 1991). Few decided to take a commercial

trip. About one-third of all respondents were otherwise displaced, choosing instead to reapply the following year, run another river, or select a different activity.

Table 2-6. Effects of Permit System on Trip Choice

	Panel Returnees	Cross-sectional Respondents
N	89	381
Denied a Rogue permit (any year)	60%	34%
If yes, able to make a Rogue trip that year anyway	67%	64%
When denied a Rogue permit, what did you do instead?		
Showed up, got a queue permit	26%	25%
Hooked up with a permitted party	20%	20%
Took a trip before or after season	20%	14%
Went on a commercial trip	1%	5%
Postponed trip and reapplied	3%	12%
Went on another river	17%	11%
Chose another activity	13%	13%

Interestingly, 96% of those who listed the permit system as a reason for decreased use (Table 2-4) had been denied a permit in the past. One other statistic reflects the impact of the permit system on use patterns. The average planning time for making a trip to the Rogue jumped from 9 weeks in 1977 to 14 weeks in 1991. Regardless of these inconveniences, 79% of the panel and 95% of the cross-sectional respondents said they supported the existing system (Table 2-7).

These findings provide substantial evidence of involuntary displacement because of the permit system and indicate the use of alternative strategies for running

the river. Both support hypothesis 4. Results also provide evidence of the permit system as a displacer which is included in hypothesis 1.

**Table 2-7. Support for the Permit System
1991 Responses**

	Panel	Cross-sectional
N	89	381
	(%)	(%)
Support the permit system	79	95
Prefer no permit system	8	2
Prefer fewer people per day	16	22
Prefer more people per day	6	5
Extend system to include May and September	30	34
Do not extend permit system	26	35

Behavioral Coping (Within-site adjustment)

Behavioral strategies for coping with unanticipated social impacts were measured as elements of intrasite displacement (Anderson and Brown, 1984). Of the panel members, 77% responded to a question asking what they did if they saw more people than expected. Among the cross-sectional group, 62% responded to the same question. Figure 2-1 depicts frequencies for four common coping techniques for avoiding others -- changing speed on the river, stopping to let others pass, passing up planned sidestops, and changing their campsites. From one-fourth to one-half (24% to 52%) of all panel members used the four methods to avoid others. Between 10% and 30% of the cross-sectional respondents used each technique.

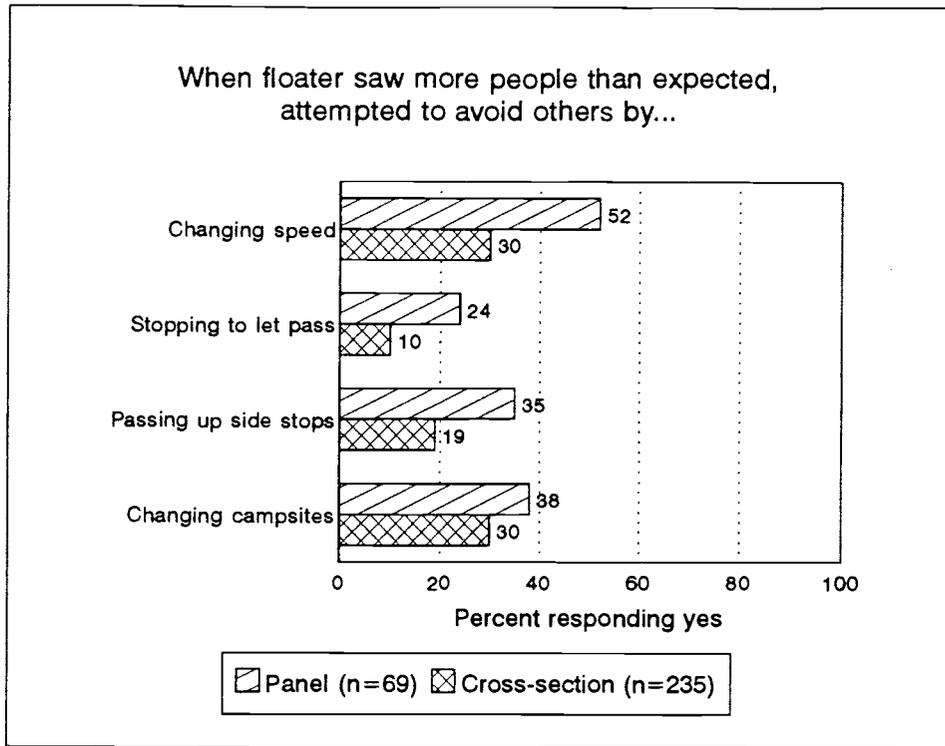


Figure 2-1. Behavioral Coping

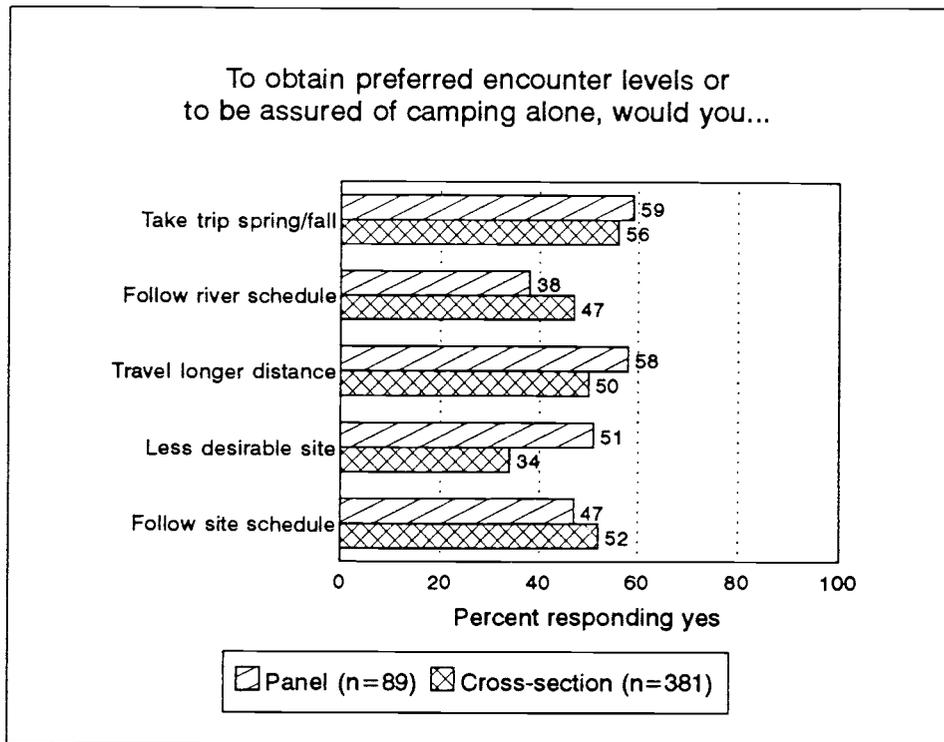


Figure 2-2. Behavioral Coping

In another approach, all respondents in both samples were asked if they *would use* certain tactics to obtain preferred encounter levels or to be assured of camping alone. Results in Figure 2-2 indicate that roughly half of all users were willing to 1) take a trip in the spring or fall, 2) follow a schedule while on the river, 3) travel farther during the day, 4) have a less desirable campsite, and 5) follow a schedule of campsites.

Collectively, these results show empirical evidence of (1) behavioral coping processes to avoid encounters and (2) a willingness to use them in order to obtain preferred contact levels. Both give support to hypothesis 5.

Discussion

Research findings indicate there is substantial evidence of succession-displacement from the Rogue; 64% of the 1977 panel did not make a return trip. In addition, a majority of repeat visitors reported their use of the river has decreased over time and a small group of respondents in the cross-sectional study anticipated little or no use of the Rogue in the future. Relevant to these findings is the issue of suitable substitute sites for the Rogue, observed differences in the group of nonreturnees and returnees, and the level of support generated for each of the displacement hypotheses. These topics are discussed in the remainder of this chapter.

Substitute Sites

One element necessary for displacement, the availability of suitable substitutes, appears to have been met. Most visitors were able to name a site they believe provides an experience similar to the Rogue. However, the attributes of substitute

rivers tend to be variable and are subject to the tastes and needs of the individual (Shelby et al. 1990). Typically, factors considered include the floating season, time required for a trip, degree of remoteness, suitability for different types of boats, and the availability of commercially outfitted trips. Several less obvious and more intrinsic elements, such as motives for making the trip and social impact norms and perceptions (Shelby et al. 1990), also enter the substitutability equation. Brunson and Shelby (1993) recently proposed a research agenda which should help to further substantiate and clarify the substitutability concept.

Substitution data from the current research supports the variability notion of alternative sites. Some users listed rivers which were conducive to outfitted trips (e.g. American, Colorado), others were closer to local boaters (e.g. Klamath, Illinois, No. Umpqua), and others offered more remote experiences (e.g. Salmon, Toulumne, Illinois). A detailed exploration of substitutability was not the intent of this study, but in light of previous research the limited data presented here suggests that preferences for substitute rivers are linked to the personal characteristics and needs of the individual boater.

Differences in Nonreturnees and Returnees

The panel members' evaluations of on-site conditions taken from the 1977 study (Table 2-2) suggest there was sufficient reason for users becoming displaced from the Rogue. Substantial numbers of visitors reported feeling crowded, seeing environmental deterioration, or being unhappy about the presence of jet boats. However, examination of the 1977 responses showed few differences in assessments

of social, resource, and management conditions to indicate why some users would choose to return and others would not. The group who appeared to be displaced (the nonreturnees), perceived most all conditions in the same light as the group of returnees. It was not until participant characteristics were considered that differences in the two groups began to emerge.

As a group, nonreturnees had much less river experience, live farther from the Rogue, and about half admitted they no longer take river trips. Findings support what river managers have suspected for years: many nonreturnees are commercial floaters whose river trip is a one time experience (Lime, 1981). In addition, results tend to corroborate consumer research that marginal users, who have the smallest consumer surplus and consequently the least to lose, are typically the users who drop out first (Hirschman, 1970). For a group whose commitment to river running is generally low, there is ample cause for succession to other activities for reasons which are not displacers in the traditional sense. Most nonreturnees appear to have simply lost interest in whitewater trips on the Rogue and have moved on in search of other recreation experiences or other rivers. The combination of travel distance, family constraints, and the time requirements of a multi-day trip offer substantial rationale for doing other things (Backman and Crompton, 1990). The single major on-site displacer for this group, encounters with jet boats, may have led those who are still taking river trips to seek out different rivers. For the most part, the actions of river managers generally have little effect on this type of group's use patterns.

The returnees demonstrated different characteristics. Most were experienced private boaters who had made repeated trips to the Rogue. Almost all (91%) were still running rivers in 1991. This group was much more sensitive to on-site conditions as displacers. Most indicated some level of decreasing use because of these factors. The returnees tend to live closer to the Rogue, making access easier and allegiance more likely. They also are older and may be more established in their family pattern. Older individuals often want familiarity and stability in their recreation activities (Iso-Ahola, 1980), while younger participants who are yet to face domestic commitments may move on for a variety of reasons (Heberlein and Ervin, 1991). In general, repeat participants have been described as qualitatively different from first timers because their consistent use implies psychological attachments to a site (Antil, 1984). For the returnees in this study, the Rogue may hold special meaning in the form of a traditional family recreation event or for outings with an established social network.

Displacement from On-site Factors

Displacement of visitors can be directly attributed to several on-site conditions confirming the initial displacement hypothesis. Among the panel group of nonreturnees, however, only motorized use was cited as a major factor. On the other hand, reasons for displacement (declining use) among the returnees focused on social, resource, and management conditions.

Social conditions. Among the social conditions, two factors were seen as displacers. One was crowding ("too many people"), but its contribution was relatively

small. Perhaps the permit system has held use at a level acceptable to most repeat visitors; however, another explanation may be just as logical -- normative evaluations of crowding have shifted to accommodate the increased use levels. The major social displacer was competition over campsites. On the Rogue, camping is limited to sandbars or rock benches along the river corridor, with some sites more desirable than others. Few nonreturnees cited problems with competing for campsites; this is a logical response because most were commercial floaters who had outfitters to deal with this aspect of the trip. But for private boaters campsite competition is a principal concern. On the Rogue, private floaters report (anecdotal data) that the campsite situation is aggravated by commercial outfitters who control premium sites by sending advance boats downriver early in the day. For private floaters, the ability to travel at a leisurely pace is complicated by worries over which downriver site may be available. While the camp setting has always been considered an important feature of a backcountry trip (Lucas, Cole and Stankey, 1985; Shindler and Shelby, 1992), the empirical evidence presented here links site competition with user displacement and provides support for designation or scheduling of campsites.

Resource conditions. One resource condition, environmental damage, emerged as a relatively low level displacement factor. Its modest effect most likely stems from two reasons. First, the physical landscape of Northwest rivers typically benefit from weather conditions. Many whitewater rivers are scoured by flood or runoff, rendering them less susceptible than other backcountry settings to litter, trampled vegetation, campfire debris, and poor sanitation. In addition, riparian ecosystems are

fairly resilient in western Oregon where ample rainfall assists rapid vegetative recovery. But Rogue River flows are highly regulated, so the river does not benefit as readily from a periodic "natural flush" and ecological impacts may accrue over time. Thus, the second reason may actually account for the low level of displacement from environmental damage. Wildland visitors have traditionally been tolerant of deteriorating ecological conditions (e.g. Heberlein and Dunwiddie, 1977; Shelby and Shindler, 1992). The opportunity to visit a popular recreational resource with many natural attributes often causes them to overlook (or accept) the presence of biophysical impacts. The same may be true on the Rogue.

Management conditions. Two management conditions, the permit system and the presence of jet boats, are major displacers. Since its inception in 1978, the permit system has probably created the greatest overall impact on river use. Interestingly, most of the returnees were in favor of the current system, even though many had experienced rejection in the permit lottery. Almost a third of this group even supported extending it to later in the year. No doubt many feel the system protects certain values important to the river setting. In any case, both voluntary and involuntary displacement occur because of the system. Intolerant users are displaced elsewhere, while others look for alternative solutions for gaining river access. Findings support the hypothesis that involuntarily displaced users will use other strategies for getting on the river, thus altering overall use patterns which may result in additional environmental impacts. However, little on-river monitoring is being

done and the effects have gone largely undetermined. Additional study of the permit system as an involuntary displacer would be useful.

Policies which allow jet boat use on the Rogue are an ongoing problem for many floaters, causing many to be displaced and others to merely be unhappy. The situation is likely to remain as a displacement factor because the issue has several sides, and solutions acceptable to all may not exist. Floaters and motorized users are after different experiences (Shelby, 1980) and agencies often inherit the dilemma of trying to serve both. Consequently, managers of western rivers with this problem are quick to point out that a wild designation does not mean a wilderness setting where motorized access is excluded (M. Cole, 1989). In the case of the Rogue, jet boaters are fairly well entrenched. Historically, they have been making mail and lodge runs since the 1930's, and like the Colorado and Snake Rivers, motorized trips on the Rogue are an important component of the local economy.

Differences in nonmotorized and motorized users contribute to the management challenge. The two groups have an asymmetric view of river experiences which makes greater regulation more difficult. Compared to floaters, few jet boaters recognize conflicts or social concerns between the two groups (Whittaker, 1992). Vaske, Donnelly, and Shelby (1993) studied differing user evaluations and concluded that when user groups envision different recreation experiences, setting management objectives may mean choosing among them, or zoning the resource to accommodate both groups. As with similar settings, regulation of jet boats on the Rogue is influenced by a wide range of politicized issues. Questions regarding additional limits

on motorized use will most likely be resolved in a larger forum than that provided by user surveys.

One last issue regarding on-site displacers is the subsample of cross-sectional respondents who said they anticipate little (if any) use of the Rogue in the future. The reaction is speculation at this point, but is of interest particularly in that most of their reasons for being displaced are similar to the returnee group. The biggest on-site issue is the use of motorized boats which suggests that floater and jet boater compatibility is not improving and that motorized use will continue to be a displacer for those seeking a more primitive experience. Two other factors -- too many people and campsite competition -- are also substantial displacers for the 1991 cross-sectional group, suggesting that in any cross-sectional sample some amount of users will find social conditions a problem. If these users become displaced, they will not be represented in subsequent cross-sections. Finally, an interest in running other rivers was mentioned by half of this group and reflects the view of commercially outfitted floaters who prefer to book a variety of whitewater experiences (of those who voiced this opinion, 75% were commercial floaters).

