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Preferences of Recreation User Groups of the Colorado River in Grand Canyon

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EXECUTIVE SUMMARY

The research reported here is part of the monitoring effort sponsored by the Grand Canyon Monitoring and Research Center and linked to the Adaptive Management Program for the operations of Glen Canyon Dam. The assessments of this report are directed at attitudes and preferences of recreational user groups and stakeholders of the Colorado River ecosystem. The objectives of this study were directed at describing preferences for various flow-related setting characteristics. Specifically the objectives were:

1. Determine current attitudes and preferences of Colorado River users toward recreation opportunities and setting attributes related to river flows.
2. Evaluate changing attitude and preferences of Colorado River users.
3. Evaluate commonality and disparity of current user attitudes and preferences regarding proposed management directions.

The study involved two phases of data collection. The first phase assessed current stakeholder issues related to recreation within the Colorado River ecosystem. Its major tasks, which were conducted during summer/fall of 1998, involved contacting stakeholders to identify and prioritize issues linking river flow levels to recreational use. The issues identified in the first phase guided the second phase of data collection in which user attitudes and preferences were assessed. The major tasks of the second phase of data collection, which took place from fall 1998 through spring 1999, involved five surveys of recreationists to assess their preferences for flow-related setting characteristics.

This research followed-up on the findings of Bishop et al. (1987) who studied relationships between flow release levels and recreational preferences of Grand Canyon white water rafters, Glen Canyon anglers, and Glen Canyon day-trip rafters. During the early 1980s, release flows from the Dam varied widely on a daily basis, and were referred to as "fluctuating flows." A large portion of their study addressed user preferences related to flows that fluctuated more than 10,000 cfs within a 24-hour period. They also found that decreases in the number of camping beaches would have a substantial adverse impact due to recreational rafters having to share camping beaches with other groups. Other studies have indicated a decrease in the number and quality of beaches in the Colorado River ecosystem due to the adverse impact of Glen Canyon Dam. One of the objectives of the 1996 spike flow (beach habitat building flow or BHBF) was to enhance the number and size of beaches in the river corridor. Evidence indicates that immediately following the spike flow there was a net gain in beaches and that a substantial proportion of beaches increased in size.

The high priority stakeholder issues that emerged from phase 1 were related to spike flows and their effects on recreation opportunities, particularly as spike flows affect number, size, and other characteristics of beaches. Hence, this study emphasized user preferences for beach characteristics, especially beach characteristics related to managerial influence such as size, presence of shade from a tree, and vegetation. Preferences for beach characteristics were primarily determined using photographs of beaches that were digitally manipulated to achieve the specific images required for the research design. For phase 2, the following five recreational user groups were surveyed using mailback questionnaires:

private trip leaders, commercial outfitter patrons, commercial river guides, Glen Canyon anglers, and Glen Canyon day-trip rafters. Survey response rates ranged between 65% and 91%. During the time period of data collection, average daily flows ranged between 9,000 - 27,000 cfs. The principal conclusions of this study were:

1. *Glen Canyon Dam releases have substantial impacts on recreational opportunities in the river corridor.* Private trip leaders, commercial patrons, river guides, and anglers all reported preferences for various flow-related setting characteristics. White water rafter satisfaction was highest at constant flows between 20,000 - 25,000 cfs, and several flow-related setting characteristics were rated highly important, most notably stopping and hiking at side canyons, and running large rapids. Angler satisfaction was highest at constant flows between 10,000 - 15,000 cfs, however anglers were still satisfied with constant flows up to 25,000 cfs. For most day-trip rafters, satisfaction was considered independent of flow levels above 3,000 cfs.
2. *The negative effects of fluctuating flows on recreational use were not substantial problems during the time period of this study.* Given the level of annual run-off since the Record of Decision (1996), results of the stakeholder discussions concluded that fluctuating flow problems have been effectively addressed and currently are not a priority issue.
3. *The recreational impacts of constant flow releases from Glen Canyon Dam were remarkably unchanged since the Bishop et al. (1987) study.* User attitudes and preferences regarding constant flows have not changed significantly in the past 15 years. The constant flow impacts identified by Bishop et al. (1987) converged with the evidence reported in this study.
4. *The 1996 spike flow, as it affected beach development, was perceived as significantly improving recreational opportunities for rafters.* Spike flows are being promoted as a means to increase the number and size of beaches, and hence have considerable support amongst the recreational public.
5. *Large size beaches with shade from trees are setting characteristics with highly reliable and strong user preferences.* Across three user groups (private trip leaders, commercial patrons, and river guides) and across several segmentation variables (past experience, boat type, group size), respondents preferred beach campsites greater than 800 square meters that included shade from trees. In addition, the size of beach was consistently ranked from a series of setting characteristics as being moderately important by white water rafters.
6. *There is both commonality and disparity between user preferences and stakeholder directions.* Points of overlap between stakeholders and users were: concern over impact of spike flows, lack of interest in fluctuating flows, and an awareness of the recreational impacts of various constant flow levels. Points of disparity between user preferences and stakeholders were that some stakeholders resisted explicit linkages between BHBF and the enhancement of recreational quality. An expanded context of Dam operating decisions, which would more explicitly include recreational user preferences, would be embraced by some stakeholders and not by others.

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INTRODUCTION

The research reported here is part of the monitoring effort sponsored by the Grand Canyon Monitoring and Research Center (GCMRC) and linked to the Adaptive Management Program for the operations of Glen Canyon Dam. Recreational use of the Colorado River ecosystem, from the forebay of Glen Canyon Dam to the western boundary of Grand Canyon National Park (approximately 293 river miles), is related to several types of user groups and many different stakeholders. The assessments of this report are directed at monitoring attitudes and preferences related to recreational user groups and stakeholders.

Recreationists are attracted to the Colorado River through Grand Canyon for a variety of reasons, including its spectacular scenery and canyons, the beauty of Grand Canyon and its appeal as a world renown park, extended raft trips, sport fisheries, archeological resources, and opportunities to see wildlife in natural settings. During 1998, about 23,000 visitors took a raft trip downstream from Lee's Ferry spending between 3 to 21 days floating, camping, and day-hiking within the river's ecosystem. Most rafters engaged the services of one of the 16 commercial river outfitters, however about 23% floated on private trips and outfitted themselves. Opportunities for a day or half-day float trip occurred on the 15-mile river segment between Glen Canyon Dam and Lee's Ferry and are provided by a commercial outfitter; about 61,000 people floated the Colorado River in 1998 related to this day trip experience. In addition, the Glen Canyon reach of the Colorado River (with Lee's Ferry as the common base of departure) is famous for its rainbow trout fishery, and attracted about 22,000 anglers during 1998, and currently supports about 20 commercial fishing guide services.

This research effort views recreation user groups as important constituents of the Colorado River ecosystem through Grand Canyon. Due to their diffused nature as a constituency, representation of their many voices within policy forums is difficult. An ultimate goal of this study is to identify the preferences of several groups of recreationists, with this report serving as a partial representation of their perspectives as constituents in the Adaptive Management Program of Glen Canyon Dam.

In addition, there are several managerial and agency stakeholders of the Colorado River ecosystem through Grand Canyon. Glen Canyon National Recreation Area and Grand Canyon National Park are agencies that share administrative responsibilities for the Colorado River ecosystem downstream from Glen Canyon Dam. Other agencies and interested parties potentially relevant to long-term planning of the Colorado River ecosystem include: U. S. Geological Survey, U.S. Fish and Wildlife Service, various state agencies linked to water and wildlife resources of the Colorado River ecosystem, various private and non-governmental organizations linked to water and wildlife resources, environmental protection groups, commercial recreation interest groups, and several Native American tribes. Each of the several stakeholders has the potential to either affect, or be affected by, management directives for the

Colorado River, and thus, are essential to consider in the development of adaptive management strategies.

Objectives

The objectives of this study were directed at describing preferences for various flow-related setting characteristics. The preferences assessed in this study were primarily linked to recreation user preferences. The specific objectives of this study were:

1. Determine current attitudes and preferences of Colorado River users toward recreation opportunities and setting attributes related to river flows.
2. Evaluate changing attitude and preferences of Colorado River users. This evaluation characterizes trends from a past recreation user study of the Colorado River ecosystem, and also develops benchmarks using new assessment parameters. These benchmarks will be instrumental in identifying changing attitudes and preferences in future recreation-related monitoring studies.
3. Evaluate commonality and disparity of current user attitudes and preferences regarding proposed management directions of NPS and other agencies. The two-phase research design (described below) allowed for the assessment of both managerial and user-based information, and hence, allowed for some comparisons between managerial-derived and user-based attitudes and preferences.

This study involved two phases of data collection. The first phase assessed current stakeholder issues related to the Colorado River ecosystem. Its major tasks, which were conducted during summer/fall of 1998, involved contacting stakeholders to identify and prioritize issues associated with recreational opportunities and their relation to river flow levels. The issues identified in the first phase guided the second phase of data collection in which user attitudes and preferences were assessed. The major tasks of the second phase of data collection, which took place during fall 1998 and winter/spring 1999, involved surveys of recreationists who were linked to recreational opportunities identified in the first phase, and obtain attitudes and preferences regarding the provision of various mixes of recreation opportunities and desirable attributes (related to river flow levels) of each opportunity.

Past Research on Flow-related Recreation Opportunities

The Bishop et al. (1987) study, which was part of the Glen Canyon Environmental Studies, was “designed to identify the effects of a variety of flow release patterns from Glen Canyon Dam on Grand Canyon white-water boaters, Glen Canyon anglers, and Glen Canyon

day-use rafters" (p. 6). During the early 1980s, release flows from the Dam frequently varied widely (by more than 10,000 cfs) on a daily basis, referred to as a "fluctuating flow." A significant portion of the Bishop et al. (1987) study addressed user preferences related to flows that fluctuated more than 10,000 cfs within a 24-hour period. Their data collection occurred during 1984 and 1985. They found that "Glen Canyon Dam releases have substantial impacts on white-water boating" (p. 170). Boater satisfaction was highest at flows between 15,000 – 35,000 cfs, and several flow-related setting attributes were rated highly important by their sampled boaters: stopping at side canyons, hiking at side canyons, and running large rapids. In addition, they found that "loss of large numbers of camping beaches would have a substantial adverse impact on white-water boating" (p. 170). Bishop et al. (1987) reported peaks in angler satisfaction around 10,000 cfs constant flow, however anglers were still relatively satisfied with constant flows up to 25,000 cfs. Compared to constant flows at the same level, angler satisfaction decreased dramatically in response to fluctuating flows between 10,000 and 25,000 cfs. For day-use rafters, Bishop et al. (1987) reported that user satisfaction was independent of flows levels (regardless of constant or fluctuating) above 3,000 cfs.

In their study of both river guides and private trip leaders, Shelby, Brown, and Baumgartner (1992) found a relationship between user satisfaction and hypothetical scenarios related to flow levels (see also Moore, Wilkosz, & Brickler, 1990; Shelby & Whittaker, 1995). For commercial motorized, commercial oar, and private trips, the highest ratings of satisfaction were reached at 20,000 - 25,000 cfs. They also found that rafters were sensitive to flow levels regarding their willingness to "row more" or "run motor more" in response to low river flows. In response to high river flows, they reported more than 75% of all rafter types would stop at additional attractions and spend more time at attraction sites.

In their study which applied the Lucas-Shechter Wilderness Use Simulation Model coupled with a survey of river guides, Underhill and Borkan (1986) also indicated that high river flows were associated with more time at attraction sites, more time to stop at additional attractions, and less delays at rapids. In one of the earlier studies of Colorado River users in Grand Canyon, Shelby and Nielsen (Report 2, 1976) suggested that increased river flows could affect the number of encounters at attraction sites, and hence the level of perceived crowding. They indicate that the distribution of use is a key consideration when managing a river for recreation opportunities (Shelby & Nielsen, Report 2, 1976, p. 40), and that distribution of use is linked to the speed of the river current: as flow increases, speed of downstream travel increases, which allows more time to stop at attraction sites.

Past research of the Colorado River ecosystem has indicated that attitudes and preferences for recreation setting attributes relevant to flow level may include delays at rapids, speed of travel, time spent floating, time spent at attractions, arrival time at campsites, size and number of beaches, and perceptions of safety (Shelby, Brown, & Baumgartner, 1992; Underhill & Borkan, 1986). In addition, flow-related attributes of the Colorado River ecosystem have been

demonstrated to have a high priority even for people who do not use the river for recreational purposes (Harpman, Welsh, & Bishop, 1995; Welsh, Bishop, Phillips, & Baumgartner, 1995).

Rather than focus on user experiences and preferences, several studies have examined changes in settings attributes relevant to both recreational use and dam operations. In general, these studies indicated a decrease in the number and quality of beaches (also referred to as "sandbars") as an adverse impact of Glen Canyon Dam operations. In their study which examined a 20-year trend of beaches in the Colorado River ecosystem in Grand Canyon, Kearsley and Warren (1993) indicated "that campsites have dramatically decreased in both number and size in the past 20 years" (p. 1). In their comprehensive review of the downstream effects of Glen Canyon Dam, Webb et al. (1999) stated that "60% of all sandbars had eroded between 1890 and the early 1990s" (p. 12). One of the objectives of the 1996 spike flow was to enhance the size of beaches within the Colorado River ecosystem (Schmidt et al., 1999). According to Kearsley, Quartaroli, and Kearsley (1999) there was a net gain of 81 new beaches immediately following the 1996 flood, and a substantial proportion of beaches increased in size (see also Thompson, Burke, & Potochnik, 1997). Although the long-term durability of the effects of spike flows is an open question, there has been ample and non-controversial evidence indicating that dam operations have resulted in decreased number of beaches and that the 1996 spike flow resulted in an immediate improvement in the number and size of camping beaches.

PHASE 1: STAKEHOLDER ANALYSIS

The methods of the first phase were directed at assessing information, and learning about issues, from stakeholders associated with the Colorado River ecosystem. The issues and concerns emerging from this first phase served as a partial basis to develop the survey instruments for the user studies of the second phase.

There were various discussion forums in which stakeholder issues related to recreation were assessed. The research team, along with several other researchers who have studied aspects of the Colorado River ecosystem in Grand Canyon, took a river trip from Lee's Ferry to Diamond creek during July, 1998 to observe recreational use and conduct informal face-to-face interviews with rafters. In September, 1998, a principal investigator presented an overview of the research project at a scheduled meeting of the Technical Work Group (TWG; see Appendix F for a list of participants) and collected information (formally at the technical presentation, informally at a workshop after the presentation, and after the TWG meeting through follow-up phone calls) about stakeholder issues and concerns related to recreational use. In addition, the research team participated in the annual meeting of the Grand Canyon River Guides in November, 1998, to provide them with an overview of recreation research, to identify setting attributes relevant to expert river runners, and to pilot test the use of photographic imagery to represent beach characteristics.

In addition, there were several researchers contacted during Fall 1998 who had conducted studies on the Colorado River through Grand Canyon. The group of researchers contacted who were most relevant to this study were the staff from the Northern Arizona University (NAU) Sandbar Studies who provided insight on issues related to development and erosion of beaches within the river corridor (Kaplinski, Hazel, & Beus, 1995). Along with their insight on sandbar development, the continuous database of sandbar change archived by the NAU group provided photographic images that depicted visual effects (from a sample of beaches) of the 1996 spike flow from Glen Canyon Dam (e.g., website: <http://vishnu.glg.nau.edu/gces/studysites.html>; see also Kearsley, Quataroli, & Kearsley, 1999), and ultimately provided the base images for use in this study.

Two general issues emerged from the stakeholder discussions, along with several specific linkages between recreation opportunities and flow-related setting characteristics. The two general issues were the following:

- (1) There was general consensus that problems related to wide fluctuation in daily flows released from Glen Canyon Dam had been resolved by the Record of Decision (ROD, 1996) that put maximum limits, from 5000 – 8000 cfs depending on monthly release volume, on the allowable level of fluctuation within a 24 hour

period. The recreational use problems related to fluctuating flows during the early 1980s, in which flows would fluctuate more than 20,000 cfs within a 24-hour period, were addressed by the ROD. During discussion with stakeholders, there was broad agreement that the current level of daily flow fluctuation was a non-issue, was not controversial, and that most stakeholders were comfortable with current operations of Glen Canyon Dam regarding the daily fluctuations of release flows.

- (2) Another issue with general agreement concerned the need for more information about the impact of Beach Habitat Building Flows (BHBF, referred to as "spike flows"). There was a general feeling that spike flows would be re-occurring on a periodic basis, and most stakeholders felt that the effects of future spike flows needed careful monitoring and research. In addition, there was general agreement that spike flows had an impact on sandbar (or beach) characteristics, but the ability to predict the impact on any given beach was difficult to determine.

There also were some specific issues involving recreational opportunities and experiences that emerged from the discussions with stakeholders.

- (3) Several stakeholders expressed concern that the number and quality of beaches within the Colorado River corridor were an issue. Of these stakeholders, the general perception was that the number of useable beaches had been decreasing across the past few decades. There were mixed impressions of whether the beaches had increased or decreased in quality; some beaches were thought to have increased in quality and others were thought to have decreased in quality. There were mixed impressions regarding the importance of beach characteristics; some stakeholders felt that beach characteristics were not as important compared to social relationships and weather; whereas others indicated that the quality of beaches in the river corridor were quite important to a high quality raft trip. Some of the implications of fewer number of beaches (and poorer quality of beaches for camping) were an increased competition for campsites, increased potential to share camp with other groups or to be within sight and sound of other groups while camping, and increased potential for both inter-group and intra-group crowding at camp. "Critical reaches" were identified within the river corridor which are near attraction sites (e.g., Phantom Ranch, Havasu Falls, and Deer Creek Falls), have a scarcity of usable beaches, and have a high potential for erosion of beaches. Private rafters who are not as familiar with the river corridor compared to commercial river guides may have more on-river anxiety regarding the daily decision to select a beach for camping particularly in the critical reaches. In addition, shade and vegetation on beaches were considered important for protection from sun and wind, and for providing privacy and visual screening.

- (4) There were a number of different characteristics that stakeholders used to define a high quality beach for recreational rafting, and these characteristics often were expressed in the context of on-river decisions to camp or lunch. Salient characteristics of beaches, emerging from discussions with stakeholders, were the following and are grouped according to whether they can be managerially influenced:

Partially influenced by managerial or dam operations:

- beach size
- presence of shade
- vegetation on the beach
- exposed rocks on beach
- approach to the beach regarding ease of mooring

Low potential for influence by managerial or dam operations:

- location relative to attraction sites
- location relative to trip schedule
- nearby side canyons

- (5) Flow level, rather than fluctuating flow levels, was an issue for some stakeholders. Stakeholders interested in fishing indicated preferences for lower flows than stakeholders concerned about recreational rafting. Accessibility and/or presence of certain fishing "holes" was indicated as being best at lower flow levels, such as 10,000 - 12,000 cfs. Recreational rafting had both a broader range of flow levels and a higher range for "best" conditions, such as 18,000 - 25,000 cfs. These results converged to a large extent with the optimum constant flow levels reported by Bishop et al. (1987) for anglers and rafters.

From the results of the stakeholder analysis, it was clear that flow-related issues had changed since the Bishop et al. (1987) study. Daily fluctuation of flows was no longer a priority issue for most recreational use (Potochnik, 1998). Although Glen Canyon anglers are probably most affected by the level of flow fluctuation, the reduced level of variability since the ROD of 1996 greatly reduced the adverse impacts of fluctuating flows on anglers. In fact, by the classification used by Bishop et al., the current level of daily flow variability would not even be considered "fluctuating" since it varies by less than 10,000 cfs in a 24-hour period (Bishop et al., 1987, p. 187). Whereas the previous study had emphasized user preferences and reaction to various fluctuating flow regimes, this study did not consider assessment of such preferences as being the top priority issues for stakeholders. However, while fluctuating flows are not currently

a top priority issue, the effects of flow regimes on boaters after a period of low run-off years, and consequent reductions in average flows, is unknown.

The current high-priority stakeholder issues were related to spike flows and their effects on recreation opportunities in the river corridor, particularly as they affect the shape, size, and other characteristics of beaches (Harpman & Jalbert, 1997; Kearsley & Warren, 1993; Thompson, Burke, & Potochnik, 1997). This study emphasized user preferences for beach characteristics, especially beach characteristics related to managerial influence such as beach size, presence of shade, and vegetation. In addition, this study obtained preferences for various flow levels related to a safe and enjoyable trip to be compared with results from Bishop et al. (1987).

There were three specific research questions that emerged from the stakeholder discussions and served as primary driving forces in the development of questionnaires for this study:

- (a) What is the relative importance of flow-related characteristics compared to other setting attributes?
- (b) What are user preferences for minimum, maximum, optimum, and constant flow levels for the Colorado River?
- (c) What are user preferences for beach characteristics regarding places to camp or lunch?

PHASE 2: SURVEYS OF RECREATION USER GROUPS

Five different recreation user groups were surveyed for this assessment of user preferences: private trip leaders, commercial outfitter patrons, river guides, anglers at Lee's Ferry, and day-trip rafters in Glen Canyon. This is not an exhaustive list of recreation user groups of the Colorado River ecosystem in Grand Canyon, but these five groups were the ones addressed by Bishop et al. (1987) and still are considered the major recreation users of the river. The assessment methods shared some similar implementation across the five user groups.

Implementation of Methods

A section of the questionnaires related to rafters employed photographic imagery to assess user preferences for the quality of beaches. Salient characteristics of beaches for recreational use were developed during the first phase of this study, and emerged from discussions with various stakeholders that emphasized the need to monitor the effects of spike flow releases. In a general sense, sampled rafters responded to a series of photographs of possible camping and lunch sites in the river corridor. These photographs were computer-calibrated by the Imaging Systems Laboratory at the University of Illinois which enabled the examination of preferences for selected beach characteristics (Orland, Daniel & Haider, 1994).

Computer-calibrated imagery has been successfully employed elsewhere to assess user preferences for a variety of setting characteristics associated with crowding, conflict, and environmental impacts (e.g., Grand Canyon, Arches, and Acadia; see Manning et al., 1996; Manning, Lime, & Hof, 1996; Manning et al., 1999; Orland, 1993). Also, there has been an accumulation of studies that, given certain conditions, support the validity of responses to photographs as representative of responses to actual environments (e.g., Hull & Stewart, 1992; Orland, Vining, & Ebreo, 1992; Thuresson, Nasholm, Holm, & Hagner, 1996; Vining & Stevens, 1986; Zube et al., 1987).

Preferences for beach characteristics were primarily determined using photographs of beaches that were digitally manipulated to achieve the specific images required for the design (i.e., computer-calibrated). The characteristics of beaches manipulated were size of beach, presence of shade tree, and presence of low growing vegetation on the beach. Beach size was a continuous variable in the visual enhancements ranging from about 400 to 1300 square meters. Shade and vegetation were considered binary (either present or absent).

The base design consisted of 24 photographs arranged in 12 pairs according to a statistical design insuring balance on all characteristics. The 12 pairs were blocked into three sets (labeled as G, H, and I) of four pairs such that each set of four contained a full range of each characteristics. Each sample of rafters was randomly divided into thirds and assigned to one of

the three sets of images. Two additional pairs of photographs were constructed varying size in a specific way, and these were made common to all three sets of images. Thus each respondent was presented with a set of six pairs of photographs; the sets were balanced with respect to each study characteristic and the base photos. The images used in the study are shown in the questionnaires which are included in the appendices to this report; the images of the appendices are the exact size that were included in questionnaires sent to respondents.

For each of the six pairs of photographs, respondents were asked to choose between the two as a site for camping and as a site for lunch. They also had the option of choosing neither of the two and continue down-river for a better site. It is assumed that the choices respondents made reflected the alternatives that best served their needs, that is the alternatives with highest utility for them.

Random utility theory (McFadden, 1974) is a mathematically sound theory of discrete choice behavior that has been empirically tested and validated in a wide range of applications. The multinomial logit (MNL) model derived from random utility theory is the most common, and it is the model used here. In brief, the utility U for a site is assumed to be a function of its size, shade, and vegetation (the utility for "neither" is a constant). For any individual respondent there is also an error of measurement of the utility which is considered random (hence random utility theory), or

$$U = V + e$$

where V is the true systematic component of the utility and e the random error component. The MNL model gives the probability of choosing site A from a choice of set $S = \{\text{Site A, site B, Neither}\}$ as

$$P(\text{Site A} | S) = e^{U_A} / \{ e^{U_A} + e^{U_B} + 1 \}$$

The choices made by respondents are the data required to estimate the parameters of the MNL model, sometimes referred to as a conditional MNL. Since the MNL model is nonlinear, an iterative maximum likelihood estimation (mle) procedure is employed. The mle produces parameter estimates along with standard errors and approximate t -statistics. Overall model fit is measured with a McFadden's Rho Square (or R^2). Values of this Rho Square between 0.3 and 0.5 are "reasonable to good," between 0.5 to 0.8 are "good to excellent," and over 0.8 are "excellent" (Intelligent Marketing Systems, 1994, p. 7-12). For these data the overall fit was generally in the good to excellent range.

Several items contained in the mailback questionnaires (see Appendices) were identical to the items used by Bishop et al. (1987). Employment of items used in the previous assessment enhances the validity of interpreting changes in attitudes and preferences of recreationists, a major study objective. In addition, employment of items related to Shelby and Nielsen's studies

in the 1970s also were used to assess attitudes and preferences for setting characteristics relevant to river flow levels (Shelby, Brown, & Baumgartner, 1992; Shelby & Nielsen, Reports 1, 2, 3, and 4, 1976); thus, not all items contained in this study will have a comparison point with the Bishop et al. (1987) study.

Survey Administration Procedures

For all user groups of this study, survey administration of mailback questionnaires employed the widely-accepted standard procedures prescribed by Dillman's Total Design Method (1978), which included the following steps:

1. An initial mailing was sent that included a questionnaire and self-addressed postage-paid return envelope, along with a cover letter explaining the study, how they were sampled, and invited the sampled visitor to complete the questionnaire.
2. One week after the initial mailing, a "thank you/reminder" postcard was sent to each sampled visitor encouraging them to respond and thanking those who already completed and returned their questionnaire. If the addressee had misplaced their questionnaire, or had comments about the study, the text on the postcard invited them to call-collect the Department of Leisure Studies, University of Illinois to request a replacement questionnaire or to clarify their concerns.
3. For non-respondents, three weeks after the initial mailing, a second questionnaire was sent that included a self-addressed postage-paid return envelope and cover letter.
4. For persistent non-respondents, seven weeks after the initial mailing, a third questionnaire was sent that included a self-addressed postage-paid return envelope and cover letter.

The guiding principle of the Dillman technique involves personalizing the appearance of the survey. Addresses on the envelopes were handwritten in blue-ball point pen for each sampled visitor, with postage stamped rather than metered. Cover letters were addressed to the interviewee with a signature in blue ball-point pen at the bottom. All stationary was letterhead from the Department of Leisure Studies, University of Illinois. Telephone calls and phone messages from sampled visitors were answered promptly with follow-up directed at sending replacement questionnaires or providing further information about the study.

All respondents were assured in their cover letter that their responses would be aggregated with other sampled visitors, and that their names would not be associated directly with their responses. A database was developed to track the responses of all sampled visitors.

The tracking system accounted for returned and completed questionnaires, undeliverable addressees, deceased persons, and refusals. Questionnaires were coded and entered into a database that was separate from the database of the names and addresses of respondents. As a final stage of survey administration, datasets were cleaned to identify missing data, wrong values, or other invalid codes.

Responses to open-ended questions were coded as text using a standard statistical software package for the social sciences (SPSS version 8.0, 1998). There were several short open-ended items on the questionnaires that were coded as text, and then reviewed for themes during analysis. Themes were developed by going through a listing of text a few times and identifying topics that would subsume several responses. For example, directly following the photographic images of beaches, the questionnaires contain an open-ended item that asked respondents if they had comments about beaches they prefer or if they had comments on the photographs just examined. Two responses such as "the bigger the beach the better" and "I like big camping and lunch spots" would be grouped under the label "prefer big beach" due to their similar meaning. After responses had been grouped into themes, the themes were then coded and percentages developed for proportion of respondents stating a given theme. For the long open-ended item at the end of each questionnaire, which asks respondents if they have any other comments, responses were compiled verbatim and presented in the Appendices.

Surveys of White Water Rafterers

This section presents results of two samples of white water rafterers who floated the Colorado River during 1997 and 1998 downstream from Lee's Ferry: (1) private trip leaders and (2) commercial outfitter patrons.

A list of trip leaders (people who applied and used a permit for a private river trip) was obtained from Grand Canyon National Park. There were 219 names and addresses of trip leaders for 1997 and 268 trip leaders for 1998. In total, 348 private trip leaders were randomly sampled and sent questionnaires; 37 were returned as undeliverable, 2 returned the questionnaire and refused to participate, 1 was sent to a deceased individual, and 245 returned completed questionnaires resulting in a 79% response rate (Table 1).

Table 1. Private Trip Leader and Commercial Patron Response Rates

	Private Trip Leaders	Commercial Patrons
Completed questionnaires	245	167
Undeliverable addresses	37	7
Refused to participate	2	0
Deceased respondents	1	0
Total questionnaires mailed	348	190
Adjusted Response Rate*	79%	91%

* Adjusted response rate was arrived at by dividing the number of completed questionnaires into the total questionnaires mailed, less the number of questionnaires returned with undeliverable addresses and the number of deceased respondents. Those who refused to participate are considered non-respondents in the calculations.

There were close to 19,600 people who took commercially guided raft trips in both 1997 and 1998, with about 75% being on motorized trips and 25% on non-motorized trips. The average fare per person per day on a commercial raft was about \$215 in 1999. The demand for commercial raft trips is high, with most commercial trips generally 90% booked-up one year in advance.

Since there was no convenient list of patrons from commercially guided raft trips, the sample of patrons was drawn in cooperation with commercial outfitters and the assistance of Grand Canyon Commercial Outfitter Association. All 16 commercial outfitters were contacted about this study and their potential role in it. Names and addresses of their passengers were requested from each outfitter in proportion to their allocation of user-days, which ranged from 13 to 55 names being requested from any one company. In the requests, outfitters were asked to select names and addresses that would be representative of their passengers, particularly

regarding the time of floating. An example given was that if half of your clients float the river in June, then about half of the names sampled should have floated in June. There were 12 of the 16 outfitters who agreed to send names and addresses of their passengers which resulted in 318 names and addresses. A random sample of 190 passengers was selected from these 318 names. Of these 190 passengers who were sent questionnaires, 7 had undeliverable addresses, and 167 completed questionnaires were returned, resulting in a response rate of 91% (Table 1).

For 1997, the range of average daily flows for the high-season summer months (May through August) was 18,000 to 26,000 cfs; the range of average daily flow for all of 1997 was 16,000 to 27,000 cfs. For 1998, the range of average daily flows for the summer months was 9,000 to 21,000 cfs (and if not for a few days in May with low average daily flows, the remainder of the summer months did not go below 14,000 cfs); the range of average daily flow for all of 1998 was also 9,000 to 21,000 cfs. Thus these samples of private trip leaders and commercial outfitter patrons experienced average daily flows between 9,000 to 27,000 cfs, with the vast majority of respondents experiencing average daily flows between 16,000 and 26,000 cfs. In contrast, the average flows related to the Bishop et al. (1987) were high during 1984-1985 with peaks in the 40,000 – 50,000 cfs range; however to include rafters who experienced low average daily flows in their sample, in one of their surveys Bishop et al. (1987) included white-water boaters from May, 1982 in which average flows were less than 10,000 cfs.

The results are organized around the three research questions related to: (1) relative importance of setting attributes, (2) perceptions of flow levels, (3) and preferences for beach characteristics. Where possible, results are compared with the findings of Bishop et al. (1987). See Appendices A and B for copies of the private trip leaders and commercial passenger questionnaires with frequency distributions of their responses.

Relative Importance of Setting Attributes

At the beginning of the questionnaires, sampled trip leaders were presented with two open-ended items asking them to identify things that “would contribute most to an excellent or perfect raft trip” and that “would contribute most to a poor raft trip;” commercial passengers were presented with the item about a perfect raft trip. The focus of interpretation of trends in Tables 2 and 3 should be on the *relative rankings* of setting attributes between this study and Bishop et al. (1987); since the question was open-ended and relied on respondents to volunteer their reports, absolute comparisons between the two studies is not reliable. Across both studies, the top attributes for the patrons were good guides, good weather, and good social interaction, and for the private trip leaders the top attributes were good social interaction, good weather, and no crowding. See Table 2 for a ranking of attributes for a perfect trip and Table 3 for a ranking of attributes for a poor trip.

Table 2. Attributes for a Perfect Raft Trip

Attribute	Proportion Citing Attribute					
	Commercial Oar Patrons		Commercial Motor Patrons		Private Trip Leaders	
	1987	1999	1987	1999	1987	1999
Good weather	33%	25%	38%	28%	34%	21%
Good social interaction	22	38	29	34	51	41
Good guides	44	36	41	35	10	0
Unrushed pace/more layovers	29	29	27	17	26	19
Wilderness experience	27	29	19	16	29	16
Well conducted trip	16	18	28	15	30	35
Good food	24	27	26	10	17	5
Good/exciting rapids	22	11	20	15	13	9
Being in the Grand Canyon	13	0	26	5	15	6
No crowding	19	11	11	6	22	30

Table 3. Attributes for a Poor Raft Trip

Attribute	Proportion Citing Attribute	
	1987 Private Trip Leaders	1999 Private Trip Leaders
Crowding	41%	43%
Bad weather	25	19
Poor guides	9	1
Poor social interaction	33	50
Litter	20	9
Unsafe conditions	31	33
Low water level	14	12

To provide a context to understand the effects of flow-related attributes on recreation experiences, assessing the relative importance of various setting characteristics is useful. The questionnaire contained a set of items related to setting attributes and asked respondents to "indicate how important each feature was for you on your trip." The importance rankings of this study were similar to the rankings reported by Bishop et al. (1987). Several of the flow-related items were moderate to very important trip attributes for rafting.

Table 4. Importance Ratings of Trip Attributes for Rafting

Attribute	Overall Ratings*					
	Commercial Oar Patrons		Commercial Motor Patrons		Private Trip Leaders	
	1987	1999	1987	1999	1987	1999
Being in a natural setting	3.0	n/a	2.9	n/a	3.0	n/a
Relaxing, getting away from it all	2.7	2.7	2.7	2.6	2.8	2.8
Confidence in my guide or trip leader	2.7	n/a	2.8	n/a	2.5	n/a
Observing flora, fauna, and geology	2.7	2.7	2.7	2.7	2.7	2.9
Being on the Colorado River	2.6	2.9	2.6	2.7	2.6	2.7
Learning about the history of the Grand Canyon	2.5	2.7	2.7	2.7	2.6	2.5
Seeing wildlife	2.5	2.5	2.5	2.4	2.6	2.6
Being with family and friends	n/a	2.2	n/a	2.6	n/a	2.8
Photographing the Grand Canyon	n/a	2.3	n/a	2.4	n/a	2.2
Seeing few people while floating	n/a	2.6	n/a	2.2	n/a	2.4
Floating on quiet stretches of river	n/a	2.6	n/a	2.3	n/a	2.6
Camping at sites without evidence of soil and vegetation damage	n/a	2.6	n/a	2.5	n/a	2.5
Visiting archaeological sites	n/a	2.3	n/a	2.4	n/a	2.4
Feeling safe	n/a	2.4	n/a	2.5	n/a	2.1
Eating good food	n/a	2.3	n/a	2.4	n/a	2.4
Interacting with others on my trip	n/a	2.4	n/a	2.5	n/a	2.6
Finding a spot for lunch with a shade tree	n/a	2.0	n/a	2.0	n/a	1.8
Places along the river without trash or litter	n/a	3.0	n/a	2.9	n/a	2.9
Fishing in the Grand Canyon	n/a	1.1	n/a	1.0	n/a	1.4
Flow-related items:						
Seeing few people at attractions	n/a	2.6	n/a	2.3	n/a	2.4
Stopping at side canyons or creeks	2.9	2.8	2.8	2.9	2.9	2.9
Hiking in the side canyons	2.7	2.8	2.7	2.7	2.8	2.8
Large rapids	2.7	2.6	2.7	2.5	2.6	2.5
Large beaches for camping	n/a	2.0	n/a	2.1	n/a	2.2
Camping on beaches with large boulders	n/a	1.4	n/a	1.5	n/a	1.3
Being the only group camping at a beach	n/a	2.6	n/a	2.6	n/a	2.6
Beaches without low growing shrubs	n/a	1.4	n/a	1.4	n/a	1.6

* Overall ratings are based on a scale of 1= not important to 3= very important.

Following from Bishop et al. (1987), patrons were asked about whether various characteristics of rapids increased or decreased the enjoyment of their trip. The sampled patrons were given a list of 15 attributes specific to rapids and asked whether each one increased, decreased, or did not matter to their enjoyment. The five attributes most important to increasing enjoyment are reported within Table 5 and were almost identical in proportion to those reported by Bishop et al. (1987).

Table 5. Attributes of Rapids Affecting Enjoyment for Commercial Patrons

Attribute	Proportion Citing Attribute			
	Commercial Oar Patrons		Commercial Motor Patrons	
	1987	1999	1987	1999
Increasing enjoyment:				
Rapid with large waves	90%	94%	95%	90%
Roller coaster ride	91	96	95	95
Long rapid	92	94	94	91
Large number of rapids	91	93	92	93
Learning how to "read" rapids from the guide or trip leader	87	87	85	84
Decreasing enjoyment:				
Having to walk around a rapid	81%	n/a	83%	n/a
Waiting at a rapid for other trips to run it	48	45	51	34
Fear of falling out of boat and being in the water for long time	45	n/a	33	n/a
Concern about damage to personal equipment	36	24	26	20
Rocks sticking out of water	31	24	25	19

Perceptions of Flow Levels

Private trip leaders were asked to evaluate their satisfaction with constant flow levels between 2,000 and 80,000 cfs on a 5-point scale ranging from "very unsatisfactory" to "very satisfactory." Responses were nearly identical to the responses from Bishop et al. (1987) and reflected a bell-shaped curve as shown in Figure 1. Below 5,000 cfs responses were very unsatisfactory. Above 10,000 cfs and below 40,000 cfs, responses were above the midpoint of the satisfaction scale (i.e., a satisfaction level of 3) and considered as satisfactory or very satisfactory constant flows. Peak levels of satisfaction ratings, for both the previous study and this one, occurred between 20,000 and 25,000 cfs.

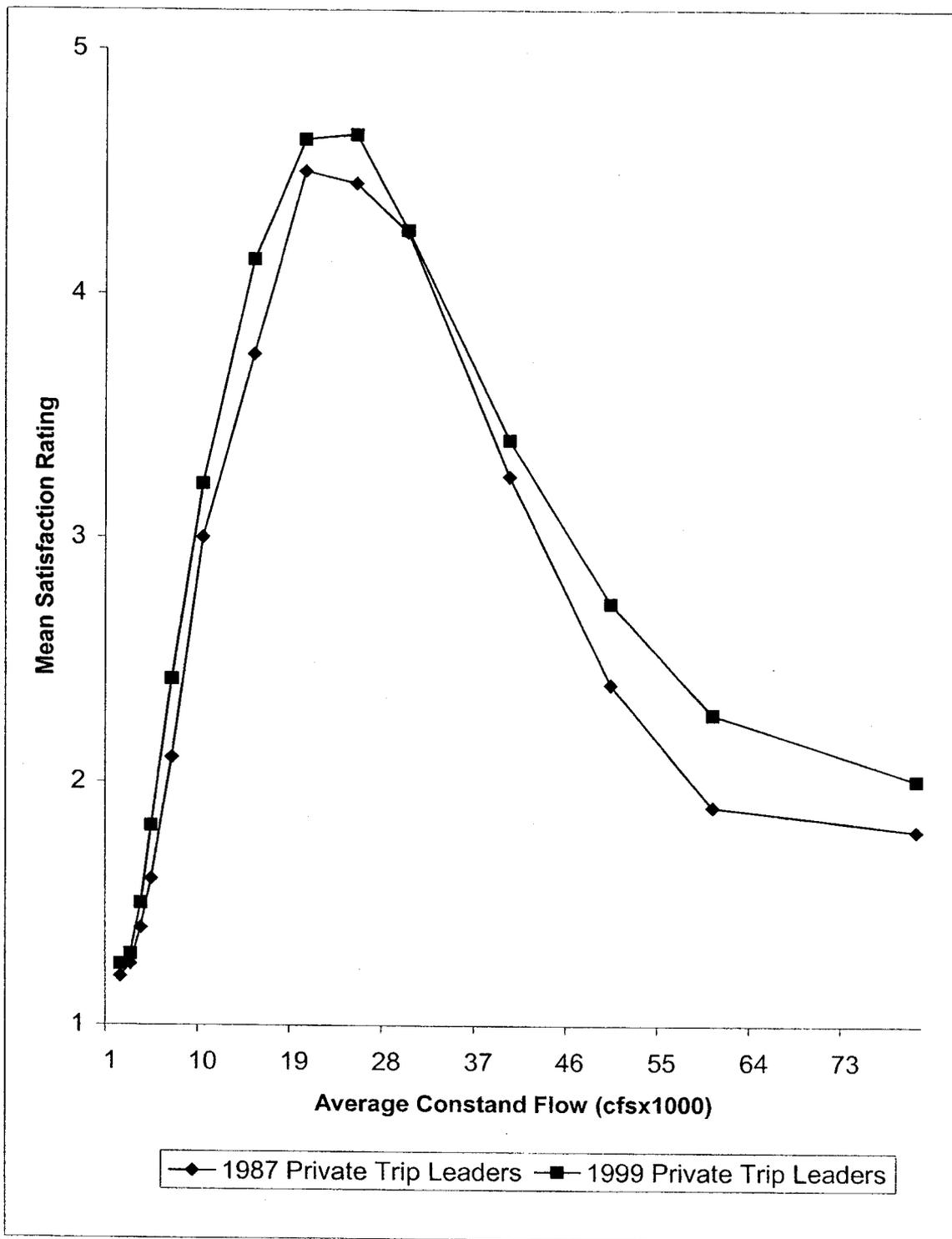


Figure 1. Private Trip Leaders' Satisfaction at Constant Flows

Private trip leaders also were asked to state the level of constant flow that “you prefer as a trip leader.” Table 6 indicates that the mean of their responses was 22,686 cfs which was 10% lower than the 25,158 cfs reported by Bishop et al. (1987).

Table 6. Preferred Constant Flow Levels

Flow	1987 Private Trip Leaders	1999 Private Trip Leaders
Preferred flow:		
Mean	25,158 cfs	22,686 cfs
Standard Deviation	7,515	8,029
Sample Size	145	201

Preferences for Beach Characteristics

Commercial patrons and private trip leaders preferred larger beaches to smaller beaches for camping, and size of beach was the strongest of the three setting attributes for camping. For lunch preferences there was a significant negative quadratic coefficient (utility function concave downward), and the maximum preference for size is about 1,000 square meters. Shade was a highly significant attribute for both camping and lunch, however both groups were relatively indifferent to the presence of vegetation. Tables 7 through 10 present MNL results for private trip leaders’ and patrons’ camp and lunch choice models. Figure 2 plots share of choice against size for patrons and privates and for both camping and lunch. The fact that both lunch curves are above the camping curves until the very largest size reflects that the respondents were more willing to accept lunch sites despite their characteristics than campsites (larger intercepts), and that the sensitivity to size is less for lunch sites.

Additional MNL analyses also were conducted which segmented the sample based upon the level of past rafting experience, whether oar or motorized, and whether the group size was large or small. With few exceptions, the segmentation variables were not significant nor were their interactions with the three primary variables of interest (e.g., experts were similar to novices in their sensitivity to beach characteristics and choice of camping and lunch sites).

Table 7. Preferences for Beach Characteristics: Private Trip Leaders’ Camping Decisions

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	1.163	.094	12.348	.0000
Size (linear)	.062	.005	13.596	.0000
Size (quadratic)	-.001	.000	-2.621	.0088
Shade	.462	.045	10.238	.0000
Vegetation	.020	.044	.450	.6530
Adjusted McFadden’s Rho ²	.774			

Table 8. Preferences for Beach Characteristics: Private Trip Leaders' Lunch Decisions

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	1.460	.105	13.888	.0000
Size (linear)	.028	.004	6.959	.0000
Size (quadratic)	-.001	.000	-3.796	.0001
Shade	.399	.041	9.817	.0000
Vegetation	.065	.040	1.622	.1049
Adjusted McFadden's Rho ²	.716			

Table 9. Preferences for Beach Characteristics: Commercial Patrons' Camping

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	1.040	.110	9.435	.0000
Size (linear)	.060	.005	11.223	.0000
Size (quadratic)	.000	.000	.832	.4057
Shade	.501	.057	8.775	.0000
Vegetation	.087	.056	1.553	.1204
Adjusted McFadden's Rho ²	.737			

Table 10. Preferences for Beach Characteristics: Commercial Patrons' Lunch

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	1.730	.135	12.815	.0000
Size (linear)	.013	.004	3.049	.0023
Size (quadratic)	-.001	.000	-1.497	.1345
Shade	.346	.045	7.622	.0000
Vegetation	.133	.045	2.942	.0033
Adjusted McFadden's Rho ²	.713			

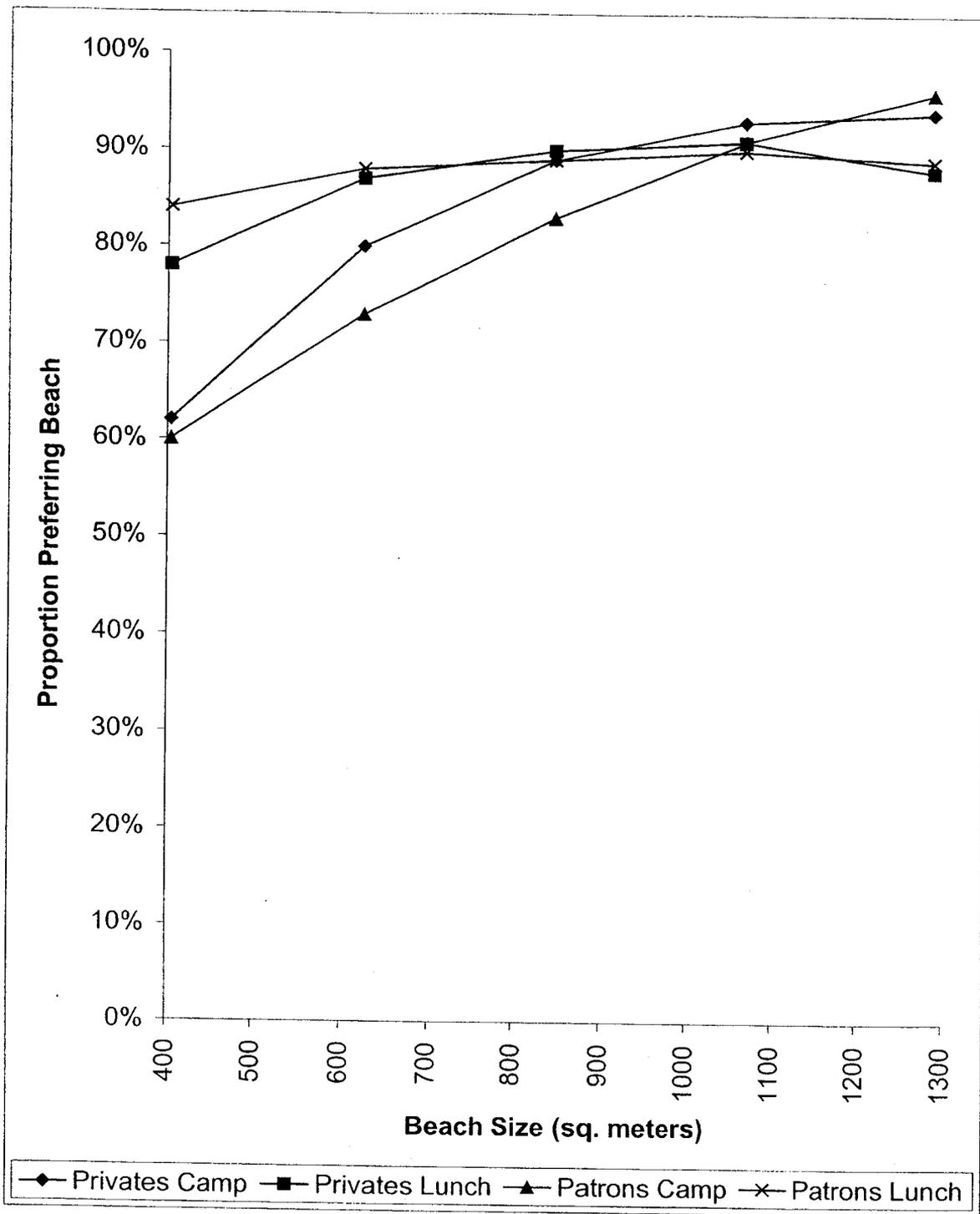


Figure 2. Commercial Patrons' and Private Trip Leaders' Preferences for Beach Size
 (Assuming no shade and no vegetation)

The item on both questionnaires immediately following the beach photographs was an open-ended question prompting respondents to identify their preferred beach characteristics. As depicted in Table 11, the largest proportion of respondents indicated shade and large beaches as being the most important attributes of beaches. Other characteristics, not assessed by the photographic images included: nearby side canyons, day-hiking opportunities, location on the river, weather, season, and good eddies to moor boats easily.

Table 11. Preferred Beach Characteristics: Patrons and Privates

Preferred Attribute	Proportion of Respondents	
	Private Trip Leaders	Commercial Patrons
Shade	46%	47%
Large beach	21	35
Hiking availability	19	13
Sandy beach	13	8
Flat beach	11	12
Vegetation	11	15
Privacy	9	14
Good eddies	9	0
Side canyons	8	13

Survey of River Guides

For the sample of river guides, the National Park Service list of certified river guides was used as a basis for sampling. River guides are required to pass an in-person certification exam; the certification expires after three years, at which time the exam can be re-taken. The 1998 NPS list of river guides contained 609 names and addresses of individuals. After deleting duplicate names and insuring just one name per address, the list was reduced to 344 names and addresses. Of these, 252 names were randomly sampled, 42 names had undeliverable addresses, 4 individuals refused to participate, and 136 completed questionnaires were returned, resulting in a response rate of 65% (Table 12). See Appendix C for a copy of the guides questionnaire with frequency distributions of their responses.

Table 12. Commercial Guide Response Rates

Commercial Guides	
Completed questionnaires	136
Undeliverable addresses	42
Refused to participate	4
Total questionnaires mailed	252
Adjusted Response Rate*	65%

* Adjusted response rate was arrived at by dividing the number of completed questionnaires into the total questionnaires mailed, less the number of questionnaires returned with undeliverable addresses. Those who refused to participate are considered non-respondents in the calculations.

Relative Importance of Setting Attributes

To provide a context to understand the effects of flow-related attributes on recreation opportunities, assessing the relative importance of various setting attributes for guides was useful. Like the questionnaire of the private trip leaders and commercial patrons, the guides questionnaire contained a set of items that asked respondents to indicate the importance of various setting attributes. Some of the highest ranked items were flow-related, such as stopping at side canyons and hiking opportunities; however, some of the lowest ranked items also were flow related, particularly camping at beaches with large boulders or without low growing shrubs (Table 13).

Table 13. Guides' Importance Ratings of Trip Attributes for Rafting

Attribute	Overall Ratings*	
	Motorized Guides	Oar Guides
Relaxing, getting away from it all	2.7	2.8
Observing flora, fauna, and geology	2.9	2.9
Being on the Colorado River	2.8	2.9
Learning about the history of the Grand Canyon	2.7	2.7
Seeing wildlife	2.6	2.7
Being with family and friends	2.3	2.5
Photographing the Grand Canyon	2.1	2.1
Seeing few people while floating	1.9	2.4
Floating on quiet stretches of river	2.4	2.7
Camping at sites without evidence of soil and vegetation damage	2.3	2.2
Visiting archaeological sites	2.5	2.6
Feeling safe	2.8	2.5
Eating good food	2.1	2.2
Interacting with others on my trip	2.6	2.6
Finding a spot for lunch with a shade tree	2.2	2.3
Places along the river without trash or litter	3.0	3.0
Fishing in the Grand Canyon	1.4	1.6
Flow-related items:		
Stopping at side canyons or creeks	3.0	2.9
Hiking in the side canyons	2.8	2.9
Large rapids	2.3	2.3
Large beaches for camping	2.1	2.1
Seeing few people at attraction sites	2.1	2.4
Camping on beaches with large boulders	1.3	1.3
Being the only group camping at a beach	2.6	2.7
Beaches without low growing shrubs	1.4	1.5

* Overall ratings are based on a scale of 1= not important to 3= very important.

Guides also were asked about the effect of the 1996 spike flow on recreational opportunities in the Colorado River corridor. Respondents were asked if they made any raft trips in the summer of 1996, and if “yes”, five items assessed their attitudes regarding the relationships between the effects of the spike flow and river rafting experiences. By reporting their level of agreement with several statements (Table 14), two-thirds or more of the sampled river guides indicated that the 1996 spike flow “improved beaches for recreational use”, that “spike flow releases are generally good for recreational use”, and that “improving the quality of recreational river running should be an important factor in the management of release flows from Glen Canyon Dam.”

Table 14. Respondents’ Attitudes Toward “Spike Flows” from Glen Canyon Dam

	Proportion of Respondents (N= 116)					Mean*
	Strongly Agree		Neutral		Strongly Disagree	
The 1996 “spike flow” from Glen Canyon Dam improved beaches for recreational use.	42%	36%	13%	8%	2%	1.9
Beach development that resulted from the 1996 “spike flow” did not improve the recreational experience.	9	11	20	41	19	3.5
The “spike flow” did not have any effect on recreational use during the summer of 1996.	7	9	19	40	25	3.7
Spike flow releases from Glen Canyon Dam are generally good for recreational use.	29	35	22	10	3	2.2
The impacts to recreational use should not be a consideration in the management of release flows from Glen Canyon Dam.	9	7	8	22	54	4.0
Improving the quality of recreational river running should be an important factor in the management of release flows from Glen Canyon Dam.	44	29	11	7	9	2.1

* Mean values are based on a scale of 1= strongly agree to 5= strongly disagree

Perceptions of Flow Levels

River guides were asked to evaluate their satisfaction with constant flow levels between 2,000 and 80,000 cfs on a 5-point scale ranging from "very satisfactory" to "very unsatisfactory." Responses were nearly identical to the responses from Bishop et al. (1987) and reflected bell-shaped curves as shown in Figures 3 and 4 for commercial oar and motor guides, respectively. Below 5,000 cfs responses were very unsatisfactory. Above 10,000 cfs and below 50,000 cfs, responses were above the midpoint of the satisfaction scale and considered as satisfactory or very satisfactory constant flows. Peak levels of satisfaction ratings, across both studies and types of guides, occurred between 20,000 and 25,000 cfs.

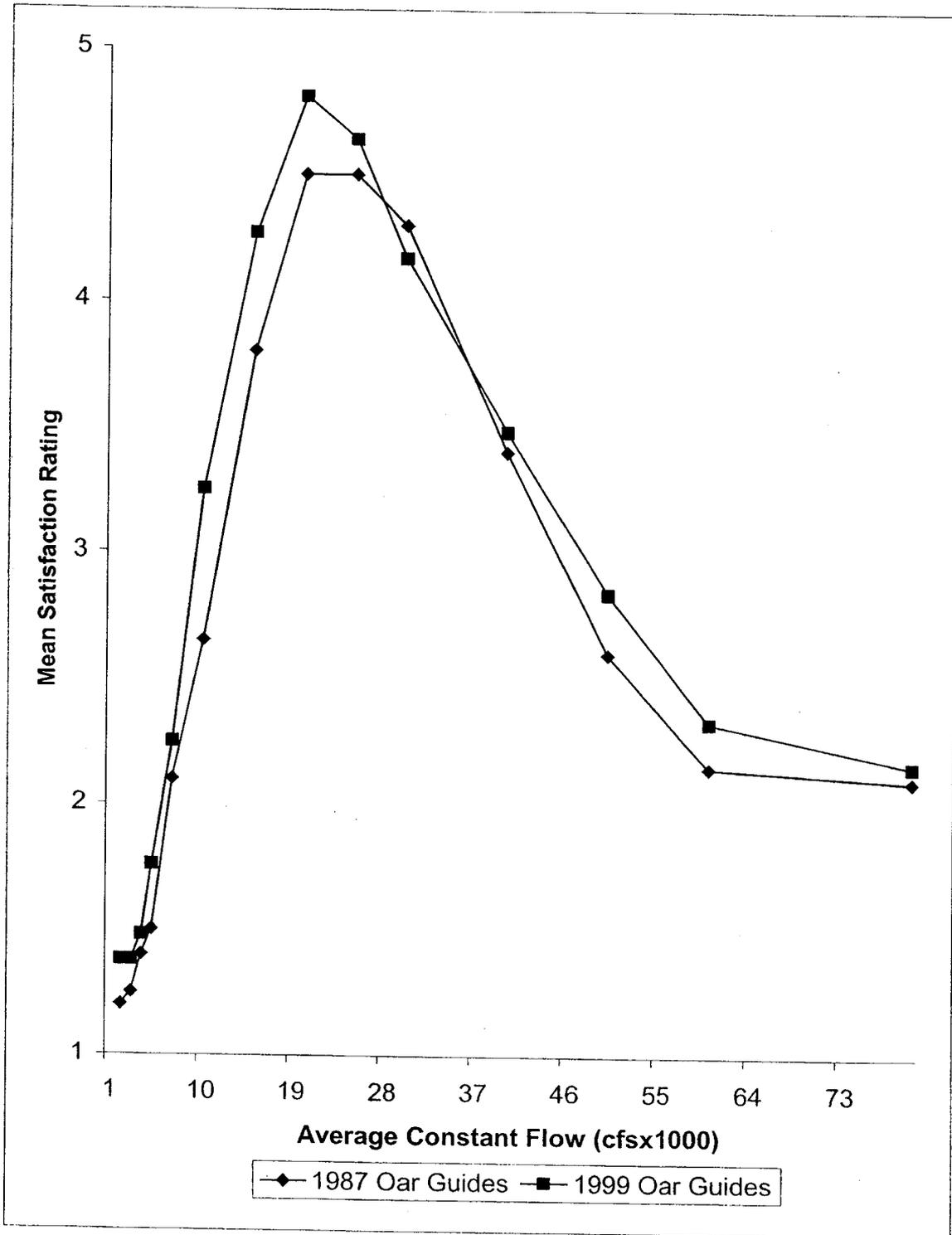


Figure 3. Oar Guides' Satisfaction at Constant Flows

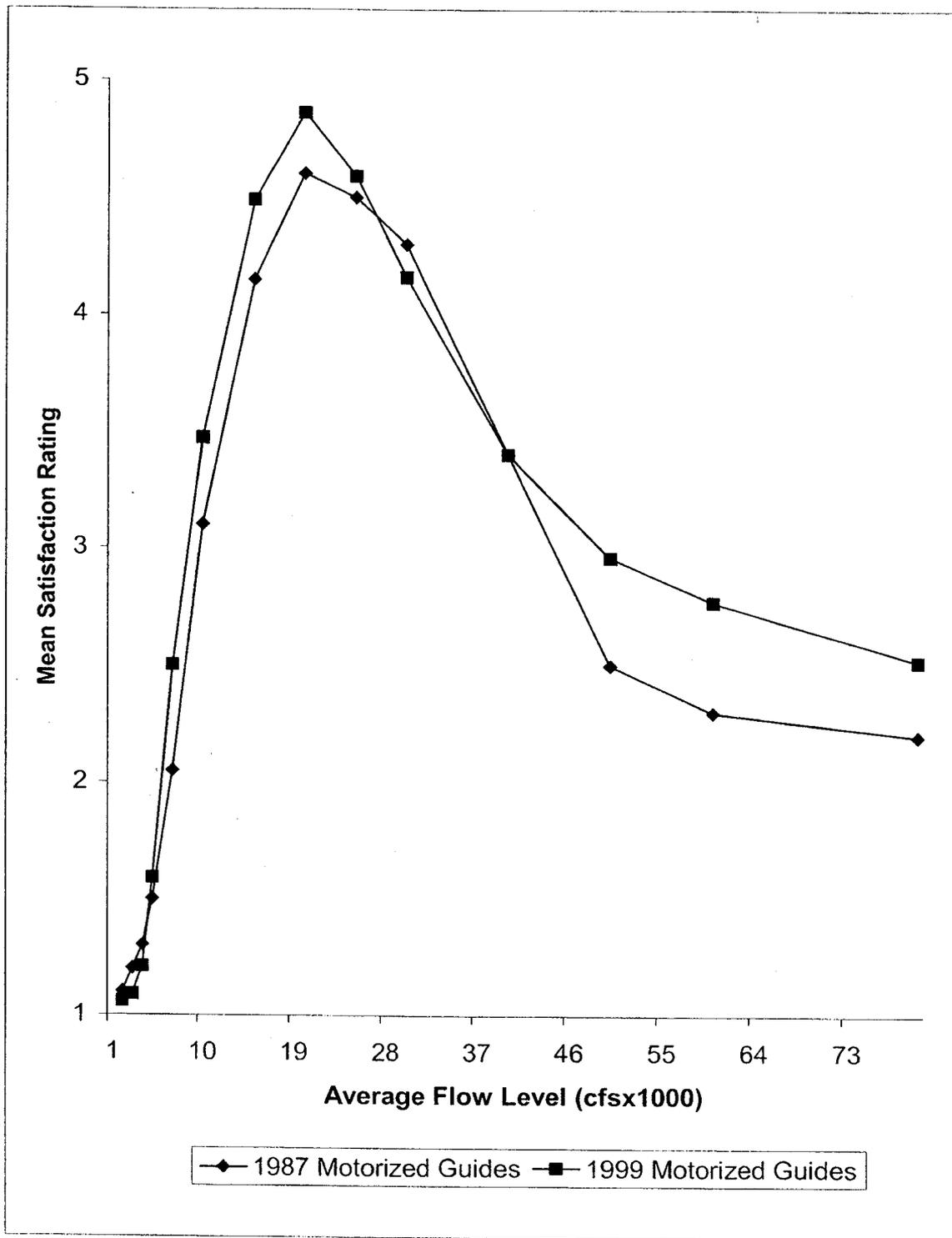


Figure 4. Motor Guides' Satisfaction at Constant Flows

Respondents also were asked to state the level of constant flow that they prefer most. Table 15 indicates that the mean of preferred flows for both commercial oar and motor guides was near 20,000 cfs, whereas Bishop et al. (1987) reported the mean of preferred flows for commercial oar guides was near 20,000 cfs but motor guides was near 26,000 cfs.

Table 15. Guides' Preferred Constant Flow Levels

Flow	Commercial Oar Guides		Commercial Motor Guides	
	1987	1999	1987	1999
Preferred flow				
Mean	26,180 cfs	20,113 cfs	20,622 cfs	20,074 cfs
Standard Deviation	10,583	5,819	6,096	6,030
Sample Size	50	62	78	54

Respondents were asked for the minimum flow level for running the river safely with passengers. Table 16 indicates that mean reported flow levels were slightly lower by about 1,000 cfs than in Bishop et al. (1987) for both oar and motor guides. Another item asked for the maximum flow level for running safely with a group. Table 17 indicates that mean reported flow levels were lower for both oar and motor guides by about 9,000 cfs compared to that reported by Bishop et al. (1987).

Table 16. Guides' Minimum Constant Flow Level for a Safe Trip

Flow	Commercial Oar Guides		Commercial Motor Guides	
	1987	1999	1987	1999
Minimum flow				
Mean	9,198 cfs	8,162 cfs	8,405 cfs	7,850 cfs
Standard Deviation	4,859	3,497	3,344	3,112
Sample Size	52	65	78	57
Percent with minimum level of 3,000 cfs or above	88	92	100	100
Percent with maximum level of 10,000 cfs or above	52	42	42	33

Table 17. Guides' Maximum Constant Flow Level for a Safe Trip

Flow	Commercial Oar Guides		Commercial Motor Guides	
	1987	1999	1987	1999
Maximum flow				
Mean	54,910 cfs	45,881 cfs	59,014 cfs	51,250 cfs
Standard Deviation	23,635	23,462	25,292	29,078
Sample Size	50	59	69	44
Percent with maximum level of 30,000 cfs or less	12	32	9	34
Percent with maximum level of 40,000 cfs or less	32	51	20	52

Like the Bishop et al. study, a set of items asked questions about actions taken at various flow levels (Table 18). Actions generally were reported at low and high flows, and the curves depicted in Figures 5, 6, and 7 are generally U-shaped. For example, the proportion of guides who reported running their motors or rowing more or less than usual to compensate for the river current was high for constant flows either below 10-15,000 cfs or above 25-30,000 cfs (Figure 5). In addition, Figure 6 indicates that at most flow levels guides were stopping less to scout major rapids in 1999 compared to 1987; difference may be due to the lack of fluctuating flows in 1999 which provided more certainty about the characteristics of rapids.

Table 18. Actions Taken at Various Constant Flow Levels

	Proportion Citing Each Action at Each Constant Flow Level (cfs x 1000)															
	1000-5000cfs		5000-10000 cfs		10000-15000 cfs		15000-20000 cfs		20000-25000 cfs		25000-35000 cfs		35000-50000 cfs		50000+ cfs	
	Oar	Motor	Oar	Motor	Oar	Motor	Oar	Motor	Oar	Motor	Oar	Motor	Oar	Motor	Oar	Motor
Stop at major rapids, such as Houserock, Hance, Crystal or Lava to scout	85%	88%	88%	81%	73%	23%	67%	12%	70%	11%	79%	30%	82%	61%	82%	75%
Stop at any other rapids to scout	67	79	58	58	9	12	6	7	6	5	22	12	43	37	48	46
Row or motor more than usual to make up time	84	90	87	84	39	14	6	4	5	2	3	0	3	0	3	0
Row less than usual or turn off motor because you are ahead of schedule	2	2	2	2	5	2	18	9	46	28	76	60	79	79	76	84
Hurry to get out of camp in the morning	72	70	82	65	45	33	10	19	5	14	3	14	3	11	3	11
Have trip members walk around a rapid because the water is too low	70	67	42	23	3	4	0	0	0	0	0	0	3	0	3	0
Have trip members walk around a rapid because the water is too high	2	2	0	2	0	2	0	2	3	2	16	2	51	16	73	33

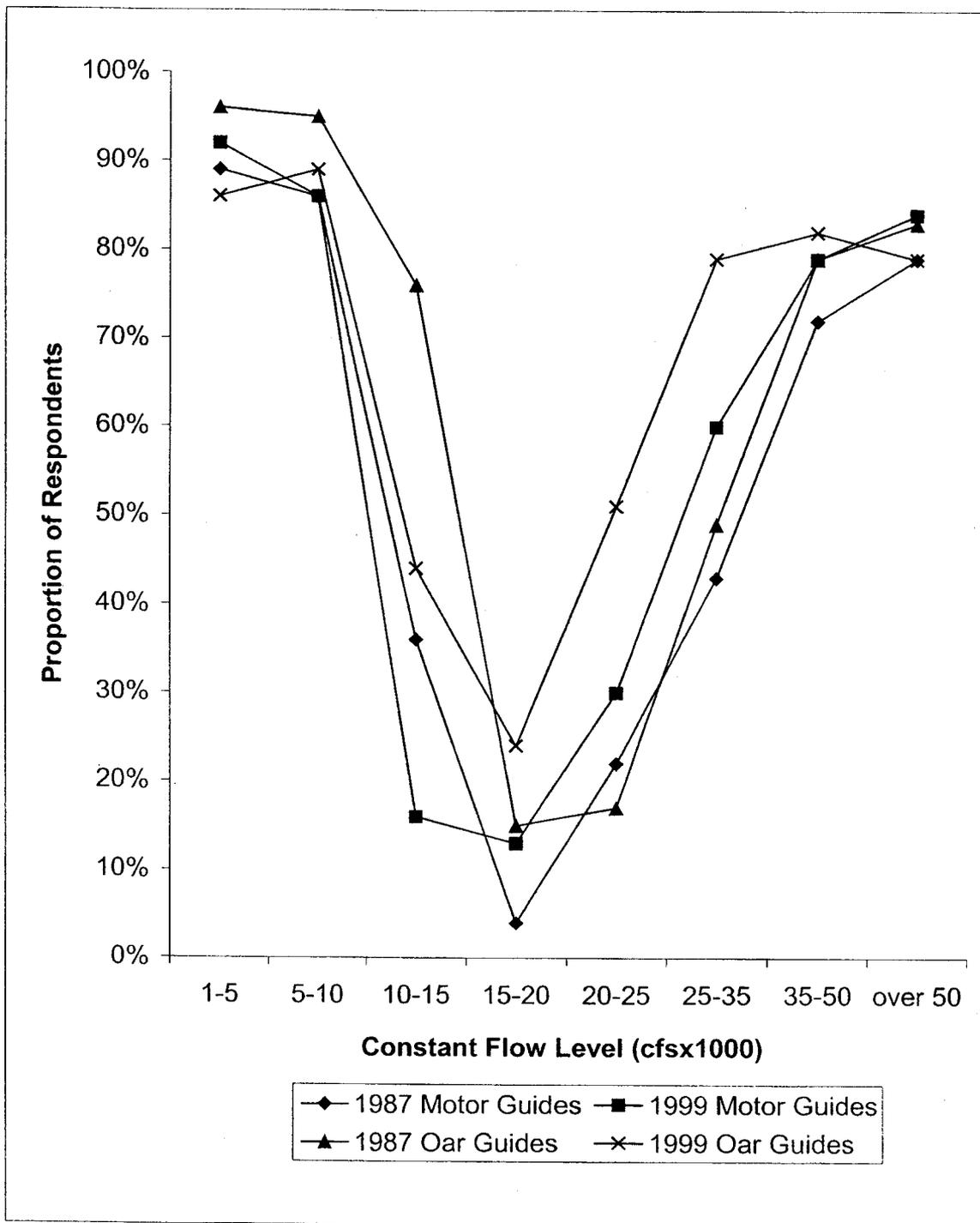


Figure 5. Guides Who Run Motor or Row More or Less to Compensate for the River Current at Constant Flows