External Influences

It was hypothesized that external factors would cause decreased use of the Rogue, but the extent of their influence was not anticipated. Collectively, outside influences were the major reason for the nonreturnees lack of repeat trips and played a major role in the decisions of returnees as well. The importance of these findings is that they help place these external influences in a context with displacement factors

attributable to the recreation site. Findings also substantiate the view that many visits are single experiences and that recreation decisions are often tied to consumer lifestyles. Factors like travel distance, family situations, and time constraints frequently outweigh the attractor attributes of a recreation site, particularly for the casual, less committed user.

Findings on external influences also fit the commercial/private floater profiles. Commercial boater who are less experienced are more likely to be deterred by travel distance, a trip costing too much, or an interest in running other whitewater rivers. They are also more likely to be one time visitors. Results suggest that the private, more committed floaters are the group who will sustain an interest in river use and be most active in maintaining its natural character.

Participant Characteristics

Results indicate that managers should be concerned about the quality of on-site conditions as displacers, but may do well to consider them in the context of how groups of users relate to them. The sum of a river runner's experience could serve as an indicator of behavior patterns (Schreyer et al. 1984). The current findings suggest that four participant characteristics are most closely associated with elements of the displacement process and may help explain why some visitors return and others do not. These are (1) type of use (private/commercial), (2) previous experience, (3) level of attachment, and (4) travel distance.

Type of use. Stereotypes of private and commercially outfitted river runners have existed for years. In a review of literature, Lime (1981) found many similarities

between the two, but argued that comparisons really boil down to assessments on specific rivers. On the Rogue, type of use appears to be a major contributor to the potential for a return trip. By an overwhelming margin, private floaters make up the bulk of repeat visits. Many commercial floaters are simply one time visitors.

Research indicates that private and commercial users seek different kinds of experiences; private users generally seek greater solitude (Shelby and Nielsen, 1976), while commercial groups look more for a group adventure (Heywood, 1987). To the extent that differences like group size and noise levels on trips can be a source of conflict between the two groups (D. Cole, 1989), these elements provide the more solitude seeking private floaters with reasons to be displaced. The differences also give additional support to why campsite competition is a greater displacer among private floaters. Selection of a campsite which is out of sight and sound of others is probably more important for this group.

It is no surprise that private and commercial floaters view the permit system differently. Because outfitters secure permits in advance for their clientele, commercial passengers may not even know a permit is required. The system is a greater burden on private floaters who will be displaced (many involuntarily) for lack of a permit. These users are more likely to need, and consequently seek, alternatives for gaining river access.

The association between commercial floaters and displacement over the use of motorized boats was largely unanticipated. Perhaps the more experienced private boaters were better prepared for seeing jet boats on the Rogue, while the commercial

users simply had different expectations about a river trip. Many commercial floaters are first time Rogue floaters whose perceptions have been influenced by advertising from outfitters. For example, an informal sampling of outfitter promotional brochures found that seven out of eight companies relied heavily on terms like "wilderness adventure" and "protected from any encroachments by man" in describing the Rogue. For commercial passengers, the use of jet boats on the river may not fit their expectation of a wilderness experience.

Previous experience. Not surprisingly, experience level is closely associated with user type ($r = -.45$, $p < .01$). Private boaters tend to have more experience, commercial boaters less (Lime, 1981). In the current findings, experienced floaters were more frequently displaced by campsite competition and the permit system, probably because most were also private boaters who must take care of these details. The association between more experienced boaters and displacement from environmental damage also makes sense. Boating longevity and a tendency for self-guided trips gives experienced floaters an awareness of river conditions. Perceptions of resource deterioration have also been attributed to standards that users established during their first trip to a recreation area (Heberlein, 1977; Nielsen et al. 1977); first time boaters are more likely to find existing environmental conditions appropriate because these conditions represent the norm for the site. Nielsen (1992) used this rationale in arguing that carrying capacity policy should be based on the opinions of repeat users.

Attachment. As the third important user characteristic, attachment had few correlations with any on-site displacers. The only association of significance was with difficulty in getting a permit. It may be that those with strong attachments to the Rogue were not the ones whose use had declined, or that their displacement was of an involuntary nature from an inability to get a permit. It is reasonable to assume that a user's list of acceptable substitute sites decreases as participation and commitment to one area increases (Buchanan, 1985), and that strong emotional ties for a setting may even reduce a user's willingness to seek out substitutes (Williams et al. 1992). These views seem to reinforce the notion that a positive image of a place is a force against displacement (Schreyer, 1979). From a management standpoint, the importance of user attachment may be that it offsets, no doubt within certain limits, the tendency to be displaced. As a result, these more loyal and experienced users may stay longer than they would ordinarily in the hope that any needed improvements can be achieved "from within."

Travel distance. Finally, proximity to the Rogue also seems to be important. Naturally, those who live farther away would be more inclined to choose alternate rivers for future trips (Nielsen, 1992). Floaters living in proximity could be expected to identify more closely with the Rogue and have certain expectations about being able to use it. Living closer was associated with displacement from too many people, campsite competition, and the permit system. It may be that more local users have become frustrated with higher densities on the Rogue as well as the need to acquire a permit -- situations that did not exist in 1977. Although locals have much greater

opportunity to obtain permits from the "no show" pool, the need for a permit may not be as widely accepted by this group.

Behavioral Coping (Within-site adjustment)

Data describing behavioral coping strategies show that a substantial number of visitors are using strategies to adjust interlocationally (intrasite) and that many more would be willing to do so to get their preferred social conditions. Although some amount of on-site movement to avoid crowding is normal for most visitors (Hammit and Patterson, 1991), these steps are especially important in wild river settings as effective methods for self regulating contact levels and to extend feelings of remoteness.

Study results indicate that proportionately more panel group members were using behavioral (within-site) coping tactics than those in the cross-sectional sample. It may be that the experienced (and perhaps more attached) floaters are more motivated to find these intermediate solutions. Kuentzel and Heberlein (1992) found that boaters who felt the most crowded at the Apostle Islands more readily adjusted their activity patterns within site. Much weaker correlations were found on the Rogue for this rationale. Whatever the motivation, there is no guarantee that coping tactics will be sufficient to keep visitors on-site indefinitely. Long-time visitors who change their behavior usually do so because they expect their normal launch times or campsites to be negatively impacted by changing conditions (Anderson and Brown, 1984). It follows that if other entry times or different campsites also become impacted, these users may be displaced to other rivers.

The Rogue seems well suited to at least one regulatory measure to help floaters avoid contacts. Currently about 70% of all float trips put-in between 9:00 and 11:00 a.m.; the majority are commercial trips probably looking to get a full day on the river. Scheduling launches may help spread floaters out. If adjustment of morning launches is not acceptable to outfitted groups, there still seems to be a large launch window for private floaters who are looking for more solitude. Two compensating mechanisms seem to be particularly relevant strategies for those living in proximity to the river. Choosing a different day (or time of year) to run the river and hooking up with a successful applicant serve those who are less constrained by time.

One concern managers may have over within-site adjustments may be the way river use patterns are altered. Altman (1975) suggested that within-site shifts can result in other environmental outcomes or costs. One such shift on the Rogue has created a high-density "season" immediately after the close of the permit period. With no permit requirement and weather still summer-like, use during the few weeks following September 15th can be three to four times that allowed during the season. However, most boaters who float at this time do not want use limits to be extended. Presumably, this period allows the most committed and the most tolerant a chance to run the river. Additional monitoring of social and resource conditions during this post season period seems warranted.

Summary

In summary, there can be little doubt that ceasing use or being displaced from a recreation setting is inspired by many reasons. Some are extremely complex. Findings indicate that an array of external influences exist that will continue to be major factors in recreation choice behavior. The results corroborate previous research that factors such as travel distance, family commitments (Heberlein and Ervin, 1990), and time constraints (LaPage and Ragain, 1976) contribute to a decline in recreation participation. But the current findings go a step further by placing these influences in a context with what we consider traditional displacers.

Tracing user succession related to the participant's lifestyle is difficult and may not be particularly fruitful. Decisions caused by things like loss of interest and insufficient time or money in all probability cannot be affected by management changes in the recreation setting (Boothby et al. 1981). While this rationale may take some of the pressure off the displacement issue, it also suggests that repeat visitors are an important group who should command increased attention. Certain on-site conditions can be directly traced to displacement of these users and are within the realm of management manipulation. The empirical evidence presented here helps reduce their complexity. Major concerns for visitors are competition over campsites, the permit system, and the use of jet boats.

Specific participant characteristics can be useful in predicting visitor reaction to social, resource, and management conditions. Identifiable groups of users view their experiences differently, which tends to be reflected in their use patterns. The

majority of the repeat visitors tend to be private, experienced users who are also sensitive to on-site impacts and influences. From their investment in equipment and their years spent on the Rogue, they have established a high consumer surplus for the site. With the most to lose over deterioration of the Rogue product, they are the ones most likely to support efforts to protect its integrity. The prudent managerial response could be to encourage these users to stay put and jointly work for solutions to the common displacers.

CHAPTER 5. RESULTS AND DISCUSSION: PRODUCT SHIFT

Results

This chapter presents results on product shift processes followed by a discussion of the research findings. The results come from both the panel and cross-sectional studies. The panel data provide measures of the product shift process and document cognitive shifts at the individual level. Panel and cross-sectional data together provide evidence of shift outcomes at the aggregate level.

Panel data comparisons are made for the group of returning floaters ($n=89$). Evaluations from 1991 refer to judgments about their most recent trip on the Rogue, and are paired with their 1977 trip evaluations. Where comparison of central tendencies is appropriate, paired t-tests were used. Cross-sectional comparisons reflect data from the full 1977 floater study ($n = 387$) (Shelby and Colvin, 1979) and the separate floater study conducted in 1991 ($n = 381$). Pooled t-tests were used to analyze these longitudinal data.

Four of the research hypotheses relate to product shift issues and will be referenced in this chapter. Hypothesis 6 predicted that when visitors were faced with unanticipated encounter levels, rather than be dissatisfied they would use cognitive coping techniques to adapt to conditions. Hypothesis 7 said that even though use levels have increased, perceived crowding will not change, encounter norms will increase to accommodate additional contacts, and satisfaction will remain high. Hypothesis 8 stated that as use increases, individual users who remain on site will change their definition of the experience to reflect a higher density setting. Finally,

hypothesis 9 said that as use increases, the aggregate user definition of the recreation experience will also change to reflect a higher density setting.

Evidence of Cognitive Coping

Product shift theory is based on users making cognitive adjustments when faced with unexpected or adverse conditions. In cases of unanticipated encounter levels, the visitor redefines the experience to reflect the actual conditions found on site. Rogue River use levels increased substantially over the 14-year study period. When users were asked how they reacted if they saw more people than expected, 69% of the panel members and 62% of the cross-sectional group responded to a series of three questions. Table 3-1 reports frequencies for three psychological strategies which could be used by visitors to cope with use levels that were higher than anticipated.

Table 3-1. 1991 Reactions to Unexpected Encounter Levels

	Panel	Cross-sectional
N	69	235
If you saw more people than expected, did you . . .	(% yes)	(% yes)
Become unhappy or dissatisfied with trip?	12%	6%
Change the way you thought about the Rogue, deciding it was less remote than you had believed?	22%	28%
Decide to go somewhere more remote next time?	14%	10%

Panel response is for most recent trip.

Overall, 12% of the panel and 6% of the cross-sectional group reported becoming unhappy or dissatisfied with their trip, giving credence to the dissonance reduction aspect of hypothesis 6. This supports the notion that in self-selected recreation activities users opt to have a good experience rather than let unexpected conditions turn it into a poor one. A side note about the panel group's responses in 1977 is interesting. Of the 23 people who voiced dissatisfaction in the original 1977 study, 30% made a return trip, further supporting the cognitive adaptability of users under the product shift hypothesis.

In answer to the second question, about one-fourth of all respondents chose to change the way they thought about the Rogue, deciding it was less remote than they had believed. This reaction provides evidence of product shift operationalized on the individual level (Shelby et al. 1988); in essence, the product (the river experience) was redefined when the visitor was faced with conditions that might not have been acceptable under the original trip expectations. These findings also provide support for hypothesis 6. The panel data created another opportunity to measure product shift on an individual level. All respondents who had decided in 1977 that the Rogue was less remote than they had believed were tracked for repeat visits. Of those who voiced this opinion in 1977, 29% made at least one repeat trip. While this modestly supports the product shift hypothesis, the 71% who did not return may lend more support to displacement from social impacts.

Finally, 14% of the panel and 10% of the cross-sectional group decided to go somewhere more remote next time. Both are relatively small percentages which seem

to give credibility to the product shift concept. Again, the panel data allow us to follow up on those who made this same decision in 1977, which if carried out will serve to support displacement theory. In the original 1977 study, 22% of the respondents who saw more people than expected said they would go elsewhere next time; of these, 75% did not return to the Rogue. When respondents change their mind and decide to return instead, as did the other 25% from the 1977 study, the action further supports product shift assumptions (hypothesis 6).

Crowding, Encounters, and Satisfaction

Perceived crowding was measured in both 1977 and 1991 on the nine-point scale which rates recreation sites from 1 = "not at all crowded" to 9 = "extremely crowded" (see Shelby, Vaske, and Heberlein, 1989). Responses have been collapsed into four categories in Figure 3-1 for panel members and Figure 3-2 for the longitudinal respondents. Although use levels had increased substantially between the sample periods, the panel's perception of crowding did not change. This result provides strong support for hypothesis 7. The cross-sectional ratings from 1977 and 1991, on the other hand, were significantly different ($p < .01$). The more recent visitors perceived a higher density setting. This finding is counter to the hypothesis. It is interesting that the 1991 cross-sectional sample also rated the river more crowded ($p < .05$) than the panel group did in 1991.