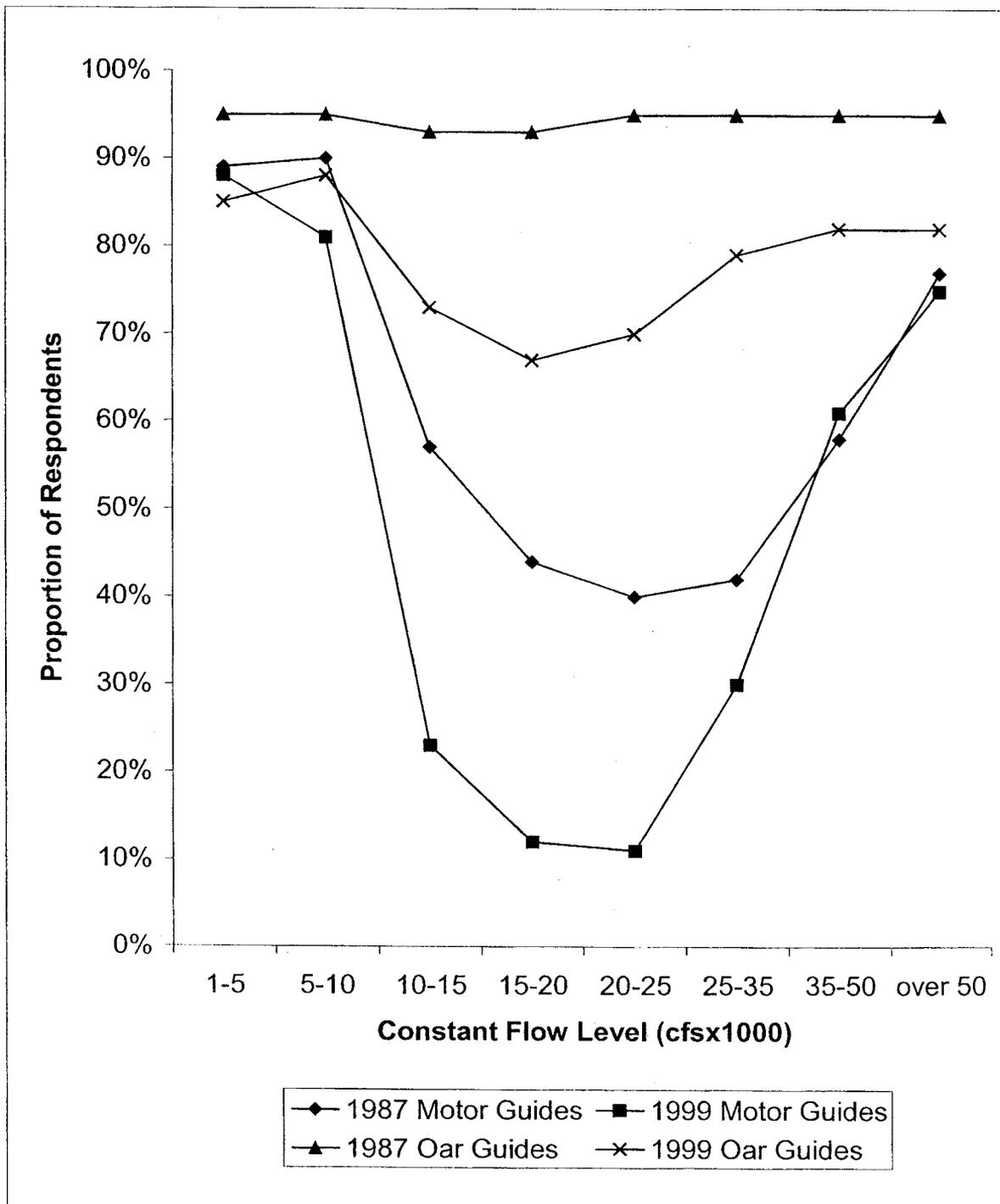


Figure 6. Guides Stopping to Scout Major Rapids at Constant Flows

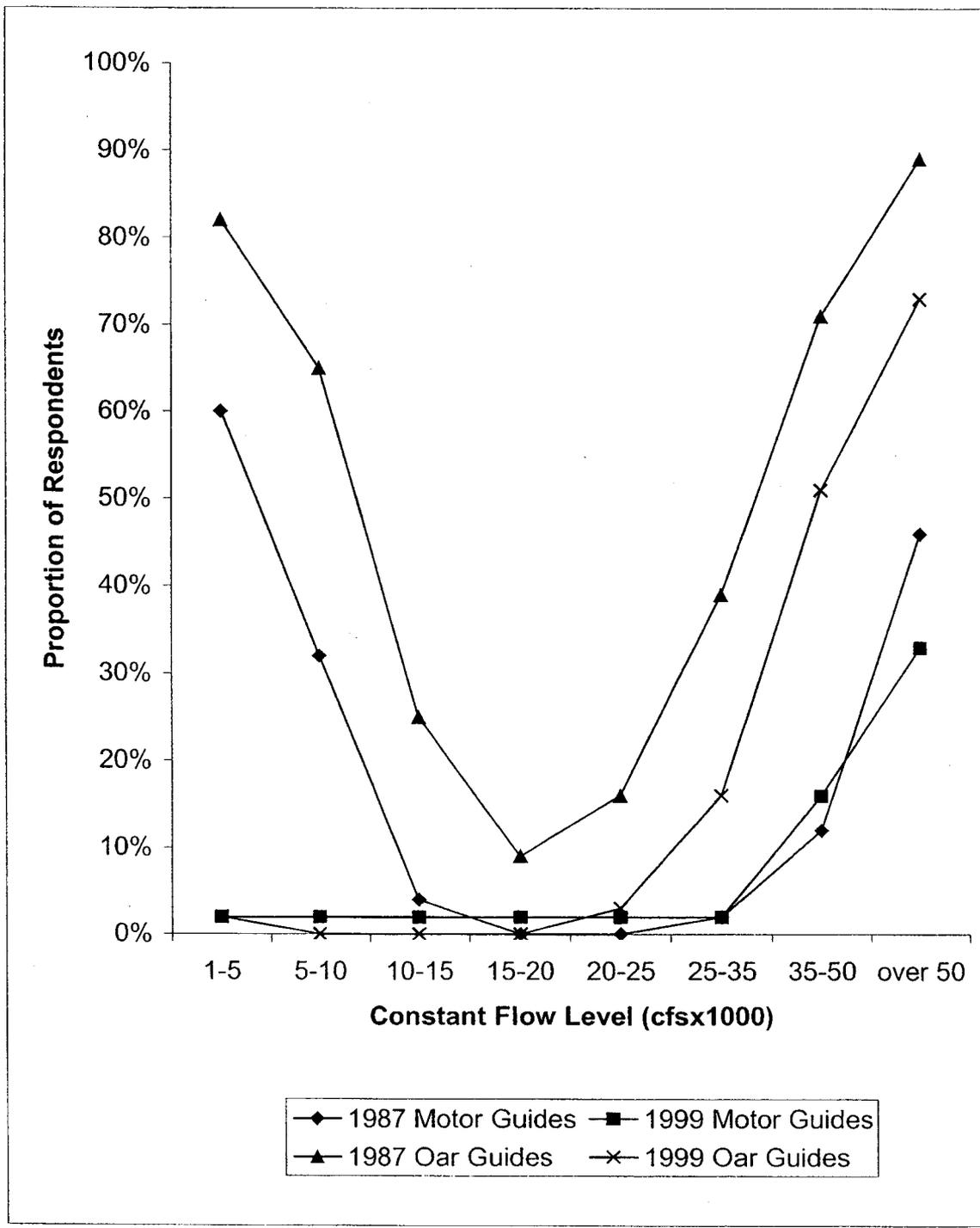


Figure 7. Guides Who Have Passengers Walk Around Rapids at Constant Flows

Preferences for Beach Characteristics

Multinomial logit choice models for river guides were estimated in the same way as for commercial patrons and private trip leaders. Model coefficients, standard errors and *t* tests are presented in Tables 19 and 20. Figure 8 contains plots of the choice functions versus size for both camping and lunch sites. The quadratic size coefficients are negative and statistically significant (concave downward). From Figure 8 we observe the optimal size for lunch site is about 850 square meters, and about 1,100 square meters for a camp site. Presence of shade has a significant positive utility for both lunch and camp sites. Vegetation has a negative utility for camp sites, and for lunch site it is non-significant.

Compared to the preferences of the commercial patrons and private trip leaders, the sampled river guides were more critical with their preferences for beaches. Compare the *lower intercepts* from Tables 19 and 20 with the intercepts from Tables 7 through 10, which indicate that guides were the most likely to check "neither" beach is acceptable (and pass by both of the beaches that were presented in a pair of photographs).

Table 19. Preferences for Beach Characteristics: Guides' Camping Decisions

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	.645	.109	5.946	.0000
Size (linear)	.084	.007	11.889	.0000
Size (quadratic)	-.003	.000	-5.346	.0000
Shade	.428	.063	6.778	.0000
Vegetation	-.285	.063	-4.550	.0000
Adjusted McFadden's Rho ²	.587			

Table 20. Preferences for Beach Characteristics: Guides' Lunch Decisions

Multinomial Logit Estimations	Parameter Estimate	SE of Parameter	t	p
Intercept	.462	.104	4.428	.0000
Size (linear)	.041	.006	7.111	.0000
Size (quadratic)	-.003	.000	-6.322	.0000
Shade	.325	.059	5.512	.0000
Vegetation	.004	.057	.071	.9430
Adjusted McFadden's Rho ²	.375			

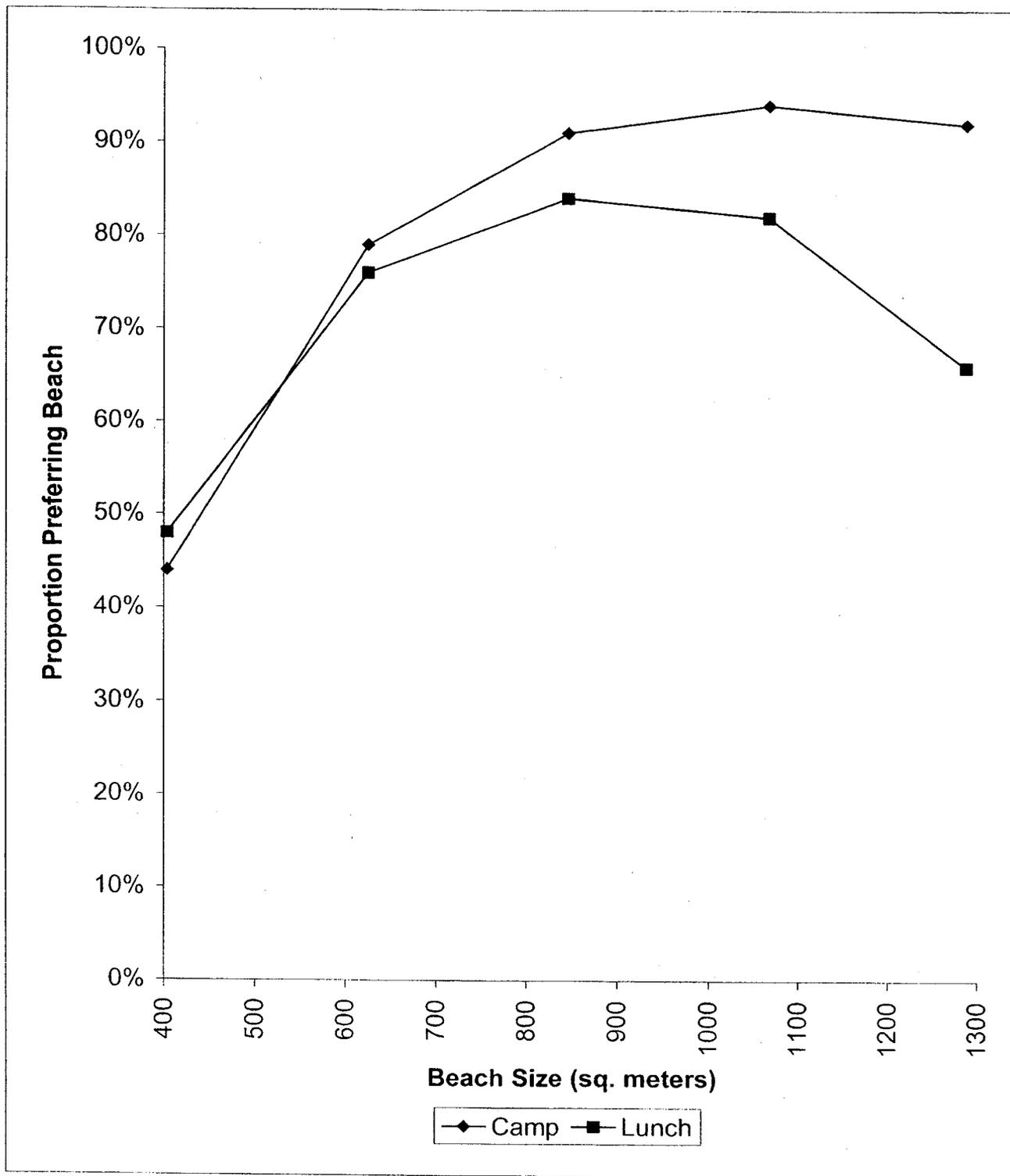


Figure 8. Guides' Preferences for Beach Size (Assuming no shade and no vegetation)

As with the MNL analyses for private trip leaders and commercial patrons, additional MNL analyses were conducted which segmented respondents and were based upon number of past rafting trips, number of years as a guide, and whether oar or motor was their typical raft type. In general, the segmentation variables were not significant nor were their interactions with the three primary variables. In other words, regardless of the level of experience in rafting, their years as a guide, or whether oar or motorized rafts, the guides responding to this study were similar to each other in their preferences for beach characteristics.

The item on the questionnaire immediately following the beach photographs was an open-ended question prompting for further information about their preferences for beach characteristics. The responses are similar to those of the patrons and privateers. As depicted in Table 21, the largest proportion of respondents indicated shade and beach size were the most important attributes of beaches. The source of shade, if indicated, usually was trees or other vegetation, but some respondents also reported shade from the shadow of canyon walls. Other characteristics, not assessed by the photographic images included: day-hiking opportunities, location on the river, privacy, weather, and season. Although many of the guides' responses stated that they recognized the beaches (and thus knew contextual information about the beach and its location), guides preferences for a large size beach and shade were highly consistent.

Table 21. Preferred Beach Characteristics: Guides

Preferred Attribute	Proportion of Respondents
Shade	58%
Large beach	14
Flat beach	11
Vegetation	11
Hiking availability	10
Wind protection	9
Privacy	8

Survey of Anglers

The visitor use counts from Glen Canyon National Recreation Area indicate that 21,900 anglers fished in and around Lee's Ferry during 1998. About three-fourths of these anglers brought boats with them. The character of fishing activity has changed markedly since 1985. Catch regulations are now more restrictive; during the sampling for this study there was a bait restriction of only flies, lures, and artificial bait (i.e., rubber worms) permitted, with no live bait, salmon eggs, power bait, or added scents. Also, as a "slot limit," fish between 16 and 22 inches could not be kept.

Since there was not an inclusive list of anglers at Lee's Ferry, an interviewer was trained to sample anglers, invite them to participate in the study, and conduct a brief on-site interview. Anglers were sampled between August and November 1998 on 28 selected weekend and weekdays. Anglers were sampled using a systematic random selection process in which every n^{th} angler (on sampling days) was contacted and invited to participate. Sampling days were selected to be distributed evenly over the sampling period and to be approximately half weekday and half weekend days. About three-fourths of the anglers were contacted while putting-in or taking-out a boat at the ramp; the remainder were interviewed on the bank trails around Lee's Ferry. During the time period of sampling, average daily flows ranged between 11,000 to 21,000 cfs; and about 6,200 anglers fished from Lee's Ferry which is about 28% of the year's total.

Of the 395 anglers who were sampled, 12 refused to participate and 52 were repeat anglers (who were sampled twice at different times). From the remaining 331, there were 295 names randomly selected and mailed questionnaires. Of these, 8 had undeliverable addresses, 4 wrote back refusing to participate, and 238 completed and returned their questionnaires, resulting in a response rate of 83% (Table 22). See Appendix D for a copy of the anglers questionnaire with frequency distribution of their responses.

Table 22. Lee's Ferry Angler Response Rates

	Anglers
Completed questionnaires	238
Undeliverable addresses	8
Refused to participate	4
Total questionnaires mailed	295
Adjusted Response Rate*	83%

* Adjusted response rate was arrived at by dividing the number of completed questionnaires into the total questionnaires mailed, less the number of questionnaires returned with undeliverable addresses. Those who refused to participate are considered non-respondents in the calculations

Relative Importance of Setting Attributes

Relative importance of setting attributes was assessed by asking anglers to rate the importance level of several attributes that contribute to an “excellent or perfect fishing trip at Lee’s Ferry for you,” and then again, by asking them to rate the importance level of several attributes that contribute to “a poor fishing trip.” Compared to the results found by Bishop et al. (1987) for attributes related to perfect trips, anglers in this study reported a decrease in the importance of catching a trophy fish and in catching their limit, and reported an increase in seeing few other people (Table 23). In addition, the attributes with the highest ranking of importance were not assessed by Bishop et al. (1987) and are related to fish health: catching healthy looking fish and catching fish that have a lot of energy.

Table 23. Attributes of a Perfect Glen Canyon Fishing Trip

Attribute	Proportion of Respondents Stating Attribute is Important*							
	All Anglers		More than Two Years Experience		Experience with Fluctuating Flows		Boat Anglers	
	1987	1999	1987	1999	1987	1999	1987	1999
Good weather	84%	79%	80%	77%	80%	77%	84%	81%
Catching a trophy fish	79	66	79	71	85	70	83	71
Catching your limit	68	45	59	51	64	42	68	64
Seeing few others	67	83	66	85	76	84	70	87
Low water	60	67	66	69	70	70	59	55
High water	54	55	54	56	59	54	54	58
Falling water level	52	55	55	54	59	57	47	60
Rising water level	51	64	56	68	54	66	49	67
Camping along the river	26	32	27	40	34	32	27	37
Catching a lot of fish	n/a	83	n/a	85	n/a	83	n/a	85
Catching a healthy-looking fish	n/a	99	n/a	99	n/a	99	n/a	97
Catching fish that have a lot of energy	n/a	98	n/a	99	n/a	99	n/a	95

*These percentages are derived from respondents’ answers to questions asking whether the reason is very, somewhat, or not important. Percentages reported here record the proportion of respondents saying the reason is somewhat or very important.

Compared to the results found by Bishop et al. (1987) for attributes related to a poor fishing trip, anglers in this study reported that the importance of “not catching your limit,” “not catching a trophy fish,” and “low water” decreased from the 1987 results. In addition, “not being able to get upstream,” “boat/motor trouble due to low water”, and “seeing many others” increased from the 1987 results (Table 24).

Table 24. Attributes of a Poor Glen Canyon Fishing Trip

Attribute	Proportion of Respondents Stating Attribute is Important*							
	All Anglers		More than Two Years Experience		Experience with Fluctuating Flows		Boat Anglers	
	1987	1999	1987	1999	1987	1999	1987	1999
Catching no fish	89%	92%	85%	92%	83%	92%	88%	93%
Not being able to get upstream	79	89	70	87	76	90	87	98
Poor weather	78	76	76	74	75	73	77	78
Boat/motor trouble due to low water	74	81	67	81	72	83	81	90
Seeing many others	71	87	64	88	71	91	74	92
Not catching your limit	63	45	58	48	60	46	64	61
High water	61	71	66	69	71	60	61	59
Low water	61	56	69	59	75	56	61	61
Falling water level	58	64	54	65	67	63	54	63
Rising water level	57	64	61	63	56	63	55	66
Not catching a trophy fish	57	35	53	37	56	37	59	37
Not being able to camp along the river	31	39	29	44	33	29	33	43
Not catching a lot of fish	n/a	75	n/a	73	n/a	76	n/a	80
Other anglers at my fishing spot	n/a	77	n/a	79	n/a	78	n/a	70

*These percentages are derived from respondents' answers to questions asking whether the reason is very, somewhat, or not important. Percentages reported here record the proportion of respondents saying the reason is somewhat or very important.

To explore further the type of fishing opportunities preferred by Glen Canyon anglers, respondents were asked for their level of agreement on several items related to preferences for size of fish and number of fish caught. In general, there were a diversity of opportunities preferred by anglers regarding fish size and number (Table 25). About two-thirds of respondents agreed with the statement "I was satisfied with the number of fish I caught." About one-half of respondents agreed with the statement "I was satisfied with the size of the fish I caught." About one-fifth disagreed with the statement "I would rather catch one or two big fish than ten smaller fish."

Table 25. Anglers' Agreement with Type of Fishing Opportunity

Statement	Level of Agreement				
	Strongly Agree				Strongly Disagree
I was satisfied with the number of fish I caught	39%	26%	23%	7%	4%
I was satisfied with the size of the fish I caught	19	32	31	12	6
Most of the fish I caught from the Colorado River were about the same size	16	39	28	11	5
Almost all of my fishing in the Colorado River is catch-and-release	77	9	6	3	5
The more I catch, the happier I am	33	27	24	12	5
A successful trip is one in which many fish are caught	22	22	36	14	6
I would rather catch a large number of medium-sized fish than a small number of large-sized fish	6	23	37	25	9
I would rather catch one or two big fish than ten smaller fish	18	27	33	19	4
I was bothered by catching too many smaller-sized fish	5	10	19	31	35

In a question that asked respondents for their reasons for fishing at Lee's Ferry, close to 90% reported they thought they would catch a large fish (Table 26), which is a slight increase compared to the findings of Bishop et al. (1987). Responses to all the items in this question indicated that anglers rated each reason as more important compared to the ratings of the Bishop et al. (1987) study. Thus, in 1999 compared to 1987, more anglers wanted to catch large fish, lots of fish, stay close to home, and perceived a scarcity of other trout fishing areas.

Table 26. Reasons for Fishing in Glen Canyon

Reason	Proportion of Respondents Stating Reason is Important*							
	All Anglers		More than Two Years Experience		Experience with Fluctuating Flows		Boat Anglers	
	1987	1999	1987	1999	1987	1999	1987	1999
Thought I would catch a large fish	86%	88%	82%	91%	84%	90%	88%	85%
Thought I would catch a lot of fish	75	85	73	85	75	84	77	82
Wanted to fish in Glen Canyon	57	86	50	87	51	87	65	84
Few other trout fishing areas available	41	61	37	71	40	64	45	51
Close to home	33	50	39	64	42	56	28	35
Wanted to catch a trophy fish	n/a	52	n/a	61	n/a	59	n/a	53

*These percentages are derived from respondents' answers to questions asking whether the reason is very, somewhat, or not important. Percentages reported here record the proportion of respondents saying the reason is somewhat or very important.

Perceptions of Flow Levels

To understand the level of past fishing experience at specified flow levels, respondents were asked if they ever fished at Lee's Ferry under various river flow conditions. Table 27 indicates that 1999 respondents were much more experienced than their counterparts from 1987. For example, in 1987 54% of respondents reported past experience with fluctuating flows, whereas in 1999 78% of respondents reported such experience.

Table 27. Angler Fishing Experience at Specified Flow Levels

Responses	Proportion Reporting Experience with Flow							
	High Flow (Greater than 16,000 cfs)		Medium Flow (9,000- 16,000 cfs)		Low Flow (Less than 9,000 cfs)		Fluctuating Flow	
	1987	1999	1987	1999	1987	1999	1987	1999
Yes, Experienced	n/a	58%	44%	70%	38%	58%	54%	78%
No, Did Not Experience	n/a	11	20	4	27	13	16	5
Don't Know	n/a	32	36	26	35	29	30	17

Anglers were asked to evaluate their satisfaction with constant flow levels between 2,000 and 80,000 cfs on a 5-point scale ranging from "very satisfactory" to "very unsatisfactory." Responses reflected a bell-shaped curve as shown in Figure 9 with the peak of the bell at a lower range of flows compared to the satisfaction reports of rafters. Below 5,000 cfs responses were very unsatisfactory. Above 7,500 cfs and below 20,000 cfs, responses were above the neutral line and considered as satisfactory or very satisfactory constant flows. Peak levels of satisfaction ratings for anglers occurred between 10,000 and 15,000 cfs.

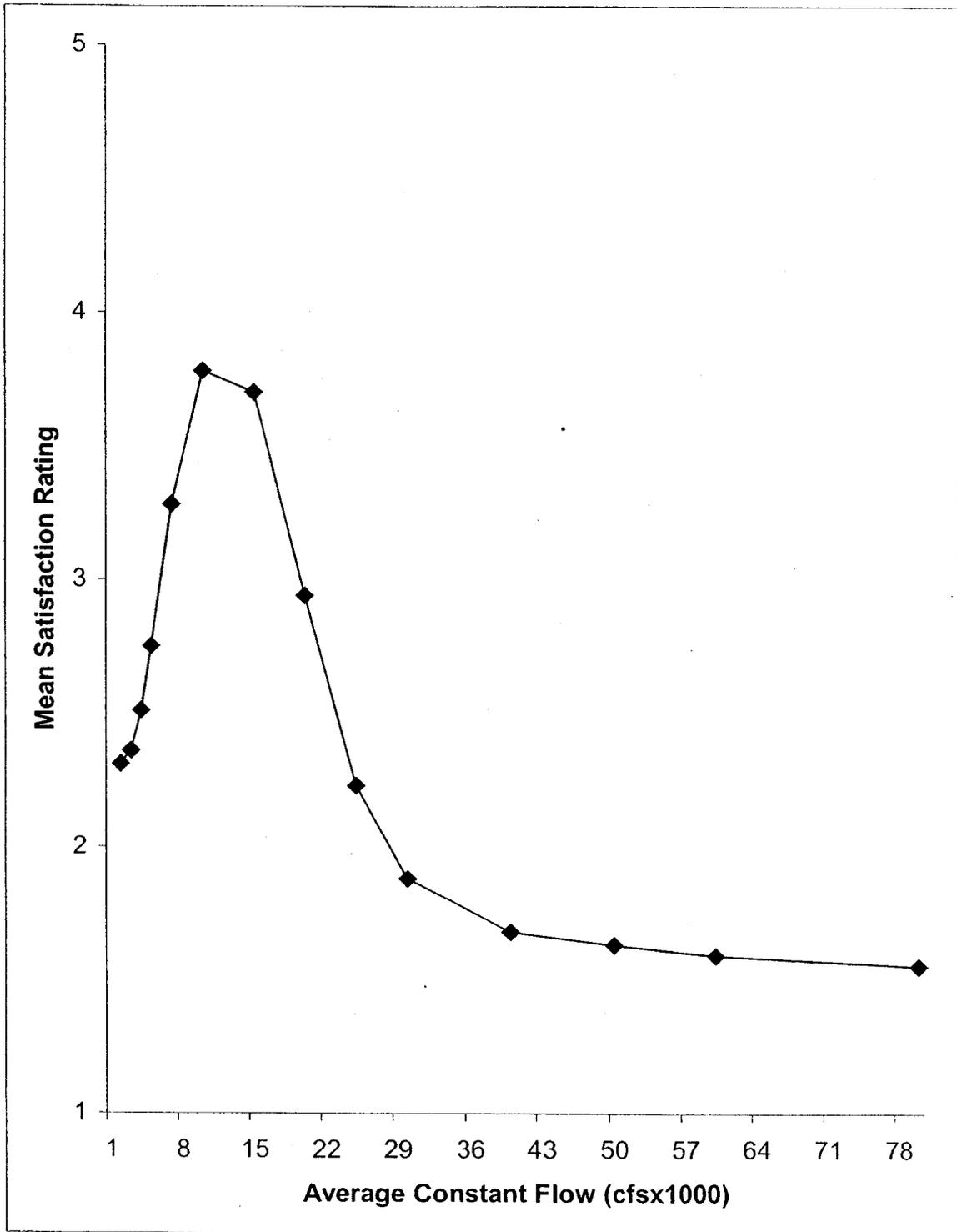


Figure 9. Angler Satisfaction at Constant Flows

Survey of Day-Trip Rafters

Glen Canyon National Recreation Area reports that 61,600 visitors took a day or half-day trip from the Dam to Lee's Ferry during 1998. These rafters, who were sampled in November 1998 and March/April 1999, experienced average daily flows ranging between 10,000 to 14,000 cfs.

On the 15 sample days (of which most were weekdays), day-trip rafters were contacted as they walked from the Lee's Ferry boat dock to a parked tour bus (which gave them a return trip to Page, Arizona). A interviewer was trained to sample day-trip rafters, invite them to participate in the study, and if willing, visitors were invited to provide their name and address in order to receive a mailback questionnaire. There were 22 day-trip rafters contacted in November, and 144 contacted in March and April. There were not any day-trip rafters who refused the invitation to participate; however there were 15 visitors contacted who had non-U.S. addresses and were dropped from the sample. There were 47 visitors with duplicate addresses (i.e., most likely a husband and wife couple) who were dropped from the sample. Of the final set of 166 sampled day-trip rafters, 5 names had undeliverable addresses, and 132 completed questionnaires were returned, resulting in a response rate of 82% (Table 28). See Appendix E for a copy of the day-trip rafter questionnaire with frequency distributions of their responses.

Table 28. Day-Trip Rafter Response Rates

	Day Trip Rafters
Completed questionnaires	132
Undeliverable addresses	5
Total questionnaires mailed	166
Adjusted Response Rate*	82%

* Adjusted response rate was arrived at by dividing the number of completed questionnaires into the total questionnaires mailed, less the number of questionnaires returned with undeliverable addresses.

Relative Importance of Setting Attributes

To provide a context to understand the effects of flow-related attributes on recreation opportunities, assessing the relative importance of various setting attributes for day-trip rafters was useful. The day-trip rafter questionnaire contained a set of items that asked respondents to indicate the importance of various setting attributes. The items ranked highest in importance were being in a natural setting, learning about the Canyon's history, good weather, having confidence in the guide, and being on the river (Table 29).

Table 29. Importance Ratings of Attributes for Day Trip Rafters

Attribute	Overall Ratings*
Being in a natural setting	3.0
Being on the Colorado River	2.8
Learning about the history of the Grand Canyon	2.8
Well-paced and organized trip	2.8
Good weather	2.8
Having confidence in my guide or trip leader	2.8
Floating on quiet stretches of river	2.7
Visiting archaeological sites	2.7
Feeling safe	2.7
Seeing wildlife	2.6
Being with family and friends	2.6
Interacting with my guide	2.6
Stopping to explore along the river	2.6
Relaxing, getting away from it all	2.5
Learning about the Glen Canyon Dam	2.4
Seeing the Canyon in one day	2.3
Seeing few people while floating	2.2
Starting the trip at the dam	2.2
Not having to make advance plans for the trip	2.2
Stopping for lunch along the river	1.9
Learning about others on the trip	1.5

* Overall ratings are based on a scale of 1= not important to 3= very important.

Perceptions of Flow Levels

The sampled day-trip rafters were asked if they knew the expected river water level on the date of their trip. More than 90% reported that they did not know it (Table 30), which is almost the same proportion reporting such in Bishop et al. (1987). Respondents also were asked about their preferences for river flow level. More than half of respondents indicated that they did not have a preference (Table 31), which is a similar proportion to the findings reported by Bishop et al. (1987). Sampled day-trip rafters also were asked if they knew the water temperature before arriving at the river, and if their trip would have been more enjoyable if the "river water were warmer." About one-third of respondents reported knowing the river water temperature, and just 11% indicated preferences for warmer water (Table 32).

Table 30. Day-Trip Rafters' Knowledge of Water Level

Response	Proportion Who Knew the Water Level	
	1987	1999
Did not know the expected water level	94%	92%
Knew expected water level		
• influenced decision to take raft trip	0	2
• did not influence decision to take raft trip	6	6

Table 31. Day-Trip Rafters' Preferred Water Level

Response	Proportion Checking Response Category	
	1987	1999
Preferred lower water	3%	1%
Preferred current level	28	37
Preferred higher water	13	9
Don't know or doesn't matter	56	53

Table 32. Day-Trip Rafters' Preferences for Water Temperature

Response	Proportion Who Agreed With Each Statement
Knew the expected water temperature	32%
Trip would have been more enjoyable if the water were warmer	11

CONCLUSIONS

This study assessed preferences of five recreational user groups of the Colorado River in Grand Canyon. The assessments primarily targeted the relative importance of flow-related setting attributes, perceptions of river flow, and preferences for beach characteristics. The two phases of this research allowed the user surveys of phase 2 to be partially grounded in the stakeholder issues emerging from phase 1. In addition, user preferences were assessed to compare with those found by Bishop et al. (1987). The conclusions, which are based upon the stakeholder and user assessments, follow directly from the major objectives (p. 6) of this study.

The principal conclusions from this study are the following:

1. *Glen Canyon Dam releases have substantial impacts on recreational opportunities in the river corridor.* Private trip leaders, commercial patrons, river guides, and anglers all reported preferences for various flow-related setting characteristics. For private trip leaders and commercial patrons, time at attraction sites, lack of crowding at attraction and camp sites, and large and long rapids contributed to a high quality recreational trip. Sampled private trip leaders reported an ideal constant flow of about 23,000 cfs. River guides reported that having time to stop at attraction site, hike in side canyons, and being the only group at a camping beach contributed to a high quality recreation. Sampled river guides reported an ideal constant flow of about 20,000 cfs. For anglers, being able to fish without being crowded, and habitat that produces healthy and vigorous fish contributed to a high quality trip. Sampled anglers reported an ideal constant flow of about 10,000 cfs. Day-trip rafters are probably the least sensitive to flow-related characteristics due to the short-term nature of their trip and their lack of knowledge about flow-related issues.

2. *The negative effects of fluctuating flows on recreational use were not substantial problems during the time period of this study.* Results from stakeholder discussions of phase 1, which included dialogue with a diversity of river recreationists, concluded that fluctuating flow problems have been effectively addressed by the ROD (1996), and thus, fluctuating flows were not a high priority issue. In addition, the final open-ended item on the questionnaires asked respondents if they had any comments about recreation on the Colorado River; although the sampled users commented on most topics (see Appendices A through E), comments related to fluctuating flows were scarce. Compared to the Bishop et al. (1987) study in which fluctuating flows were found to be a major source of negative impacts from Glen Canyon Dam operations, this study indicated that such problems have been greatly reduced. However, while fluctuating flows are not currently a problem, the effects of flow regimes based on the ROD (1996) after a period of low run-off years is unknown.

3. *The recreational impacts of constant flow releases from Glen Canyon Dam were remarkably unchanged since the Bishop et al. (1987) study.* Attitudes and preferences regarding constant flows have not changed significantly in the past 15 years or so. Across the five user groups, several trip attributes exhibited similar levels of importance between this study and Bishop et al. (1987). For examples, private trip leaders and commercial patrons ranked stopping and hiking at side canyons as highly important to their raft trip across both studies. The satisfaction of white-water rafters at various constant flow levels was almost identical between the previous study and this one. Also, about two-thirds of responding anglers in both studies indicated that "low water" was important to a perfect Glen Canyon fishing trip.

There are still clear differences between rafters and anglers regarding preferences for constant flows. However differences in seasonal use patterns between rafters and anglers provides potential for Glen Canyon Dam operations to integrate their preferences. Although many of the conclusions from Bishop et al. (1987) are still relevant, one in particular addresses this point.

Flow regimes combining high constant flows in the months of May through September with moderate or low flows during the remainder of the year would be likely to produce the largest recreational benefits. (Bishop et al., 1987, p. 176)

As an important exception to the general similarity between the two study results, the guides' maximum constant flow for a safe trip was lower in this study than in the previous one; for example 32% of 1999 sampled oar guides reported a maximum safe flow of "30,000 cfs or less" whereas 12% of 1987 sampled oar guides reported the same (comparison in Table 17). It may be that sampled guides were influenced by flow levels at the time of reporting; in other words the flows of the late-1990s were lower than the flows of the mid-1980s which may have influenced guides appraisal of the maximum constant flows for a safe trip.

4. *The 1996 spike flow, as it affected beach development, was perceived as significantly improving recreational opportunities for rafters.* At least two-thirds of the sampled river guides indicated (through several different measures) that spike flows improved beaches and enhanced the quality of recreational river running. Of the responses to the last open-ended question from the private trip leader and river guide questionnaires, the effect of high-volume release flows was a frequently mentioned topic. Invariably the responses were positive about the impacts of such flows and their ability to simulate pre-dam seasonal flooding (see Appendices for a verbatim listing of open-ended responses). In addition, sharing a camp with another party of rafters was consistently reported as significantly detracting from the quality of recreation. To the extent that the impact of spike flows increase the number of useable beaches in the river corridor, the need to share a camp with another party will be minimized. In particular, competition for camping beaches in critical reaches of the river corridor was a primary source of dissatisfaction. Spike flows are being promoted as a means to achieve an increase in number and size of beaches, and

hence, they have considerable support amongst the recreational public. However, there may be other strategies to increase the number and size of beaches in the critical reaches of the river corridor, and these would probably be supported by recreationists. A key component of future GCMRC monitoring efforts would be to assess the increased number, size, and location of useable beaches due to spike flows and to identify factors affecting beach durability and persistence.

The beneficial effects of spike flows on fishing opportunities was not as apparent as the effects on rafting opportunities. The two most important attributes of a Glen Canyon fishing trip were catching "a healthy looking fish" and catching one with "a lot of energy." To the extent that spike flows enhance the health and vigor of fish, anglers also would be in support of such release flows. However, it is not clear if beach habitat building flows are the same as fish habitat building flows. Another key component of future GCMRC monitoring efforts would be to assess the relationship between spike flows and fish habitat with emphasis on the identification of factors affecting fish health and vigor.

5. *Large size beaches with shade from trees are setting characteristics with highly reliable and strong user preferences.* Across three user groups (i.e., private trip leaders, commercial patrons, and river guides) and across several segmentation variables (i.e., past experience, boat type, group size), the larger beaches were the most likely to be preferred for camp and lunch, and the beaches with shade from trees were likely to be preferred. Even though this study employed three different base images as well as allowed for other sources of external variation, the finding that users generally preferred beach campsites greater than 800 square meters that include shade from trees exhibited high consistency across the three groups of white-water boaters. In contrast, low-growing vegetation on beaches was not related to strong user preferences. Responses to open-ended questions about preferred beach characteristics also indicated strong preferences for large size beaches and shade. In addition, the size of beach was consistently ranked from a series of attributes as being moderately important by private trip leaders, commercial patrons, and guides.

6. *There is both commonality and disparity between user preferences and stakeholder directions.* The major points of overlap between user preferences and stakeholder issues were: concern over the impact of spike flows, lack of interest in fluctuating flows, and a general awareness that various characteristics related to constant flows have a significant impact on recreational use.

Points of disparity between user preferences and stakeholder issues are based on the plurality of viewpoints represented amongst stakeholders. Some stakeholders may resist the development of explicit linkages between beach habitat building flows and the enhancement of recreational quality. The context for discussion of spike flows within the Technical Work Group (TWG) is based primarily upon the physical sciences without explicit linkages to recreation user preferences or social value. Identification of linkages between recreation user preferences and

dam operations provides an expanded context to evaluate decisions about release flows; an expanded context of dam operating decisions *which includes recreation user preferences* would be embraced by some stakeholders and not by others. In addition, some of the Native American tribal concerns questioned recreational use of the river corridor altogether. What for recreational rafters is a leisure experience, for a portion of Native Americans is a sacred journey. Thus any linkages between recreational use and the Colorado River in Grand Canyon is viewed as sacrilege by some stakeholders representing Native American tribes.

As limitations on this study and as grist for future recreation research, the relative importance of various setting characteristics and their linkages to recreation quality needs further investigation. The objectives of this study were directed at understanding relationships between user preferences and flow-related characteristics. Although such objectives ostensibly target managerial relevance, they risk viewing recreational use through an artificially small window that may be unable to capture elements that fully explain high-quality recreation opportunities. As an analogy: when fisheries biologists were asked to study the effect of flows on the humpback chub, they first needed to understand the life-cycle and seasonal patterns of the chub prior to understanding the effect of flows on the chub (see Bureau of Reclamation, 1995). In an analogous fashion, without first understanding more fully the nature of river-based recreation resources and experiences, it is challenging to completely address questions related to flow releases and recreational use.

There are at least two directions for future recreation research derived from the GCMRC's mission. The first is to undertake a study that addresses basic questions about linkages between recreational experiences and resource characteristics within the river corridor. For a majority white-water rafters, the experiential quality of a Colorado River trip is powerfully influenced by travel brochures, the daily and cumulative narratives of river guides during one's trip, and social interaction with other rafters (of which most is positively appraised by recreationists). To what extent are release flows and flow-related characteristics linked to the daily experiences of recreational rafting? Rather than embed research in the framework of dam operations and release flows (as in this study), a recommendation would be to embed the research in the daily experiences of recreationists. The objective of the research would be to identify linkages between recreational experiences and release flows as they emerge in the daily experiences of rafting and fishing. Such results would provide a more comprehensive ability to explain such linkages and their relative importance to recreation quality.

A second direction for future recreation research would be to undertake a study that explicitly addresses use values (both social and economic) *within a regional context*. A user study samples only those people who chose the Colorado River as a place for recreation. However, there are numerous other places within the Colorado Plateau that were either part of recreational trips to the Colorado River (a.k.a., multi-destination trips) or were included in recreationists' "choice set" of destinations for recreation. Understanding destination decision-making for recreationists attracted to the region accounts for trade-offs between resource

characteristics at various destinations, and provides a context to understand the distinction of recreational resource characteristics of the Colorado River below the Dam. In other words, the Colorado River ecosystem as a recreational resource is not insulated from its regional context. This recommendation recognizes that any empirically-based use-valuation should account for the value of resource characteristics within a set of regional opportunities, and be inclusive of preferences for both current and potential users. An example of such research questions would be to assess the extent to which release flows and flow-related characteristics are linked to decisions to choose the Colorado River ecosystem as a place for recreation; the research context would be the decision-making frames of recreationists within the Colorado Plateau. The objective of the research would be to identify linkages between the value of Colorado River recreation and release flows as they emerge in recreationists' decision trade-offs. Such results would provide an improved ability to explain the utility of Colorado River flow-related resource characteristics to recreationists who have made decisions to recreate within the region.

To the extent that the attitudes and preferences reported by sampled recreationists reflect on-river appraisals and decisions, the results indicate that the operations of Glen Canyon Dam continue to have substantial impacts on the quality and distribution of recreational use in the Colorado River corridor.

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**APPENDIX A: COMMERCIAL GUIDE QUESTIONNAIRE WITH
FREQUENCY DISTRIBUTIONS**

Colorado River Guide Study



**Conducted by
University of Illinois
Department of Leisure Studies
104 Huff Hall
Champaign, IL 61820**

**Sponsored by
Grand Canyon Monitoring and Research Center**

There are many different alternatives for flow regimes from the Glen Canyon Dam. The purpose of this study is to find out how different flows affect river running in the Grand Canyon. As an experienced boater, you are the expert and have detailed knowledge of the effects different flows have on river trips. Regardless of whether you have taken 1 trip or 100 trips in the Grand Canyon, your opinions are important. You can contribute your expertise to the decision-making process by filling out this questionnaire.

We're going to ask you about the effect of different water levels on the rapids, campsites, and attraction sites, as well as your preferences for flow regimes in the Grand Canyon. Please answer the questions from your perspective as an experienced boater and trip leader.

1. Please check below the kind of boat you **most often** use for your trips in Grand Canyon:
(Please choose one type of boat)

42% Motor raft → 98% 33 feet or larger
2 smaller than 33 feet

46 Rowing raft → 2 20 feet or larger
98 less than 20 feet

8 Dory

4 Other (please specify) N=7; Kayak (57%); Paddleboat (29)

Please answer the remaining questions BASED ON THE BOAT YOU INDICATED ABOVE.

2. In this first section, we are interested in learning how different water levels affect rapids.

Assuming you were to run an **ENTIRE GRAND CANYON TRIP AT A CONSTANT FLOW**, please specify the minimum and maximum water levels for running rapids safely with a group, the level that provides the best ride, and the level you prefer as a trip leader for running rapids.

Minimum level for running safely with a group
Maximum level for running safely with a group
Best ride for trip members
Water level you prefer as a trip leader

(Please answer in cfs)

Mean=8047 cfs

48383 cfs

20323 cfs

20182 cfs

3a. Which campsites, rapids, or attraction sites would be most problematic **BELOW** your minimum safety level? (*If none, please write none*)

N=260

1. Hance (32%)
2. Horn (27)
3. Crystal (8)

b. Which campsites, rapids, or attraction sites would be most problematic **ABOVE** your maximum safety level? (*If none, please write none*)

N=145

1. Crystal (34%)
2. Lava (16)
3. Havasu (9)

4a. Would certain flow levels cause problems with *access or use of campsites* for you?
(Please ✓ one)

25% No → Please skip to next page, question 4

75 Yes → Please fill in each of the blanks below if applicable

b. Below **mean=7578** cfs, we would have problems getting to camp on time because we would have to spend too much time traveling on the river.

c. Above **mean=32577** cfs, important camps might be unavailable for use because they are under water.

d. With daily fluctuations more than **mean=6942** cfs, we would have problems with hanging up boats, loading boats, or having to move camp.

5a. Would certain flow levels cause problems with *access to or use of attractions* for your trip?
(Please ✓ one)

28% No → Skip to next page, question 5

72 Yes → Please fill in each of the blanks below if applicable

b. Below **Mean=7740** cfs there would not be enough time for stops at attractions because of the need to "make up time."

c. From **mean=12362** to **mean=27521** cfs the amount of time for stops at attractions would be "about right."

d. Above **mean=23221** cfs there would be extra time for stops at attractions.

CONSTANT FLOW LEVELS

6. How would you, as a trip leader using the boat you usually pilot, evaluate each of the following water levels for a Grand Canyon river trip? Assume the water level is constant for the entire trip. *(Please circle one number for each water level)*

Flow Level	Very Satisfactory	Somewhat Satisfactory	Neutral	Somewhat Unsatisfactory	Very Unsatisfactory
2,000 cfs	87	7	3	1	2
3,000 cfs	87	7	3	1	2
4,000 cfs	79	10	7	2	2
5,000 cfs	57	28	9	5	2
7,500 cfs	20	44	21	11	5
10,000 cfs	5	15	36	25	19
15,000 cfs	0	5	9	32	54
20,000 cfs	0	1	2	9	88
25,000 cfs	0	4	3	22	71
30,000 cfs	2	6	14	33	46
40,000 cfs	7	23	18	23	29
50,000 cfs	22	20	23	16	19
60,000 cfs	37	17	18	13	16
80,000 or more	45	14	17	11	13

7a. In the past, have you used information concerning scheduled Glen Canyon Dam releases as a basis for making decisions about your raft trips in the Grand Canyon (e.g. when to run particular rapids, when to camp, where to moor boats, etc.)? (Please ✓ one)

10% No → Please skip to next page, question 9

90 Yes

b. What has been your **MOST** common means of obtaining this information?

N=122; Lee's Ferry (60%)

Telephone (22)

Past experience (19)

Internet (13)

Boatmen (9)

c. How reliable have you found this information about scheduled releases to be? (Please ✓ one)

4% Always accurate

61 Usually accurate

35 So-so

1 Seldom accurate

0 Never accurate

d. Do you have any suggestions on how to improve the ways that water release patterns and general river information are communicated to river runners?

N=80; Keep launch board at Lees Ferry and Phantom Ranch up to date (35%); Rangers with literature on flow patterns at put-ins (18); Radio broadcast, internet, and phone messages (16)

8a. Before arriving at the Colorado River, do you usually know what the river water temperature will be? (Please ✓ one)

4% No

96 Yes

b. Would your river trip(s) have been more enjoyable if the river water were warmer?

(Please ✓ one)

42% No

58 Yes (Please explain) N=61; Comfort (69%) Safety (25)

Average passenger wants warm water (8)

c. Do you notice whether the river water temperature changes during your trip(s)?

(Please ✓ one)

8% No

92 Yes



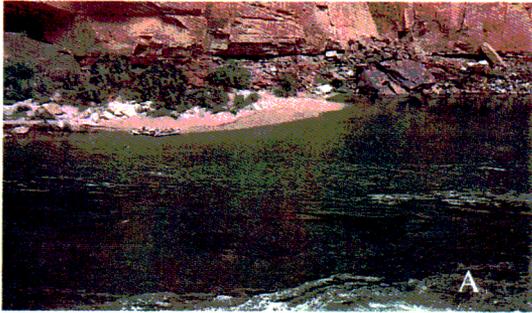
If yes, how does the water temperature usually change? (Please ✓ one)

0% The water becomes colder when moving downstream

98 The water becomes warmer when moving downstream

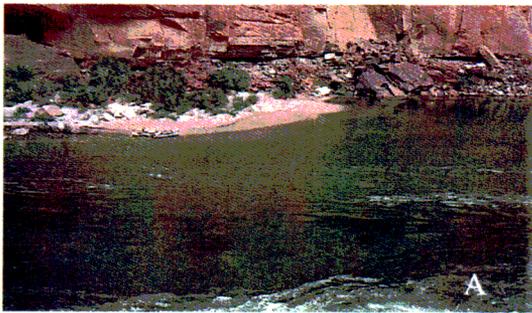
2 The water temperature fluctuates when moving downstream

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



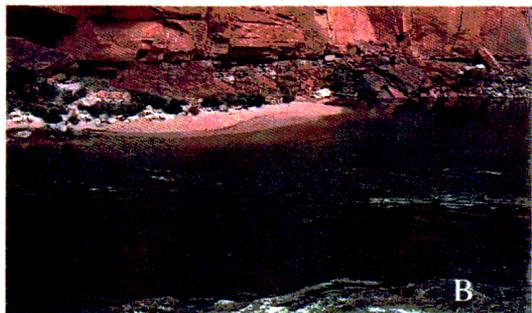
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 63% B- 26% Neither- 11% Both- 0%
 A- 65% B- 20% Neither- 9% Both- 7%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 70% B- 19% Neither- 12% Both- 0%
 A- 53% B- 27% Neither- 13% Both- 7%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 83% B- 11% Neither- 7% Both- 0%
 A- 35% B- 52% Neither- 4% Both- 9%

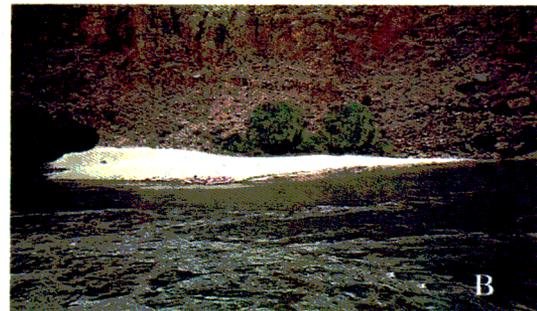
G(n =46)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



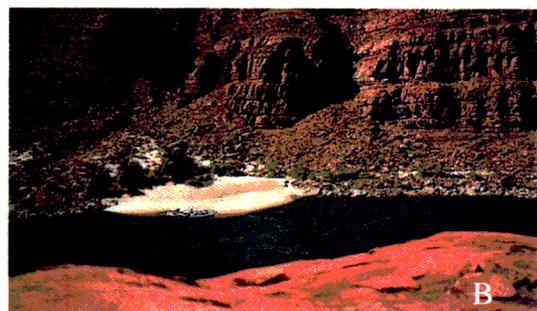
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 14% B- 73% Neither- 9% Both- 5%
 A-30% B- 64% Neither- 6% Both- 11%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 18% B- 67% Neither- 9% Both- 7%
 A- 14% B- 48% Neither- 19% Both- 19%

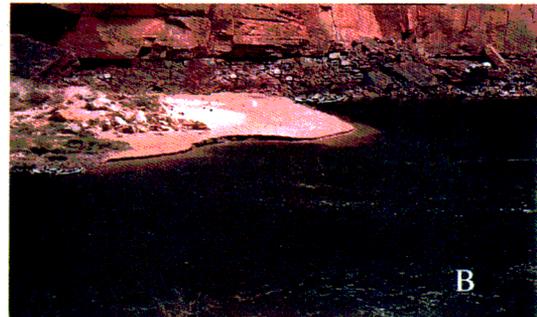


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 44% B- 33% Neither- 22% Both- 2%
 A- 30% B- 41% Neither- 17% Both- 11%

G(n = 46)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



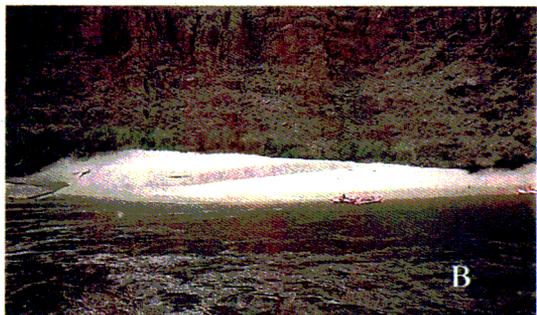
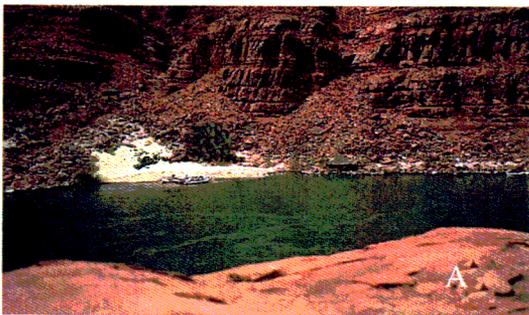
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 43% B- 51% Neither- 3% Both- 3%
 A- 21% B- 55% Neither- 22% Both- 3%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 68% B- 21% Neither- 8% Both- 3%
 A- 42% B- 42% Neither- 22% Both- 3%

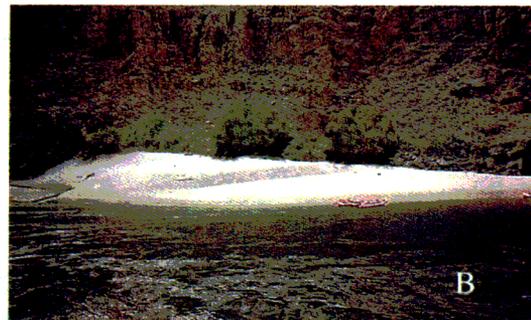


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 11% B- 73% Neither- 14% Both- 3%
 A- 35% B- 27% Neither- 35% Both- 3%

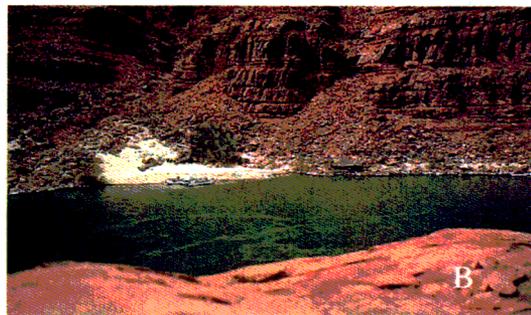
H (n = 38)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



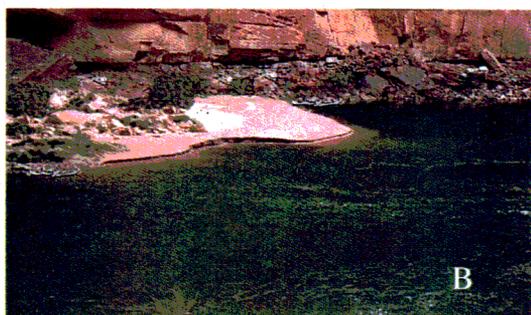
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 11%	B- 74%	Neither- 11%	Both- 3%
A- 32%	B- 32%	Neither- 32%	Both- 3%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 74%	B- 9%	Neither- 14%	Both- 3%
A- 54%	B- 26%	Neither- 17%	Both- 3%

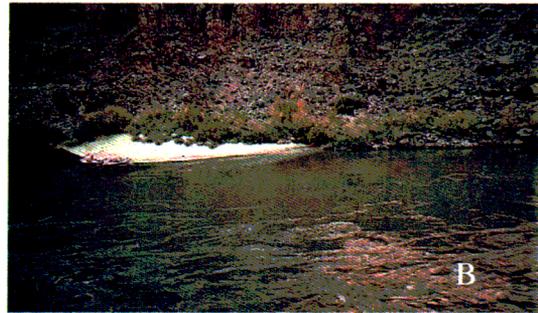
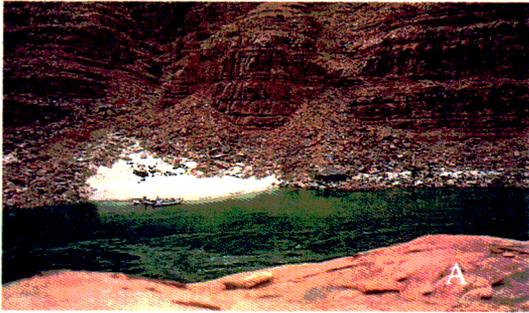


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 31%	B- 49%	Neither- 17%	Both- 3%
A- 11%	B- 57%	Neither- 29%	Both- 3%

H (n = 38)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



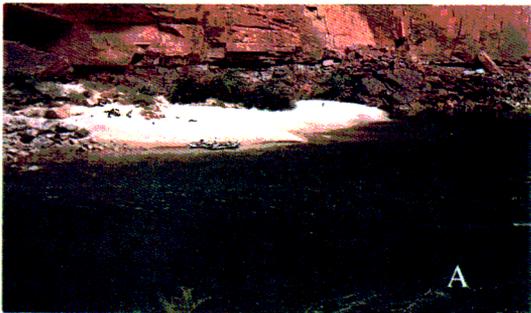
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 5%	B- 46%	Neither- 49%	Both- 0%
A- 5%	B- 65%	Neither- 24%	Both- 5%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 53%	B- 8%	Neither- 40%	Both- 0%
A- 43%	B- 24%	Neither- 24%	Both- 9%

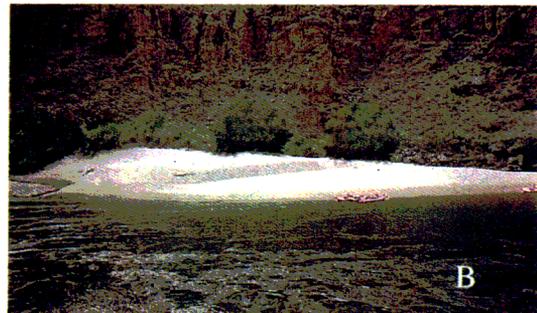


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 92%	B- 0%	Neither- 8%	Both- 0%
A- 66%	B- 5%	Neither- 21%	Both- 8%

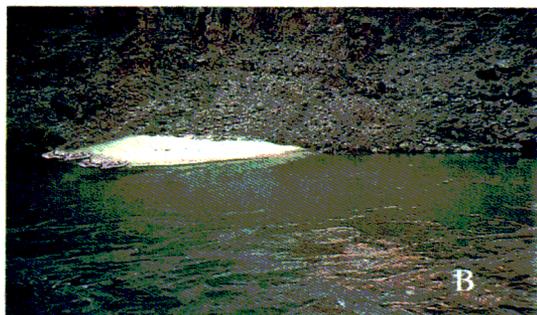
I (n = 39)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



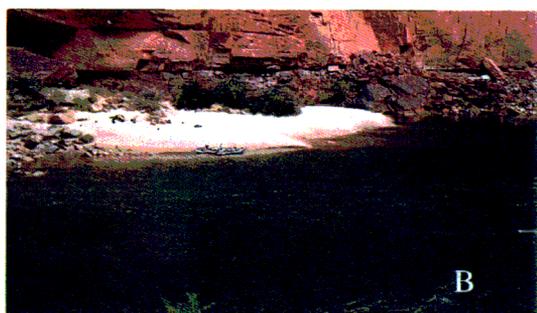
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 3%	B- 76%	Neither- 22%	Both- 0%
A- 26%	B- 40%	Neither- 24%	Both- 11%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 11%	B- 22%	Neither- 68%	Both- 0%
A- 38%	B- 19%	Neither- 35%	Both- 9%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 8%	B- 84%	Neither- 8%	Both- 0%
A- 11%	B- 60%	Neither- 22%	Both- 9%

I (n = 39)

9. Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page?
(Please comment below)

See Page 85 for List of Responses

10. At what **CONSTANT FLOW LEVELS** in the Grand Canyon would you have to do any of the following? Assume each water level is constant for the entire trip.
(For each item, please check all water levels that apply)

	Constant Flow Level (cfs x 1000)							
	1-5	5-10	10-15	15-20	20-25	25-35	35-50	50+
Stop at any other rapids to scout	73	58	11	7	6	18	41	47
Row or motor more than usual to make up some time	88	87	30	5	5	3	3	3
Row less than usual or turn off motor because you are ahead of schedule	1	1	3	14	40	71	81	82
Hurry to get out of camp in the morning	71	74	40	15	9	8	6	6
Have trip members walk around a rapid because the water is too low	69	32	3	0	0	0	2	2
Have trip members walk around a rapid because the water is too high	2	0	1	1	2	9	34	54
Miss a hike because pull-in was too difficult	3	2	3	2	2	2	3	3

11. River trips through the Grand Canyon have a number of features. People differ in what they feel is important for them personally. In this next section, we list a number of features of a Grand Canyon river trip. Please indicate the importance of each feature for your trips. (Please circle one number for each item)

	Not at all important	Somewhat important	Very important	Didn't experience
Observing flora, fauna, and geology	0%	11%	89%	1%
Being on the Colorado River	1	12	87	0
Being with family/friends	5	47	47	1
Relaxing: getting away from it all	2	17	79	2
Large beaches for camping	15	41	24	0
Large rapids	5	61	34	0
Stopping at side canyons or creeks	0	4	96	0
Learning about the history of the Grand Canyon	2	26	72	0
Fishing in the Grand Canyon	17	35	29	0
Seeing few other people while floating	14	53	33	0
Hiking in the side canyons	0	11	89	0
Floating on quiet stretches of the river	4	31	66	0
Seeing wildlife	2	32	66	0
Camping at sites without evidence of soil and vegetation damage	13	39	45	3
Visiting archaeological sites	1	45	54	0
Feeling safe	8	29	63	0
Finding a spot for lunch with a shade tree	15	47	38	0
Eating good food	12	59	29	0
Interacting with others on my trip	3	33	63	1
Seeing few other people at attraction sites	9	59	32	0
Camping on beaches with large boulders	67	26	5	2
Being the only group camping at a beach	4	26	70	0
Beaches without low growing shrubs	49	39	9	4
Places along the river without trash or litter	1	3	96	0
Fishing in the Grand Canyon	51	39	9	2

Did we miss anything else important? N=37; Being outdoors (51%) Crowding (14)
Lack of air traffic (11) Quiet Motors (11) Social interaction (11)

12a. Did you take any raft trips down the Colorado River in Grand Canyon in the summer of 1996? (Please ✓ one)

8% No → If NO, please skip to question 13.

92 Yes → If YES, please respond to the questions below.

b. If yes, please indicate whether you agree or disagree with the following statements regarding the “spike flow” that occurred in the spring of 1996. (Please ✓ one for each item)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The 1996 spike flow from Glen Canyon Dam improved beach and recreational use.	42%	36%	13%	8%	2%
Beach development that resulted from the 1996 “spike flow” did not improve the recreational experience.	9	11	20	41	19
The spike flow did not have the effect of recreational use during the summer of 1996.	7	9	19	40	25
Spike flow releases from Glen Canyon Dam are generally good for recreational use.	29	35	22	10	3
The impacts to recreational use should not be a consideration in the management of release flows from Glen Canyon Dam.	9	7	8	22	54
Improving quality of recreational river running should be an important factor in the management of release flows from Glen Canyon Dam.	44	29	11	7	9

c. Do you have any comments on the relationship between “spike flow” releases from Glen Canyon Dam and recreational use?

N=86; Spike flows enhance recreational experience (36%); Recreational use should not be major basis for spike flow (30); Spike flows create more beaches to camp (13)

13. In this final section we would like to ask some questions about your background which will help us compare your answers to other guides.

a. How old are you? **Mean=40** years old

b. Are you (*Please ✓ one*):

81% Male
19 Female

c. How many years have you been a commercial guide in the Grand Canyon?

Mean=14 years

d. For how many of these years was the **majority** of your time spent guiding oar or motor trips?

Mean=9 years on oar trips
Mean=9 years on motor trips

e. About how many trips in Grand Canyon have you taken as a commercial guide with each of the following types of boat? (*If none for a particular type of boat, please write in 0*)

Mean=51 trips on motorized rafts
Mean=28 trips on rowing rafts
Mean=8 trips on dories

f. What kind of commercial trips did you run in 1998? (*Please check all that apply*)

45% Motorized raft
62 Rowing raft
12 Dory

g. In 1998, how many days did your trips usually take? **Mean=12** days

h. At what flow levels have you run commercial river trips through Grand Canyon?
(*Please complete all that apply*)

Lowest flow level: **Mean=5630** cfs

Highest flow level: **Mean=52375** cfs

Largest daily change in flow level: **Mean=15439** cfs

14. Do you have any other comments about rafting on the Colorado River in Grand Canyon?

See Page 75 for List of Responses

Thank you for your time and responses. Please mail back your questionnaire in the enclosed postage-paid envelope. Your responses will be included within a summary report presented to the Grand Canyon Monitoring and Research Center.

Public burden for this collection of information is estimated to average 35 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington, DC 20503.

Responses to Open-ended Question 14

Do you have any other comments about rafting on the Colorado River in Grand Canyon?

6. It is an invaluable commercial experience to thousands of people who would never be able to safely undertake a private trip. Deterioration of beaches after 1996 spike flow has been significant.
11. Even if recreational use of the river is decreased and opportunities are fewer due to too high or too low of flows, the dam should be removed.
13. Everyone should have the opportunity to do at least one trip in their lifetime.
15. In comparison to large commercial rivers in Idaho (Salmon-Snake) where I have worked for 20 years, the Colorado is managing #'s of visitors well—there is enough room on the river at current levels. 4-stroke outboard motors mandatory would be a big help. Water temps should be raised for the enjoyment of all participants on the river. Higher flows seasonally would enhance the river corridor and provide experiences for privates and clients who would like to see the river at hysterically higher flows at least a portion of the year.
17. I left the canyon in 1984 to attend law school. Since that time I have been fortunate enough to return every 2 years to guide a trip. The biggest change I have noticed are what I perceive to be attempts by the NPS to make the trips “vanilla” and legislate out fun. A GC raft trip is not for everyone. But what it should be is available to everyone. Ongoing attempts to restrict motor trips automatically limits the available pool of people who can experience a trip because of time constraints. On my return visits I am also dismayed by the increasing presence of private trips. While they may have one or 2 experienced guides on such a trip, my personal experience is that several of these people do not have the expertise to pilot a boat on this river. This lends to more incidents which then directly results in more “big brother” involvement and even more restricting from the park. Additionally, the limited number of camps in various areas necessitates the guides working together. Generally speaking the private trips don't cooperate either out of ignorance or arrogance knowing they won't need to barter with the same guide next trip. I could go on... But I'm not anti-private trips. I am against any trip that does not have a knowledgeable and experienced guide on each boat.
21. Benefits that accrue to people, groups and society as a result of raft trips are poorly documented. Aspects that make the trip unique (length, uniqueness of the ecosystem) are also not emphasized. A better description of the so-called “recreation resource” is needed in order to assess impacts of GCD operation on it.
24. The wants and needs of recreators should not be part of decisions on flow regimes. They shouldn't be completely ignored, but the environmental resources should get top billing.
25. I feel it is important to educate people about future threats to the canyon, so they can be aware of any issues pertaining to the canyon and the surrounding areas. Education is the key to preservation of the canyon, which will always be in danger in one way or another.

32. I've done more privates than commercial—seen 8000-40000 cfs—I don't like daily fluctuating flows but I'd rather see a more naturally functioning system which introduces a large degree of unknown. A constant flow erodes a bathtub ring; a daily fluctuation erodes banks even more quickly; the answer lies with a more natural/weather-related increase, not related to air conditioning needs in AZ.
34. Its something everyone should do at least once in their lives. I love my job, I hate all the conflict that surrounds it. We should strive to keep it as best we can. The dam is there, people want to see the place. There's room for both motor and oars. Cleaner quiet technology for motors, better mind set for oars, no way is necessarily the best. Try one solid like of oar boats from start to finish and see how everyone likes that. Motors show up pass and are gone. Helps spread things out. Take a trip on the Arkansas in Colorado. No thank you! There's room for both! These question sheets are all fine, but this just as the one last summer were all "loaded" questions. There's a lot more that goes into making decisions, and just a river trip in general than what you think. We have to work with what we've got, can't really change it much. The climb has fixed that for us!
37. The GC river trip experience is one of the most diverse and magical adventure in the universe. Let the river run free and natural as intended by nature, quit trying to manage this awesome place for so many specific interests. Let mother nature dictate highs and lows, camps and shade etc. Spread out use longer into the shoulder season and eliminate motorboats! This is the GC for God's Sake.
40. Its an experience everyone should take part of. But over commercialization has taken a toll on the canyon. Trash and overuse, is more pronounced. There is always negative attitudes between private trips and commercial. Both think they are "God" of the river. Educating everyone about the fragile environment will help preserve it longer. But it was one of my greatest experiences ever and I loved sharing my knowledge and the beauty of the canyon with those who had never been there before! Don't pee on the sand!
55. I believe we provide the best protection of the most incredible place on earth. I try to impart my love of the place while helping people to grow. Most damage I've seen comes from privates--Physical abilities of pair seem to be weaker than ever--we're able to provide "the experience" without doing more than Deer, Havasu, Saddle, etc. Which minimizes impact on canyon at large. Save the place for those of us who explore it fully. We're producing lots of advocates for the place. Flow releases should only consider environment impact we'll adjust trips in response.
56. There are too many people on the river for it to feel like a wilderness experience.
58. I think this study is an awesome tool into reevaluating our river use in the GC. I haven't had many trips down the canyon, but I did a trip ten years ago and most recent last year and I've had had noticed a big difference in river management, which has had put more affect into commercial and has forgotten about the private boater who has lots to say. The commercial activity is awesome and we do a great job into our trips. The big question is why is the water so cold and clear? Where is all the driftwood? I think I smell human waste? I see a trail over there and why can't we use it? Why are there so

many people here? Different campsites and constant waterflows are not the answer only a temporary solution.

61. I think that the Glen Canyon release should mirror the natural fluctuations in the upper Colorado. High in the spring and early summer and lower in late summer.
63. I'd like to see a continuous flow of 12,000 to 16,000 cfs, occasional floods of 50-60,000 cfs to restore beaches. Also a continuation of motor and oar trips.
64. I'm going to go ahead and fill out this questionnaire in spite of the fact that I haven't been active as a guide for 6 years now. Perhaps that will decide if you will want to include my responses or not. I worked in GC for 13 years starting out running motor trips on the fastest legal trip length allowable (and that was stretching it) but spending most of my guiding career running dories on trips as long as 22 days. Last 5 years I had trips exclusively. The camping/lunch spot questions and photos are hard to figure. As a trip leader, the decision on where to camp and eat lunch are determined by a great number of factors, any number of which would be more important than minor differences in pictured sites. Truthfully, the differences seem fairly cryptic in most cases. Shade is the most important factor for a lunch stop the greater part of the season. I'd go 5 miles to find it in July. Size is the most important feature in a camp, though if you have to camp at 3:00 p.m. to get tiny ledges above Havasu then you do it. How many trips are behind us? What's their schedule? Where and when does the sun dome up here? Is there anything to do there besides camp? Do you really want to run Granite first thing in the morning while grabbing coffee and french toast? But I'll fill it out anyway.
65. There is nothing greater.
67. Flow—I'd rather have the old pre-dam scenarios. High spring and lower winter flow to boat on. That being an unlikely scenario. I prefer low teens to low twenties for running trips. Camp—proximity to hikes plays a far greater role in camp selection than how nice the beach is. Granted, given a choice I'd camp at the best beach. There are many camps, not in _____ book that are sweet camps—same with no sand.
70. We need to do something about the vegetation that is taking over our remaining beaches. We need a big enough flow to rip some of it out and redeposit beaches in its place.
71. It is the best job in the world!
76. Slow ramping on the downside helps with predictable bottoms (ie. 5000 in a give day). The river is easy once you hit 10,000 at 30,000 the hydrolix gets to hits the rafts. 55,000 builds better beaches than a slow down ramp than a constant or low fluctuating flow. Please don't rubber stamp the trips. Variety is the spice of life. And remember it's a National Park, treat it that way.
77. Photographic section was inane.
79. Take down Glen Canyon Dam.