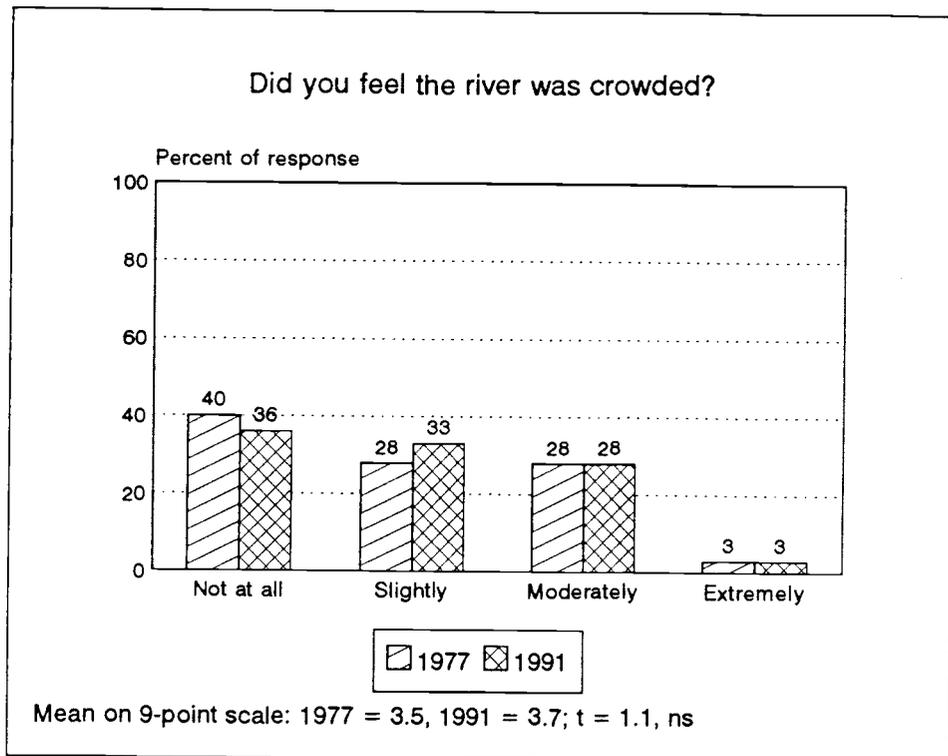


Figure 3-1. Crowding Perceptions Among Panel Respondents

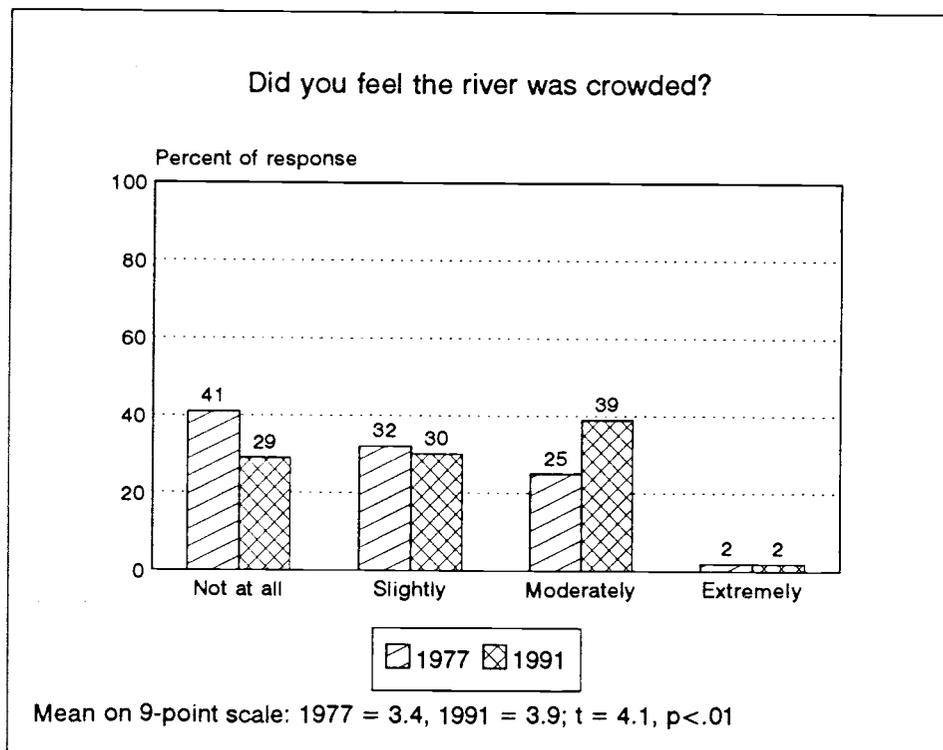


Figure 3-2. Crowding Perceptions Among Cross-sectional Respondents

To further test the idea that perceptions shift with increased use, visitors showed their level of agreement with statements about social and environmental conditions using a 5-point Likert-type scale (strongly disagree to strongly agree). Table 3-2 provides comparisons of assessments made in 1977 and 1991. (While no inventories exist to empirically indicate that ecological conditions have deteriorated

Table 3-2. Comparison of Social and Environmental Assessments

	Panel			Cross-sectional		
	1977 Mean	1991 Mean	t- value	1977 Mean	1991 Mean	t- value
<i>Social assessments:</i>						
The Rogue is too crowded to be considered wilderness.	2.8	3.0	0.8			
Rogue seems relatively un-affected by presence of man.	3.0	2.8	-1.5	3.0	2.8	2.2*
The character of a river trip on the Rogue is not changed by meeting other parties.	3.0	2.8	-1.4	2.9	2.9	-0.3
Our trip traveled at a leisurely pace.	4.1	4.1	0.1	4.2	4.1	1.9
<i>Environmental assessments:</i>						
Presence of excessive litter	2.6	2.5	-0.6	2.4	2.4	-0.2
Trampled natural vegetation exists	2.5	2.7	1.0	2.4	2.6	-2.2*
Attraction sites appear overused	2.6	2.8	1.5	2.6	2.7	-1.4
Campsites appear overused	2.6	3.0	2.6*	2.6	2.6	-0.4

Means based on 5-pt. scale: 1 = strongly disagree, 2 = probably disagree, 3 = neutral, 4 = probably agree, 5 = strongly agree.

*Significant at $p < .05$.

Note: River management did not want the item "The Rogue is too crowded to be considered wilderness" included in the 1991 cross-sectional study.

over time, it may be reasonable to assume that higher use levels have lead to some increased level of wear and tear). The panel responses for the four social assessments were essentially the same from 1977 and 1991, while one environmental evaluation (the overuse of campsites) was significantly different at the .05 level. Among the cross-sectional respondents, results were similar; one item in each category was rated differently. In 1991, fewer people agreed that the Rogue was unaffected by the presence of man and more people thought the natural vegetation had been damaged. With few perceptual changes overall, these findings lend moderate support to hypothesis 7.

Encounter norms were assessed by asking floaters a series of questions about the acceptable (1) number of river encounters per day, (2) number of jet boat encounters per day, (3) amount of time in sight of other parties each day, (4) number of stops (out of 5) at which to meet another group, and (5) number of nights (out of 5) to camp within sight or sound of another party. Most floaters were able to give a specific number of acceptable encounters, although others said encounters made no difference to them. Results are shown in Table 3-3.

For the panel group, one norm increased significantly between 1977 and 1991. The mean number of acceptable encounters on the river rose from 5.7 to 7.4 per day, reflecting the product shift process. Norms for jet boat encounters, time in sight of others, number of stops to meet others, and camping within sight or sound of others remained essentially the same. Among the cross-sectional respondents, two encounter norms changed significantly. Acceptable numbers of river encounters and jet boat

Table 3-3. River and Camp Encounter Norms

	Panel			Cross-section		
	1977	1991	T-value	1977	1991	T-value
Acceptable number of river encounters per day.						
Mean	5.7	7.4	8.3*	4.4	5.5	-3.4*
Makes no difference	27%	17%		18%	22%	
Acceptable number of jet boat encounters per day.						
Mean	1.5	1.5	-0.1	1.3	1.9	3.7*
Makes no difference	10%	12%		5%	14%	
Acceptable amount of time in sight of other parties each day.						
Mean (hrs.)	1.3	1.4	0.4	1.3	1.2	0.8
Makes no difference	28%	24%		22%	29%	
Acceptable number of stops (out of 5) at which to meet another group.						
Mean	1.8	1.8	0.2	1.7	1.8	1.2
Makes no difference	24%	19%		15%	20%	
Acceptable number of nights (out of 5) to camp within sight or sound of another party.						
Mean	1.4	1.2	-0.8	1.2	1.2	-0.4
Makes no difference	23%	11%		13%	16%	

*Significant at $p < .01$.

encounters both increased. Another point of interest also emerged from the panel data. For all but one of the measures (jet boat encounters), significantly fewer panel members selected the "makes no difference" option in 1991 than in 1977. This occurred even though the norms among those who specified a number may not have changed. In contrast to the panel group, the number of cross-sectional respondents who voiced indifference to encounters *increased* in 1991 for each of the measures.

In a final measurement of encounter norms, partial correlations from both studies indicate that private use in 1991 was associated with higher encounter norms. In the panel group, private users had greater tolerance for river encounters ($r = -.26$, $p < .05$), for jet boat encounters ($r = -.37$, $p < .01$), and for camping within sight or sound of others ($r = -.25$, $p < .05$). Private cross-sectional respondents were more tolerant of being in sight of others on the river ($r = -.15$, $p < .05$), meeting others at stops ($r = -.23$, $p < .01$) and camping within sight or sound of others ($r = -.20$; $p < .01$).

Finally, satisfaction ratings for trips were measured on a 6-point Likert-type scale (poor to perfect). Results were collapsed and are shown in Figures 3-3 and 3-4. Panel member ratings indicate a significant decrease ($p = .04$) in satisfaction from 1977 to 1991. Cross-sectional respondents' ratings remained the same over time. Collectively, the incongruity of the findings on crowding, encounters, and satisfaction reflect a difference in the panel and cross-sectional respondents. Results suggest there may be limits to the product shift hypotheses.

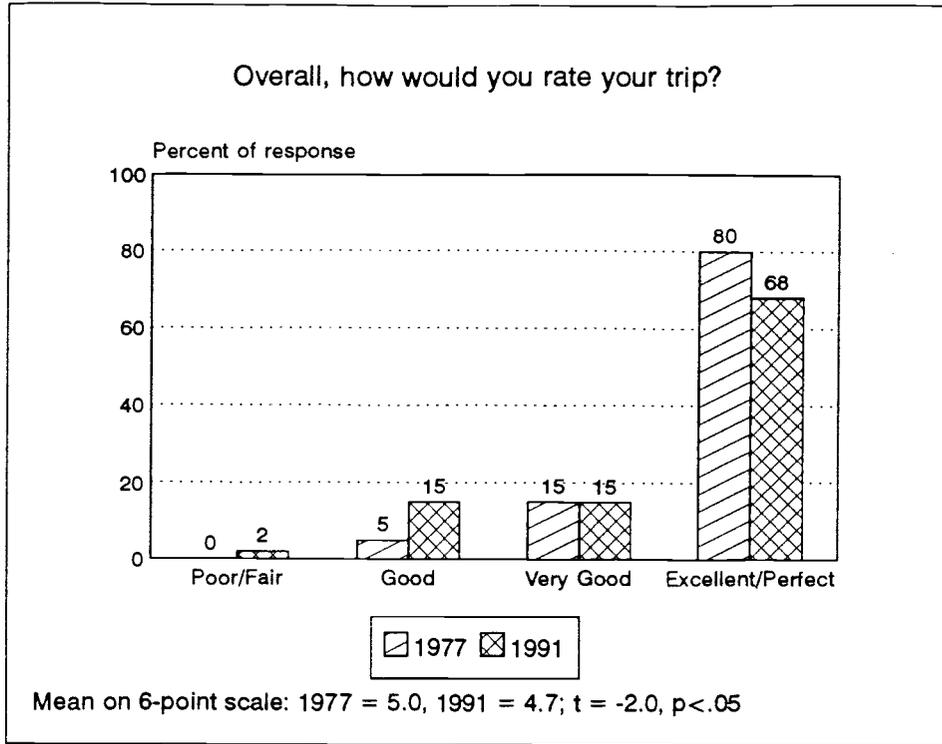


Figure 3-3. Trip Satisfaction Among Panel Respondents.

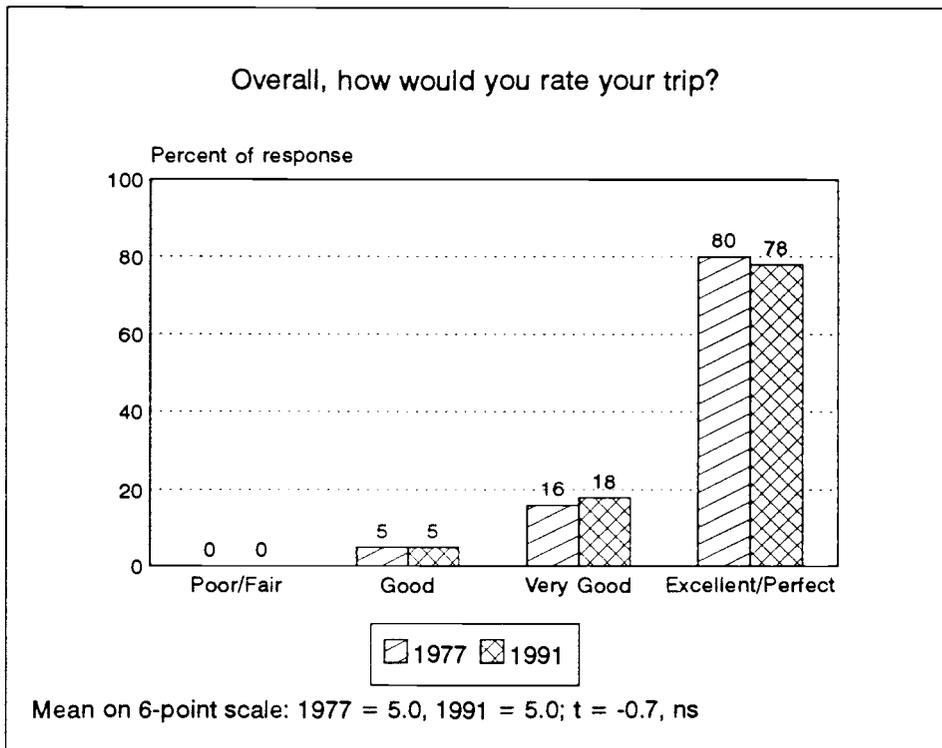


Figure 3-4. Trip Satisfaction Among Cross-sectional Respondents.

River Experience Definitions

A major component of the product shift concept is how visitors define the experience offered by the recreation setting. Users were asked what kind of experience the river currently provides and what it should provide; response choices were wilderness, semi-wilderness, and undeveloped recreation. Results are reported in Figures 3-5 to 3-8.

According to both panel and cross-sectional respondents, a significant shift to a higher density experience has occurred since 1977. The percentages of floaters who think that the Rogue provides wilderness have decreased significantly, with more believing that it now offers a semi-wilderness or an undeveloped recreation experience. In addition, a parallel shift occurred in the type of experience users think should be provided. Significantly fewer believe it should be a wilderness experience and more think either a semi-wilderness or an undeveloped recreation description is appropriate. Results for the panel members give evidence of the product shift *process* at work on the individual level, giving strong support to hypothesis 8. Findings from both studies indicate shifts in the aggregate experience definition and provide evidence of product shift *outcomes*. These results support hypothesis 9.

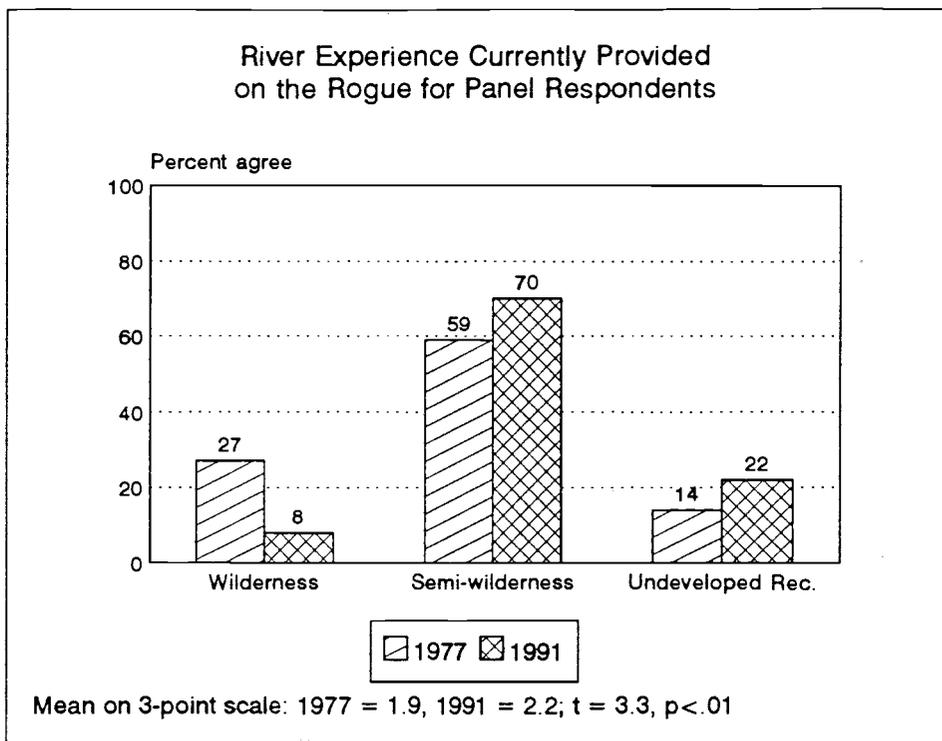


Figure 3-5. River Experience.