85. Love it!
86. This is my first season, in the canyon. On June 7, was my first commercial trip, so I probably am not the best question answerer, but I'm glad I could help if it did.
89. The photo section/questions are unrealistic. I would camp at any of those beaches if trip dictated it. I had to camp there in order to hike a particular side canyon in the morning or all other camps were taken. Aesthetics such as trees are way down on the list of priorities and only comes into play when nothing else is a factor. Very rarely the case. I almost never base a decision for a camp on aesthetics. More important factors are shade (what time the sun goes down, not trees), location, difficulty in parking boat in an area where falling water will not stand it, # of trips competing for camps in the area.
92. Yes, thanks a million.
94. River trips in the GC have changed because of the water flows. Different flows will result in different trips. The effects of the dam have resulted in different trips. Politics, social and economic standing, availability of travel resources and general public attitude all change the desire for and hence the nature of rafting and rowing trips in the GC. A good guide will always be able to deal with differing flows. But flows will have their effects, too. This questionnaire is ridiculously simpleminded. As are many guides; but politics will have the most impact on river trips. Nice try but you don't pass.
96. I love the GC. I enjoy immensely sharing that place with new people. I get to see it again for the 1st time every trip with passengers. The most important thing for me is to protect the canyon and allow people to get a quality river trip. Huge fluctuating floods are poor for the canyon, they erode beaches, take away flora, there is no replacement sand. The canyon is an ecosystem—one of the largest riparian zones now is the western US. I'd personally like to see no dam. If that was possible, but I think not. Fluctuating flows is better for the canyon and a quality river trip.
97. The biggest problems right now are: "wilderness or not", huge private trip demand, or the 19 year waiting list.
98. The interior flows on GC since 1991 have certainly helped boating and its nice being and camping on a river that behaves more like a river. Being an idealist, if it came down to a vote today I would vote for imitating the pre-dam flows (matching the in-lake flows to the amount released). I also support draining Lake Powell eventually, bringing the silt load back to the river through GC. There is after all only one and it deserves the best treatment.
101. Professional guides have always environmentally conscious about the canyon. Most if not all companies would fine a person showing disregard for the canyon and the people traversing through the canyon. It is in almost all people, the greatest vacation they could possibly have. Preserving the canyon is upper most in the mind of guides, passengers and companies.

103. As an instruction with _____, I serve as a kayak safety boater for the kayak clients, always with another safety boaters, as many as 20 clients in kayaks—we operate with commercial raft (rowing) support. Smart move to send a follow up post card. Most guides are great people with different time schedules.
105. The whole experience has changed since I first ran back in the 1960's. We can no longer camp at places we used to enjoy. The sheer numbers are up. The wild river feeling is gone. The huge mounds of driftwood have been used up. Pristine beaches are covered with weeds because of not being flushed out and re-deposited sand. Some things are better with regulations. The control of human waste; the experience level of the guides in all areas, the technical equipment available. All these factor to make the number of people smoking and throwing their cigarette butts in the sand a lot better. Regulations, far sighted multiple use planning "for our childrens' children's children" is also in our best interest. Thank you for allowing me to participate. Sorry about the delay in returning I lost the questionnaire for a couple of weeks. I have quite a few B and W photos aerial photos of beaches and rapids that I took back in 74-75 if that might be helpful as a comparison to the beaches today. Let me know.
109. It has really been great!
111. Regarding #2—what is the definition of "safety"? when you pay attention any level is safe and there is serious risk at all levels. #4b—It is more challenging to make camp at low water, especially with upstream winds. However, we used to do 12 days to Diamond with 3-5000 cfs+ always managed to make it. It is not an excuse. #6—Each water level has its pros and cons. I appreciate them all. Don't like the question. What are we evaluating? #8b—river companies pamper passengers more than they expect. #11—again not a good question since different passengers have different preferences. Is this for me, guides, passengers? #12b—the value of the spike flow is limited due to accelerated erosion due to extended high water in 1997!
112. I have a concern that the answers given here will be taken in their "cut and dried" yes, no format—there are so many variables involved in the answers I've given. Apologize for my delayed response—I've been on the water since April on "back to backs".
113. It has been great. 20 years ago people seemed to be more interested in being in the GC and enjoying the beauty now some people just want to make sure you have plenty of pretzels and cookies.
116. I think the best possible condition would be to return the river to its nearly natural state by removing the dam.
117. While we all have our personal preferences, there are no bad trips in GC. As commercial guides, we're there to facilitate the experience for others. They will have the time of their lives no matter what.
118. I ran a lot of trips when I was younger. Now I own my own small company and only do a few Grand trips per year.

120. Private users should be the only ones who can apply for a permit in GC. Then they could decide if they wanted to run a commercial or a private trip! And get rid of the dam!!!! And what about private users (non-guides) are you going to ask them questions?
133. I feel that if a spike flow is done again, research needs to be done so that large water flows don't follow the spike flow and undercut the loose sand that is deposited.
134. Well, I'm planning on stopping commercial boating or at least cutting back to 1-2 trips. I've been guiding (every year) since 1976. First in N.C., then CO, then NM, CHILE, Costa Rica, GC. The prices of trips have cut the most fun, most interesting people out of the picture. Now we get mainly fucking doctors/lawyers and other boring people who can't tie their own shoe laces—I'm sick of them. There's lots of cool places to visit—I'll miss the canyon and the outdoors for 2 weeks at a time but its not worth being with a bunch of babies for 2 weeks—its exhausting and we don't get paid enough for the incredible responsibility that guiding is defined by. As more and more old timers gave and take their experience with them—and people become for helpless→ There will be more deaths down there. Its already starting now.
140. Its ridiculous to attempt to manage this place with any attempt at securing environmental integrity or consistency without first removing the dam. That's where to start. All these surveys are just about as useless.
143. In 26 years as a commercial guide, a very small percentage of my time is spent in the canyon. Even though I love the place and prefer the longer experience, once you spend a season or more on an undamaged river, everything else is second rate. A trip on a damned river can never be regulated to simulate the quality and spirit a free river has to offer.
145. I would like to see them limit motor rafts. I feel it gives more people a chance to experience the river. If a person cannot hike in or out or spend 2 weeks there on a raft, the motors are perfect. I also do not feel that the 0-4 motorboats we see per day impacts me at all. Get rid of the over flights if we are trying to rid the canyon of noise.
156. I support the use of motorized travel in GC was a method to reduce impact. Impacts consisted of camps, visit sites. I'm not in favor of the present wilderness river corridor as presented by NPS, GC.
161. The rafting community of the GC too often looks at river issues from our own perspective and not that of the commercial passenger. The commercial passenger, who will do only 1 or 2 trips through the canyon in their lifetime is the largest user group, and we should pay more attention to their expectations and experience without imposing our own biases and judgements about motors vs. oars, crowds (our term) vs. solitude, etc. For the passenger, who is used to the mall and Walt Disney World, a busy day at Deer Creek is still a beautiful day in the wilderness.
162. Rafting the Colorado in GC will be governed by a complex set of variables that relate to the law of the river. Dam operations will reflect hydrological and hydro power concerns. The boating situation is dramatically improved on the post Els era. Spike flows can

improve the riverside beaches for camping when a host of conditions are met. Hydrofopper, channel sediment storage, timing, etc. Even with all this and all the shared use, crowding and everything, it is still one of the best river trips in the world. With respect to camp beaches there are many variables. Much of it is based on location on the river corridor and other parties. Ideally I look for flat area for kitchen and common area. Quality of moorage for water dropping. Overall size with respect to party size. Shade! Early PM or late AM. Plus other variables. Like staging for the next day. Above the gorge, attraction sites, etc. It's endless. Thanks for your great work. Good luck with the study. Sorry it took so long. Please send me a copy of report.

164. Thanks for doing this.
165. There is a lot of controversy in the canyon concerning many things (i.e. CRMP-wilderness area, removal of Glen Canyon Dam, releasing warmer water, etc.) There are many sides to these issues, and many decisions to help improve the canyon's environmental status will effect recreational use of the canyon. I think the environment is far more important than recreational needs and/or desires. We will see what happens.
167. Apples and oranges: the conclusions from this survey are flawed because of the less than typical trip your survey is trying to describe, evaluate: specifically: a hatch trip is a hatch trip (same with most commercial motor trips), but individual trip leaders run different trips. Rowing trips (commercial) are also structured by water level, time of year, and the maximum # of customers the outfitter can sell (hence shortest # of user days/trip) Private trips are often run by ex-commercial guides, but true pilgrims just cannot know how it goes. All trips are not typical, but a unique event to passengers, but structured to crew who come repeatedly.
169. GC river running is not a manufactured experience. The less control over the variable, the better—manage the river for the species, or water storage, whatever—let the river runners go down the river on the rivers terms—whatever that may be. This is a bad instrument, it assumes an 8th grade comprehension level, most boatmen have a B.A. or B.S. It is put together by someone with no understanding of what goes on, on the river. Good luck.
174. The beach pictures are lame! They were way too far away to give an accurate assessment. The GC is not a wilderness area!
178. Commercial guides/trips through the GC is extremely important and valuable to the public. It changes the lives of some and enhances the lives of all—this is what I love, well that and the scenery, white water and community that I experience as a guide. This experience (a trip through the canyon) should never be taken away from the public.
181. One of the greatest outdoor experiences available in the world. It is truly a transformative experience for many people, and as such should be carefully nurtured for people in the future.
183. I believe people come to the GC to raft because they are looking for an adventure. Some people do wish to have big nice beaches and all the comforts of home, but lets get real we

are in a very harsh environment where things can go wrong. To try to find the perfect flow for safety, camping, and lunch spots is a wonderful idea. But one big rain up a side canyon could at any moment create a new unpredictable rapid or any sort of chaos. I would love to see the river flow between 17,000 and 20,000 cfs all summer, but no matter the flow 50-100 years from now, the canyon's beaches and rapids will be different.

184. My guiding days are coming to a close. My last year of guiding was 1996, and from 1993-1996, I only guided one trip/year. I did research trips during those years, and privates in 1997-98. This year may be my first since 1974 when I don't do a Grand trip, the "ultima thule" and the one trip to which all others are compared. I would like to see commercial outfitters lengthen their trips, decrease their reliance on motors, and use less helicopter exchanges. Quiet motor technology is a great improvement.
185. Stupid survey. There are so many factors in a trip. Just think about overall health of canyon and other canyons drowned in Lake Foul. Natural rivers and river running (done properly) than the lowest impact on nature as any recreational activity I can think of. And its very good for the soul. Tell that to Yellowstone Park (they allow, snowmobiles, tons of traffic, but no rafting—even non-motor? It's the most beautiful and non-intrusive way to see nature, discover oneself, and help overall cause of preserving our beautiful nature, by making it available to "city folk" who don't know what a canyon trip has to offer. Its for the young and old in all states of health and helps the overall cause of the world.
192. I think there's too many "research"/science trips. I've been a boatman on a few "science" trips and have observed various degrees of inefficiency, laziness, and a lack of willingness to communicate and utilize traditional river etiquette. (the _____ are an exception). It appears that just about anybody can come up with a "study" a get a permit and funding for river trips. The GC is more than just a "lab" for overeager scientists. I can hardly wait until "mother nature" kicks ass and that stupid ill-conceived dam goes down!
194. One of the things we never consider in all the hooplah about our passengers' comfort is that they can be comfortable in almost any place if we present it in a positive light. They've come to expect a Club Med experience because that's what they're being sold, but it should be an adventure, with all the unknowns and inconsistencies possible for that adventure. We the guides can make a small rocky beach wonderful for them no matter what. It's our attitudes that give them the clues about what to consider important. If we're bitching about camping here or there, or seeing 50 people at Deer Creek, they will too.
197. Allocations need to be adjusted for the private boater to have more access GCRD is doing a fine job of keeping guides informed as to issues. Private fees need to be lowered.
201. Thanks for doing this study. It sounds worthy.
203. The canyon is a magical place!!! It is our job to protect it, and share it with others. Some for of water release should be used to protect the ecosystem that man has created in GC.

I'm not sure I have the answer, but I would like to see Lake Powell emptied, and GC dam removed and let nature run her course!!! Remember nature bats last!!!

206. Regulated flows have made my job easier and a better safer experience for my passengers. Also the spreading out of commercial launches (especially motorized) through the week has greatly cut down on crowding at camps and attraction sites.
207. Limit the amount of destruction to the beaches and campsites and attractions by ramping down the amount of people allowed to go down on commercial trips. People not river flows are destroying the GC. From beach erosion to shitting in the campsites. Just like people destroying the rainforests or old growth trees by logging, commercial trips are destroying the inner canyon.
210. Unanswered question means you've given me no choice that accurately reflects my opinion. I was significantly under-whelmed by this survey. Many questions seem to make simplistic if not outright stupid assumptions about how guides think about camps, lunch spots, water levels, water temps, etc. Conclusions drawn from answers to poorly formulated questions will be worthless: are you still beating your wife?
215. The canyon is cleaner now than it was in the 1970's. Much effort from commercial guides and NPS on river staff is the reason. Additionally, guides have become (and continue to) an extension of NPS of when it comes to resource protection and education. GC is far from a wilderness experience and is far from a Grand Cayman experience. The status of the river corridor is good and continues to open the eyes of visitors to a place that is so much bigger than we are.
217. I love it!
224. Simulating nature's spring floods and gradually lowering the flows would do much for restoring beaches. Continued "scrubbing" action of flow fluctuations will eventually destroy all beaches.
226. Flexibility seems to be the answer. When all the beaches are gone, we'll sleep in the rocks. If an "attraction" has too many visitors, go somewhere else. Tolerance comes next. In many ways, our attitudes are more important than physical changes.
227. The current flow patterns from Glen Canyon are much better than they used to be before intern flows were implemented.
228. Sending out a questionnaire of this sort to commercial guides in the middle of the season and expecting a quick return is unreasonable. I received both the questionnaire and the reminder while I was on my first trip. I support research and am glad to help, but let's be reasonable.
232. I am not currently guiding in the GC, but am very concerned with its condition and the quality of the experience. Good luck with your survey and I'd be interested in the results.
236. What are the objectives of this survey? Key questions regarding fluctuating levels are largely lacking. Fluctuating flows significantly impact trip planning. Each section of the

river is handled differently by guides. You should ask questions regarding critical section in the GC and the effects of flow regimes on those areas.

237. It is a shame what GC river trips have to come to. For the affluent to add to their list of been there, done that. One problem creates another. So much like the rest of consumptive society, it's embarrassing to be associated with. Why worry about if passengers are being pampered properly? What ever happened to the adventure of the river trip? A real river would not be dam controlled however then the beer would not be cold enough and there may be mosquitoes, and that just wouldn't fit into the white-bread American dream. I'm sorry to see GCMRC spending money on this when I think there are real issues in GC that need addressing.
240. I'm not impressed with your selection of questions. It shows to me a lack of understanding and depth of the subject. Good luck.
241. I feel that too much emphasis is put on "controlling" the dam releases to improve recreational use. If we would just do what will benefit the ecosystem, that is how we will improve the recreation. We know what those answers are. And I am not trying to say we have to take the dam down. So if we would just act on them we could improve things. Instead we spoil the "recreational use" by sending down way too many research trips to answer questions like, "if we increase the flow, will boulders and rocks roll down stream?"
247. It is bias. But the management of GC has never thought about why they look at the reach as though it is a vacuum. Glen Canyon dam is the #1 problem to all the things that are falling apart in the Colorado through the GC. Without the dam, guides would have to become "true guides again" each trip would be different because the wilderness variables would be back. Right now guides in the GC guide in a vacuum with a "canned trip". It really is easy when compared to an Idaho or Cataract Canyon Trip in the spring through fall time set. It is also interesting that the "canned experience" in the Grand has caused the enormous canned egos of the boatman!
9999. There are too many fingers in the pot....Electric power plants, US Government, Park Administrators, US Coast Guard, Commercial River companies, Private boaters, Native Americans. Can everyone be happy?
999999. In all reality, the canyon has not changed much in the six years I've been going there—which is good. Things grow, things die, beaches gain and lose sand. Things like fluctuating flows have stabilized more, though there is always room for improvement. The powers that be need to decide how they wish to manage, though possibly with more of an active public check value. Oh, I digress. The experience of rafting the Colorado is a great one. It is a pristine environment, and we've all learned how to deal with the idiosyncrasies. The "private boater's association" needs to get a grip and it shouldn't take years to get a "spike flow" approved by the nine million regulating agencies involved bye bye.

Responses to Open-Ended Question 9

Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page?

3. Camp with vegetation—lunch with shade.
4. Shade! Steep bank is water is dropping.
5. A beach with shade is always preferable for camping or lunch, but large beaches make nice campsites.
6. Good shade, late sun in morning; early shade in afternoon, good parking, kitchen close to boat and in wet sand, lots of room for guests to spread out.
10. Most of items are the same and do not indicate underwater obstacles.
11. Best beaches have space, shade, scenery, and hikes.
13. Prefer to camp with lots of space, shade for lunch, and cover from rain.
15. Preference depends on time of day—shade and location to side hikes—several pairs of photos are of identical beaches during different vegetative states.
17. I avoided steep beaches with unpacked sand (wind) and no vegetation.
20. Depends on wind and places to camp. Eddies-how calm they are, hiking-accessibility.
21. Shade is most important criterion at lunch. Privacy and wind protection afforded by vegetation (usually tamarisk) are important for camps.
24. Both lunch and camp needs shade, hopefully a little sun at one end for bathing. The proceeding questions leave out important info.—how hot is it? Is there an attraction close by, etc.
25. Lunch: definitely shade to escape noonday sun which is inevitably scorching. Prefer to spread out beach where people feel they have more privacy, next to a rapid which drowns out people who snore, and adds to coolness of air.
28. Would like shade for lunch, seek windbreak for a camp—the photo of Hot Na Na (mile 18) is preferred since I know the camp well, and know that shade is available near the cliff under an overhang.
32. Lunch—depends on season of use and current weather→may want a lot of sunshine to stay warm or may look for shade to stay cool. Camp—steepness of beach and tide dictate the hassles expected with tying up and whether boats stay floating or get stuck.

34. Shade for lunch is nice, but not always possible. Camps big enough for your group! It's nice to have some elbow-room, but not always the case. We work with what is available to us!
36. Camp choice is dependent on group size vs. beach size, time of setting of sun below rim (shade), steepness of bank, etc. Your photos don't quite provide enough info.
37. Shade is essential for summer. Sun is desired in off-season. Camps depend on wind speed, direction sun, shade sunrise, sunset, hike availability and scheduled events.
40. Shallow beaches-not steep. Larger, open beaches trees or shade is always preferable.
42. For the most part, each beach looked fine to camp or lunch at. I would stop at each of them.
46. Flat beaches are better. Larger beaches are generally better. Features that act as privacy screens (rocks, trees, etc.) are desirable. Computer enhanced photos are an interesting way to isolate beach characteristics.
49. Space, shade, private pee stop, photos are repetitious
52. Camp we want deep water for boats, long beaches so people can spread out. Some trees for shade and privacy. A good spot close to water for kitchen. Pictures on previous page were photos that were same spots, but changes amount of sand and foliage.
53. Lunch spots need shade, obviously the beach rebuilding flows impacted some beaches, (in the photos).
54. Shade
55. Space for 20 is primary consideration—prefer not to cluster unless have to, ledges, trees are good for rain.
58. There are plenty of beaches for campsites and lunches. And yes different water levels do affect our choices. I believe our presence does affect the environment. But as long as we keep the water flow constant, we will always have problems with any conditions and overcrowding, which is my own personal concern.
61. Large level beaches are the best for camping and lunch.
63. Need more sand to camp.
65. Big beaches with space for 40 people—shade is great for lunches—flat is always good—they look like the same two pictures to me.

67. Lunch—I'll stop based on shade and proximity to hikes in the summer or whenever it is hot. Sun in the Spring and Fall. Camps—size, proximity to hike—where other trips are privacy, etc.
68. Lunch camps depend on time of year and temperatures (shade). Over grown beaches are least favorite.
70. Big beaches everywhere.
71. At low water—more sand for camping is available—Tree only help to cut wind and shade. What years were the 3 camps photographed?
74. Same camps difficult levels and views—both good camps.
75. The larger the beach the better (in general). Shade dictates lunch.
76. I'll lunch at a 20 x 20 if it has the shade or sun I want. Camp I look for a level spot near the water for kitchen.
77. Shade at lunch. Camp—good harbor, flat areas for camp-windbreak for kitchen.
79. Prefer places that have some shade. Tried to figure where one high water mark came.
81. A bit hard to tell relative scale and flatness of beach, even with boats in photo have camped on all beaches shown.
86. They were the same.
88. Gentle slopes—open spaces to spread out shade. Easy boat tie up and access. None of the photos were my idea of ideal lunch or camp spots.
89. Most important aspect for lunch beach is whether or not it has shade—tree shade is least desirable only as last resort, I would pass tree shade and run further to lunch at a beach that's orientation gives it real shade.
92. The computer-generated alterations in these photos do not present the factors used to answer the questions they are paired with. But I do personally prefer large sandy beaches (if it's not windy).
94. Ridiculous way to evaluate guides feeling about camps and lunches. Who's money are you wasting? Hate fencefault. I like Hot Na Na. No s___—trees an more sand is better—but is there another beach downstream? When does the sun set here? Who else is on the river?
96. To camp/lunch it depends greatly on the group of people you have. Whether a small camp is appropriate or if a bigger camp. If it is raining, if it is 115 degrees, so many variables, it depends—sorry I can't give a better answer.

97. I prefer to camp where there is some protection from blowing sand, a place with some vegetation and flat area. For lunch, shade is most important in summer.
98. Lots of sand for boat parking, quiet eddy, preferably (early) shade for lunch and mid summer camps. (Hot Na Na camp shown is our preferred 1st night camp and can be used up to about 25K. Motorboats generally have to be parked on deeper water for the night if a typical 22→14 fluctuation occurs. We rarely use the Fencefault beach for lunch or camp (its too small).
99. Adequate level places for kitchen and individual campsites; shelter from wind and for privacy; suitable parking for boats to deal with fluctuations.
100. It is best to camp and lunch in areas that offer the best shade on summer trips.
103. Camps like RR, Granite/Bass Camp, Nankoweap Camps—220 mi camp—shade and proximity for lunch camps with hike/side canyon hike night camps.
105. Lunch #1 Shade #2 Foliage for bathroom #3 Sand no rock. Camp #1 Sand #2 flat beach #3 river drops so I don't have to push off in the night.
108. Hard to choose a camp from a color photo. Knowing the location in the photo was distracting my decisions. Look for open spaces to camp in sunny weather I look for shade in cool weather looking for sun!
109. We like shade and some area for privacy.
111. Lunch spots need to have shade. Prefer camps that are at a side canyon and more spread. Windbreaks for the kitchen are essential. Privacy near the river for the unit is preferred.
112. At lunch we are typically looking for shade, open area (beach) to safely serve guests (get around tables) with privacy for urination; camps need room for all tents, area close to boats for safely unloading and setting up kitchen, good harbor for boats contingent upon available fluctuation info, some wind protection (for kitchen) if possible, and good (safe) accessible bathing area. Trees or no trees in 1A, 3B, and 6A—trees too far away for kitchen protection or shade needs at lunch...all these choices depend on time of year, size of group, where I'm heading; more than just size of beach itself to consider...water fluctuation typically more dangerous to walk around; depends on rapid and people—I've had times when people could not walk (they came on the trip that way).
113. Lunch—shade, easy access to river. Camp—shade, trees, side hikes, easy access to river.
116. In the summertime, shade is my primary concern for camp or lunch. Size isn't all that important.
117. Prefer big, shady beaches. Some vegetation. Flat landing and kitchen area. Amount of visitation also a factor. Can do lunch anywhere if necessary.
118. Need shade for lunch need toilet spot for camp.

120. I don't prefer any particular beaches or camps.
121. Photos not totally representative of GC beaches.
133. When doing lunch we prefer shade at camp late sun is good as well as a deep pull in spot.
134. I lunch at the most obscure place I can find—because there's still plenty of them and they don't have to be huge—the photos are difficult—a little too small (boats that is).
136. Desirable: shade for lunches, space for camps. Camps with smaller fluctuation zones.
140. That is ridiculous. Same beaches. You stop where you can in accordance with other trips and their schedules, your own schedule, etc.
143. I always prefer a lower slope beach as a camp and usually lunch at spots not often used for camps.
145. Lunch—I hope for shade. Camp—As much room as possible.
148. In summer I like shady beaches, in spring/fall I like sunny beaches in the monsoons I like dry beaches in wind I like vegetated beaches—I like all beaches.
156. Try not to launch at beaches to avoid impact where's the shade? That's what dictates lunch stops for the most part.
161. A desirable beach always has a good place to tie the rafts, kitchen area close to the rafts, and an easy path to the toilet location. All other facts are variable based on the time of year, weather, size and type of group, etc.
162. This is very confusing because you ask the survey questions with very few different beaches pictured.
164. Lunch shade is great—small area ok. Hard to tell levelness in photos.
165. There are a couple factors that make a big difference in such decisions, like how large the group is (how big of a beach do we really need to camp?), and what is the weather and temp. In hot summer we search for a shady lunch. In cool winter we search for a sunny lunch beach.
167. Photos do not show flatness/level of beach this is extremely important for camp—also only an experienced boater can tell the fluctuations from your photos.
169. Nice graphics—they don't mean anything. Lunch→shade or sun (temp dependent). Camp→kitchen spot, toilet spot, room to lie down, shade or sun, early or late, temp dependent.
172. All the same pictures.

174. For lunches, shade is key! And overlapping ledges provide the best early afternoon shade. For camps you need places where people can separate and camp away from others.
175. None of the photos are usual stops for me I like a deep pull in and a close kitchen.
178. I prefer lesser used camps and lunch spots in or with shade for commercial trips (summer).
181. Lots of room to spread out.
182. I usually try and have lunch somewhere that is not a campsite. Campsites need to be big enough for kitchen, potty and sleeping.
183. They are the same 3 campsites. None of which I use for camp or lunch. Unless I'm running an abnormal trip.
184. Lunch—weather is a factor: cold, you want sun; hot, you want shade. I prefer smaller campsites (passengers prefer larger). I was involved in campsite research studies—it is hard to evaluate sites from photos or just by looking from the river. In general, sites with large boulders or trees to partition the camp work better. I don't like "dune camps". I camp at at least one new campsite each trip (one I haven't camped at before).
185. This is ridiculous. Depends on size, time of day, weather—obvious it is 3 sites—some high water, some low. Sand is nice—but you need flood floors to redeposit. Ultimately you need silt from behind dam that should've been in canyon. Just rearranging sand without replenishing from upstream, eventually all beaches will erode! Can't they release silt with flood flows. I already wrote them. Take a trip and find out how much more the canyon is than CFS and rapids.
187. Shade camps and lunch stops.
191. Where a trip lunches/camps is more often dictated by: how far we made it downstream and where we want to go/stop the next day. In four photos you seem to be trying to set up big beaches vs. small beach, but I know the beaches in your photos....my choice would not be based on size alone.
192. They were repetitive and small.
194. I prefer to lunch in places that have shade and that shade is not too far from the boats (to carry gear). Camp is better on a bigger beach with larger group. Steepness is a major factor. Decreasing steepness is better. Very hard to get an idea of steepness and how much flat area.
197. Lunch spots are usually not a problem. Group size is the determining factor also season, sun, shade for camp.

199. Frankly I'm a little baffled by those photos. They don't necessarily provide enough information to provide an answer.
201. I like sunny lunch spots—small is fine.
203. Shade for lunch/large camps to accommodate 15-30 people. Also vegetation for early shade and late sun.
204. My choices are decided by 1) is it large enough to accommodate my group or 2) does it provide shade on sunny days or shelter on cold, rainy days.
206. Time of day, group size and physical ability, other groups in area, courtesy to rowing groups, plans for next day, water fluctuations (planned or anticipated) are more important factors in camp decisions than just options presented.
207. Flat, sandy, shade. Friendly eddy with good tie downs, protecting from wind/rain, sun. Photos looked similar and doctored.
209. Enough room, shade.
210. Kind of beach for camp or lunch depends mostly on where we are. Size and/or shade are at best a 2nd consideration.
215. I prefer to have lunch on smaller, less used, shady type beaches, which have good eddies for swimming (cooling down) and possibly fishing. Camps, I am not real particular, though stay away from big features less beaches. Generally, a side canyon is nice (not major attraction though), good morning for boats and hopefully a safe swim/ bath eddy for the folks.
217. Camp—enough open space above high water line for the group and protection (vegetation) from wind for kitchen. Lunch—shade from vegetation or cliffs needed. Neither of the bars look particularly good for lunch.
220. Stopping spots are affected most often by shade concerns, but it is an incredible variety of factors that go into making a stop decisions.
221. Photos pre or post dam? Why use same pics and change places. Camp—either just off boat—shade early afternoon and late AM—flat spots for camping.
222. Preference for camp is a sandy beach easily accessible to the boats with room for people to spread out. Lunch depends on the circumstances sun it cold shade 90% of the time.
224. The photos showed a rough limited selection I prefer large beaches against cliffs with foliage.
226. Where I camp or lunch changes seasonally. A good place in May will not work in July...boat parking takes precedence.

228. Only 3 different beaches are shown. We camp regularly at Hot Na Na, occasionally at 31 mile, and I have never camped at Fence Fault. On a cloudy day in the summer I would lunch at any of those beaches even though they don't fit into our lunch schedule. Shade is an important factor for lunch. I camp at Hot Na Na boat parking with fluctuating flow, fence fault appears too steep and small, 31m is steep with few boat ties and the last photo without plants had no port site.
230. Other important factors in choosing camps would be afternoon/morning; sun/shade and side hikes.
231. Lunch needs shade. Camping needs room to spread out for campsites.
232. I'm not so concerned with shade at lunch beaches and I prefer the smaller "less traveled" spots, we set up our lunches near the water (as our passengers may be sloppy). For camps—big-flat, with vegetation.
233. Shade is important for lunch—room to spread out is important for camp.
236. Where you camp largely depends on the size of group, the types of boats, and the additional itinerary activities for the trip.
237. I usually have a +2 day plan and try to find calm and shady spots for lunch. Camp must have quiet water for sleeping on boats and morning shade.
240. Shade for lunch.
241. I enjoy to camp or lunch at any kind of beach. They each have an individual character.
245. Shade good for lunch, nice beach, steep drop-off, side hikes good for camp.
247. The channel is in a sand deficit. So camps are always a challenge. Upper basin beaches where sand flow is still present spoils a guides perspective.
9999. Lunch—anywhere with shade. Camp—where we're going to get water away.
999999. These photos are biased towards larger beaches to camp and smaller ones to lunch. It doesn't work that way always. The hiking options are extremely limited on all photos.

**APPENDIX B: PRIVATE TRIP LEADERS' QUESTIONNAIRE AND
FREQUENCY DISTRIBUTIONS**

Grand Canyon River Rafting Study

for Private Trips



Conducted by
University of Illinois
Department of Leisure Studies
104 Huff Hall
Champaign, IL 61820

Sponsored by
Grand Canyon Monitoring and Research Center

This questionnaire refers to the most recent trip you took on the Colorado River in the Grand Canyon during 1997 or 1998. Please refer to this trip when responding to items on this questionnaire.

- 1a. Overall, how would you rate your raft trip? *(Please ✓ one)*
- 0% Poor
 - 1 Fair, it just didn't work out very well
 - 4 Good, but a number of things could have been different
 - 11 Very good, but could have been better
 - 64 Excellent, only minor problems
 - 20 Perfect
- b. What things would contribute most to an excellent or perfect raft trip in the Grand Canyon for you?
See Tables 2 and 3
- c. What things would contribute most to a poor raft trip in the Grand Canyon for you?
See Tables 2 and 3
- 2a. Where did you put-in (start your trip)? *(Please ✓ one)*
- 100% Lee's Ferry
 - 0 Phantom Ranch
 - Other (please specify) _____
- b. Where did you take-out (end your trip)? *(Please ✓ one)*
- 1% Phantom Ranch
 - 1 Whitmore Wash
 - 66 Diamond Creek
 - 31 Lake Mead
 - 1 Other (please specify) _____
3. How long was your trip? **Mean=18 days**
- 4a. Including yourself, how many people were there on this raft trip?
(Please include people in your boat and people in all other boats in your group)
Mean=14 People
- b. What type of boat were you on? *(Please ✓ one)*
- | | | | |
|----|----------------------------|----|-------------|
| 6% | Motor powered raft | 2% | Dory |
| 70 | Oar powered raft | 16 | Kayak/Canoe |
| 2 | Combination motor/oar raft | 2 | Paddle raft |
| 2 | Cataraft | | |
- 5a. Including your most recent trip, how many times have you rafted the Colorado River below Lee's Ferry?
Mean=7 times

- b. About how many Grand Canyon river trips have you taken as a passenger or trip leader with each of the following types of boat?
(If none for a particular type of boat, please write in 0)
Mean=3 trips on motorized rafts
Mean=4 trips on rowing rafts
Mean=1 trips on dories
- c. At which flow levels have you run Grand Canyon river trips?
(Please complete all that apply)
- Lowest flow level: **Mean=8834** cfs
Highest flow level: **Mean=32059** cfs
Largest daily change in flow level: **Mean=11738** cfs
- d. How many white water raft, dory, or kayak trips have you taken at locations other than Grand Canyon? *(Please ✓ one)*
- | | |
|----|--------------|
| 1% | None |
| 3 | 1-2 |
| 5 | 3-5 |
| 5 | 6-10 |
| 4 | 11-20 |
| 82 | More than 20 |
- 6a. Before arriving at the Colorado River, did you know what the river water temperature would be? *(Please ✓ one)*
- | | |
|----|-----|
| 1% | No |
| 99 | Yes |
- b. Would your river trip have been more enjoyable if the river water were warmer?
(Please ✓ one)
- | | |
|-----|---|
| 43% | No |
| 57 | Yes <i>(Please explain)</i> N=109; Comfort (61%) Safety (22) |
- c. Did you notice whether the river water temperature changed during your trip?
(Please ✓ one)
- | | |
|-----|-----|
| 16% | No |
| 85 | Yes |
- ↓
- If yes, how did the water temperature change? *(Please ✓ one)***
- | | |
|----|---|
| 1% | The water became colder when moving downstream |
| 95 | The water became warmer when moving downstream |
| 5 | The water temperature fluctuated when moving downstream |

7. River trips through Grand Canyon have a number of features. People differ in what they feel is important for them personally. In this next section, we list a number of features of a Grand Canyon river trip. Please indicate how important each feature was for you on your trip.
(Please circle one number for each item)

	Not at all important	Somewhat important	Very important	Didn't experience
Observing flora, fauna, and geology	0%	12%	89%	0%
Being on the Colorado River	3	19	77	0
Being with family/friends	2	19	79	0
Relaxing: getting away from it all	3	19	78	0
Large beaches for camping	8	59	33	0
Large rapids	4	39	57	0
Stopping at side canyons or cracks	0	0	91	0
Learning about the history of the Grand Canyon	4	46	50	0
Photographing the Grand Canyon	15	50	35	1
Seeing few other people while floating	11	37	52	0
Hiking in the side canyons	2	13	85	0
Floating on quiet stretches of the river	3	35	61	0
Seeing wildlife	1	33	66	0
Camping at sites without evidence of soil and vegetation damage	5	36	56	2
Visiting archaeological sites	5	50	46	0
Feeling safe	20	48	31	2
Finding a spot for lunch with a shade tree	33	47	19	1
Eating good food	9	47	44	0
Interacting with others on my trip	5	32	64	0
Seeing few other people at attraction sites	9	45	45	0
Camping on beaches with large boulders	68	27	5	2
Being the only group camping at a beach	7	27	66	0
Beaches without low growing shrubs	44	45	11	1
Places along the river without trash or litter	3	5	93	0
Fishing in the Grand Canyon	50	29	10	10

Did we miss anything else important? N=62; Crowding (32%) Being outdoors (19) Quiet motors (18) Lack of air traffic (16)

8a. When you were planning your trip, did you know before you left home what the expected water level was for the dates of your trip? (Please ✓ one)

22% No

78 Yes



If yes, did this information about the expected water level have any influence on WHEN to take your trip? (Please ✓ one)

88% No

12 Yes (please explain) N=23; Wanted high level (35%) Didn't want too high or too low (30)

b. Did you notice whether the water level changed during your trip?