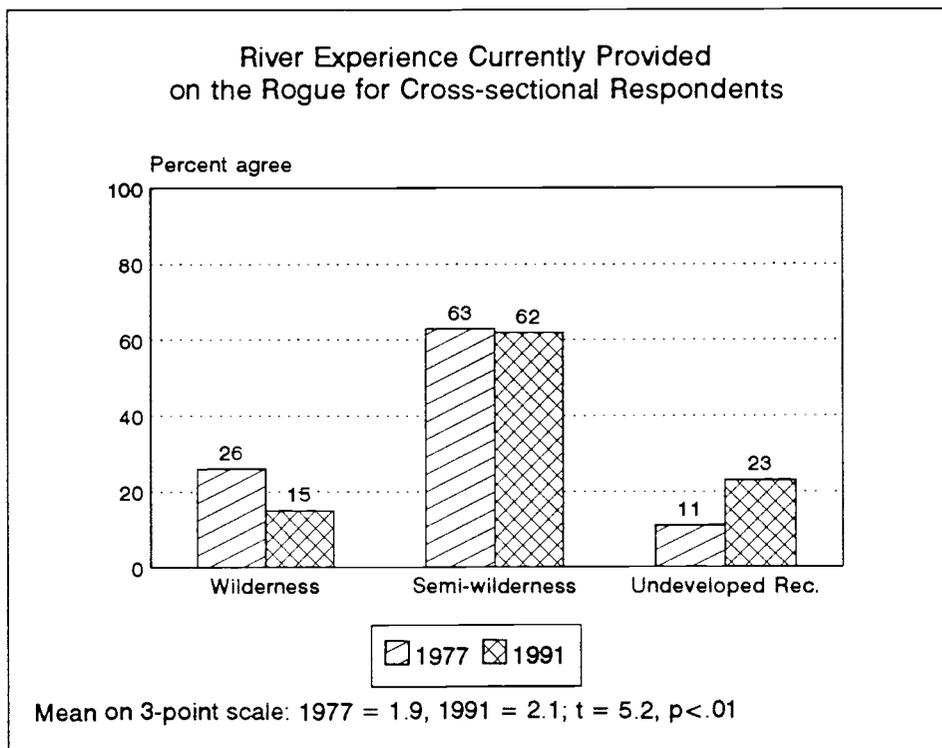


Figure 3-6. River Experience.

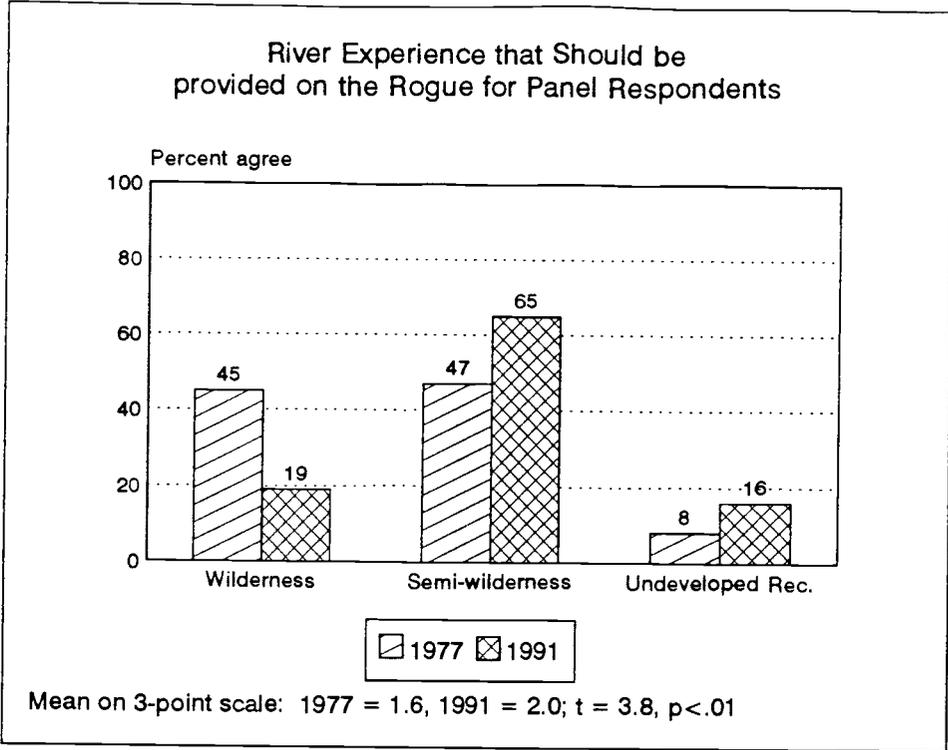


Figure 3-7. River Experience.

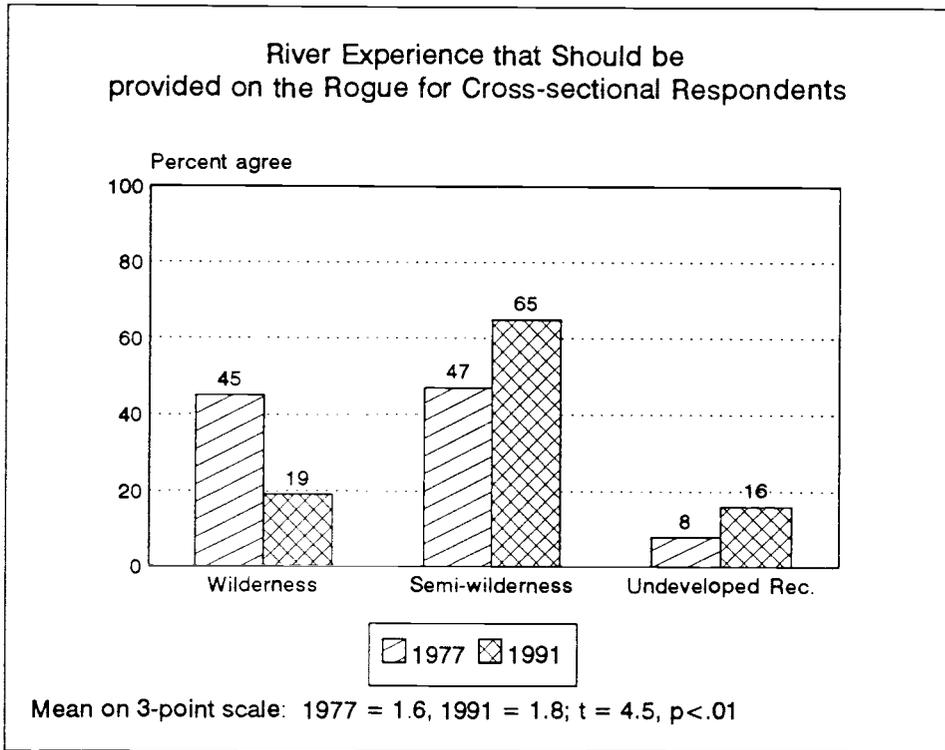


Figure 3-8. River Experience.

Discussion

The recreation experience on the Rogue River has changed substantially between 1977 and 1991. The findings presented here are unique in that they provide empirical evidence of product shift processes in response to changing conditions. Although results show several incongruities as well as differences in the panel and cross-sectional respondents, evidence exists to support the product shift theme and extend research concepts in this seldom studied area. Discussion of findings primarily involve (1) the use of cognitive coping techniques as adaptive strategies, (2) user perceptions of crowding, encounter norms, and trip satisfaction, and (3) shifts in user experience definitions to reflect changing conditions. The remainder of this chapter will be devoted to these topics.

Cognitive Coping Strategies

The product shift theory is based on the tendency for visitors to make cognitive adjustments when confronted with a different number of people than anticipated. Users in both the 1991 panel and cross-sectional samples made the predicted product shift. When faced with more people than expected, few became unhappy or dissatisfied with their trip or decided to go to a more remote location the next time. The most favored reaction to unexpected encounters was for users to change their perception of the river and think of it as a less remote setting than previously believed.

Additional findings, however, produced mixed messages about the nature of cognitive shifts. The use of a visitor panel provided the opportunity to go one step

further and track use patterns for those who had made a similar product shift in 1977. With less than a third (29%) of those who changed perceptions in 1977 making a repeat trip, there is doubt about the influence of cognitive shifts on later decisions. Many reasons have already been identified as to why people do not return to an area. Yet, findings suggests that while cognitive adjustments help visitors cope within the recreation setting, and support the dissonance reduction theory associated with on-site behavior, they may play a weak role in overall decision-making in the long run. Cognitive coping offers no guarantee about future behavior. Unfulfilled expectations may just make it easier to select another recreation site the next time.

Interestingly, almost a third (30%) of the *dissatisfied* floaters from the 1977 panel decided to make a return trip, as did 25% of the panel members who had decided to go somewhere more remote next time. These two reactions suggest that further rationalization about a setting can occur after leaving the site. It could also mean that the site had been redefined during the initial visit and the return trip was for a different kind of recreation experience.

Finally, additional evidence of cognitive adjustment is found in comparing panel members' social and environmental assessments of a Rogue trip from 1977 and 1991 (Table 3-2). Only one of eight evaluations changed over the 14 year period. The panel adapted to higher use levels, suggesting acceptance of the notion that one would expect to see more people in remote areas these days (Shelby et al. 1988). High mean scores in both 1977 and 1991 for "being able to travel at a leisurely pace"

may be the single variable most reflective of the cognitive adjustment involved in product shift.

Collectively, these findings represent the first follow up with individuals who have made a prior product shift and indicate the complex nature of this area of study. Additional panel research could provide other insights to these issues.

Crowding, Encounters, and Satisfaction

Crowding. Crowding scores (Figures 3-1 and 3-2) give evidence of a product shift and illustrate differences in the panel and cross-sectional samples. Panel members' judgments of crowding remained the same from 1977 to 1991, although use levels had increased substantially. The similarity of these ratings reflects the notion that feeling crowded is a normative judgment and is largely determined by the expectations and preferences of the individual (Kuss et al. 1984; Shelby and Heberlein, 1986). Panel members were repeat visitors who were influenced by past Rogue experiences and by communication with other river runners. Their crowding response fits with expectancy theory (Lawler, 1973) that over time, most people's perceptions are shaped to fit the situation they are in.

In contrast, the 1991 cross-sectional group did not adjust accordingly. They felt more crowded than both their 1971 counterparts and the 1991 panel members. This suggests that cross-sectional samples are different from long-term panel respondents. The panel group appears to have adapted over time as they were expected to. It is also likely they are more effective than newer visitors at adjusting trip plans to avoid crowds. The more recent cross section of visitors reflects a wider

range of users who are not as accepting of the higher use levels. According to product shift assumptions, this group should have demonstrated tolerance of the increased use -- in theory, the more accepting newcomers replacing the less tolerant visitors who moved on to other sites. Over time, the more recent group may evolve to include only those who have adapted to conditions found on the river. Overall, these adaptive processes contribute to changes in the character of the setting.

Encounter norms. Findings about encounter norms point out product shift incongruities as well as differences in the sample groups. The general stability of the means for acceptable encounter levels was not as predicted. The only changes between 1977 and 1991 were increases in the number of river encounters (both the panel members and the cross-sectional group) and in the number of jet boats (cross-sectional sample). Several interesting points emerge from the findings.

First, the general consistency of the norms over time suggests that users prefer not to adapt further to contacts, particularly in specific situations that are important to them. They may not be overly concerned with casual encounters while floating on the river, but attraction sites and campsites are high priority elements of the trip. These findings concur with similar results about contacts at specific sites on wild and scenic rivers in Alaska (Whittaker, 1992). Privacy in camp settings has always been especially important to wildland users (Stankey 1973, 1980; Lucas, 1980); normative results here continue to support this preference. Second, panel responses indicate that long term users are unwilling to adapt to jet boat use, suggesting resolution of this conflict may not be close at hand. Not only did panel members' norms not shift, but

in *both* 1977 and 1991 43% of this group said the acceptable number of jet boat encounters was zero. Third, the panel and cross-sectional groups are moving in different directions in their selection of the "makes no difference" option. A move toward specifying a preference about contacts (by the panel) reflects an increased awareness of other visitors, and suggests river encounters are becoming more relevant for this group of long term users. In contrast, greater indifference by the 1991 cross-sectional group suggests just the opposite. There is evidence that a large percentage of recent visitors, who fill the void earlier visitors who do not return, are more tolerant of existing conditions (Vaske et al. 1980).

Satisfaction. According to product shift theory, satisfaction will remain high even as use increases. Interestingly, the panel results failed to support this hypothesis, although findings for the longitudinal group did. The panel findings are an exception to the satisfaction model which has been developed largely on various cross-sectional research. That the group of long term panel users had difficulty sustaining satisfaction, suggests there may be limits to product shift assumptions. But the findings may also point to differences in the make up of the two sample groups. The panel is comprised mostly of private floaters, while the cross-sectional group is split evenly among private and commercial use. In both samples, commercial use was significantly associated with greater satisfaction levels. The satisfaction findings may reflect the tendency for those in high cost activities (commercial trips) to more effectively reduce dissonance and report fulfillment (Aronson and Mills, 1959;

Manning and Ciali, 1980). If this is the case, average satisfaction ratings in cross-sectional studies will continue to be high because of the one-time commercial floaters.

Experience Definitions

Finally, the shift in experience definitions offers the most substantial evidence for a product shift on the Rogue. In their longitudinal research from the Rogue, Shelby et al. (1988) called for panel data to verify that the process occurred among individual repeat users. The current research provides compelling evidence of the product shift process and shows that it occurred within a use limit system. A permit system which regulates use level was insufficient to maintain the character of the intended experience.

Results from both the panel and cross-sectional studies document the aggregate outcome that the Rogue is providing a different kind of experience than in the past. Majorities of users now define the river as a semi-wilderness setting, with mean responses indicating a progressive shift away from the "wilderness" end of the recreation opportunity spectrum. As Stankey (1989) theorized about such findings, changing conditions make the site a *different* kind of place. This shift to a higher density product can mean a lowering of expectations about what is appropriate for a recreation setting and can also contribute to a further decline in site conditions (Shindler, 1992). For the Rogue, future management of the site as wilderness seems unrealistic -- when asked what the river should offer, few believed this classification was appropriate.

At popular sites like the Rogue, a change in the experiences provided can be slow to develop and difficult to isolate. Management may have become complacent, figuring an element of protection existed from a permit system which limits use. The temporal illustration provided by longitudinal research (both panel and successive cross-sections) helps illuminate the cumulative effects.

Summary

Although mixed results raise additional questions, the research findings tend to substantiate the product shift theory. Regardless of the psychological outcomes, the result on-site is a gradual shift to a higher density recreation experience. This is accommodated by both changes in the user and a gradual transition to more tolerant visitors.

Overall, the findings suggest that the collective cognitive adjustments effectively altered the nature of the recreation setting. For many visitors, expectations about appropriate interaction levels changed to fit the existing situation. Following the product shift theme, this was a shift from finding the desired optimal situation to obtaining a satisfactory one. This is a natural reaction given that optimization often requires time and effort beyond the immediate scope of most individuals. March and Simon (1958) noted the difference in the two behaviors is like "searching a haystack to find the sharpest needle, and searching the haystack to find one sharp enough to sew with" (p.141). Thus, product shift behavior is really maximizing behavior when one takes into account the costs of the search for something better. Ultimately, changing perceptions make management's task of

maintaining resource quality more difficult. Users become desensitized to changing conditions and may not readily support regulatory measures to make improvements.

A question remains about the lasting nature of the product shift phenomena for individual users. There is some evidence that although a cognitive shift suffices for the current trip, it may be short-lived. Certainly numerous factors are involved.

Continued panel research in this area may help answer questions about the strength of product shift convictions over the long term.

CHAPTER 6. METHODOLOGICAL BENEFITS

This study was designed to use longitudinal data, and particularly panel data, to measure change over time. This methodological approach was considered the best technique for examining the temporal effects of displacement and product shift at recreation sites. The following discussion addresses two points regarding the merit of the methodology. The first section discusses the general benefits derived by using longitudinal procedures and the second comments on specific findings the panel data was able to expose that successive cross-sectional studies used in a longitudinal fashion could not.

Longitudinal Methods

The research design incorporated two longitudinal studies -- one using successive cross-sectional samples and the other tracking a panel group. Upon examination of the findings, several a priori benefits of using these general longitudinal procedures were confirmed. First, the ability to measure changes among user samples over time produced empirical evidence of displacement and product shift. Much of the previous research in these areas is based on user speculation or extrapolation of cross-sectional data. The longitudinal data showed the extent of behavioral coping techniques used to adjust to conditions within the recreation setting (intrasite displacement) and gave credence to the idea that experienced visitors are more likely to employ these strategies (Hammit and Patterson, 1991). The data helped expose the involuntary nature of displacement caused by the permit system (Shelby et al. 1989), further suggesting that user attachment and alternative strategies

for river access are important elements in recreation choice behavior. It also reinforced the notion that certain conflicts, like differences between floaters and jet boaters or user competition over campsites, are long-term problems and probably will not be resolved without management intervention. Finally, a shift in user experience definitions for the Rogue provided compelling evidence of product shift outcomes. That this product shift occurred within a regulated system (use level) has implications for other regulated sites, and exposes the vulnerability of popular unregulated recreation areas.

The second benefit derived from longitudinal research is the insights it provided about long-term repeat users of the recreation resource. As a group, long-term users were generally experienced private floaters who were more sensitive to impacts and lived close to the Rogue. They are a relatively small group overall. Longitudinal information may be useful in building a profile of repeat floaters which in turn may help identify potential support groups for management programs.

A third aspect of longitudinal data tends to reinforce the importance of management objectives and responsive stewardship. By exposing user displacement caused by on-site conditions and visitor acceptance of higher densities, the argument for increased management action is supported. The findings emphasize that wildland resources cannot be managed under a default system. Results suggest we probably do not know enough about ecological resource conditions and that users may provide little reliable information about the extent of ecological deterioration -- other elements of the recreation experience may be more important to visitors. It is up to managers

to inventory and monitor resource conditions and establish specific objectives for maintaining quality. Displacement data allow managers to focus on the specific social, resource, and management conditions which are relevant to visitors and important in achieving objectives. Overall, longitudinal research helps managers establish benchmarks and resource standards for future desired conditions.

The fourth conclusion derived from the longitudinal data is that it helps confirm the importance of this methodological approach. Long-term effects were observed that would not have been recorded from single cross-sectional studies. The findings provide opportunities to further test basic assumptions about user behavior and to explore new questions such as the effects of involuntary displacement on visitation patterns or examine the limits of normative shifts. The current research also suggests that constraints generally associated with panel studies -- time, money, and panel attrition -- may no longer pose so large a barrier for researchers. Factors such as improved record keeping, greater availability of recreation data sets, advances in computer capabilities and communication systems, and improved methodological models suggest panel studies can be conducted more efficiently than in the past. The current need for long-term environmental research to support management of human-forest ecosystems makes these types of studies more attractive.

Panel vs. Cross-sectional Data

The value of having panel data rather than just results from two cross-sectional studies used longitudinally is apparent for three reasons. First, panel research provided an opportunity to track one sample to observe specific displacement and

product shift processes and measure changes in the individual user. The specificity issue is important; panel data is the only method which can provide empirical evidence of distinct on-site displacement factors and verify the level of external influences on visitation. While cross-sectional data may indicate there are plenty of reasons to be displaced, the panel findings confirm specific causes and help narrow the field to a manageable few. In addition, panel data produced evidence of the product shift *process* occurring among individuals. Cross-sectional research can only show a shift as a *net outcome* between two different sets of users.

Second, the panel data allowed use patterns to be categorized based on participant characteristics like user type and experience level. For example, personal characteristics could be associated with the likelihood of repeat visits or a tendency to be displaced by certain conditions. This could allow management to identify potential support groups or focus management strategies on problems relevant to particular groups of users.

Panel findings also supported the notion that long-term users and newer visitors are different groups. They showed the attrition of visitors over time, and that as a group, long-term visitors reflect a smaller segment of private, more specialized, more attached floaters who have adapted (by both cognitive and behavioral means) to increased densities. Recent cross-sectional studies tend to include a larger, more disparate group of visitors who on average represent a wider range of views.

Finally, the panel data provided findings which were in opposition to conventional product shift assumptions and also gave insight into at least one new

issue. Although use levels increased, the encounter norms of panel members did not increase as predicted to accommodate additional contacts. In addition, trip ratings for panel members decreased between 1977 and 1991, a finding counter to the traditional satisfaction model. These results suggest there may be limits on how far users are willing to take a product shift. To compensate, it appears that other behavioral coping strategies (within-site adjustments) may be measures preferable to cognitive coping. These observations could only come from panel research.

The findings also raised a new issue of stability within the product shift phenomena. Many users were able to adapt to unexpected on-site crowding and encounters on their 1977 trip, but relatively few returned for repeat visits. This raises questions about the ability of an area to sustain people's interest even with a cognitive shift occurring during the course of a previous trip. The panel data presented here suggests that the shift made on site may not be strong enough over the long-term to lead to repeat visits. Additional panel studies would help resolve these questions.

CHAPTER 7. MANAGEMENT IMPLICATIONS

As with any case study, results from the Rogue must be interpreted within limits. However, longitudinal research and especially panel data are rare and offer a unique opportunity for comparisons of users who change visitation patterns and those who do not. The research also provides information from a group of long-term users, a perspective that is helpful in the management of any recreation setting.

The results show that displacement and product shift are significant processes occurring on the river. Findings also indicate that other (external) aspects of people's lives are major contributors to user succession, but these factors are most often beyond managerial control. The more site specific elements of displacement and product shift are identifiable concerns that can be addressed by management. The following is a discussion of the management implications of these two forces.

Displacement

Research results have largely supported the five displacement hypotheses which this dissertation intended to examine: (1) on-site factors are displacers on the Rogue, (2) external influences cause use to be discontinued or decreased, (3) participant characteristics influence succession-displacement decisions, (4) the permit system is an involuntary displacer and fosters strategies for alternative means to run the river, and (5) users employ on-site behavioral coping mechanisms to avoid encounters.

With an array of influences on the Rogue experience, managers can only concentrate on factors that fall within their sphere of control. They have limited

time, resources, and abilities and must consider practical approaches with the potential for improving conditions. Each river comes with its own set of problems, opportunities, and politics. Results reinforce earlier research that emphasizes the need to manage for specific settings when information is available for an individual site (Lime, 1981; Shelby et al. 1988). In addition, findings indicate that attention to participant characteristics can help identify use patterns that may be helpful in developing appropriate management strategies. Taken together, site specific and user specific information will result in better management objectives.

Site and User Specific Factors

It has been shown that external factors are substantial influencers in recreation choice behavior. The findings help explain that recreation sites are in competition with numerous other interests to which people choose to allocate their personal resources. Results also place these off-site factors in a context with on-site conditions. For example, the panel data show that nonreturning floaters were most influenced by external factors and that many were single trip visitors who moved on to other things. The only significant on-site displacer for this group (motorized use) was one they shared with repeat visitors. By concentrating on the set of problems identified by repeat users, it is likely that managers can address the on-site needs of all users. The approach is not intended to ignore one-time users, but from a practical standpoint it is more difficult to access this group and respond to their concerns. Working closely with long-term users is inherently easier -- this group has a continuing river presence and is sensitive to issues specific to the Rogue. Repeat

users generally are better informed about resource and management problems than first-time visitors (Hammit and McDonald, 1983; Nielsen et al. 1992), and thus can be a more appropriate population on which to base recreational use policies. It makes sense to focus on these repeat visitors and their on-site issues.

On-site Displacers

Social conditions. Social carrying capacity is generally the most relevant factor for users in planning for river and backcountry recreation. Perceptions of social conditions often are affected by exceeding visitor encounter expectations (Shelby and Heberlein, 1986), how and where encounters occur (Whittaker, 1992), the type of group encountered (Vaske et al. 1986), and if users share a single point of view about conditions (Adelman et al. 1982). Findings on the Rogue suggest that crowding in general is not the problem. However, encounters at locations like attraction sites or campsites are important to visitors and may have a greater negative impact than just seeing other floaters. Users can generally find ways to avoid the more casual river contacts by speeding up, slowing down, or letting others pass. But special places like side stops or favorite campsites are often among the primary reasons for a float trip and the individual user may have few options for avoiding encounters other than to pass up the site altogether.

Following this reasoning, it makes sense to attack the social impact problem with solutions other than simply reducing the number of permits. Besides being politically infeasible, reduction in use levels would have to be substantial before any noticeable effect on overall crowding was produced (Shelby and Heberlein, 1986).

Likewise, such actions would probably do little to solve campsite competition.

Currently, many private floaters feel outfitters control premium sites by sending advance boats downriver early in the day. Instead, other solutions may be found in the behavioral coping strategies floaters are using on their own to avoid social impacts. Not only are they adjusting use patterns, but they appear willing to try measures imposed by management. Policy changes could include (1) scheduling launch times to spread boaters out, (2) restricting group size to help preserve feelings of remoteness, (3) designating campsites to avoid camp crowding and ecological damage to areas that cannot sustain camping activity, and (4) initiating a campsite reservation system to alleviate floater anxiety and reduce competition.

No doubt obtaining user consensus on the first two suggestions will be more difficult given the needs of commercial outfitters. Afternoon put-in times and smaller groups would change their operation. However, the third and fourth options should be easier overall for users to support. A river map with designated sites would assist first-time visitors and could curtail infringement on campsite privacy from all but the unplanned, emergency stop. Designation would also make renovation of deteriorated sites easier. As far as reserving campsites is concerned, the argument has already been made that commercial outfitters have installed their own reservation system. Many users know that agency operated systems have met with success on other popular rivers.

Adaptive behavioral strategies are important because they offer alternatives to feeling crowded or being displaced. They have been particularly effective for users

who are most sensitive to crowding (Kuentzel and Heberlein, 1992). But their use also signals a preference for the Rogue, supporting the contention that users will first look for alternative solutions in the neighborhood of old ones (March, 1982). It is logical that when users are looking for the closest available substitute, they may find it in the same recreation setting -- if they are willing to vary their use patterns (Brunson and Shelby, 1993).

Resource conditions. At first glance, resource conditions on the Rogue might not seem to be an issue because they are not substantial displacers. Not surprisingly, resource deterioration has not been a major deterrent at popular backcountry sites where other attractor attributes (good whitewater, scenery, or fishing) frequently offset resource impacts. But managers are faced with the dilemma of trying to maximize recreation use, while also protecting the ecological values associated with a wild river designation. Congress clearly intended these areas to be managed in such a way that recreational use would not significantly impair the resource. Where deterioration occurs, managers not only have responsibility to serve visitor tastes for recreation settings, but to elevate them (Dustin, McAvoy, and Schultz, 1982).

On the Rogue, fire pan requirements and the installation of pit toilets at many campsites have minimized some resource degradation problems. But as with many backcountry settings (Washburne and Cole, 1983; GAO, 1989) no established program is in place to measure biophysical change over time. Displacement and product shift processes indicate that relying solely on user observation of conditions is an undependable methodology. A systematic site inventory and monitoring program

is really the only reliable option for determining changes in ecological conditions. Managers can then decide which impacts are most important and which ones they have control over and can do something about. A long-term agency commitment is fundamental to solving environmental issues. Without monitoring and periodic evaluation, site plans may become more damaging than no system at all because they give a false sense of security that the resource is being protected.

Management conditions. Previous management decisions have made the permit system and motorized boating major displacers on the Rogue. As discussed, the permit system is the single involuntary displacer and may best be viewed in a separate context. As with any management policy, positive and negative outcomes exist. A substantial majority of users find the permit system a preferred alternative -- it sets a use limit and many unsuccessful applicants are still able to find other ways to make a trip. Of course, the two samples surveyed represent only those who have run the Rogue and do not include the opinions of those who were unsuccessful in obtaining a permit and went elsewhere. In general, however, permit systems are viewed as a necessary tradeoff. They most often have user support, minimizing the uncertainty of getting on a river (Shelby, Whittaker, and Danley, 1989) and protect social norms important while floating the river.

Competition over a limited number of permits can cause frustration, and illustrates differences in the type of users on the river. Private floaters sometimes feel cheated because they have waited years to get a permit through the lottery, while commercial passengers simply have purchased a spot with an outfitter (D. Cole,

1989). Such perceptions periodically prompt questions regarding the allocation formula. Conversely, permit systems can also benefit more experienced floaters who understand the intricacies of cancellation and no show policies -- they can more easily acquire unclaimed permits.

River systems which have established permit seasons also allow for a short post-season when weather is still good and large numbers of floaters flock to make a run. On the Rogue, social conditions in the post-season could be described as a "sacrifice" setting (Shelby et al. 1989), one that is largely the result of use patterns altered by the permit policy. This use period serves those who were involuntarily displaced by the permit system as well as those who simply chose not to deal with it. With up to four times the usual number of floaters, the kind of experience (product) available to users is altered considerably. The post-season serves the most committed and the most tolerant, but at a cost to the type of recreation experience provided. Managers are currently considering an extension of the permit season. Any policy change should take into account the likelihood of further alterations to use patterns on the Rogue as well as other rivers which may serve as substitutes.

A review of the permit system will ultimately be more successful if experienced floaters are given the chance to participate in the process. Users can provide a helpful perspective and may turn up improved methods for distributing unused permits. At a minimum, a review process would provide an opportunity for frustrated boaters to voice their concerns, gain a better understanding of the system, and perhaps become more accepting of it.

Policies that allow motorized use may be the least acceptable form of displacement. We know that managers can reduce negative perceptions of crowding or environmental impacts by improving the accuracy of user expectations (Shelby et al. 1983). But resistance to jet boats among repeat users does not appear to be decreasing, regardless of the way in which management couches its description of the river. This problem is not the Rogue's alone. On the Snake River, the presence of motorized boats in Hell's Canyon has frequently lead to disappointment or frustration among outfitted float trip passengers (M. Cole, 1989). In the Grand Canyon where motorized use is also well established, administrators have simply stopped referring to a trip on the Colorado River as a wilderness experience (D. Cole, 1989).

Expectations about motorized use, however, might be more important among first-time visitors. Based on an outfitter's advertisement, many first-time commercial passengers expect a "wilderness trip" on the wild Rogue and are not prepared for an encounter with a jet boat. More accurate information may play a role in their evaluations and influence decisions about future trips. Yet there appears to be little coordination of public information between agency managers, who tacitly defend motorized use, and entrepreneurs capitalizing on wild river designations. Those promoting the use of rivers like commercial outfitters, local chambers of commerce, and jet boat excursion operators have no responsibility for resource management. Conversely, resource managers generally have little experience in the tourism business and seldom are involved in marketing efforts. Under this alignment, the

pressure is on the agencies to maintain a level of resource quality that may not be able to measure up to commercial users' expectations.

When recreation areas are managed under a broad range of social and economic conditions, decisions on where to draw the line must weigh policy, economic, and use considerations (Hammitt and Cole, 1987). The stakes over allowing jet boats are so high that river managers alone can seldom make final determinations, but they can take intermediate steps to provide visitor information which accurately describes resource and social conditions. Without such steps, management agencies will continue to be in the position of having to supply a single product which meets multiple criteria. Often the overriding problem in these situations is that management has not agreed on what the river product should be, nor has the product been adequately defined for (or with) the public.

Participant Characteristics

Findings suggest that participant characteristics like user type and their experience level influence decisions about repeat visits. Identifiable attributes are important from a management perspective to the extent they can help determine use patterns, develop a profile of users, and identify likely support groups for river programs. Distinctions such as private/commercial and first-time/experienced users may help in crafting management solutions to displacement issues. For instance, commercial floaters are likely to live further away, to visit once, and their single concern over on-site conditions is with jet boats. Whereas, private boaters are likely

to be more experienced, to be repeat visitors, and to view permit processes and a campsite reservation system as important issues.

Identifying user groups and developing partnerships with them is growing in importance for resource agencies. On popular recreational rivers, it is easy for managers to be insensitive to displacement because use levels remain high. At face value, the river remains a highly desirable place. But potential management allies -- users who care the most about the quality of the river product and the ones most likely to take an active role to preserve it -- instead may be moving on to more desirable settings. When conditions are allowed to change, managers run the risk of losing many of their most supportive customers.