(Please ✓ one)

9% No

91 Yes



If yes, how often did you notice it changing? (Please ✓ one)

54% Every day

26 Almost every day

19 Only on a few days

What made you aware of the water level change? N=116; Beached rafts (49%) Rising water (16) Observation (16)

9a. Assuming you were to run an **ENTIRE GRAND CANYON TRIP AT A CONSTANT FLOW**, please specify the minimum and maximum water levels for running rapids safely with a group, the level that provides the best ride, and the level you prefer as a trip leader for running rapids.

(ANSWER IN CFS)

Minimum level for running safely with a group	Mean=9708 cfs
Maximum level for running safely with a group	Mean=39761 cfs
Best ride for trip members	Mean=22880 cfs
Water level you prefer <u>as a trip leader</u>	Mean=23303 cfs

b. Which campsites, rapids, or attraction sites would be most problematic **BELOW** your minimum safety level? (If none, please write none)

N=265; Horn (31%)
Hance (25)
Lava (14)

c. Which campsites, rapids, or attraction sites would be most problematic **ABOVE** your maximum safety level? (If none, please write none)

N=179; Lava (28%)
Crystal (26)
Granite (9)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



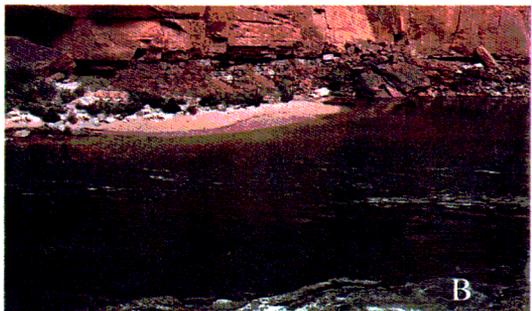
- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 69%	B- 17%	Neither- 11%	Both- 3%
A- 63%	B- 19%	Neither- 13%	Both- 6%



- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 66%	B- 23%	Neither- 9%	Both- 3%
A- 57%	B- 28%	Neither- 8%	Both- 7%



- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 59%	B- 28%	Neither- 9%	Both- 4%
A- 34%	B- 51%	Neither- 6%	Both- 9%

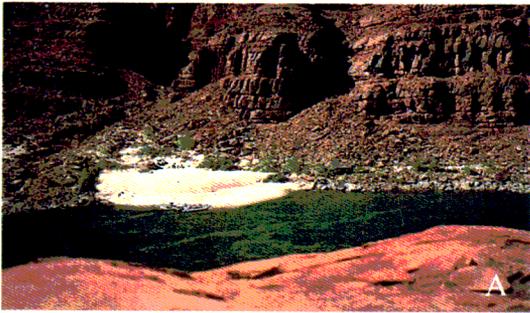
G(n =72)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



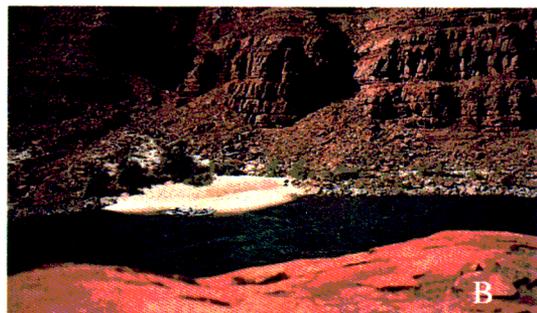
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 7% B- 83% Neither- 6% Both- 4%
 A-23% B- 58% Neither- 13% Both- 7%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 23% B- 61% Neither- 11% Both- 4%
 A- 23% B- 59% Neither- 13% Both- 6%

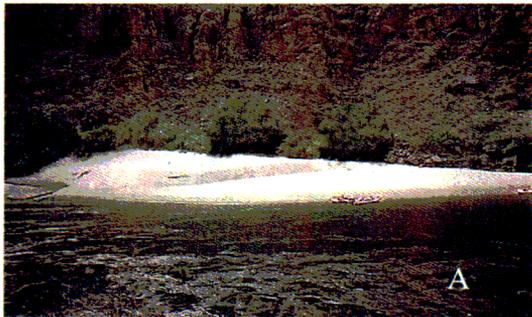


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 39% B- 46% Neither- 13% Both- 3%
 A- 27% B- 60% Neither- 7% Both- 6%

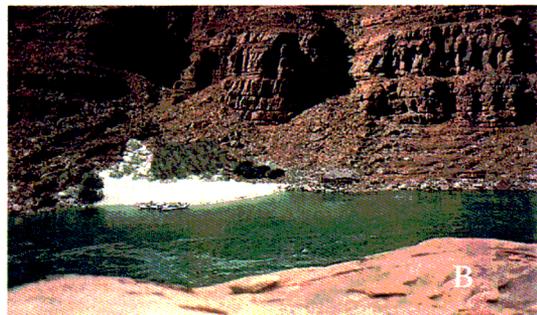
G(n = 72)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



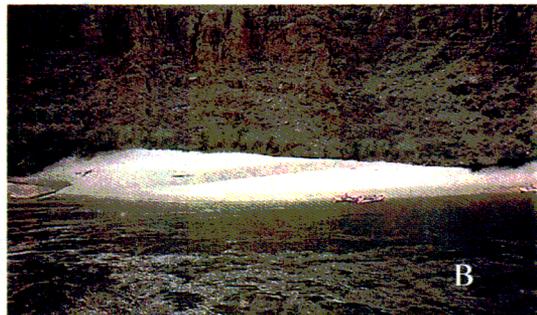
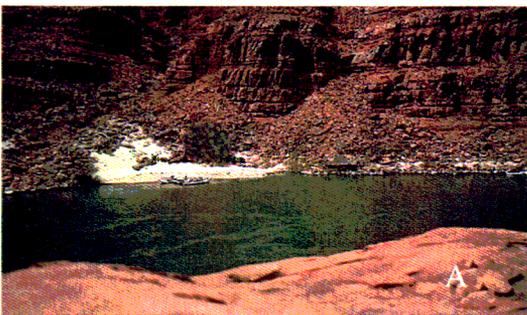
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 74%	B- 18%	Neither- 4%	Both- 4%
A- 43%	B- 43%	Neither- 5%	Both- 9%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 47%	B- 36%	Neither- 13%	Both- 4%
A- 42%	B- 42%	Neither- 9%	Both- 8%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 23%	B- 68%	Neither- 4%	Both- 5%
A- 49%	B- 40%	Neither- 4%	Both- 8%

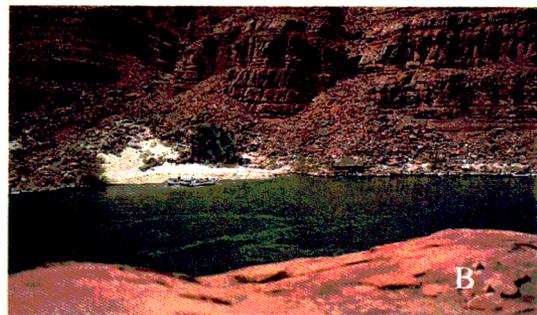
H (n = 78)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



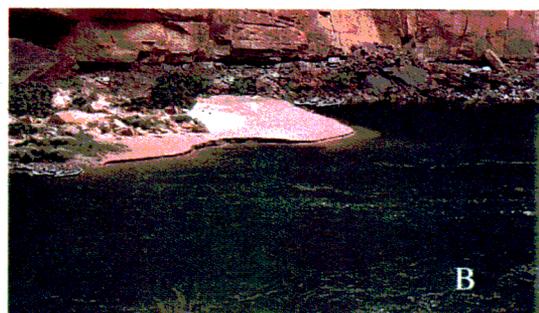
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 26%	B- 66%	Neither- 5%	Both- 3%
A- 36%	B- 47%	Neither- 9%	Both- 8%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 70%	B- 12%	Neither- 13.2%	Both- 5%
A- 41%	B- 37%	Neither- 9%	Both- 12%

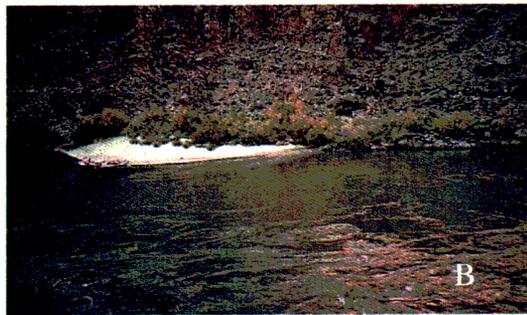


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 39%	B- 48%	Neither- 7%	Both- 7%
A- 18%	B- 65%	Neither- 7%	Both- 10%

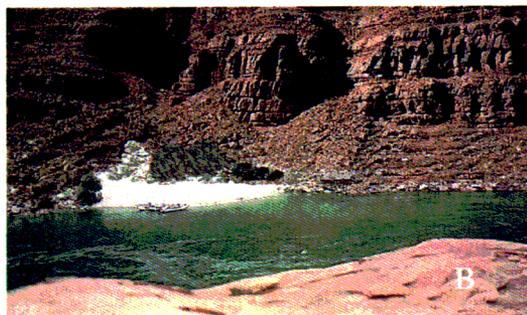
H (n = 78)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



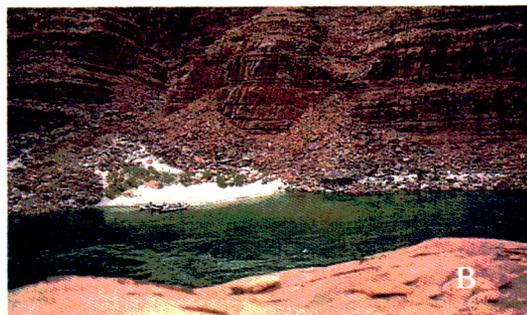
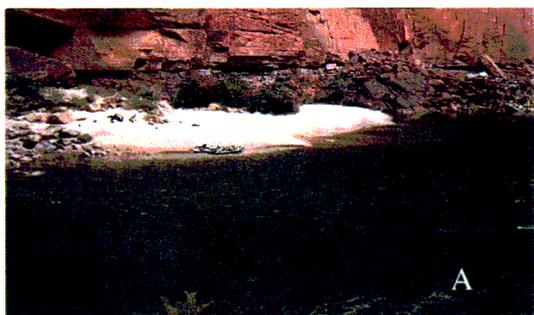
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 6%	B- 67%	Neither- 26%	Both- 1%
A- 15%	B- 74%	Neither- 5%	Both- 7%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 74%	B- 13%	Neither- 6%	Both- 0%
A- 53%	B- 34%	Neither- 6%	Both- 6%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 87%	B- 5%	Neither- 6%	Both- 2%
A- 71%	B- 17%	Neither- 6%	Both- 6%

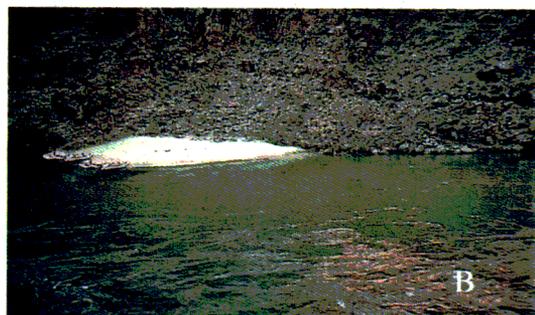
I (n = 84)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



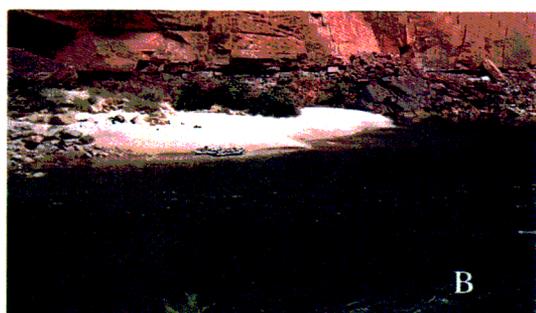
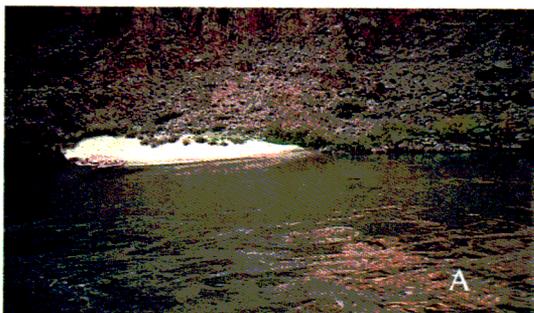
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 12% B- 80% Neither- 6% Both- 2%
 A- 43% B- 48% Neither- 2% Both- 7%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 45% B- 21% Neither- 33% Both- 1%
 A- 55% B- 29% Neither- 9% Both- 6%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 3% B- 88% Neither- 8% Both- 1%
 A- 6% B- 80% Neither- 8% Both- 6%

I (n = 84)

10. Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page?
(Please comment below)

See Page 133 for List of Responses

11. On average, how crowded did you feel the river was while you were camping on river? (Please circle the number on the scale that best represents your feelings)

1=12%	2=23	3=16	4=14	5=14	6=11	7=7	8=2	9=1
Not at all crowded	Slightly crowded		Moderately crowded			Extremely crowded		

- 12a. Did you ever share a beach with other groups for a campsite location?
(Please ✓ one)

54% No

46 Yes



If yes, how many nights did this happen? (Please ✓ one)

57% One night

32 Two nights

6 Three nights

5 Four or more nights

- b. Could you see the camps of other groups from any of your campsites during your trip? (Please ✓ one)

29% No

71 Yes



If yes, were these groups sharing the beach with your group or did they have a separate beach?

(Please ✓ all that apply and fill in the blank for number of nights)

We shared a beach with another group on **Mean=2** nights.

We were on separate beaches but within sight or hearing of other groups on **Mean=2** nights.

- c. If you had a choice, would you prefer a campsite: (Please ✓ one)

0% On the same beach as another group

4 Where you might be able to see or hear another group

96 Out of sight and hearing of others

CONSTANT FLOW LEVELS

13. How would you, as a private trip leader using the boat you usually pilot, evaluate each of the following water levels for a private Grand Canyon river trip? Assume the water level is constant for the entire trip.
(Please circle one number for each water level)

Flow Level	Very Satisfactory	Somewhat Satisfactory	Neutral	Somewhat Unsatisfactory	Very Unsatisfactory	Don't Know
2,000 cfs	42%	19%	5%	5%	88%	0%
3,000 cfs	4	1	3	10	82	0
4,000 cfs	5	3	5	19	69	0
5,000 cfs	6	4	10	32	49	0
7,500 cfs	11	9	10	27	25	0
10,000 cfs	17	23	34	19	8	0
15,000 cfs	15	31	16	5	3	0
20,000 cfs	77	13	6	1	3	0
25,000 cfs	79	11	5	2	0	0
30,000 cfs	56	24	12	3	5	0
40,000 cfs	32	21	16	15	16	0
50,000 cfs	21	15	14	19	31	0
60,000 cfs	16	10	14	12	49	0
80,000 or more	14	6	11	10	59	0

14. In the past, have you used information concerning scheduled Glen Canyon Dam releases as a basis for making decisions about your raft trips in the Grand Canyon (e.g. when to run particular rapids, when to camp, where to moor boats, etc.)?
(Please check one)

52% No → skip to next page, question 15

48 Yes

- a. What has been your **MOST** common means of obtaining this information?

N=114; Experience (37%) Lee's Ferry (30) Internet (23) Telephone (19)

- b. How reliable have you found this information about scheduled releases to be?
(Please ✓ one)
- 7% Always accurate
 - 63 Usually accurate
 - 26 So-so
 - 4 Seldom accurate
 - 0 Never accurate
- c. Do you have any suggestions on how to improve the ways that water release patterns and general river information are communicated to river runners?

N=91; Launch board at Lees Ferry and Phantom Ranch updated regularly (14%); Radios, internet, telephone recordings (23); Rangers with literature on flows at put-ins (20); Keep constant flows (12)

15. An important issue facing river rafting at Grand Canyon concerns the number of groups that run the river each year. We would like to know how you feel about trade-offs between public access to the river and the number of people encountered on a river trip. Your opinions about these trade-offs will provide useful information for river management. As a follow-up to this questionnaire, we would like you to respond to questions about river access; *these questions are accessible on the internet*. First, we would like to ask about your ability to respond to the follow-up questions on the web:

- a. Do you have access to a computer that would allow you to complete the web-based set of items on trade-offs between public access to the river and numbers of people encountered?
(Please ✓ one)

23% No → *Please skip to item 16*

77 Yes



- b. Are you willing to take some additional time to complete the web-based set of items on trade-offs between public access to the river and numbers of people encountered?

(Please ✓ one)

17% No → *Please continue to item 16*

83 Yes → *Please complete this questionnaire, and then follow the instructions below to access the web-based items*

These items are an important part of the study; please answer these questions if you have access to the internet. The additional items are located at the following address:

<http://nature.snr.uvm.edu/grandcan>

The identification number printed on the front cover of this questionnaire will be needed to submit your responses after you have accessed the web site.

16. In this final section, we would like to ask some questions about your background and occupation which will help us compare your answers with those of other people. We stress that all of your answers are strictly confidential.

a. How old are you? **Mean=46** Years old

b. Are you (Please ✓ one):

84% Male

16 Female

c. How many years of school have you completed?
(Please circle one or check the highest year or level)

1 2 3 4 5 6 7 8 9 10 11 12=3%

14% Some college

22% M.A., M.S.

42 B.A. or equivalent

19 Advanced degree (M.D., Ph.D.)

d. Please check the response that comes closest to your total family income before taxes.

(Please ✓ one)

2% Less than \$10,000

11% \$50,000 to \$59,999

5 \$10,000 to \$19,999

14 \$60,000 to \$69,999

6 \$20,000 to \$29,999

6 \$70,000 to \$79,999

10 \$30,000 to \$39,999

8 \$80,000 to \$89,999

12 \$40,000 to \$49,999

17 \$90,000 to \$99,999

11 \$100,000 or more

e. With reference to your primary occupation, are you currently (Please ✓ one):

73% Employed full-time

12 Employed part-time

2 Full-time homemaker

2 Temporarily unemployed

1 Not employed or looking for work

4 Retired, not working

6 Retired, working part-time

17. Do you have any other comments about rafting on the Colorado River in Grand Canyon?

See Page 108 for List of Responses

Thank you for your time and responses. Please mail back your questionnaire in the enclosed postage-paid envelope. Your responses will be included within a summary report presented to the Grand Canyon Monitoring and Research Center.

Public burden for this collection of information is estimated to average 35 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington, DC 20503.

Responses to Open-Ended Question 17

Do you have any other comments about rafting on the Colorado River in Grand Canyon?

1010. Get rid of the dam. Change proportion of trips allocated to commercial and recreational boaters. It is outrageous that the wait list is normally 15-20 years long!
1020. More private access (more private launch dates). Limit motorized travel. Trade commercial user days for private user days, the combined total is as high as it needs to be. People cry that they need motorized boats to make it easier for more people to make the trip, whether it be from time constraints or physical limitations, well I say that's too bad. This is nature, not Disney World. That line of reasoning is ridiculous, would they put escalators up to Everest? I did not answer the questions on the website because I don't feel they address the issues. You already have to wait 10 years (or more) for a permit. If you trade commercial user days for private user days, you shorten the wait without impacting the environment. More total user days is definitely not the answer. And out of curiosity, how does someone in Illinois end up with a project like this? Good Luck!
1040. Restructure the access between commercial and private boaters. A 20 year waiting list for private boaters is absolute nonsense. Fee structure is insane!
1050. Allocations to private parties are too small. Waiting 10-15 years or more is absurd.
1070. I found the NPS rangers arrogant and discourteous.
1080. I have done the Colorado River trips as both a commercial guide and as a private trip leader. I feel the NPS procedures and rules favor the commercial operators. It is unfortunate that private trips have approx. a 14 year wait and represent only 10% of the trips. I feel that current limit 22,000/year is enough to be saved, perhaps too high. I would like to see more alternatives; at present there are basically two choices--a 12 day motor trip or a 14 year wait for a private trip permit.
1100. I have always felt too much of the access to the canyon has been given to commercial outfitters. Is it really fair that all of us that are skilled enough to run the river privately have to wait 12-15 years to take a trip? Meanwhile we pay every year to stay on this list. Why is it that the big money makers (comm. Outfitting companies) always get preferential treatment. Wouldn't it be more fair to give 50% of the use to the privates and 50% to commercials? Having filled out your computer survey, I still wonder how the % of commercial and privates compare. I feel the questions would change greatly if we the privates got 50% of the use of the river. Why do you not put this question out for discussion? The

- questions become quite nebulous past 10 years. I will 70 in 20 years and certainly not kayaking the GC then!
1111. Dogs should be allowed. We deal with our poop just fine picking up after. Your dog should be no problem. The current permit system sucks! It used to be much easier to get a cancellation. And the fees are just bending us over. River runners should not have to pay so much. User days should be moved fair for private/commercial.
1122. Get all the motors off the river. Get all commercial outfitters off, or better yet, make commercial passengers apply in advance and wait as long as privates. That is fair. Blow up the dam. Thank you. I enjoyed contact with some of the privates and with none of the commercial people we saw.
1144. 12 year waiting list: \$200 to put your name on the list. \$25 a year to keep it on launch fee, user day fee, take out fee. Disproportionate # of privates to commercial trips. This takes some of the fun out of a canyon trip. And it discriminates against the young people and goes against my idea of public land.
1155. More private permits should be made available for those who wish to raft without commercial operators. This would improve equity between private and commercial river runners in terms of access. It seems that the way the system is currently set up, it favors commercial operations. As taxpayers, we should have priority access to our National Parks over commercial enterprises. The dam should be removed to let the river run wild. This would encourage replenishment of the ecosystem that is suffering as a result of the dam. Further restrict the use of motorized rafts in the GC.
1177. Best trip of my life, by far! Incredible beauty in the canyon. This place is a natural and precious treasure that is well worth preserving for the sake of the flora, fauna, geology, etc. and for future generations. Don't allow it to be spoiled or destroyed in any way. Also the water was way too cold, and as a result, could be quite hazardous. It is not natural to have such cold water in the Colorado. Please do something about that!
1199. Since my first trip in 1971, till now the river is cleaner, the people more friendly and willing to work things out. A lot of beaches are gone. The _____ have stabilized the banks.
1200. Allow more private party launches and greatly reduce the number of outfitters.
1236. Limit powerboats and commercial trip size.
1248. Truly enjoyable experience, all trips should be framed as ours was (days without other trips launching) to make it a more private experience.

1298. Do it, enjoy it. The "_____ Brothers" should be pilloried for their selfishness towards access to the canyon. Perhaps there should be a mandatory blackball for privates: once every 3 years, say.
1300. I've made my last trip. I'm too old for the long trips and extended hard work. But convince the BOR to sustain more constant flows during the higher use season=May through September. Are you doing this survey under contract with NPS at GC? If so, be prepared for penetrating, adversarial questions from Supt. _____ and his hench persons. I hold a BS and MS in civil engineering from the UI at C-U. As a second semester sophomore in Spring 1953, I took a P.E. (no kidding) class in "outdoor activities". It was a "pioneer" endeavor--which may have grown into your department. (naturally it was resisted by most of the "jocks" in the P.E. department--because it was not really P.E.!)
1326. One of the most difficult aspects to deal with in regard to camping is on both sides of Havasu Creek. In fairness, the last campsites on the approach to Havasu are best used by larger commercial trips. This leaves campsites further upstream for private groups. Even with an early start, it is difficult to get down to Havasu (say Mooney or Havasu Falls), and return to the river and still have sufficient time to find a good campsite downriver. Good campsites below Havasu are scarce. If you want to see all of Havasu Creek, it becomes a long, rushed day. There probably isn't much that can be done about this but it is something of a problem. Ideally, a trip would be done at approximately constant mid-high flow volumes. No matter the flow levels, weather, etc. The GC trip is worth doing. It is such a beautiful, emotional, magical place.
1339. The 3 trips I have taken were well spread apart--1984/1988/1997. Therefore trying to remember flow levels in regards to specific rapids and/or side canyons is very difficult for me. I'd like to see the permit system become a little more flexible. The rule that one's name gets dropped from the waiting list should they go on a trip is totally outrageous! A person with lots of money could go commercially numerous times a year, if they wanted to. But if I float with a friend my name gets bumped from a list that takes 9+ years to wait through--bullshit!!! I was very upset by the beach degradation--a noticeable change since I was last down in '88. Short of blowing up the dam, I'm not sure what can be done to change it--Would love to see this be a real deserted river again. Would like to spend more time per trip--more hikes and lay-over days would make for a higher quality trip.
1342. More river days for private boaters. More quiet!
1397. My biggest concern, as a private boater, is the waiting list. I have run many rivers in many parts of the world and there is no experience quite like three weeks in the GC. There is no longer any point of thinking of the Colorado River as a wilderness experience. As in most National Parks in the US, it is not a wilderness experience but a great experience outdoors in an incredible environment--with

many other people. Because of the demand, and the care river runners take of their environment, I believe the number of private trips down the GC should be increased significantly. I answered the internet questions after writing this.

1428. The GC is a resource not a commodity. Commercial trips treat the canyon as a commodity. The time to get a permit to go down the GC is absurd! (16 years!!)
1432. Balance private and commercials, i.e.-- more private permits. Human waster removal from river corridor.
1446. The discrepancy between private and commercial access to permits is unfair. Private people should have equal access as commercial clients. I had to wait 8 years for my trip in 1997. Yet commercial clients can go on short notice. That is unfair. We saw other groups about 20-30% of the time. That was ok, but user days should not be increased because more than 30% contact would be too much and campsites would be hard to find in some areas. Everyone should apply for a permit and be put on a waiting list. When each names get to the top of the list, he or she can choose to put together a private trip or a commercial trip. The waiting list system is best because a person knows he or she will get to the top of the list eventually and it allows the trip leader to plan the trip better.
1464. Our last trip they kept the water constant at the same level. This helped us out. No floating toilets in the middle of the night. No trashed boat with logs and sticks at Tegrats Creek. We had to beach all the other rafts that year. Get rid of the Tamarisk. This will ruin the river over the years to come. Keep it cold, we loved catch and release fishing.
1482. Reduce commercial trip size. Smaller trips blend in better. Allocate more user days to privates. Count commercial guides as user days. Two motor rigs disgourging 40+ people at side canyon is ridiculous. 10-15 person trips can virtually disappear in the canyon. Also private trips take a lot of inexperienced people also. The commercial argument doesn't fly.
1496. The balance between private and commercial trips is way out of line, and needs to be redressed. Restrict commercial trips and allow more private trips. I had to wait 10 years for one trip. Too long! A good friend waited too but he was too old, so it was too late for him.
1535. The allotment of launch dates for private trips vs. commercial trips is horribly unfair. I waited for 9 years to get a permit.
1555. Repeat that allocation of commercial and private permits is out of balance in favor of commercial. Waiting list for a private permit is now 12 years! Too long! The park/river don't belong to the outfitters! Your website questions are almost all like being questioned about whether you'd prefer to be burned at the stake or

drawn and quartered. There aren't any good choices. The number of permits given to commercial boaters must be made equitable to #'s given to private!!!

1595. I think it is being handled ok now. I feel you are trying to micro-manage it. Leave well enough alone!
1616. To me the most important aspects of the GC trip are: reliable flows over 10,000 cfs, lack of crowding, maintenance of wilderness environment, and fair permit system.
1622. Wish I had the time available to go more often. It is one of the finest experiences available.
1638. I have comments about the questions I answered on the internet. I would say my answers are tempered not because I don't want to see people but due to the fact that there are not that many places on the Grand to camp and have lunch. The major tourist side canyons can not take a large number of rafters, and it would be difficult to on load and off load many groups at these spots. Stopping at Havasu is already difficult with 2 commercial and 1 private trip a day. Nakawear and the Anastaze Ruins would be another place. Stopping to scout major rapids would be tough, too. Seeing people is nothing, it is where do they camp, eat, and tour that worries me.
1666. It is entirely unfair that paying customers (rich folks) can buy 10 or 20 trips a year if they want (even if most don't), while privates have to wait way long, and also are kicked off the list if they participate in more than 1 private trip (but not if, they pay for a commercial trip). The permit allocation has never been fair. Everyone should be put on a waiting list for access, not just the privates. Am I bitter? You bet! This whole fiasco has been mismanaged from the very beginning. No wonder everyone on the list is p***** off, but if you have the money, you sail on through on your 6-day motor cruise! Solution! Everyone pays a fee and gets in line. The fees go to buy off the commercial allocation. Why in 10 or 20 years, several of the companies would be bought out and there would be less commercial use. This plan hasn't a prayer, because the commercials are in charge of the allocation system. I looked at your website and the questions are so crazy that I lost interest. They hassle the respondent too much. Clever by half. My responses are not to be used.
1672. Instead of limiting private groups, limit commercial trips. Please give consideration to assigning campsites so we don't have to negotiate every day for a place to stay. Talk to river groups about the courtesy of not pulling out into the river as another group is floating by. I know the river has a lot of traffic and I don't care as long as I don't have to float for miles with another party. My experience running the Middle Fork of the Salmon has had led me to believe that having assigned campsites eliminates most of the rivalry between rafting parties. On our two GC trips, one commercial trip leader was willing to negotiate so we

- both got some of the campsites we wanted. Another commercial trip leader (different trip) told us she had clients to please and she didn't care about our needs. We would be glad to share a campsite with someone who couldn't make their assigned camp because of illness, fatigue, boating mishap, etc. as long as they asked/explained instead of just moving in on top of us.
1694. It is certainly nice having the river to yourself and not seeing others, but not at the expense of restricting access, especially for private boaters. The current permit system requiring a 10+ year wait to get to the top of the list is insane! This system penalizes people with full time employment who have limited vacation time. Also private boater fees are too high, why do we have to subsidize the hiking trails that we minimally use.
1700. It is still the "ultima thule" and the one trip to which all others are compared. A permit wait of 3-8 years is acceptable, longer is not. More permits could be added to the "shoulder" seasons. No increases in commercial use. Support wild and scenic, not wilderness designation.
1717. I have only rafted the GC once. I don't know about the different river flows/levels and the effect they have on the rapids. My name was in to get the permit and the friends I went with were more experienced and planned the trip in regard to time of year to go, water levels, food company to use, equipment to take, etc.
1724. The NPS does an excellent job. Something has to be done about the years required on waiting list for private boaters. Private boaters should be given more access to the river and reduce the commercial traffic.
1731. The majesty of the GC and awe-inspiring beauty of the River corridor was constant and overwhelming. It was visual and sensory by second, day-by-day, rain or shine, we were in the center of a magnificent masterpiece. Only a higher power could have created something so timeless and spectacular.
1762. I would love to see the removal of Glen Canyon dam and a return someday of running those flooded passages. I would also like to see the elimination of the motorboats, it is obnoxious.
1779. Allow more private (public) user days and reduce commercial interests. Get the helicopter and plane flights over the canyons eliminated or at least controlled. Make commercial outfitters pay their fair share—same percentage of cost as private users. Continue monitoring impacts to the river and canyon. Eliminate Glen Canyon Dam!
1786. Just do it! Any water level, anytime, nobody lives forever, most people don't get to live at all.

1793. As far as I got on your website, it seemed to be asking whether I'd wait longer for a permit in exchange for more solitude. No. What I want is to be able to find a camp. I don't require the absence of other people. There isn't enough GC for that. My answers to the picture questions here were based on liking to raft with small parties. I hate mob-trips. Our Grand trip was one-boat, two people
1834. I would like to see a higher percentage of private trips available.
1850. The Park Service wasn't very clear about camping at the upstream site River left (southside) of Phantom Ranch, this is reserved for transfers only. We were there, set up, and got kicked out threatened with a fine, had to visit Phantom Ranch get water, make phone calls, run Horn Creek Rapid at 6:00 p.m. and set up a new camp.
1868. Re: question 7—if I wanted to feel "safe" I'd stay home. Being prepared for risks is part of the trip. Re: pairs 4 beaches. The appearance of the beaches is far less important than where we wanted to be for hikes and who was hungry. Why go to a website to answer questions about access—much easier of the point for me to answer them as part of the questionnaire.
1876. Actually I was kayaking but we did have support rafts. I do not know what is the character of the river when flow gets below 10,000 cfs, but I assumed in question 13 that it would get very technical, possibly fun for a kayak but difficult and bony for a raft.
1892. Access is presently over-allocated to commercial interests and guests. I would recommend: fewer commercial launches, more private launches (8 years on wait-list is absurd), fewer powerboat launches during motorized season.
1900. I could call a commercial outfitter and take a GC trip this year. I understand the waiting list for a private trip is up to about 17-18 years. This is ridiculous. The fee to the NPS for the trip increased greatly from 1988, my first trip, to 1997, my second trip. I did not see anything I was getting for the extra money. However, I do not want much out of the NPS, except to get our of my way and let me do it. I went in April, 1988 and September 1997. Both times the water was clear at the put-in and turned into a chocolate malt about a mile downstream when the Paria ran in. This was the end of fishing on both trips. It was amazing how 50 or so cfs in the Paria could turn 20,000 cfs into such mud. Surely some rancher on the Paria could use more water for irrigation. Most other streams that run into the river are clear, as they run through rock. Clearer water is safer for river running. It is easier to see what you need to see, for example to distinguish a big hole that you want to miss from a big wave that you want to hit.
1928. Amount of daily flow fluctuation should be restricted. Fee structure is completely unreasonable. Make the asphalt crowd pay for their infrastructure, if rafters have to pay for waiting list management. Private trip wait list is absurdly long. User

days should be reallocated away from commercial trips. Motor trips should be restricted to a smaller percentage of total.

1937. The current private trip waiting list situation is so out-of-hand at this point, that it's ridiculous. Why not convert some commercial user days to private user days? The GC is a sacred place. Damage created by recent flow releases from Glen Canyon Dam has taken a toll. My greatest desire where the GC is concerned is that it remain undamaged in terms of habitat and erosion and overcrowding—whatever it takes. Being in the canyon is as close to living in God's House as it gets. I have seen so many people's lives profoundly and positively affected by having the opportunity to float the GC.
1982. Minimize noise from large horsepower commercial rigs. More private permits. The regulations for minimum impact work.
2010. For me, rafting the GC in an oar-powered boat on a private permit is one of my "trips of a lifetime". Each time I go it lives up to and goes beyond my hopes of what an outstanding journey should be. Each time I learn more than I could have imagined. Each time I expect it may be my last time so it always holds a special quality. I think we must continue to limit the numbers of rafters to retain the quality of experience. I think the disparity between the number of private and commercial permits is inequitable and overly penalizes the private sector.
2030. It is the best!!!
2060. Many management agency years and taxpayer dollars have gone into managing the GC as a wild area. It seems very inconsistent then that the water temp is allowed to be 20-30 degrees colder than the natural state. This greatly detracts from the quality of a GC raft trip. It is a constant reminder the river is completely controlled. Warmer water would go a long way to letting this be forgotten.
2070. A raft trip on the CO thru GC is a rare and spiritually uplifting experience. It was worth the 9 year wait. I understand the tradeoffs between launches and crowding, and think its about right the way it is. You did not ask about the commercial/private allocation ratio. I believe its weighed too heavily toward commercial user days. I also am opposed to motorized trips, although I understand their historical claims.
2090. I have always loathed bureaucracy. In July-August of 1997, we were nearly drowned in a flash flood at Havasu Canyon. 80+ people were cared for by park personnel, given loads of MREs, water, and transported 6 miles downstream. My daughter was airlifted out due to injuries. Park staff treated us quite nicely, and I believe we run rivers at our own risk. Advance information and ongoing communication is a crock. A false security blanket.