River experience and attachment are evidence of a person-place bond that evolve from identifiable conditions of the place and characteristics of people. These place attachments involve "cognitions of satisfaction and expectations of stability, feeling of positive affect, greater knowledge of the locale, and behaviors that serve to maintain or enhance the location" (Shumaker and Taylor, 1983, p.237). Over time, strong ties to a recreation setting increase the users' level of concern about how the site is managed. If properly focused, user loyalty can serve the socially useful purpose of helping to prevent deterioration. Encouraging this type of boater to remain on-site should be a management priority. One method to encourage this use is by aligning with "friends of the river" type groups. This also creates an interactive link between users and managers for planning efforts on specific rivers. Planning on

a larger scale could be enhanced by working with the Pacific Rivers Council who maintains a more regional orientation.

There is a subtle, but important message in findings about long-term users who form attachments to places like the Rogue. It involves the significance of favorite places and the expectations of recreation consumers about stewardship responsibilities. It also suggests that loyalty has finite heights and is related to responsive management systems. The message reminds management that their business is more than just allocating resources based on use figures or who wins a lottery. It is a reminder that those who find emotional and symbolic value in recreation settings expect those qualities to be maintained and may become involved in processes to ensure that they are. Feelings of ownership found in river veterans and local users can help halt river changes and provide support for difficult regulatory decisions.

Product Shift

The product shift hypotheses in this study were generally supported. Users adapted to on-site conditions, adjusted their perceptions of crowding, and changed their experience definitions for the site. However, the critical product shift issue is not that the process occurred, but rather why it occurred and the outcomes produced. Although a cap was placed on use by the permit system in 1978, results confirm that the setting shifted to a higher-density description -- most floaters now identify the Rogue as either semi-wilderness or undeveloped recreation. As with similar backcountry settings, the change occurred by default rather than by design (Shelby et al. 1988). In fact, little river planning has been done since the original management

plan was adopted in 1972. Thus far there has been little consideration by management of the shift in experience definitions or its effect on the type of opportunity provided. The product shift findings illuminate two major areas of concern for management.

First, product shift is largely the result of an absence of management -- or essentially, management by default. Without a responsive management system in place, wildland users will resort to making cognitive adjustments to support their intent to have a positive experience. Under a default management approach, informal standards for resource and social impacts in wildland areas are set by the users themselves, based on their continued use and acceptance of the sites they select. However, visitor assessments of conditions are only a function of the average perceptions of users on-site, and those who care the least about density will make up a proportionately larger share of total use (Schreyer and Roggenbuck, 1978).

When high-use sites reflecting substantial ecological and social impacts continue to be used, it follows that the impacted conditions become the accepted standard among users. For example, to acquire the river attributes they value, visitors like those on the Rogue will tolerate a certain amount of distractions like increased use levels, motorized boating, or permit systems. Environmental *preferences* may be for lower impact levels, but without management standards in place to control impacts users are willing to *accept* higher levels to have access to a valued resource (Shelby and Shindler, 1992). Even if visitor succession-displacement is in progress, continued visitor use implies acceptance of site conditions. That these

"new" users may be less discriminating than those who preceded them only gives credence to a product shift argument.

It is interesting that the panel group in this study did not shift their encounter norms relative to their recreation experience definitions. This might indicate the tolerance for contacts has been reached by repeat users. If contact norms are at the upper bound, repeat visitors might be compensating through a variety of behavioral coping techniques. Before these users become displaced altogether, managers could capitalize on a partnership to initiate regulatory improvements -- in a sense turning feelings of dissonance into actions to change the situation. But in the absence of leadership and publicly expressed management objectives, resource agencies must accept the random outcomes of product shift.

An effective management plan is based on objectives and standards that delineate the specific environmental conditions to be maintained or achieved. This need to establish management objectives that clearly define satisfactory levels of quality was identified in early research on wildland carrying capacity (Wagar, 1964; Frissell and Stankey, 1972). Researchers generally agree that this fundamental principle is the critical step in determining acceptable levels of resource change (Shindler, 1992). Without a mechanism in place to define desired conditions and take mitigating action when necessary, the standards adopted by users inadvertently become policy (Drucker, 1985). Under default management systems, users with the greatest tolerance for impacts will dictate conditions, and managers will find it increasingly difficult to gain support for regulatory action.

The second management implication is how findings underscore the importance of well defined experience opportunities. The research results provide ample support for management policies that are more in line with the river's wild designation and that can be meshed with public preferences. On popular rivers like the Rogue, it is easy to overlook changing conditions because use levels remain high and people continue to be satisfied. These processes lead to the systematic elimination of opportunities at the low density end of the recreation opportunity spectrum (Shelby et al. 1988), an undesirable outcome if agencies are committed to providing a range of recreation choices. In defense of a more proactive approach, Becker (1981) argued that a wild river designation comes with certain expectations, including experiences differing substantially from those at an undeveloped recreation site.

Planning frameworks developed for visitor impact management and capacity determinations (see Stankey, Cole, Lucas, Petersen, and Frissell, 1985; Shelby and Heberlein, 1986; and Graefe, Kuss, and Vaske, 1990) emphasize the need to address two fundamental questions critical to settings like the Rogue: (1) early selection of a management goal for the type(s) of recreation experience to be provided and (2) identification of appropriate social and environmental conditions for these experiences. These are clearly the initial steps in the planning process. It is not enough to simply state an intent to "maintain natural conditions" or offer the public "river recreation opportunities." These statements may be easy to agree on, but are difficult for managers and the user public to interpret (Stankey and McCool, 1989). They are also indicative of the general absence of responsive management. In wildland settings,

little planning can be accomplished until a set of experience opportunities are agreed upon and expressed.

To help meet management goals, the U.S. Forest Service recently introduced a planning framework to be used in tandem with the Limits of Acceptable Change system (Stankey et al. 1985). The Recreation Opportunity Spectrum (ROS) for River Management (USFS, 1992) outlines six experience opportunity classes for categorizing the social, resource, and managerial conditions present on recreational rivers. By identifying experience classes for various river segments, management and users together can establish objectives and set specific resource standards. River management objectives then become the "operating rules" that help define what is acceptable and what is not (Stankey and McCool, 1989). Clear, publicly expressed objectives help visitors make choices about where and when their recreational preferences can be met.

One role of management is to describe to the potential user the important attributes of the recreation setting. In new or uncertain situations, choice makers need theories to help simplify their world. Clear definitions of the recreation experience will not only set a course for better management direction, they will help visitors have more accurate expectations about their recreation choices. Relationships exist between the way people perceive a recreation environment and their subsequent behavior in that environment (Kaplan, 1983). Users who are better prepared for the conditions they encounter will be less likely to feel crowded or have their trip

interfered with, and may be less likely to contribute to further deterioration.

Individuals desiring a different experience can choose from other alternatives.

Conclusion

Managers are far from powerless in the struggle with user displacement and product shift. Different user expectations and preferences for experiences are all legitimate, but management must determine what is appropriate for the setting within legislated mandates and regulatory limits. Management decisions set up circumstances that foster certain experiences and discourage or preclude others (Shelby, 1980). Systems that define the scope of recreation experiences and outline specific management objectives play a major role in combatting displacement and product shift processes. By changing the premise of user decisions, management can help shape visitor behavior.

Planning systems that can integrate visitor interests with management leadership are integral to resolving current resource issues. In the past, most wildland users have preferred a limited management presence and few controls on their recreation experiences (Lucas, 1983). More recently, presumably as more areas are impacted, management intervention has been viewed positively and in some cases even expected (Shindler and Shelby, 1993; Marion and Lime, 1986). Displacement and product shift processes have helped change recreation areas to the point where management by default is no longer an option. Responsive planning systems are a requirement in managing human-wildland interactions. As a management strategy, knowledge about users and liaisons with them provide one final advantage. In

situations of conflict or where changes are imminent, planners and managers can broaden their political base so that all legitimate viewpoints are given a fair hearing. As a result, user involvement can provide managers with a supportive political constituency for implementing controversial programs.

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APPENDICES

APPENDIX A: PRIVATE AND COMMERCIAL DIFFERENCES

A-1. Comparison of 1977 Responses for Causes of Succession-Displacement Panel Study Commercial Floaters

Responses from 1977 survey (unless noted)	Nonreturnees (N = 132)	Returnees (N = 33)	Test Statistic ¹
<i>Social Conditions</i>			
Felt some level of crowding	64%	79%	1.9
Bothered by seeing so many people on river	28%	33%	0.2
Prefer to see fewer people on trip	34%	52%	2.7
Trip was less enjoyable by meeting jet boaters	60%	75%	1.9
Meeting others changes character of the Rogue	51%	46%	0.2
Saw more parties on the river than expected	22%	42%	4.0*
Rogue is too crowded to be considered wilderness	25%	38%	1.5
<i>Resource Conditions</i>			
Rogue environment is damaged by overuse	39%	44%	0.1
Excessive litter on river	12%	22%	1.2
Trampled natural vegetation exists	14%	31%	4.3*
Overuse of campsites exists	20%	31%	1.2
Overuse of attraction sites exists	23%	25%	0.0
Rogue is relatively unaffected by man	43%	43%	0.0
<i>Management Conditions</i>			
Motorized boats are inappropriate in wild section	99%	100%	0.0
Roads are inappropriate for the wild section	93%	100%	1.3
Campsites w/ tables & fireplaces are inappropriate	76%	70%	0.3
Campsites w/ outhouses are appropriate	76%	67%	0.8
Preference for better camping facilities	12%	15%	0.1
Preference for banning jet boats	84%	91%	0.5
<i>Participant Characteristics</i>			
Private floaters			
Commercial floaters			
1977 Rogue trip was first whitewater experience	62%	34%	7.7**
1977 Rogue trip was only whitewater experience	39%	0%	12.3**
No longer go river running (1991)	51%	3%	15.1**
Live more than 200 miles from Rogue	86%	73%	2.4
Married	45%	63%	2.4
Number of children	0.7	1.6	2.2*
Under 30 years of age	48%	34%	1.4
Over 55 years of age	5%	3%	0.0

¹Chi-square tests were used to compare frequency distributions; T-tests were used to compare means.

*Significant at $p < .05$; **Significant at $p < .01$.

**A-2. Comparison of 1977 Responses
for Causes of Succession-Displacement
Panel Study Private Floaters**

Responses from 1977 survey (unless noted)	Nonreturnees (N = 28)	Returnees (N = 56)	Test Statistic ¹
<i>Social Conditions</i>			
Felt some level of crowding	54%	48%	0.8
Bothered by seeing so many people on river	25%	18%	0.2
Prefer to see fewer people on trip	43%	29%	1.1
Trip was less enjoyable by meeting jet boaters	58%	51%	0.1
Meeting others changes character of the Rogue	46%	39%	0.2
Saw more parties on the river than expected	21%	23%	0.0
Rogue is too crowded to be considered wilderness	36%	36%	0.0
<i>Resource Conditions</i>			
Rogue environment is damaged by overuse	46%	36%	0.5
Excessive litter on river	18%	29%	0.7
Trampled natural vegetation exists	21%	16%	0.1
Overuse of campsites exists	22%	24%	0.0
Overuse of attraction sites exists	22%	18%	0.1
Rogue is relatively unaffected by man	41%	43%	0.0
<i>Management Conditions</i>			
Motorized boats are inappropriate in wild section	100%	87%	2.3
Roads are inappropriate for the wild section	96%	100%	0.1
Campsites w/ tables & fireplaces are inappropriate	78%	75%	0.0
Campsites w/ outhouses are appropriate	74%	58%	1.4
Preference for better camping facilities	0%	4%	0.1
Preference for banning jet boats	71%	66%	0.1
<i>Participant Characteristics</i>			
Private floaters			
Commercial floaters			
1977 Rogue trip was first whitewater experience	20%	11%	0.5
1977 Rogue trip was only whitewater experience	1%	0%	0.0
No longer go river running (1991)	36%	13%	3.1
Live more than 200 miles from Rogue	74%	36%	7.9**
Married	59%	54%	0.1
Number of children	0.7	1.5	1.6
Under 30 years of age	48%	32%	1.4
Over 55 years of age	0%	0%	0.0

¹Chi-square tests were used to compare frequency distributions; T-tests were used to compare means.

**Significant at $p < .05$; **Significant at $p < .01$.

**A-3. Succession-Displacement Factors
Panel Respondents by Type**

Reasons for Decreased Use of the Rogue ¹	Nonreturnees			Returnees ²		
	Comm.	Priv.	Chi- Sq.	Comm.	Priv.	Chi- Sq.
<i>Social Conditions</i>	(%)	(%)		(%)	(%)	
Too many people	7	6	0.0	10	18	0.2
Too much competition for campsites	7	6	0.0	19	28	0.2
<i>Resource Conditions</i>						
Too difficult to reach access points	2	0	0.0	0	2	0.0
Shuttle is too long	0	6	0.8	5	5	0.0
Environment damaged by overuse	2	12	1.4	5	15	0.6
<i>Management Conditions</i>						
Too hard to get a permit	2	31	12.7*	10	55	10.1*
Don't like use of motorized boats	33	6	3.4	33	18	1.2
<i>External Influences</i>						
Rogue is too far away	68	31	6.3*	52	15	7.8*
Family situation makes trips more difficult	34	31	0.1	29	35	0.1
Don't have as much time for multi-day trips	26	38	0.4	38	25	0.6
Costs too much	19	6	0.9	5	0	0.1
Rogue is below my skill level	2	0	0.0	14	2	1.5
Rogue is above my skill level	1	6	0.1	0	0	0.0

¹Respondents could select more than one reason.

²69% of returnees who reported decreasing use of the Rogue.

*Significant at $p < .01$

APPENDIX B: PANEL STUDY SURVEY INSTRUMENT

This questionnaire was mailed to panel respondents as a 7 x 8 1/4 inch, staple-bound booklet with a cover identifying it as the Rogue River User Study.

Accompanying correspondence described the study and asked for the recipient's voluntary participation.

1991 ROGUE RIVER USER STUDY

This questionnaire helps us explore some of the changes that may have taken place in the 14 years since we first contacted you on the Rogue River. There may have been changes in the Rogue experience itself, and possibly also changes in the way you use the Rogue and other whitewater rivers. Some of you may have made regular Rogue trips in the ensuing years. For others, that 1977 trip may have been a once-in-a-lifetime experience that you've barely even thought about for many years.

This survey had to be designed for both kinds of respondents. As a result, some of the questions might not apply to you. Depending on how you answer a particular question, we may ask you to skip certain other questions. *Please answer every question you can.* A single missing answer decreases the value of all your responses. There are no right and wrong answers; the best response is the one that most closely reflects your current feelings and beliefs about the Rogue in particular, and whitewater boating in general.

Oregon State University
Department of Forest Resources

1. Have you made a Rogue River boat trip at least once in the years since we contacted you in 1977?
 - No -----> Please skip to question #1 on page 8.
 - Yes

2. In what year did you make your most recent Rogue trip? _____

3. How many Rogue trips have you made since we contacted you in 1977?
About _____ total trips

4. From 1977 to the present, would you say that your use of the Rogue has ...
 - Decreased
 - Stayed about the same
 - Increased

5. From 1977 to the present, would you say that the overall quality of the Rogue boating experience has ...
 - Decreased
 - Stayed about the same
 - Increased

6. In what year did you make your first Rogue River boat trip? _____

7. Was your first Rogue River trip a ...

<input type="checkbox"/> Commercially guided raft trip	<input type="checkbox"/> Guided drift boat trip
<input type="checkbox"/> Private raft trip	<input type="checkbox"/> Private drift boat trip
<input type="checkbox"/> Commercially guided kayak trip	<input type="checkbox"/> Jet boat trip
<input type="checkbox"/> Private kayak trip	<input type="checkbox"/> Other _____)

8. Was your most recent Rogue River trip a ...

<input type="checkbox"/> Commercially guided raft trip	<input type="checkbox"/> Guided drift boat trip
<input type="checkbox"/> Private raft trip	<input type="checkbox"/> Private drift boat trip
<input type="checkbox"/> Commercially guided kayak trip	<input type="checkbox"/> Jet boat trip
<input type="checkbox"/> Private kayak trip	<input type="checkbox"/> Other _____)

In the next few pages, we'd like to ask you questions about your most recent Rogue trip. Please try to answer to the best of your recollection.

1. Overall, how would you rate your trip?

- Poor
 Fair, it just didn't work out very well
 Good, but I wish a number of things could have been different
 Very good, but could have been better
 Excellent, only minor problems
 Perfect

2. Did you feel the river was crowded? (please circle appropriate number)

1	2	3	4	5	6	7	8	9
Not at all		Slightly crowded			Moderately crowded		Extremely Crowded	

3. When you made plans to run the Rogue, how far in advance did you decide to go? (please fill in the appropriate numbers)

_____ months, _____ weeks, _____ days

4. About how many miles is the Rogue from your permanent address?

_____ miles

5. Was your most recent trip on the Rogue during the permit season (Memorial Day to Labor Day)?

- No -----> Go to question #6
 Yes -----> Skip to question #7

6. If you answered no to question #5, was this because: (check all that apply)

- Didn't enter the permit lottery
 Wasn't successful in the permit lottery
 Didn't decide to go on a river trip until after the lottery
 Thought there would be fewer people on the river at this time
 It was more convenient to make the trip at this time
 Just wanted to experience the river at a different time of year
 Other (please specify _____)

Now skip to question #8.

7. If you answered yes to question #5, how did you choose your time: (check all that apply)
- It is the best time of the year to run the river
 - It was most convenient with my personal schedule
 - Thought there would be fewer people on the river at this time
 - Thought I'd be more likely to get a permit at this time
 - Other (please specify _____)
8. Overall, was this trip less enjoyable because you met ...
- | | | | |
|-------------|-----------------------------|------------------------------|--|
| Floaters | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |
| Jet boaters | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |
9. Before you went on your most recent Rogue River trip, about how many parties did you expect to see each day while floating the river?
- I expected to see _____ other parties per day.
- I didn't know what to expect.
10. How does the number of parties you actually encountered on your trip compare with the number that you expected to encounter?
- | | |
|---|---|
| <input type="checkbox"/> Quite a few less than expected | <input type="checkbox"/> A few more |
| <input type="checkbox"/> A few less | <input type="checkbox"/> Quite a few more |
| <input type="checkbox"/> About the same | <input type="checkbox"/> I didn't know what to expect |
11. If you saw more people than you expected, did you ...
- a. Become unhappy or dissatisfied with the trip?
 - No
 - Yes
 - b. Change the way you thought about the Rogue, deciding it was less remote than you had believed?
 - No
 - Yes
 - c. Decide to go somewhere more remote next time?
 - No
 - Yes
 - d. Decide it offered fewer opportunities for solitude than previously?
 - No
 - Yes

e. Attempt to avoid others by speeding up or slowing down?

No

Yes

f. Attempt to avoid others by getting off the river to let others pass?

No

Yes

g. Attempt to avoid others by passing up planned stopping places?

No

Yes

h. Attempt to avoid others by changing your campsite?

No

Yes

12. On the next two pages are a number of statements about the Rogue River and your trip down it. For each one, circle the response which is closest to the way you feel. "Probably agree" means you agree more than you disagree with the item. "Probably disagree" means you disagree more than you agree.

	Strongly Disagree	Probably Disagree	Neutral	Probably Agree	Strongly Agree
Our trip traveled at a leisurely pace.	1	2	3	4	5
I would have enjoyed the trip more if we had seen fewer people while floating on the river.	1	2	3	4	5
I would have enjoyed the trip more if we had seen fewer people at side stops.	1	2	3	4	5
The character of a river trip on the Rogue is not changed by meeting other parties.	1	2	3	4	5
I would have enjoyed the trip more with better camping facilities.	1	2	3	4	5

	Strongly Disagree	Probably Disagree	Neutral	Probably Agree	Strongly Agree
The Rogue seems relatively unaffected by the presence of man.	1	2	3	4	5
The Rogue River is too crowded to be considered wilderness.	1	2	3	4	5
I think float trips should be banned from the wild section of the river.	1	2	3	4	5
I think jet boat trips should be banned from the wild section of the river.	1	2	3	4	5
I would like to be able to reserve a room or cabin at one of the lodges in the wild section.	1	2	3	4	5
I would like to see more Forest Service or BLM staff patrolling the river.	1	2	3	4	5

13. Now please indicate the degree to which you agree that each of the following environmental damage conditions exists on the Rogue River.

Excessive litter	1	2	3	4	5
Trampling of natural vegetation	1	2	3	4	5
Overuse of campsites	1	2	3	4	5
Overuse of attraction sites	1	2	3	4	5
Decrease in wildlife	1	2	3	4	5

14. Please indicate the highest number of encounters with other float parties you would tolerate before the experience became unpleasant.

Number of encounters with other parties while floating on the river each day.

OK to have as many as _____ encounters per day

___ Makes no difference to me

Amount of time in sight of other parties while floating on the river each day.

OK to spend as much as ___ hours and ___ minutes in sight of others

___ Makes no difference to me

Number of stops (to swim, hike, etc.) at which you meet another group.

OK to meet others at as many as _____ out of 5 stops.

___ Makes no difference to me

Number of nights spent camping within sight or sound of another party

OK to be near another party as many as _____ out of 5 nights

___ Makes no difference to me

15. Would you be willing to do any of the following to get your "preferred" encounter levels? (Please check all that you'd be willing to do)

___ Wait a month longer to go on a trip

___ Take the trip in May or September

___ Follow a schedule while on the river

16. Would you be willing to do any of the following in order to be assured of camping alone? (Please check all that you'd be willing to do)

___ Travel farther during the day

___ Have a less desirable campsite

___ Follow a rigid schedule of campsites

17. Which size float trip would you rather meet while traveling on the river?

___ Small (5 people or less) ___ Large (16-25 people)

___ Medium (6-15 people) ___ Makes no difference to me

18. What about encounters with jet boats? Indicate the highest number you would tolerate before the experience became unpleasant.

OK to have as many as _____ encounters with jet boats

___ Makes no difference to me

19. Which of the following activities or facilities do you think are appropriate on the "wild section" of the Rogue? (check all those which are appropriate.)

___ Motorized boating

___ Roads (paved or gravel)

___ Non-motorized boating

___ Campsites with tables and fireplaces

___ Hiking/backpacking

___ Campsites with outhouses

___ Mountain biking

___ Hang gliding/ultralight aircraft

20. Of the following three kinds of experiences, which do you think the Rogue River trip currently provides?

___ Wilderness, a place generally unaffected by the presence of man.

___ Semi-wilderness, where complete solitude is not expected.

___ Undeveloped recreation, where meeting other people is part of the experience.

21. Of the three kinds of experiences, which do you think the Rogue River trip should provide?

___ Wilderness, a place generally unaffected by the presence of man.

___ Semi-wilderness, where complete solitude is not expected.

___ Undeveloped recreation, where meeting other people is part of the experience.

22. Use limits on the wild section were implemented to hold the line on river use during the summer season. What are your feelings about the system? (check all that apply):

___ I support use limits on the wild section.

___ I would prefer no use limits.

___ There should be fewer people allowed each day.

___ There should be more people allowed each day.

___ Use limits should be expanded to include May & September.

___ Use limits should not be expanded through May & September.

___ Other (please list _____)

QUESTIONS IN THIS SECTION ARE FOR ALL RESPONDENTS

1. In the years since your 1977 Rogue trip, have you made trips on other whitewater rivers?
 - No ----- > Please skip to question #4
 - Yes

2. What other whitewater river(s) have you made trips on since then that offer experiences similar to those on the Rogue?
 - _____
 - _____

3. How many rivers do you visit for whitewater boating in a typical year?
 - About ___ rivers per year ----- > Please skip to question #5

4. Reason you haven't made any more river trips? (Check the best answer)
 - There are other vacation activities I'd rather spend my time on.
 - I'm not interested in boating any other river besides the Rogue.
 - I'd like to, but I can't afford the time involved.
 - I'd like to, but I can't afford the cost of a trip.
 - I'd like to, but it's not a good idea for my family right now.
 - I'd like to, but there are no whitewater rivers near my home.
 - I'd like to, but I'm not physically able to do so anymore.
 - I'd like to, but permit systems make it too hard to get access to good river trips these days.

5. Check the statement that best describes your feelings about river-running:
 - I no longer go river-running.
 - If I couldn't go river-running, I would soon find something else I enjoyed just as much.
 - If I had to give up running rivers, I would miss it, but not as much as a lot of other things I now enjoy.
 - If I couldn't go river running, I would miss it more than almost any other interest I have.
 - Running rivers is one of the biggest things in my life; if I had to give it up, a great deal of the total enjoyment I now get out of life would be gone.

6. How often do you participate in the following outdoor activities? (circle each appropriate answer).

1 = Never
2 = Once a year or less
3 = Several times a year
4 = Once a month or more

Overnight backpacking	1	2	3	4
Day Hiking	1	2	3	4
Rafting	1	2	3	4
Kayaking	1	2	3	4
Fishing using a drift boat	1	2	3	4
Fishing from a riverbank	1	2	3	4
Power boating on a river	1	2	3	4
Jet skiing on a river	1	2	3	4
Mountain biking	1	2	3	4
Hang gliding or ultralight flying	1	2	3	4

7. Do you ever visit the Rogue for outdoor recreation activities other than whitewater boating?

No
 Yes (please specify activity _____)

8. Which of these statements best describes how you feel about the Rogue River as a place to visit?

The Rogue is below average compared to the other recreation places I visit.
 The Rogue is about average but there are other places I like better.
 The Rogue is better than average, among the best places I visit.
 The Rogue is my favorite recreation place.

9. Have you ever been denied a permit to make a Rogue River boat trip?

No -----> Please skip to question #11
 Yes

10. If yes, were you able to make a Rogue trip that year anyway?

No
 Yes

11. We'd like to know what happens if people can't make a planned Rogue trip. If you answered "yes" to #9 on the previous page, tell us what you did (or would likely do) instead. If you answered "no," tell us what you think you would have done.

What was your first reaction to being denied a permit? (check only one)

- Try to hook up with another party that was issued a permit
- Show up at the river, hoping to get a permit issued to someone who fails to pick it up
- Run the river without a permit
- Try to get space on a commercially outfitted float trip
- Reapply for trip dates when I'd be more likely to get a permit
- Schedule my trip for a time before or after the permit season
- Decide to make a boat trip on a different river
- Decide to engage in a non-boating activity at the Rogue River
- Decide to engage in a non-boating activity somewhere else

12. Could the alternative experience you chose in question #11 give you as much satisfaction as the trip you had originally planned?

- No Yes

13. Suppose it were impossible for you to find a different way to take a Rogue trip. Please rank the three other options in order of preference.

(1 = most preferred, 3 = least preferred).

- Make a boat trip on a different river
- Engage in a non-boating activity at the Rogue River
- Engage in a non-boating activity somewhere else

14. If your choice in #11 involved rescheduling or canceling your Rogue trip, what did you do (or would you likely do) on the days when your trip was originally planned?

- Make a boat trip on a different river
- Engage in a non-boating activity at the Rogue River
- Engage in a non-boating activity somewhere else

15. Could the alternative experience you chose in question #14 give you as much satisfaction as the trip you had originally planned for that date?
 No Yes
16. If your choice in either #11 or #14 was to boat another river, what river?

17. If your choice in either #11 or #14 was a different activity, what activity?

18. Which of the following statements best expresses your expectations about future boating on the Rogue?
 I don't expect to make any future Rogue trips
 I expect to make future Rogue trips, but not as often as before
 I expect to visit the Rogue at least as often ----- > Skip to Page 12
 I don't know what to expect ----- > Skip to Page 12
20. If you are visiting the Rogue less often than you used to, or if you expect to use it less often in the future, we'd like to know why. Here are some possible reasons. Please check all of the reasons that apply to you.
- The Rogue is too far away from my home
 - It costs too much to make a Rogue trip
 - It's too difficult to reach the access points
 - The shuttle is too long on the Rogue
 - It's too hard to get a permit
 - There are too many people on the Rogue
 - I don't like the use of motorized boats on the Rogue
 - There is too much competition for campsites
 - The river environment has been damaged by overuse
 - The Rogue is above my skill level
 - The Rogue is below my skill level
 - I no longer have as much time for multi-day river trips
 - My family situation makes river-running more difficult
 - It's hard to find companions for a Rogue trip
 - Other (please list _____)

In this section, we would like to ask some questions about your background which will help us compare your answers to those of other people. All of your answers are strictly confidential.

1. How old are you? _____ years old 2. Are you ___ male ___ female

3. How many years of school have you completed?

<input type="checkbox"/> Some high school	<input type="checkbox"/> Bachelor's or equivalent
<input type="checkbox"/> High school graduate	<input type="checkbox"/> Master's or equivalent
<input type="checkbox"/> Some college	<input type="checkbox"/> Advanced degree (M.D., Ph.D., etc.)

4. Are you:
 - Single
 - Married
 - Separated, divorced, or widowed

5. Please check the amount closest to your total family income before taxes.

<input type="checkbox"/> Under \$10,000	<input type="checkbox"/> \$55,000-\$59,999
<input type="checkbox"/> \$10,000-\$14,999	<input type="checkbox"/> \$60,000-\$64,999
<input type="checkbox"/> \$15,000-\$19,999	<input type="checkbox"/> \$65,000-\$69,999
<input type="checkbox"/> \$20,000-\$24,999	<input type="checkbox"/> \$70,000-\$74,999
<input type="checkbox"/> \$25,000-\$29,999	<input type="checkbox"/> \$75,000-\$79,999
<input type="checkbox"/> \$30,000-\$34,999	<input type="checkbox"/> \$80,000-\$84,999
<input type="checkbox"/> \$35,000-\$39,999	<input type="checkbox"/> \$85,000-\$89,999
<input type="checkbox"/> \$40,000-\$44,999	<input type="checkbox"/> \$90,000-\$94,999
<input type="checkbox"/> \$45,000-\$49,999	<input type="checkbox"/> \$95,000-\$99,999
<input type="checkbox"/> \$50,000-\$54,999	<input type="checkbox"/> More than \$100,000

6. How many children age 18 or under do you have living at your home? _____

7. What is your ZIP code? _____

8. What is your primary occupation? If retired (check here) and give former occupation. (Be specific) _____

9. Are you now a member of an outdoor or conservation organization?
 - No Yes (Name(s): _____)

APPENDIX C: 1991 CROSS-SECTIONAL SURVEY INSTRUMENT

This questionnaire was mailed to 1991 cross-sectional respondents as a 7 x 8 1/4 inch, staple-bound booklet with a cover identifying it as the Wild Rogue River Study. Accompanying correspondence described the study and asked for the recipient's voluntary participation.

1991 WILD ROGUE RIVER STUDY

The wild section of the Rogue River runs from Grave Creek to Foster Bar. Anyone who has been on this section of river wants it to remain a high quality recreation area. But this requires careful planning. To help protect the unique aspects of the "wild Rogue experience," we need to learn more about you -- what you do and what you prefer. This questionnaire is designed to help provide that information.

Please try to answer every question you can. A single missing answer decreases the value of all your responses. Answer what you believe to be true for you. There are no right or wrong answers; the best response is the one which most closely reflects your own personal feelings and beliefs, or what you actually saw or did.

Certain questions may seem similar. But some of the concepts we are trying to measure are quite complex, and we need to approach them from several different angles. It is important that you answer as many questions as you can.

We realize that you may have been on the Rogue more than once during the 1991 season. We are interested in the particular trip on which you filled out our one page questionnaire. The details are important, so please do the best you can to describe the trip when you were contacted.

Thanks for telling us about your use of the Rogue and your views for management of the river. All responses will be kept confidential. *Please return your questionnaire in the envelope provided.*

Department of Forest Resources
Oregon State University

Please tell us about your boating activity on the wild section of the Rogue.

1. How often do you float the wild section? (Check the best answer)
 - Once a week or more
 - Once a month
 - Several times a year
 - Once a year
 - Not every year, just occasional trips
 - This was my first trip ----> please skip to question #1 on page 2.