2100. Keep up the good work. I hope and plan to run it at least 15 more times before I am 70! Lower the fees for waiting list!
2124. Maintain or reduce the number of people on the river. Fees paid to NPS are excessive. Rafting through GC is a marvelous experience.
2136. My first trip was in 1980. This year I will make my fifth trip. The river has become more crowded with commercial boats, the battle for camp beaches has become the force which drives the river running schedule and the beaches have been seriously eroded away.
2200. I would like to be able to do it annually but can't get a permit easily.
2228. To get the right answers to river planning issues, you have to start by asking the right questions. 1) What process and what influences on that process are appropriate for deciding how to divide allocations among privates, research trips, and commercials? 2) What should that allocation be? 3) How important is it to compel: a) commercials to adopt the new quiet motors? b) air-crafts to stay X-thousands of feet over the canyon rim? 4) Which park regulations make sense and which do not? 5) The fundamental rule: river running is an expression of freedom. Which changes will enhance freedom and which will limit freedom?
2246. More private party access!!! No fees to US citizens (we own it). Our taxes fund to operate the park and should come from congress and foreign visitors. Less commercial boats. Allow paid guides on private trips. The current level of environmental protection works, stop the ever increasing restrictions and NPS meddling. Leave the motorized boats alone, they have the right to use the park also. I have no problem with airplane noise. There is no such thing as "natural quiet" on the river, its "naturally noisy" and thats okay with me (no boom boxes allowed).
2264. I would like to see a more equitable distribution of user days in the canyon, so the private sector has a greater chance for a trip, rather than the current 20 year wait. Commercial operators have in excess of 80% of the user days, with only 350 or so private trips/year. The commercial companies are all owned by millionaires, with the possible exception of Martin Litton, and that equals political clout, so unless the companies are willing to acquiesce some of their days or the NPS changes, i.e.--more permits in the "shoulder" season (Spring/Fall), a private trip will continue to be a rarity.
2278. Number one is the world for diversity.
2282. We had a highly unpleasant experience with a ranger on patrol from the NPS, by the name of _____. He was taking a group of 20 "volunteers" through the canyon (four more than private trips are allowed, and are they counted as user days?) Not only was he intrusive and invasive in our camp, but he was verbally

abusive and profane. His comment of "if I had my way, there would be no private river trips through the GC." I can only hope he does not represent the NPS views. Many of our group said the experience with him ruined their experience. Having an uninvited, intrusive, profane individual enter our camp most certainly ruined the experience for me.

2300. The permit system and the changing yearly rules by the park service are completely out of whack. The allocation between commercial and private user days is unfair. The opportunity to acquire cancellations should be re-implemented and the "overbooking" by the park service should not be allowed. I feel the relationship between NPS and the private river runners has reached very low depths, and more communication, less regulation, and more user days needs to be implemented. Many in the Flagstaff Private River Runner community feel resentment aimed directly at NPS. 10-12 year waits on the waiting list are absolutely absurd...and not offering cancellations (this year the NPS has not been issuing cancellations on a call in basis) because of "overbooking" is not fair to the privates when you consider the percentage of user days given to the commercial outfitters. We want to use and enjoy the river and canyon, not abuse it! Allocated user days should be used and offered for cancellations. Changes need to start at the source of the problem, the NPS. We hope this survey and study helps all concerned.
2350. Many of the questions you have asked are superfluous in the context of the privilege of making this wonderful trip. I would never quibble about water flows, camp spots or the like, but would rather be thankful for the opportunity to make the trip. For myself and those on my trips, the important things are the grandeur of the canyon and the opportunity to be together and deal with the vicissitudes of weather, water flow, rapid difficulty, locating good camp spots, etc.
2372. My first trip changed my life in '88. It has been quite a journey since then-- learning by going on succession of trips with groups so diverse and unpredictable. Missed 2 years since '88 and I am afraid I could miss '99 if commitments continue to grow. It is a tradeoff and if I don't run the Grand this year, I will be investing my time and energy into other rewarding projects including hopefully Lechuguilla Cave!
2388. The Colorado/GC is a public river. More user-days needed badly. It is easy to bypass certain crowded attractions, or wait your turn. Some controls could be placed at Havasu, Deer Creek, etc. to phase trips in and out.
2394. Preserving this most fabulous adventure couldn't be more important. Any increases in public access would certainly tarnish the experience.
2418. Need to be able to get private permits easier. More days for private boaters, less commercial days. If you make the wait too long, we will die before we get to go on the river. Our children should be able to inherit our place on the waiting list.

2426. As equipment has improved and population increased, many more people are boating than 20 years ago. This of course has led to restrictions, permits as more people crowd onto rivers, and the attitude of boaters has changed, as has the people who boat. We all have more \$, more stuff, specialized equipment and we don't endure the discomforts, cold we use to, now are we forced to compromise. Because I'm getting older, I get nostalgic for the more miserable old days, at least it kept people off the rivers, more people has its plus side, such as more political advocacy for rivers! As for the canyon, it will only get more and more pressure for use. Protecting the place from ourselves has to be priority #1.
2434. Questions regarding beaches in the canyon are mute. Because the dynamics that shape the beaches, affect the growth of nonnative vegetation are no longer in affect. The use of certain beaches (because of trip schedules) and nonuse of others by commercial trips has contributed to the overgrowth of nonnative on the nonuse beaches. I also believe that the never-ending research is a waste of time, however it does give a lot of people a lot of time in the canyon. I have camped with researchers and helped with some of the manual labor during beach erosion studies. I have camped with researchers doing sedimentation research after the "Babbit Flood". Their conclusions (off the record) generally speaking, "most of this research is interesting, but in the long run as long as the dam is there, nothing is really going to change." I would like to a get a copy of the results of this survey.
2442. I think the most ideal scenario would be to release a steady flow from the dam. This would be most advantageous to the wildlife, the ecosystem, beaches, the river runners, etc. I'd love to see a steady flow of 18,000 cfs!!! But even a steady flow of 12,000 or 14,000 or 16,000 whatever would improve conditions for all things concerned in GC.
2450. The most treasured moments of my life are sharing this amazing opportunity with family and friends. Seeing your name on the Launch Board @ Lees Ferry is awesome!!! (but repeatedly, I've seen blank or cancelled dates and launches). How could this be? We need more private launch slots because people deserve them. For existing, rare slots to go unused, What's up?
2468. Though I am somewhat opposed to motor rigs I see that they served a useful purpose. I would like to see commercial companies given put in dates with a set number of passengers. If they cannot confirm the seats 30 days in advance they are up for grabs by private or other commercial companies. The waiting list is excessive in length. But I have no reasonable solution. I agree with the fees but if a trip is not taken, the money received for being on the list should be used to reduce the fees of those who go. A water outlet should be installed at the boat ramp (beach) at Phantom Ranch. A human waste dump should be installed at Peach Springs (fee for dumping like ones on the main Salmon). Boaters itineraries should be posted at the launch ramp to all planning by later trips.

2476. Cut down on the amount of Commercial numbers taken down the river by totally banning motorized rafts. They're noisy and pollute the water. And take up too much space at main attraction spots.
2510. I don't believe anyone under 21 should be aloud to put their name on the waiting list, because it is a scam by their parents which just make the list longer. So they can go on more trips.
2550. Motor rigs people are on are a bigger impact than private groups because they don't participate and are clued out. I.e. one client stole my hat and when I chased him down in a kayak, he said, "oh I thought it was lost". The guide apologized for him but I don't need this city attitude, the 7 day club med party attitude that they bring to a special place we have to wait years to visit with a select group of our closest friends and family.
2560. I am in strong support of full wilderness protection for the river corridor. The Colorado River through the GC could be a premier wilderness river experience unparalleled in the lower 48. This wilderness treasure should not be severely compromised due to the aggressive and successful advertising by large commercial boating companies whose priority is to make maximum profit with shorter trips. The canyon is much too precious of a national, cultural and biological treasure for such short-sighted management! There are plenty of 4-7 day motorized river trips available elsewhere in the region.
2570. It is not the big canyon, it's not the kind of large canyon, or the huge canyon, its not the mediocre canyon, it's the Grand Canyon. River people take care of the canyon, unlike the incredibly filthy backpacking trip of the college of the incarnate word, San Antonio, Texas that we found at South Carolina/Vaseys. Pigs!!!
2590. The trip of a lifetime.
2600. The current allocation of permit system seems odd. A friend on the list for 11 years is being asked to pick dates 2 years in advance. I could be in a nursing home before my name comes up again (but I'd go!)
2612. Because we need time in wilderness and away from society in the modern age. We need to feel again our connection to the earth. Also there is an accompanying poem.
2650. Don't increase the number of users or the number of launches.
2662. Keep it simple. Remove the dam. Limit commercial trips. Increase private trips. Ban motors. Ban quicky trips. If people want to see the canyon they should take the time to SEE the canyon. This is not a Disney Land.

2686. Love the shit out of it. I'd lobby for: smaller max size groups. Less commercial user days more private. If people could do only one trip every 24 months, it would shorten the wait list. That would be good. Make the air temps warmer in the winter!
2698. As I mentioned earlier—I don't have web access at the moment—I am very open to seeing more people in the canyon, even if it does mean sharing a camp once in awhile. I've been on four trips and seen 2 other privates (of course 2 of my trips were in December).
2700. Some of the best times in my life have been spent in the canyon. The river itself is good, but the canyon with side canyons is the real attraction. For the most part, the people I've encountered there had a great respect for the place and public awareness of beach and campsite preservation seems quite high. Near as I can figure, I've spent about 150 days in the canyon and enjoyed them all with the exception of a few bad weather days. Preservation is key.
2714. The NPS does a terrible job of administering access to the river. The present permit system is ridiculous. The fees charged by NPS are completely unconscionable and no services are provided (other than enforcement type boater harassment). Current river management should take a look at how the main salmon and Yampa/Green in Dinosaur National Monument are administered.
2732. Park Service does a pretty good job with regulations and management.
2750. The outfitters allocation of user days is grossly unfair compared to the private boaters allocation. The allocations should be at least equal. Politics and money should not be allowed to degrade a national treasure such as the GC.
2764. There would be fewer conflicts between groups if all were running a more or less the same schedule. Eliminate motor trips and everyone will be at about the same pace. I just completed the web-based questionnaire. Generally the private groups are small and unobtrusive. I would prefer the solitude, but I'll trade off the solitude for the chance to run the river. Commercial groups, especially the large motorized trips, are intrusive and inconsistent with the character of the canyon. If the Park Service is truly interested in assuring a quality river experience, they must eliminate motors on the river and commercial river trips (including boatload should be no larger than the private trips (16 people).
2782. I am very bothered by the sight seeing helicopter flights. The planes are somewhat invasive, but can be lived with. The helicopter are very invasive and annoying. I know they are restricted to certain corridors, and when you are in those corridors you sure know it. I feel really sorry for backpackers who are hiking in those areas. I think helicopter tours should be banned and they should only be used for rescue work. I think that given the mandate of the NPS and the

demand for private use, that the allocation of user days should be adjusted. I don't want to see commercial companies off the river, but I feel that they have more than their share. For the sake of the canyon, I feel that all going down the river, (science trips, guides on commercial trips and rangers) should count in the user day equation.

2796. Rescind the Hatch Act! No more motors in the river corridor!
2816. Thank you for doing studies on the impacts of us on the river. This is one of the most incredible places in the world. The natural habitat being preserved is absolutely the top on the list of importance. Even if permits decreased to insure the health of the ecosystem it would be fully acceptable.
2838. The ratio of private to commercial trips should be closer to 50/50!
2850. Get rid of motors. Limit commercial trips to 16 people including guides, increase private user days (by reducing commercial) to 50%/50% split. Eliminate the use of so called painless private outfitting of private trips, require commercial trips to stay together (no camp snatching). Ditto for private. Limit _____ at bass camp. Reduce science trips to real science and make them row in now motor season. Ditto for NPS trips, no motors.
2888. Reduce the fees so private boaters can enjoy it—it takes \$ plus time to do in 18 days. Private party trips should have priority over commercials. Keep the river an adventure.
2894. It is certainly among the greatest experiences of my life.
2900. Would like to go more often. I have been in canoe rental, kayaking, rafting, dory, sailboats, powerboats for years since 1955. I like the river at all levels, all year, I live on a canoeing river the white water in SE Indiana. I still make fiberglass kayaks and dories.
2918. There needs to be more dates for private trips the people who are making the bucks off of the GC should have less influence in the planning for river use. They have a vested interest. The park belongs to the people why should it take 10-12 years to get a private permit?
2968. The personal fulfillment I have experienced on GC river trips is valued above all other experiences in my life. Each of my 5 trips has crystallized my personal values, my life's direction, my relationship in the world. A note about the ever so popular notion of "family values". This most recent GC trip saved my marriage! In regard to the number of groups web based survey: the number of private groups on the river has a small effect relative to the huge number of commercial groups. My input would be to reduce the total people in the canyon, but especially reduce the large, noisy, fast-moving commercial groups.

2976. I prefer to be on the river without the motor rigs. Simply because of the number of people (at camps, or popular hikespots, etc.). However, I would like to commend the commercial groups I've encountered. They have always gone out of their ways to communicate info., share knowledge and beer and what ever one might need, this is a view of many of my friends, who collectively have done dozens of trips. We all come from the woods of the northwest and are the first to realize the only true "wilderness" left is probably Antarctica.
2984. I'm glad it is not wall-to-wall people. I'd rather wait and have a quality quiet time. Number of days allowed should be raised by about 2, once we're there it would be nice to not have to push so hard the whole way down. Especially once days get shorter in September. We were there in late June and used almost every hour of daylight, and still missed a whole lot, and came home exhausted (but happy).
3010. The number of commercial starts and customers compared to private starts and participants is grossly skewed. There should be a reduction in commercial starts and an increase in private starts. Motorized craft of all types should be prohibited in the park.
3020. Beside the fact that it is an incredible experience and that I feel extremely lucky to have been down... I feel the issue of commercial run trips and private run trips is totally unfair. A person could pay a private company to run the canyon many many times. While I had to wait 11 years for my permit. Most of the people who came on my trip could never afford the \$ required by these companies so their only opportunity to experience their GC was with me. This seems very unfair. The Park Service issue of permits, commercial vs. private is unfair. The ridiculous fees associated with this whole system stinks too! Unless I save \$8000.00 and wait at least another 10-15 more years I will not be able to take my 2 daughters down the river! Get rid of the extreme water fluctuations (maybe the dam too!)
3040. The waiting list system is not working 10-20 years is too long to be on a list. Also many of the same people get trip cancellation slots-those need to be spread around and it might help reduce the waiting list. Also, it would be good to give more permits to the private sector and reduce the motorized sector (perhaps only mid May to mid September, and mid November to end of January.)
3050. Fewer commercial user days—more private. My son is a commercial boatman.
3070. During the 18 days we were on the river we saw I believe three or four other private groups and at least that many commercial trips each day. I know the motor rigs were passing us and were on a shorter trip than the private groups but I would like to see a higher ratio of private trips than there are now. It took me ten years for my name to get to the top of the list and I would like to see this time

shortened too. I do not want the canyon to become crowded though on the other hand, I also feel the fees are excessive and would like to know why they are so high.

3090. Too many motorized rafts, too many noisy planes flying over. It is a wonderful experience not to be missed. In fact, I'm on another trip as I write this. Wish we could have 21 day private permits in summer.
3100. Love it.
3139. Typed addendum attached to survey.
3155. It is a real treat. Adventure of a lifetime. Can be a lot of work, but worth it. The fees are going out of sight! In 1984 for a private trip of 16 people--\$50.00, in 1999 for a private trip of 16 people--\$1600.00. For this amount of money you'd think they would have a full time employee at the phone in the river permits office instead of a full answering machine. The GC park service sucks. The park supt. Thinks he owns the park and not the American people. The public who owns and pays for visiting the park—need much better service than they are getting.
3184. Commercial outfitters are becoming obsolete. They should begin to see their role as evolving into one of offering fewer “old style” full service trips while beginning to offer outfitting services to private boaters. Overall user should be reduced 30% Cut the commercial outfitters by 50% (5% per year for 10 years). Increase private permits. Letter also attached to survey.
3200. Nine years in obtaining a permit is too long. People you have rafted with previously are longer available. You have to scramble to put a trip together, ending up with people you don't know: an uncomfortable trip.
3238. Keep it clean and pristine, permits are great! Remove the dam! Free the fish, ban the planes, choppers, surveys. Reduce commercial permits increase private boater permits. We boated a month after the first major flush of the dam—great beaches, lots of sand, warm water is ok, but cold water is fine too. No time for web survey, sorry.
3244. On the whole, GC/Colorado management is very well run. As a private boater I'm naturally biased towards adjusting the commercial, private allocation more in favor of private boaters! The current method of allocating unclaimed/reclaimed/etc. launch dates favors local (ie. those living nearby and thus able to launch a trip on short notice) over those living further away and/or with needs for longer lead times/ advance notice. I waited on the private list for 9 years the first time, and 11 years this second time. Is it getting worse and worse? Are others sneaking on somehow, or using “research” status, etc. To get on,

while only honest dummies like myself patiently wait 10+ years between trips to this magnificent place?

3272. All persons who want to run the Colorado, including commercial passengers, should have to apply, and be on a waiting list. I gave up on your website questionnaire—it's too long...like the Colorado waiting list.
3288. Less commercial permits, more access for private trips. Permit period too long. Better access to side canyons such as Havasu and Matcat would be desirable.
3300. Reinstate the yearly Fees it will scare off people who put their name on the list, without any intention of capability to run the Grand. The scheduled flood of 95 helped the beaches in Oct 96 a lot . By 98 the beaches were small again anything that can help the beaches would be great.
3328. The current allocation of 2 private boaters to 98 commercial boaters is grossly unfair. I waited 10 years to get my 1998 permit and will probably wait 12 or more years for my next one. I don't want to see more boaters allowed on the river at a given time. The balance is right as it now exists (just make it 50% commercial and 50% private). The quality of a GC float trip is would class and made more so by the fact that I rowed my own boat, planned my own trip, and provided the leadership, myself.
3337. More user days need to be allocated to private use to reduce the ridiculously long waiting period for a permit. It is unfair that commercial access is available on relatively short notice while I must set and wait 12-15 years for the kind of experience I want, although I do recognize to need for and importance of the professional river runners.
3346. Yahoo!
3373. I laugh a lot, get scared a lot, am immersed in a wild and fantastically beautiful place. I give it 2 paddles up. I was the co-leader on this trip. _____ was the permit holder. Please send any future correspondence to _____.
Comment or computer question: I tried to get through questionnaire twice and both times at the indifference curves-2 I kept getting looped back to beginning question.
3382. It seems private trip access is so limited relative to commercial. However, is that true? Every year I go (between 1981-1998) its cleaner, less smell of urine, less trash—same (?) amount of ants/other insects drain human places. Motors seem quieter.
3391. Why should the private sector be penalized for wanting to go on as many private trips as they can get on. Why should their name come off the waiting list if they have a chance to go on other private trips? I feel this system penalizes private

- boaters. At my age by the time my # comes up I may not be healthy enough to go.
3400. One private launch per day is not acceptable. I waited nine years for my permit. Commercial outfitters control the river. They do a fine job and I can't find fault with their use--except for the whole motorized aspect...however, there are many private river runners who seldom, if ever, get to experience the trip due to the long waiting list. Beaches were rebuilt with the recent flooding--that is good--they are eroding with the daily flow variances, that is bad. A more constant flow with a spring flood might improve the river corridor.
3412. We had an absolutely perfect trip. We put on after the motor season; we often day full days with no other parties on the river. The camps were all spotless--which is a compliment to the NPS rangers put-in lecture. We only had an unfortunate issue with a commercial trip that we couldn't escape from day 7-day 12. They took every campsite, they were drinking on the water, they were rude, and they went out of their way to give us a hard time. That ruins the canyon. Its beyond dumb that a permit holder can only go on two private trips while on the waiting list-but you could go on endless commercial trips. Stupid.
3498. Something must be done to better accommodate private trips. The current allotment to commercials is absurd. The wait is now 15 years for a private permit. I'll be dead by then.
3500. I am against eliminating motorized craft from the river. The outfitters and private boaters would all end up competing for the same campsites if all crafts were human powered. The allocation of permits to the general public should increase at the expense of the commercial sector. I should not have to wait 10 years to get a permit while those who want to fork over big \$\$ to the outfitters can book a trip with much less notice. For information to be given to the NPS I prefer public forum vs. multiple-choice questions.
3520. It has always been a great experience. All dealings with the park service employees, especially the rangers at Lees Ferry have been positive. I enjoy traveling down river, but the ability to hike the side canyons is quite important. I would prefer to see user days maintained at the present level if not decreased. I would sacrifice my ability to return for the continued integrity of the canyon ecosystem.
3535. A GC river trip, in my opinion, is the best trip a boater can do, a few comments: The ratio of commercial to private trips is completely unfair. Maybe in 1972 this made sense, but today it is ridiculous. How many sports/activities are you penalized for being able to do yourself? The non-motorized season needs to be either lengthened or motors should be completely eliminated. Non-motor season should include part of the summer. Maybe a non-motor season of July 15-January 15. I think the number of trips could be increased slightly.

3560. I kept having trouble trying to answer the computerized questions and finally gave up in 3rd set.
3580. I did my latest trip in October and I felt there were a lot of groups on the river. It was a question every night as to whether we'd find the campsite we'd planned or already taken--frequently they were taken. We spent one night camped on ledges with singing eddy because campsite was taken--I was up all night watching boats--was tired for rest of the trip--was a major distraction for me to have so many groups on the river. Most of the groups were commercial outfitters. I'd like to see less commercial outfitters in non-summer months. Otherwise it was a great trip.
3595. Renegotiate the ratio of private to commercial trips to increase the percent of private trips. Get a better computer system to track permit applications. Make it possible to trade, postpone, or reschedule launch dates. Be open, clear and above-board on just how the permit system is being managed.
3600. It took us 9 years for our private permit to come up. Now we hear it takes 12 years. A few years ago I would have paid about \$50.00 to the NPS for launch fees. In 1989 we paid \$1000.00 in entry fees, launch fees and daily impact fees. Didn't see that the campsites looked any different then my trip in 1987 and 1991. The impact fee is more than a camper would pay in the south rim and we picked up all our trash, carried out all our human waste and brought our own water. The higher fees are ridiculous, and I am a river manager with the BLM. Some fees, ok, but too much of an increase.
3618. Be nice to not have to wait 20 years to get a private permit. Or have I said that already?
3626. More private and less commercial trips.
3634. Little apparent attention in this questionnaire to kayaking or canoeing. Too difficult to obtain permit. Too much emphasis on commercial float opportunities at expense of private boater. Cycling of flows in river too frequent, extreme and apparently harmful to ecology.
3650. Park service has done a good job of maintaining balance between solitude and letting lots of people boat. Now that so many people have equipment and expertise, the ratio of private :commercial should shift more toward private.
3676. I think the appointment of permits between private and commercial trips is horrendous. More private, less commercial would be much better. A person willing to pay can go this year. A private group needs to wait 10+ years.

3684. The private/commercial space allocation is extremely unfair. I had to wait 9 years to get my permit (it is even longer now). But commercial spots are available by the thousands every year. Yet to get on one of the commercial trips, I would have to pay 4 to 5 times the cost of my private trip (per person). I did not answer all of the questions on the internet, because if they were my only choices (e.g. wait 20 yrs. And share camps 50% of the time or wait 10 years and share camps 75% of time), then I just would not go to the canyon. 20 years is a ridiculous time to wait. Put in for a permit at age 44, go to the canyon at age 64? Get real! Especially when commercial trip bozos don't have to wait at all!
3722. Please cut some of the commercial user days to provide better access to private boaters. Given the choice of a safe trip or "a good ride", I'd prefer safety. Water temperature is not a major factor in enjoyment of a trip for me. I would rather have water temperatures dictated by the requirements of the fishery over boater comfort/enjoyment and discharge dictated by beach nourishment over peak power generation. Please send me an executive summary of the report.
3733. Private trips should be given 1st priority and commercials should have to wait in line. Private trips should be allowed to employ the help of commercial help. I would have liked to have 1 j-rig for support and 12 kayakers rather than 4 rafts and only 5 kayakers.
3788. Private permit to commercial ratio needs to be changed. Waiting list should not take 10 years to be on the river. Commercial raft customers should be required to visit with ranger since they caused more damage to the environment. Weren't able to hike Havasu because too many commercial there. A more constant flow would alleviate some of the beach damage.
3828. I would like a copy of the analysis report.
3832. What about wind? You can't do anything about it, but it can suck. Commercial boatman are professionals and seem to show more respect for the river and safety passing people on the river is not a bother, camping with one group is ok at a big beach. Big, long, flat beaches are great!
3846. Yes. I believe the permit process and allocation of permits is patently unfair! All persons desiring to float the river should be required to apply for and obtain a permit. The present permit system favors the wealthy. And least able. If an applicant is unable, for lack of skill or equipment, to safely float the river, they should then be able to hire a competent guide and/or outfitter. Those with the resources (monetary) can currently float the river whenever and as often as they wish. Those of more modest means are allowed to float once in a blue moon. Non-commercial usage should be expanded, not further reduced or restricted.
3882. Please warm the water! This is the biggest detraction and biggest hazard on the trip.

3900. It is great. I think they ought to let more people go.
3931. Yes, the fee schedule for a private trip is too much. When I got on the list in 1989 a trip was free. Then it went to \$25.00 to get on the list. By the time I got to the top of the waiting list, it cost almost \$100.00 per person to float the river. I understand that we, as river runners, need to bear some of the costs of the river permit system, but \$1400.00-\$1600.00 for 1 trip seems a bit much to me.
3955. The GC is the finest river trip in the USA and probably the world. Much of the credit for maintaining the river in near wilderness condition goes to the park service and the people who have fought to protect it. Access to the canyon remains the greatest challenge; one which the park service must address soon. Outdoor technologies and gear has advanced to the point that many competent men and women can safely run the canyon; and we all know that doing it yourself is a big part of the "experience". But with a 17 year waiting list access has become difficult to say the least. The demand for private permits is now extreme, yet the park service has offered no substantial remedy. The obvious solution is to adjust the commercial/private ratio (now 85%/15%) to something more realistic. A 50/50 split would be fair. Removal of motors from the canyon would probably accomplish this while assuring that the commercial trip participants were having a much higher quality experience. The fact is all this stuff about camp "a" verse camp "b" is insignificant compared to the issue of access. If most people never get a chance to run the river the way it was meant to be run, alone and without motors, why bother with all this? The fact is that the vast majority of traffic through the canyon is commercial.
3962. The timing of trips is critical. We never saw the private trip which put-in the day ahead of us. We were either keeping a similar pace or they had a faster pace. Eventually we saw 2 groups which put in after us—the group which launched 1 day after (GpA) and the group which launched 2 days after (GpB). GpA preferred to take several lay over days and make more miles per day. They were a pleasant and friendly group and we enjoyed interacting with them. Below lava we found ourselves headed for the same camps (Hells Hollow and then Book of Worms). GpB was doing a 14 day trip so in this same section of river there were 3 private groups vying for a small number of camps. Plus there was a commercial trip in the same area. So there were 4 groups going for 3 camps. Some sections of river simply cannot accommodate this many groups. Also commercial companies vary wide in their tolerance of private groups. Some were great and would discuss their plans with us while others obviously found us to be a nuisance. The upper stretch of river was well paced but about Deer Creek to Mile 204 was crowded.
4010. We encountered many great commercial guides this trip. Much better than in 91. Hatch and Arask guides were great. Very good trip. Flow levels higher than 91.

4030. I would like to see more private permits. No rental of motor rigs to privates (especially inexperienced). I was thrilled to see how clean the canyon was. Longer private trips permits, total # of days up to 25 days in summer.
4050. Fees are obscene!
4060. The user days should be reallocated. Today private groups have a smaller group size and wait ten years on a waiting list, because they have the equipment, skill to do it themselves. The private permit is in great demand. One can go next year on commercial trips, just pay your money. There is less demand compared to private trips. The National Parks and public land belong to the people of the US, large corps, and commercial profitters have 90% of the user days, why?
4070. The emphasis on large, commercial trips at the expense of private trips distresses me. I understand many people cannot man their own trip, but would prefer to see smaller, non-motorized commercial groups. This would make the experience more intimate for all while reducing congestion. Also, such "easy access" high \$\$ trips encourage people to disrespect the fragile nature of canyon/desert ecology, leading to high-impact camping practices which become apparent to those using the same beaches subsequently. Also, the group permit structure for removing names from the waiting list is seriously flawed. (actually the whole waiting list process is flawed). Allowing people to go on as many trips as they like with commercial companies without any effect on the waiting list status, while removing people who go on more than 2 private trips is favoritism. There should be no penalty for anyone going on trips they do not lead. This system allows those with money and a preference for large groups an advantage over others.
4080. There's nowhere I'd rather be and nothing I'd rather be doing.
4114. I flipped a 14' boat just above randy's rock—commercial motor rigs were dodging us like a slalom course. Also we ran into bad bees at one camp. Can't remember which.
4128. Get ride of motors. Much more private trips available, and fewer commercial. Use of camps about right. Private waiting list absurdly long. I'll be too old to do the trip if I get on list again and wait the full time.
4146. We also spend time on Lake Powell, but I think they should install devices on Glen Canyon dam to draw water from higher up so it is warmer through GC. Run floods through GS as much as it takes to build/clean beaches and get rid of brush, *(and maybe tame crystal!). More private trips (key point, though the commercial guys were great—helpful, courteous—good folks). Park service has management of river just about right. # of people ok, emphasis on cleanliness/tidiness great, safety fine, rangers not too intrusive so you don't feel you're being patrolled.

4178. I feel strongly that the number of commercial permits need to be reduced while the number of private permits should be increased. It took 9.5 years to obtain a private permit on the waiting list. Work and scheduling constraints made it impossible to claim a cancellation permit. From what I understand, the waiting list is even longer at the present time. Learning all the river skills necessary to put together and lead a canyon trip required years of dedication from each trip leader and boatman on private trips. They "earn" the right to experience the canyon, with every river mile they log. Tourists on the commercials just lay their money down and are coddled down the river. The boaters on my trip and any other private earn their spot with the skills and knowledge and respect for rivers gained over years of river running.
4196. I am a geologist and a river guide. I would like to work at the GC, to enjoy life to its fullest too, but that might ruin it for me! Keep access limited to boats, preferably non-motorized. The majority of the public are ignorant about the river and would ruin it for those who really respect and appreciate, and care for it. Foot prints, cigarette butts, and any trash or signs of human life are a drag when encountered here. The sounds of air-planes are also unwelcome. To enjoy this place, you must endure the hardships of the journey. Do not succumb to the needs of the many, who want or demand an easy life! You must enjoy the hardships of the journey, whatever you are faced with! Do not develop it into an amusement park! Keep those clowns away, or t the rims only!
4234. There are too many other rivers to float with motors. I quit on website, too long. My criteria was seeing people <10% of time.
4268. The overwhelming presence of commercial trips violates the spirit of the National park charter. Motorized rafts destroy the quality of the GC experience. A private permit application takes 10 years to be granted, wile a person can make a reservation on a commercial trip and go in a week. The private boaters are not given an equal opportunity to have time on the river and this is simply not right.
4284. I would like to see spring run off conditions simulated for a longer time (4-6 weeks) with nightly fluctuations and weather conditions playing a role in CFS. I would also want more private trips, less commercial rafts (30' or longer) type boats no motors, and no aircraft shorter waiting periods for permits. No limits on number of trips a person or trip leader does in a year or while on waiting list.
4292. The issue of a crowded river was no mystery to me. I had read for years about the difficulties in managing the use of the river. It is obviously popular. I was on the waiting list for 8 years. I expected to be passing many boaters along the way. We always found a beach to camp on within a short time of deciding to camp. We didn't pass too many taken campsites before we found one for ourselves. And we hit many stretches of river without seeing anyone. I thought the park service people were great, as well. Swimming at Havasu Creek was the best. This survey

would probably be best immediately after the trip. Its been over a year for me. Some of the details have faded.

4300. My current wait list number is 16,000. At the current rate of permits, I will be 71 years old at the time my permit number is reached. I would like to see less beach erosion and more permits for private parties.
4348. Yes I would like to see more access possible for private boaters. Also, there should be some way to prevent biasing cost and allocations for large groups (the waitlist length makes it most likely to have larger group sizes and the NPS charges per person decreases with larger group size.)
4349. The NPS is controlled by concessionaires. Greed is the motor for the GC. Power and water control the dam. "Greedy" outfitters control access and camping on the river. The GCMRC is very weak and does not use the current legislation to make a priority of GC resources. I.E. the organic act, ESA, GC Protection Act, GC EIS. The beach size issue is a joke.—if it is such a problem then how come NPS increases the numbers by 30% after the mid-80's.
4362. Commercial trips should be limited in same ways as private to minimize negative impacts on GC. 1) two launches per day max. 2) 32 people per day max 3) waiting list for all commercial passengers. 4) reallocation depending on size of waiting lists in two sectors. 5) Elimination of weekend launch clustering, etc. The public deserves a uniform, fair allocation system for all GC access.
4450. There is no reason for the commercial outfitters to have such a large piece of the pie. Except maybe to give \$ to certain politicians to maintain favor! Reduce their numbers and increase private trip numbers. Get rid of all the dams.
4472. So who the hell are you guys? Look folks, the problems in the GC are well defined, and need no further researching. Get your collecting butts off the gov't research tit and do something besides issuing esoteric boring reports which none of us "civilians" will ever read. These "research" deals seem like nothing more than a thinly veiled excuse to go down the river without waiting for your turn like the rest of us. I would say you are part of the problem, not the solution.

Responses to Open-Ended Question 10

Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page?

1010. Your pictures do not give me enough information. Is it a hot or cool day? How long will the sun blast the site in the afternoon? Are there side hikes from this location? Is the landing gradual or steep? More sand and less rocks on the main kitchen area is good, etc.
1020. Shade is nice for lunch, sand for camping prefer a beach with morning sun for camping when its hot. Previous pictures. What was the point? I'd lunch at any one them if I was hungry and camp only if it was the best spot considering time of day and other parties may occupy a better site.
1040. All the photographs are of the same 3 beaches but with variations in vegetation. Time of year is not mentioned but is important. Shade is much more important in hot months.
1050. Prefer sites near hiking for camping. Would prefer these same sites for lunch unless it is too hot to hike. Your photos are impossible.
1070. Very confusing photos.
1080. Vegetation and then shade is nice for lunch. But not important for camp. I prefer a large beach for camp, with vegetation.
1090. Same beach—movable foliage! A camping beach would ideally have some shade, expanses of sand, and perhaps a side hike.
1100. We always prefer beaches with some greenery so campsites have some privacy and shade.
1111. Lunch isn't that big a deal sometimes we do a floating lunch. For camp big beaches that are boat friendly are best. The tams should be cut out.
1122. Empty ones.
1155. Adequate room is necessary to accommodate party adequate access. Creek water would be nice. RE: pix adequate options not provided.
1177. Should be lots of sandy preferably, shade good too.
1199. Shade is good!
1200. Large—level, shady—sandy.

1236. Large level beaches with flat areas and shade.
1248. Prefer to camp where there is some vegetation and where there doesn't seem to be danger from fluctuating water level—and enough room.
1298. Shade in summer, sun in winter. Yeah...what's the gimmick? Same shot, different angles, different vegetative levels. Is this psych 400 creeping in or what?
1300. To camp—ledges; shade; with large enough trees to rid sunshades, and rain flies. Short walks to boat and for hiking. To lunch—again, ledges; short walk to boat. Your photos—I'm not impressed with any of your computer-generated beaches.
1313. Like to have lunch where there is shade near the river. Like to camp where there is sand, places to walk, and the sound of rapids to drown out noise.
1326. Ideally large, sandy; relatively flat; some bushes, shrubs, and/or trees for shade, tie downs, privacy, etc.
1339. Nice beach without another group—not horribly eroded—trees/bushes/rocks where the groover can be located—flat areas to sleep on etc, etc. Shade! Same 3 beaches throughout—other group already on beach in back photo.
1371. Need good landings, level tent sites shade not important.
1397. Prefer large sandy beaches, but will adjust to most anything.
1400. Camps that provide some shade are best for lunch stops. Depending on the time of day you stop for camp, the earliest shade side is best.
1414. Any beach with shade for lunch. Any beach with shade for camping and large enough for party.
1428. Camp preference is at side canyons. Lunch preferences is at scenic spots.
1432. Pro's—level sand with shade. Con's—exotic (tamarisk) provide shade.
1446. Camp—big enough for privacy with easy kitchen set up. Lunch—shade is great. Hikes are good at camps and lunch stops.
1464. Camp at a beach having —hike at camp, or a short float in the morning to an attraction. Liked sandy (big beaches) used a tarp for shade.
1482. A small party can camp any place in the canyon happily. Trees are nice, so are larger beaches, but they all work.