2. How many trips did you make on the Rogue during 1991? _____ total trips.

3. In what year did you make your first Rogue River boat trip? _____

4. Was your first Rogue River trip a ...

<input type="checkbox"/> Commercially guided raft trip	<input type="checkbox"/> Guided drift boat trip
<input type="checkbox"/> Private raft trip	<input type="checkbox"/> Private drift boat trip
<input type="checkbox"/> Commercially guided kayak trip	<input type="checkbox"/> Jet boat trip
<input type="checkbox"/> Private kayak trip	<input type="checkbox"/> Other _____

5. Was your most recent Rogue River trip a ...

<input type="checkbox"/> Commercially guided raft trip	<input type="checkbox"/> Guided drift boat trip
<input type="checkbox"/> Private raft trip	<input type="checkbox"/> Private drift boat trip
<input type="checkbox"/> Commercially guided kayak trip	<input type="checkbox"/> Jet boat trip
<input type="checkbox"/> Private kayak trip	<input type="checkbox"/> Other _____

6. Overall, how many Rogue trips have you made? About _____ total trips.

7. Over time would you say that your use of the Rogue has ...
 - Decreased
 - Stayed about the same
 - Increased

8. Would you say the overall quality of the Rogue boating experience has ...
 - Decreased
 - Stayed about the same
 - Increased

In the next few pages, we'd like to know about the trip in which you filled out the one page questionnaire. Answer to the best of your recollection.

1. Overall, how would you rate your trip?

- Poor
 Fair, it just didn't work out very well
 Good, but I wish a number of things could have been different
 Very good, but could have been better
 Excellent, only minor problems
 Perfect

2. Did you feel the river was crowded? (circle appropriate number)

1	2	3	4	5	6	7	8	9
Not at all		Slightly crowded			Moderately crowded		Extremely crowded	

3. What time and from what location did your party launch?

We launched at about _____ am/pm from _____

4. How many people were in your party? About _____ people

5. In general, how did you feel about seeing other parties on the river?

- | | |
|--|--|
| <input type="checkbox"/> Enjoyed it a great deal | <input type="checkbox"/> It bothered me some |
| <input type="checkbox"/> Enjoyed it somewhat | <input type="checkbox"/> It bothered me a great deal |
| <input type="checkbox"/> Made no difference either way | |

6. Overall, was this trip less enjoyable because you met ...

- | | | | |
|-------------|-----------------------------|------------------------------|--|
| Floaters | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |
| Jet boaters | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |
| Anglers | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |
| Hikers | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> Didn't meet any |

7. Where did you meet the greatest number of other parties? (Be specific)

8. Before you went on your Rogue trip, about how many parties did you expect to see each day while floating the river?

I expected to see _____ other parties per day.

_____ I didn't know what to expect.

9. How does the number of parties you actually encountered on your trip compare with the number that you expected to encounter?

_____ Quite a few less than expected _____ A few more

_____ A few less

_____ Quite a few more

_____ About the same

_____ I didn't know what to expect

10. If you saw more people than you expected, did you(check all that apply)

_____ Not applicable (I didn't see more people than I expected)

_____ Become unhappy or dissatisfied with the trip?

_____ Change the way you thought about the Rogue, deciding it was less remote than you had believed?

_____ Decide to go somewhere more remote next time?

_____ Decide it offered fewer opportunities for solitude than previously?

_____ Attempt to avoid others by speeding up or slowing down?

_____ Attempt to avoid others by getting off the river to let others pass?

_____ Attempt to avoid others by passing up planned stopping places?

_____ Attempt to avoid others by changing your campsite?

11. Did other users interfere with your float trip?

_____ No ----> please go to question #12

_____ Yes ---> please answer a & b below

a. In what ways did others interfere with your activities?

b. What group(s) were responsible? (check all that apply)

_____ rafters/kayakers

_____ drift boats

_____ jet boats

_____ bank anglers

_____ other motorized boats

_____ other: _____

12. Below are a number of statements about the Rogue River and your float trip. Circle the response for each which is closest to the way you feel.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our trip traveled at a leisurely pace.	1	2	3	4	5
I would have enjoyed the trip more if we had seen fewer people while floating on the river.	1	2	3	4	5
I'd have enjoyed the trip more if we'd seen fewer people at side stops.	1	2	3	4	5
I would have enjoyed the trip more with better camping facilities.	1	2	3	4	5
The character of a river trip on the Rogue is not changed by meeting other parties.	1	2	3	4	5
The Rogue seems relatively unaffected by the presence of people.	1	2	3	4	5
I'd like the opportunity to reserve a cabin at one of the lodges.	1	2	3	4	5
The Rogue River is too crowded.	1	2	3	4	5
There should be a program on river safety/etiquette for first time boaters.	1	2	3	4	5
I'd like to see more Forest Service or BLM staff patrolling the river.	1	2	3	4	5

Next we'd like to know how you feel about conditions on the wild section of the Rogue and the type of river trip you prefer.

1. What is your level of agreement that the following environmental conditions exist on the Rogue River?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Excessive litter	1	2	3	4	5
Trampling of natural vegetation	1	2	3	4	5
Excessive timber harvesting visible from river	1	2	3	4	5
Overuse of campsites	1	2	3	4	5
Overuse of attraction sites	1	2	3	4	5
Decrease in wildlife (answer only if you've been on the wild section before this trip)	1	2	3	4	5

2. Please indicate the highest number of encounters with other float parties you would tolerate before your river experience became unpleasant.

Number of encounters with other parties while floating on the river each day.
 OK to have as many as _____ encounters per day
 ___ Makes no difference to me

Amount of time in sight of other parties while floating on the river each day.
 OK to spend as much as ___ hours and ___ minutes in sight of others
 ___ Makes no difference to me

Number of stops (to swim, hike, etc.) at which you meet another group.

OK to meet others at as many as _____ out of 5 stops

___ Makes no difference to me

Number of nights spent camping within sight or sound of another party.

OK to be near another party as many as _____ out of 5 nights

___ Makes no difference to me

3. Would you be willing to do any of the following to increase your chance of getting your "preferred" encounter levels? (check all that apply)

___ Follow a schedule while on the river

___ Take the trip in the spring or fall

___ Run a different river

4. Would you be willing to do any of the following in order to be assured of camping alone? (check all you'd be willing to do)

___ Travel shorter distance during the day

___ Travel farther during the day

___ Have a less desirable campsite

___ Use only designated campsites

___ Follow a schedule of reserved campsites

5. Which size float trip would you rather meet while traveling on the river?

___ Small (5 people or less) ___ Large (16-25 people)

___ Medium (6-15 people) ___ Makes no difference to me

6. What about encounters with jet boats? Indicate the highest number you would tolerate before the experience became unpleasant.

OK to have as many as _____ encounters with jet boats

___ Makes no difference to me

7. Which of the following activities or facilities do you think are appropriate on the wild section of the Rogue? (check all those which are appropriate.)

___ Motorized boating ___ Campsites with tables and fireplaces

___ Non-motorized boating ___ Campsites with outhouses

___ Hiking/backpacking ___ Interpretive signs

___ Mountain biking ___ Locator signs (points of interest,

___ Roads (paved or gravel) mileage, etc.)

8. In recent years, low flying aircraft have become a potential issue on the wild section. We'd like your opinions. Have you noticed any of the following while on the river:

Helicopters	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Fixed wing airplanes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Ultralights	<input type="checkbox"/> No	<input type="checkbox"/> Yes

Do you think any of these aircraft are appropriate over the wild section:

Helicopters	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Fixed wing airplanes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Ultralights	<input type="checkbox"/> No	<input type="checkbox"/> Yes

9. *Prescribed fire* is a technique in which forest fire fighters deliberately burn dead and down woody debris to keep fuel levels low and minimize the potential for large destructive wild fires. While accomplishing this goal, it creates some smoke during actual burning and leaves a temporarily blackened landscape. Prescribed fires are coordinated with adjacent landowners and fire management plans. Do you think the use of this technique should be considered along the Rogue?

No Yes

We'd like your opinion on use limits in the wild section and how they affect your choice of activities. Currently, the permit season runs from June 1 - September 15 with approximately 120 people allowed on the river each day.

1. Use limits were implemented to manage use on the river during the summer season. What are your feelings about this system? (check all that apply):

- I support use limits on the wild section.
- I prefer no use limits.
- There should be fewer people allowed each day.
- There should be more people allowed each day.
- Use limits should be extended to include May & September.
- Use limits should not be extended to include May & September.
- Other (please list) _____

2. Currently, about half the available permits are allotted to private boaters and half to guided trips by outfitters. Do you feel this allocation is:

- About right
 Should be more permits for private boaters, less for guided trips
 Should be more permits for guided trips, less for private boaters

3. Was your most recent trip on the wild section during the permit season?

- No -----> Go to question #4
 Yes -----> Skip to question #5

4. If your trip was not during the permit season, was this because: (check all that apply)

- Didn't enter the permit lottery
 Wasn't successful in the permit lottery
 Didn't decide to go on a river trip until after the lottery
 Thought there would be fewer people on the river at this time
 It was more convenient to make the trip at this time
 Just wanted to experience the river at a different time of year
 Other (specify) _____

Now skip to question #6.

5. If your trip was during the permit season, how did you choose your time: (check all that apply)

- It is the best time of the year to run the river
 It was most convenient with my personal schedule
 Thought there would be fewer people on the river at this time
 Other (specify) _____

6. Have you ever been denied a permit to make a Rogue River boat trip?

- No ----> Skip to #8
 Yes

7. If yes, were you able to make a Rogue trip that year anyway?

- No
 Yes

8. We'd like to know what happens if people can't make a planned Rogue trip. If you have been denied a permit, tell us what you did (or would likely do) instead. Even if you haven't been denied a permit, tell us what you think you would have done. (check only one)

- Try to hook up with another party that was issued a permit
- Show up at the river, hoping to get a permit issued to someone who fails to pick it up
- Run the river without a permit
- Try to get space on a commercially outfitted float trip
- Reapply for trip dates when I'd be more likely to get a permit
- Schedule a trip for a time before or after the permit season
- Decide to make a boat trip on a different river
- Decide to engage in a non-boating activity at the Rogue River
- Decide to engage in a non-boating activity somewhere else

9. Could the alternative experience you chose in question #8 give you the same satisfaction or benefits as the trip you originally planned?

- No Yes

10. Suppose it were impossible for you to find a different way to take a trip on the wild section. Please rank the three other options in order of preference. (1 = most preferred, 2 = next preferred, 3 = least preferred).

- Make a boat trip on a different river
- Engage in a non-boating activity at the Rogue River
- Engage in a non-boating activity somewhere else

11. If your choice in either #8 or #10 was to boat another river, what river?

12. If your choice in either #8 or #10 was a different activity, what activity?

In this section we'd like to know more about your river experiences.

1. Did you fish during your trip on the wild section?
 No Yes

2. During the last five years, have you made trips on other whitewater rivers?
 No -----> Please skip to question #5
 Yes

3. What other whitewater rivers have you made trips on during this period that offer experiences similar to those on the Rogue?

4. How many rivers do you visit for whitewater boating in a typical year?
 About _____ rivers per year -----> Please skip to question #6

5. Reason you haven't made any more river trips? (Check the best answer)
 This trip was my first whitewater experience.
 There are other vacation activities I'd rather spend my time on.
 I'm not interested in boating any other river besides the Rogue.
 I'd like to, but I can't afford the time involved.
 I'd like to, but I can't afford the cost of a trip.
 I'd like to, but there are no whitewater rivers near my home.
 I've tried, but it's too hard to get a permit.
 Other (specify) _____

6. Check the statement that best describes your feelings about river-running:
 If I couldn't go river-running, I would soon find something else I enjoyed just as much.
 If I had to give up running rivers, I would miss it, but not as much as a lot of other things I now enjoy.
 If I couldn't go river-running, I would miss it more than almost any other interest I have.
 Running rivers is one of the biggest things in my life; if I had to give it up, a great deal of the total enjoyment I now get out of life would be gone.

7. Which of these statements best describes how you feel about the Rogue River as a place to visit?
- The Rogue is below average compared to other recreation places I visit.
 - The Rogue is about average, but there are other places I like better.
 - The Rogue is better than average, among the best places I visit.
 - The Rogue is my favorite recreation place.
8. Of the following three kinds of experiences, which do you think the Rogue River trip currently provides?
- Wilderness, a place generally unaffected by the presence of humans.
 - Semi-wilderness, where complete solitude is not expected.
 - Undeveloped recreation, where meeting other people is part of the experience.
9. Of the three kinds of experiences, which do you think the Rogue River trip should provide?
- Wilderness, a place generally unaffected by the presence of humans.
 - Semi-wilderness, where complete solitude is not expected.
 - Undeveloped recreation, where meeting other people is part of the experience.
10. Compared to other rivers you've run, the Rogue is:
- Below average
 - About average
 - Better than average
 - Your favorite
11. Which of the following statements best expresses your expectations about future boating on the wild section of the Rogue?
- I don't expect to make any future Rogue trips
 - I expect to make future Rogue trips, but not as often as before
 - I expect to visit the Rogue at least as often ----- > Skip to #13
 - I don't know what to expect ----- > Skip to #13

In the one page questionnaire, river users identified a variety of conditions or problems which they felt should be addressed by managers. Please circle the answer that best describes how you feel about those listed below.

	Not a problem	A minor problem	Problem	Major Problem
Amount of litter	1	2	3	4
Amount of human waste	1	2	3	4
Condition of toilets	1	2	3	4
Not enough toilets	1	2	3	4
Competition for campsites	1	2	3	4
Failure to use firepans	1	2	3	4
Presence of bears	1	2	3	4
Too many rafters/kayakers	1	2	3	4
Too many anglers	1	2	3	4
Too many jet boats	1	2	3	4
Danger from large jet tour boats	1	2	3	4
Congestion at put-in or take-out	1	2	3	4
Rude behavior by others	1	2	3	4
Conflicts between users	1	2	3	4

Identify conflict: _____

Listed below are various management alternatives which users have suggested as possible strategies for improving river conditions in the wild section. For each one, indicate your level of support or opposition.

	Strongly oppose	Oppose	Neutral	Support	Strongly support
Issue fewer permits	1	2	3	4	5
Issue more permits	1	2	3	4	5
Extend permit season	1	2	3	4	5
Limit fishing use	1	2	3	4	5
Limit jetboat use	1	2	3	4	5
Prohibit jetboat use	1	2	3	4	5
Limit raft/kayak party size to 15 or less	1	2	3	4	5
Provide a take-out at Marial/Mule Creek	1	2	3	4	5
Provide toilets at more campsites	1	2	3	4	5
Users may reserve campsites on launch date	1	2	3	4	5
Camp only at designated sites to reduce camp encounters	1	2	3	4	5
Increase enforcement of river regulations	1	2	3	4	5

We would like to know more about your background to help us compare your answers to those of other people. All answers are confidential.

1. How old are you? _____ years old 2. Are you ___ male ___ female
3. How many years of school have you completed?
 ___ Some high school ___ Bachelor's or equivalent
 ___ High school graduate ___ Master's or equivalent
 ___ Some college ___ Advanced degree (M.D., Ph.D., etc.)
4. About how many miles is the put-in for the wild section of the Rogue from your permanent address?
 _____ miles
5. Please check the amount closest to your total family income before taxes.
- | | |
|-----------------------|-------------------------|
| ___ Under \$10,000 | ___ \$55,000-\$59,999 |
| ___ \$10,000-\$14,999 | ___ \$60,000-\$64,999 |
| ___ \$15,000-\$19,999 | ___ \$65,000-\$69,999 |
| ___ \$20,000-\$24,999 | ___ \$70,000-\$74,999 |
| ___ \$25,000-\$29,999 | ___ \$75,000-\$79,999 |
| ___ \$30,000-\$34,999 | ___ \$80,000-\$84,999 |
| ___ \$35,000-\$39,999 | ___ \$85,000-\$89,999 |
| ___ \$40,000-\$44,999 | ___ \$90,000-\$94,999 |
| ___ \$45,000-\$49,999 | ___ \$95,000-\$99,999 |
| ___ \$50,000-\$54,999 | ___ More than \$100,000 |
6. How many children age 18 or under do you have living at your home? _____
7. What is your ZIP code? _____
8. What is your primary occupation? If retired (check here ___) and give former occupation. (Be specific) _____
9. Are you now a member of an outdoor or conservation organization?
 ___ No ___ Yes Name(s): _____