1496. Important factors for both: large site, shade for camping; sites for sleeping, adjacent hiking or attractions; for lunch, everything is less important.
1515. Lunch: want shade. Camp: large eddy, space to spread out.
1535. Camp—prefer side attractions—protection from wind, share canyon from rafts. Lunch—shade.
1616. Doesn't make sense to me—you take what you get under the conditions available: I've camped on a lot worse and a lot better—size of group also matters.
1622. Prefer beaches without rocks. Prefer shade for kitchen and tents ideally both.
1638. Beaches for lunch need to be able for all captains to get to easily and have shade and have tie points for rafts. Beaches to camp need to have a level spot for the kitchen, enough places for the group to set up tents and have tie down places where the boats are pulled into.
1666. Lunch: small, shaded, interesting nooks and crannies. Your project on prev. page finally got ridiculous...pix are too small and the questions redundant.
1672. In all cases either beach would be fine to lunch at. Prefer flat areas to camp—need sleeping spots. But either is acceptable. On the GC you take what you can get.
1694. Too small beaches, prefer larger.
1700. Lunch weather is a factor: cold, you want sun; hot, you'd like shade. I prefer smaller campsites. I was involved in campsite research studies—it is hard to evaluate sites from photos or just by looking from the river. In general, sites with large boulders or trees to partition the camp would be better. Also, I don't care for "dune" camps. I camp at at least one new campsite each trip (one I haven't camped at before.).
1717. Large beaches with trees especially if you share the beach with other groups.
1724. For lunch we want shade. Camping we want possible hikes and good eddies for rafts.
1731. Beaches with room for the entire group.
1762. Prefer beaches with some shade and variety as opposed to just large open sandy areas.
1779. Prefer beaches with shade during summertime also it would've helped to know which side of the river the beaches were on (using downstream direction as

orientation). As I look for camps that will get earliest possible shade (good graphic manipulation photos) I also look for sites that are minimally impacted by "tide"/water level fluctuations.

- 1786. Small
- 1793. Level area, dry sand, good landing.
- 1800. Big beaches are nice. Shade is nice. Give me a break.
- 1834. We like camps where you can find a little privacy provided by trees or rocks.
- 1850. Big beaches with trees are the best for camping, smaller ones with some shade are ok for lunch.
- 1868. Either type beach could be chosen depending on many factors.
- 1876. Need shade for lunch and for late afternoon camping. Need a good eddy for rafts, and flat areas for camps.
- 1892. I prefer camps with smooth moorage for rafts and without steep hikes from boats to main/center off camp.
- 1900. More sand, fewer rocks for camping. Are there more than 3 campsites pictured? They look alike.
- 1928. Your manipulated vegetation photos are extremely subjective, and not likely to provide useful data. The canyon is too crowded to pass up a possible campsite, even if less than ideal.
- 1937. Its hard to see the incline angle of the beaches in the photos. Also hard to tell whether the beaches have been doctored in photos to appear eroded or whether there's just a difference in water level from photo to photo. Personally I prefer large sandy beaches with flat areas among trees and/or bushes to camp in. An adjacent creek is desirable.
- 1973. My ideal beach for camping is relatively flat or with terraces, sandy, good eddy, enough vegetation or rocks for sheltering/screening kitchen and porta-potty, adjacent canyon for exploring. Lunch beach-sandy with good eddy, some shade and side canyon. Interesting visual preference computer enhancement on photos.
- 2030. They look like photos of the same beaches taken from different angles and with a bush or two inserted to make them seem different.
- 2060. Large beaches with some mature vegetation up are most desirable nice digital alterations.

2070. Shade important for lunch, sun is high.
2090. Shade is essential for lunch; also nice for privacy. However, volleyball is also lots of fun on open level beaches.
2100. Most good camping beaches are also good lunch beaches.
2124. Camp: nearly level dirt or sand with trees or shrubs—large area. Lunch: sand ok but rock ledges in shade is best. Photos: changing some vegetation and a bit of sand are less important than sand vs. a no sand environment or a photo with a background with a hikeable side canyon for AM or evening hike (campsite is more than a beach).
2136. Lunch: shade, beach and a short hike or interesting side canyon are nice, but not essential. Camp: ease of access, level sandy beach, interesting attractions, early shade.
2162. No trash, good eddy, level place for sleeping, side canyons, wind shelter.
2200. Large beaches preferred with room for 16 to camp shade is important and access to a short hike.
2228. Camp: decent stretch of sand for tents and availability of side hikes. Lunch: all sites good. Photos on previous page don't pose good choices. No doubt some will favor $a > b$, $b > c$, and $c > a$!!!
2250. Shade can be very important at both camp and lunch.
2264. Sandy beaches best for camping (frisbee, spreading out, etc.) but we have made do with smaller (cremation for instance) morning sun important for late season trips, morning shade important for summer trips.
2278. Large open beaches for 15 or more. Small nooks for small parties.
2282. Early shade—as a private group smaller camps were ok.
2316. Camp—large beaches. Variety of terrain for some privacy for those desiring it. Sun/wind exposure. Lunch—side canyons/hikes available.
2338. I prefer to camp on large sand beaches. I prefer to lunch in the shade.
2344. I like long, flat beaches.
2350. We like afternoon shade in the summer for camping. We seem to always be able to find shade for lunch. Per phone conversation 6/16/99 ____ knows what the

- river/beaches are like. He's been on so many times. He set up a plan ahead of time and has a target spot. Preferences target: presence of shade, hiking opportunities, divided river into segments re: equal stress. Related to flow of river (Diamond Creek to Pearces' F. has a sharper gradient). Assumption of questionnaire is that lunch and camp spot are different: which is not always the case. Did 2 trips last year, April and...
2372. I can eat lunch on board! No preference expect sun-shade which is an issue from July to Dec depending if one is cold or hot. Did you remove tammies with computer?
2388. Small with off areas for small sleeping places. Some morning shade is nice! Beach is too flat = boat problems/water level. Beach too steep = hard to carry hernia boxes!
2394. Gradual taper to water; good place for boats. Some trees for wind and blowing sand protection. Lunch is fine anywhere → even floating.
2418. Any place may be good for a camp or a lunch spot. If there's a good hike and small company, oh well, its great.
2426. Land at small sites, used areas below high water marks. Prefer campsites with less vegetation, size appropriate to group size.
2434. I always have small groups, so beaches do not matter. Use more examples, not just three.
2442. We usually do summer trips. Shade at lunchtime preferably close to river's edge is important. We usually have long days on the river and get to camp after the heat of the day; so shade is less important at camp but we usually try to choose a camp that will have shade from canyon walls in morning. A nice calm eddy is also a big plus when sleeping on your boats.
2450. Shade is much appreciated (boulder, overhang, trees, shrubs). Easy access eddies and close tie offs.
2468. Prefer both sun and shaded areas for lunch. Camp beach—safe tie up for boats, good eddy, close to a level kitchen area.
2500. I wouldn't camp at these mile markers anyway there are better camps in these areas on the river.
2510. Large or more spread out beaches to camp (___) smaller beaches will do for lunch.

2520. I like sandy beaches for camping but with trees boulders or vegetation to be able to get away from other campers. Flat spots for horseshoes and volleyball are a bonus when possible. As for the photos, many times the choice was difficult because so much depends on the size of your group.
2550. Water color determines a lot of feeling of the photos, especially the last pane. I go for spots without tamarisk because it feels like GC desert.
2560. My choices would be influenced by which season the trip was occurring. The photos/questions were confusing. What's the point? Be up front and more specific with the respondent!
2570. I noticed that the difference in the photos is the amount of tamarisk. Same beaches just different amounts of growth.
2590. Big and small prefer bigger beaches.
2600. I like big sandy beaches. Maybe some shade from a cliff.
2612. Like room, some shade or protection, accessible kitchen area—access to hike or climb.
2636. Prefer shade when its hot, overhangs when its rainy, beaches when you want to play volleyball; so it depends.
2650. The view and surrounding rocks, etc. Are more important than size of beach to me; also best site depends on circumstance—open beach without shade at 100 degrees is not appealing but may be in other conditions. There are no set rules on which is a preferred beach—may change from trip to trip. (You only show 3 beaches—test of consistency?)
2698. I don't understand the comparisons being made on the previous page. I think different camps have a lot of different stuff to offer. My preference though is for camps with hikeable canyons.
2732. Lunch needs shade in hot, sun in cold. Camp—flat sand short distance from boat.
2750. Size, shade, and access important for camping. Shade and attractions important for lunch.
2764. We don't stop for lunch. Generally we're a small group and we try to use smaller, less popular campsites. We leave the big beaches for the larger groups.
2782. Lunch: shade from either trees or ledges or walls. Camp: good level kitchen spot, enough sleeping space, a ledge shelter, afternoon shade.

2796. I like to camp where there are side canyons for hiking. Beach camping is overrated, I'd rather camp on ledges than sand.
2816. Shade is important, as a guide you get too much sun but I'm from Montana, so...it's nice to have shade. Ants suck also.
2838. I'm pretty indifferent as to where I camp or have lunch.
2850. I don't feel this is a valid question as most people will always go for the large camping beach regardless of vegetation.
2888. Camp—individual trees etc. For 6-10 persons. Lunch—anyplace with shade and side attractions/hiking.
2894. Very difficult to tell anything from photos. Really kind of useless for purposes of evaluation. Time of day, whether or not one waits to play volleyball etc. all factors on any given day.
2950. Easy access to kitchen area and tent sites. Shade. Easy take out and put in.
2968. A sloping large beach is easy on boats and people. Some trees and large rocks may provide shade and wind protection.
2976. Prefer camps with shade, good eddies for boats morning sun, and enough room to be comfortable small but comfortable is nice. Not picky about lunch, shade and water is nice.
2984. Camp should have shade, safe distance from side creek, beach lunch spot should have shade, side canyon to explore.
2992. Prefer side canyons to camp and more room to move lunches need shade and sort of flat.
3000. Lunch—someplace with potential shade, not necessarily tree overhang, etc. Camp—large enough for privacy. Safe line to boats. Quiet eddy. Good bottom for fluctuation. Side hikes possible.
3010. Camp: shade trees, safe anchor for boats, easy access, hiking opportunity beach area. Lunch: shade, smaller beach.
3020. I guess I should have turned this page, 1st but comments are also on page 7. Basically your given choice/s sandy beaches with shade, sandy beaches without shade, shady beaches with little sand, or little shade little sand. Shade is more important during the day for lunch and less so at night, unless your doing lay-over or spending more time at camp in the morning.

3030. Prefer shade for lunch prefer shade and level areas for camping.
3040. For camping, large sandy beaches are favored. For lunch, sandy beaches are nice, but shade is very important.
3050. Both lunch and camp—shade—private areas for tent sites (privacy by trees or terrain). Flat areas for tents—shade near shore so as to not haul stuff across the continent.
3070. All of the camp/lunch sites look nice. It is difficult to choose which beach without knowing the size of the group you are with. Some sites would look small for a large group but would be plenty for a smaller trip.
3080. What year were the pictures taken? Those places no longer look like that. Lets use different pictures for the next questionnaire.
3090. You only showed 4 beaches with more or less trees. Lunch beaches need trees shade fairly close to water and easy place to pull up boats. Campsites are nice with both the sandy beaches and enough vegetation in sand to have privacy between campsites.
3100. What
3126. Prefer camps with trees and rocks to provide shade and privacy also sites with hiking trails.
3139. Hiking accessibility.
3155. If the weather is hot, trees are nice for shade. If its windy I'd prefer a less sandy camp-more rocks.
3184. Camp—need private, easy access for toilet prefer scenic, private place for solar shower. Lunch—shade most important.
3197. Not enough variety.
3200. Sand and shade. River level changes campsites.
3222. Uncrowded.
3244. I prefer to camp (and lunch) at places where hikes are possible, yet the photos don't allow one to assess this parameter.
3250. Hard to tell on some of them what they really look like. Ideal beach is one with some big trees with sand between.

3266. Not enough beaches shown in photos.
3272. Shade is very desirable for camp and lunch. Small beaches are ok for lunch.
3288. Large sandy beaches with vegetation.
3300. When running a trip, we don't get choices. The camps we use are at whatever mile we are, the most important criterion is side hikes.
3328. Lunch beaches have a place for shade and are large enough for the women to get privacy to pee. Camp beaches are large enough to allow people to get privacy while sleeping, bathing, going to bathroom etc.
3337. Camping—big and sandy—like there were before the dam.
3346. For camps, access to hiking areas, away from potential flash-flood areas, with sandy beaches, some rocks and vegetation.
3355. Gradual sloped beaches, shrubs for wind block. Photos are all the same. There is much more variety on the river.
3373. Pictures were ok. But we prefer a camp near a nice side canyon with shade and a good parking place for the boats. Not too steep of a rise so as to facilitate carrying kitchen and a sheltered spot for the kitchen. Lunch with shade and nice scenery is best with good parking.
3382. After doing the last page, I realize I like some shrubby trees—side canyons are great!! Also with cliffy over-hangs—the bouldery beaches were less inviting; however sitting at home, and in the river, beauty feels so much more relative to the moment.
3391. Like to hike side canyons at stops—did not see.
3400. #1=shade, swimming or shallow water large enough site to have elbow room for camping...especially with kitchen and crappy sites.
3412. Camps need short carries and enough flat terrain for your respective party. They don't have to be large (or even sandy—try the ledges camps). Lunch just needs trees! Comparison seems like a trick—not sure what pictures tell.
3424. Best camp=lots of sand, easy carry to kitchen, shade, deep water, no current, good groovey spot, several flat campsites and no surveys.
3474. Camp—easy beach access to unload—no steep bank and a good eddy. Able to spread out and have little niches for tents.

3486. Lunch: beaches with shade trees. Camp: large beaches with plenty of nooks and crannies for individual tent sites around trees at rock boulders.
3498. Larger beaches with tree are preferable for larger groups—why the same photos over and over.
3500. There were several duplicates locations. Beaches with naked women!
3520. Nice enhancement of the photos. Vegetation is a nice camp refuge when the wind is blowing sand around us, are large boulders (Hot Na Na).
3535. I like beaches with easy access, shallow making swimming , bathing, etc. easier.
3540. Predominantly flat, deep for the rafts, shade, rock ledges, places to hike.
3560. Camping: prefer someplace with privacy and hiking/climbing lunch sites with some shade are best.
3580. I like to camp with some brush around to separate tents and toilet. For lunch its nice to have shade trees depending on the time of year. Spacious beaches are nice for camps or lunch. Good hiking is plus for canyons.
3595. You should have included “both equally preferred” since some had little difference, to my eye, such as last pair. I like sites where individual campsites have privacy plus some shade.
3600. Prefer large beach or private spots to get up tents and room for separate kitchen area—screened area for porta-potty—our private groups are usually 12-15 in size.
3618. Prefer broad sand beaches with minimum of growth.
3626. Camp with room for privacy and exploration repetitive.
3634. Not enough info to decide; depends on hiking opportunities around and outside photo, time of day, weather, flow in river, and anticipated flow regime.
3642. Trees, shelter, space is good.
3676. You need a choice to include “either” as well as “A”, “B”, “neither”. I like to camp at a place where there is opportunity to explore.
3722. Photos: shade is most important during summer. Hikes are next in importance. Shade could be from trees or shadows from canyon walls.
3733. When its hot >80 degrees F. I seek shade. Rafts do better on sandy beaches. Rocks can rub holes in them. Big enough to spread out—lessen impact.

3744. Bigger, flatter beaches with large shade trees and very little under brush or weeds.
3788. Bigger beaches in general with more side hikes. Some natural foliage would be nice.
3800. These questions and choices are not really fair, to me at least, as I would want to know regarding where the sun was, what time of year it was, is the water going up or down, etc. I would probably stop at any of them if the trip wanted. Beaches with shade or hikes.
3828. Most are retouches of a few (3-4) beaches. Wish I could grow trees so easily. Move trees for camping, fewer ok for lunch.
3832. Everyone knows that the experiment on beach building is a bust! Everyone wants big, flat beaches, preferably with shade and wind protection.
3878. Having some vegetation was nice.
3882. Same sites in all photos—different vegetation large sandy beaches best for camp, a shady spot best for lunch!
3900. With early sun and early shade, or a creek.
3931. Not real important, we'll take what we can get, usually not a problem.
3955. Best camping spot include interesting side canyons or attraction. I.E. south canyon, north canyon, bass, etc.
3962. Clever use of photoshop. What qualities I look for in a campsite have very much to do with my location on the river. In some sections of the river there are not many choices and one cannot afford to be picky. Most important is that there be a spot to set up the kitchen and enough sleeping spots for everyone. Shade is secondary. A suitable place to tie off rafts is also primary. A suitable place to unload is primary. A large beach area (for playing games) is a bonus.
3979. Lunch: shade critical! Camp: easy landing, good tent sites and kitchen location. Amusing computerized photo retouching!
4030. Good kitchen sites, good sleeping sites, good groover privacy, shade. Many of the photos are the same—just from different angle and distance.
4060. Some shade trees or cliffs for shade with decent boat landing and sheltered tent sites.

4070. Shade trees are always a plus. Side canyons at near camp allow more hiking time. Size of beach needed for camp would decrease in proportion to group size –tough call on some beaches: less shore/more canyons would be picked on earlier season trips.
4080. Don't like camping in Tamarisk with mice and snakes.
4114. Lunch and camp on beaches with interesting rocks or trail or stuff around. Ban second pair does not look safe – rock slides.
4128. Impossible to tell from photos if these beaches are any good. Need more detail; depends on lots of things like heat, weather, hiking, hour long time of day, interesting features, when in canyon, etc.
4146. I was not excited by any of them. Want beach flat, not too far from water, maybe hiking in shade (shaded by walls if possible). I know trees not "native", but shade was welcome. Brush on otherwise great beaches, sucks. Obviously mostly same pictures with different vegetation.
4178. I made some choices of camping beaches based on hot weather with some consideration for shade and shelter from wind.
4182. Camp—privacy, calm water to sleep on boat, early AM sun not too intense, access to hike. Lunch: shade, access to hikes.
4196. The photos were of the same 2 beaches, different angles and water levels. Not too steep a sandy beach, else wind blown sand all over. I like some trees or rock cover, for shade. Hiking spots are also important.
4242. Other things determine where we camp and lunch.
4250. Shade, flat, not a lot of tamarisk, good hiking if possible.
4268. Photos are difficult to analyze due to lack of perspective. Camping—sandy beach, nice eddy, trees for shade. Lunch: shady.
4284. I prefer larger beaches, or level places. Same three beaches different yes.
4292. I always preferred to lunch with a little shade by rock or tamarisk tree, but would settle for either (we did have an umbrella). Camping is preferred on a beach with a lot of sand free of brush and the possibility of a side hike and a late morning sun shadow, but like most everything in life, sometimes you take what you get.
4300. It is difficult to tell from the photos which beach is better suited for lunch/camp.

4312. Campsite selection depends on group size, weather, time of year and supply of firewood (winter).
4324. Smaller beaches are fine for lunch but prefer larger beach to camp. Only three beaches on previous page (some at different water levels) there are nicer campsites on the Grand.
4348. Basically all of the photo spots looked fine for both camping and lunch. Some important criteria for camp spots: large area and flat spaces and good side hike. Most important criteria for lunch: sheltered, easy to get out.
4350. This is a seasonal question. Cold vs. hot—sun vs. shade. The beach issue is overblown—the size of beaches values a lot in Cataract Canyon now and in GC prior to 1963.
4362. Photos don't indicate slope. Prefer shady beaches.
4416. They have to be above water.
4450. Any beach is good, as long as it is large enough. Typically I lunch at a smaller beach as others may want to set up camp early and I don't want to be in their way on the large beaches.
4472. Where I camp is not a big issue. Photography schedules are.
9999. Shades for lunch. Side canyons for camp.

**APPENDIX C: COMMERCIAL PATRON QUESTIONNAIRE
WITH FREQUENCY DISTRIBUTIONS**

Grand Canyon River Rafting Study



Conducted by
University of Illinois
Department of Leisure Studies
104 Huff Hall
Champaign, IL 61820

Sponsored by
Grand Canyon Monitoring and Research Center

This questionnaire refers to the most recent river trip you took on the Colorado River in Grand Canyon. Please refer to this trip when responding to items in this questionnaire.

1a. Including your most recent trip, how many times have you rafted the Colorado River below Lee's Ferry?

Mean=4 times

b. How many white water raft, dory, or kayak trips have you taken at locations other than Grand Canyon? (*Please ✓ one*)

24% None
 32 1-2
 25 3-5
 8 6-10
 7 11-20
 4 More than 20

2a. Where did you put-in (start your trip)? (*Please ✓ one*)

87% Lee's Ferry
 12 Phantom Ranch
 1 Other (please specify) **N=4; Whittmore Canyon (25%); Mile 187 (25)**

b. Where did you take-out (end your trip)? (*Please ✓ one*)

18% Phantom Ranch
 27 Whitmore Wash
 15 Diamond Creek
 30 Lake Mead
 10 Other (please specify) **N=14; Lava Falls (71%); Pierce (14)**

c. How long was your trip? **Mean=7 days**

d. What type of boat were you on? (*Please ✓ one*)

62%	Motor powered raft	0%	Dory
22	Oar powered raft	1	Kayak/Canoe
3	Combination motor/oar raft	7	Paddle raft
4	Oar/paddle	1	Motorized pontoon boat

3. Including yourself, how many people were there on this raft trip?
 (*Please include the guide/trip leader and all the people on all the boats in your group*)

Mean=24 People

4. What things would contribute most to an excellent or perfect raft trip in the Grand Canyon for you?

See Table 2

5. River trips through Grand Canyon have a number of features. People differ in what they feel is important for them personally. In this next section, we list a number of features of a Grand Canyon river trip. Please indicate how important each feature was for you on your trip. (Please circle one number for each item)

	Not at all important	Somewhat important	Very important	Didn't experience
Observing flora, fauna, and geology	4%	22%	74%	0
Being on the Colorado River	2	18	79	0
Being with family/friends	10	29	59	2
Relaxing: getting away from it all	4	25	71	1
Large beaches for camping	17	60	23	1
Large rapids	7	35	59	0
Stopping at side canyons or creeks	1	13	86	0
Learning about the history of the Grand Canyon	2	27	71	0
Photographing the Grand Canyon	8	46	46	0
Seeing few other people while floating	15	38	48	0
Hiking in the side canyons	4	16	79	1
Floating on quiet stretches of the river	10	39	51	0
Seeing wildlife	5	43	52	0
Camping at sites without evidence of soil and vegetation damage	8	27	65	1
Visiting archaeological sites	6	47	45	2
Feeling safe	7	34	58	1
Finding a spot for lunch with a shade tree	22	52	26	1
Eating good food	8	48	44	0
Interacting with others on my trip	9	37	54	1
Seeing few other people at attraction sites	11	39	49	0
Camping on beaches with large boulders	56	35	7	2
Being the only group camping at a beach	6	31	63	0
Beaches without low growing shrubs	60	35	2	2
Places along the river without trash or litter	3	4	93	1
Fishing in the Grand Canyon	62	15	5	18

Did we miss anything else important? N=34; Good guides (32%) Social interaction (12) Quiet motors (12) Being outdoors (12) Safety (12)

6. If you had the opportunity, would you take a Grand Canyon white water trip again? *(Please ✓ one)*
- 1% Definitely not
 - 5 Probably not
 - 10 Probably yes
 - 83 Definitely yes
7. Overall, how would you rate your raft trip? *(Please ✓ one)*
- 1% Poor
 - 0 Fair, it just didn't work out very well
 - 1 Good, but a number of things could have been different
 - 4 Very good, but could have been better
 - 43 Excellent, only minor problems
 - 51 Perfect
8. What role did the rapids play in your decision to take the trip? *(Please ✓ one)*
- 4% Rapids were the most important reason for taking the trip
 - 44 Rapids were one of the two or three most important reasons for taking the trip
 - 45 Rapids were only one of many important reasons for taking the trip
 - 7 Rapids were not an important reason for taking the trip
- 9a. Would you say the rapids you encountered on your trip were: *(Please ✓ one)*
- 16% Smaller than you expected
 - 19 Bigger than you expected
 - 60 About what you expected → *Skip to question 10*
 - 6 Had no expectations → *Skip to question 10*
- b. If the rapids were smaller or bigger than you expected, how did you feel about it? *(Please ✓ one)*
- 59% Liked it
 - 31 Didn't make any difference
 - 10 Didn't like it
10. What is the **ONE** thing you liked most about the rapids on this Grand Canyon trip? *(Please try to be specific)*
- N=140; Challenge (31%) Size and number of rapids (23) Safely getting through rapids (12) Skill of guides (11) Anxiety (9) Different types (8)

11. Below are a number of characteristics of rapids, which you may or may not have experienced on this trip. For each characteristic, please indicate how it affects your enjoyment of a rapid. (Please circle one number for each item)

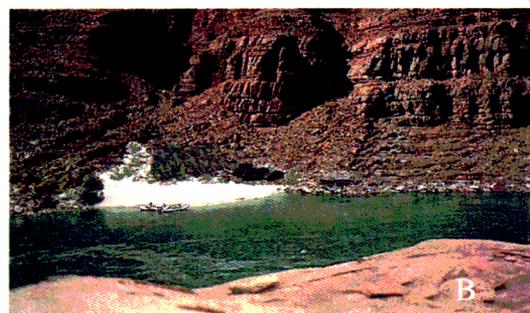
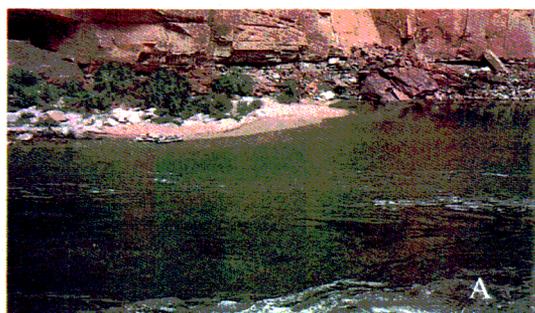
	Greatly Decreases Enjoyment	Somewhat Decreases Enjoyment	Doesn't Matter	Somewhat Increases Enjoyment	Greatly Increases Enjoyment
Roller coaster ride (standing waves)	12%	41%	32%	27%	6%
Rapid with large waves	0	3	6	18	73
Rapid with small waves	3	10	18	35	44
Rocks sticking out of water	3	17	41	31	8
Getting hit by water	1	4	26	29	40
Force of the water that hits you	1	7	27	36	28
Concern about damage to personal equipment	2	20	74	3	2
Hanging onto the boat to avoid being tossed out	0	5	35	33	27
Fear of tipping over	4	24	48	19	6
Large number of rapids	0	2	5	30	63
Long rapid	0	1	7	27	65
Short floating time between rapids	1	4	46	30	20
Very cold temperature of water when it splashes on you	6	30	47	11	7
Waiting at a rapid for other trips to run it	12	25	44	15	4
Learning how to "read" rapids from the guide or trip leader	0	1	13	47	39

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



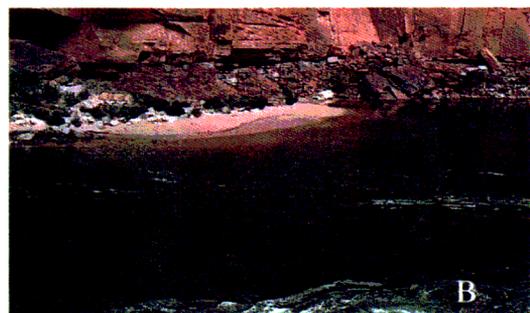
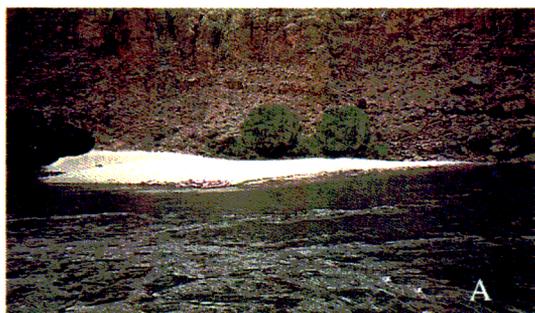
- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 69% B- 17% Neither- 14% Both- 0%
 A- 68% B- 18% Neither- 12% Both- 3%



- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 54% B- 29% Neither- 14% Both- 3%
 A- 54% B- 37% Neither- 6% Both- 3%



- 1. Which beach do you prefer as a place to *camp*?
- 2. Which beach do you prefer as a place to *lunch*?

A- 56% B- 29% Neither- 12% Both- 3%
 A- 44% B- 44% Neither- 9% Both- 3%

G(n =35)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



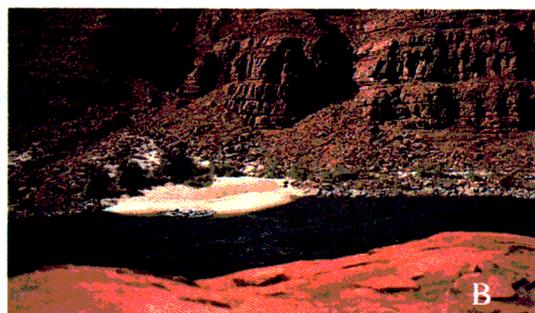
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 9%	B- 91%	Neither- 0%	Both- 0%
A-30%	B- 64%	Neither- 6%	Both-0%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 18%	B- 67%	Neither- 15%	Both- 0%
A- 27%	B- 58%	Neither- 15%	Both- 0%

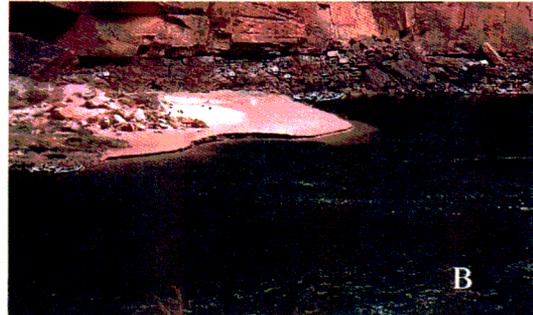


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 31%	B- 41%	Neither- 28%	Both- 0%
A- 38%	B- 50%	Neither- 13%	Both- 0%

G(n = 35)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



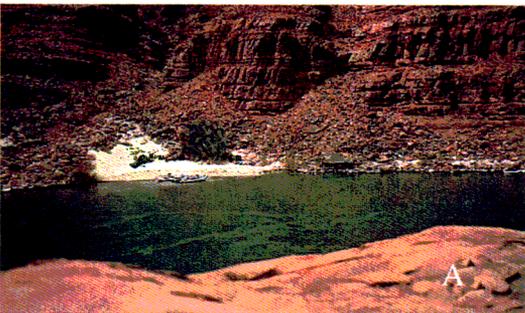
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 85% B- 8% Neither- 6% Both- 2%
 A- 54% B- 40% Neither- 5% Both- 2%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 52% B- 28% Neither- 19% Both- 2%
 A- 44% B- 46% Neither- 8% Both- 2%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 15% B- 77% Neither- 6% Both- 2%
 A- 47% B- 44% Neither- 8% Both- 2%

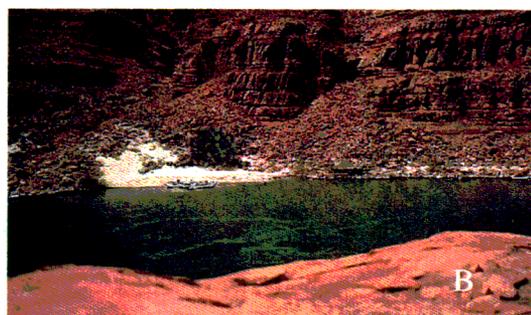
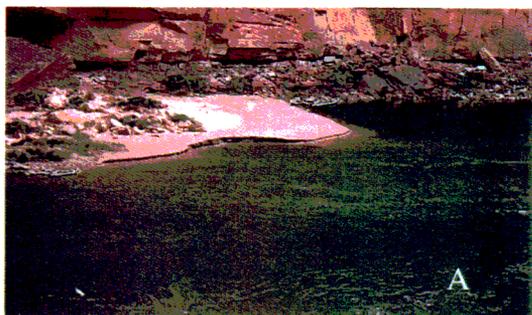
H (n = 65)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



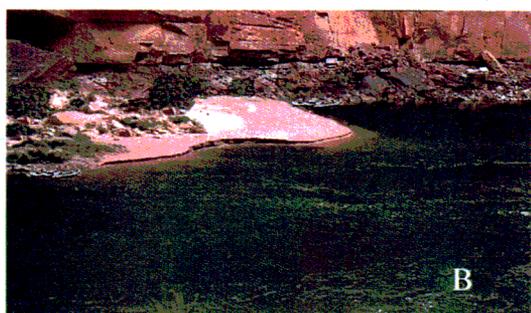
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 13%	B- 80%	Neither- 7%	Both- 2%
A- 47%	B- 45%	Neither- 7%	Both- 2%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 75%	B- 6%	Neither- 18%	Both- 2%
A- 44%	B- 46%	Neither- 8%	Both- 2%

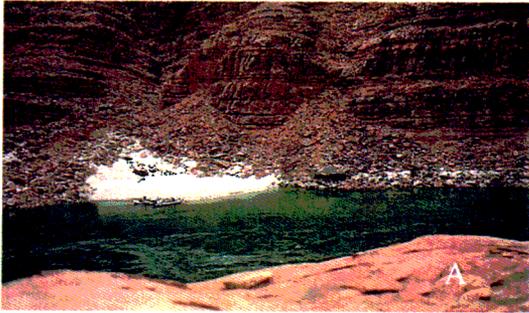


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 44%	B- 40%	Neither- 14%	Both- 2%
A- 20%	B- 72%	Neither- 7%	Both- 2%

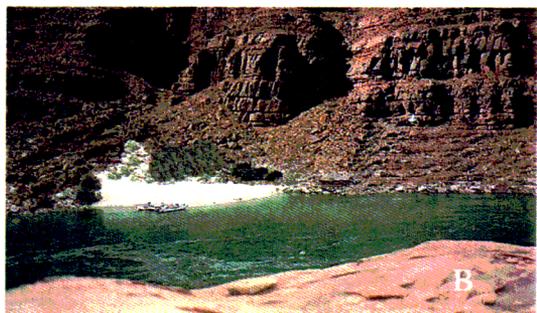
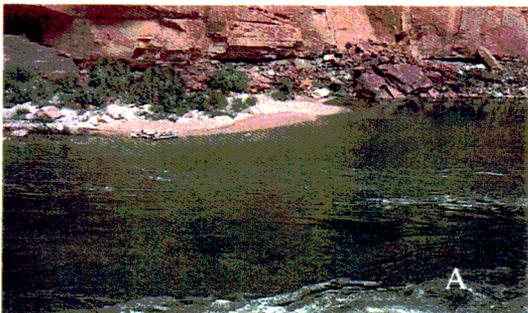
H (n = 65)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



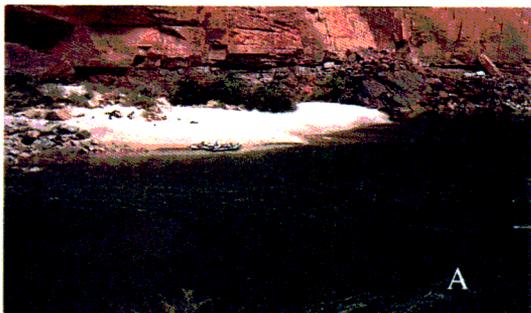
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 3%	B- 77%	Neither- 19%	Both- 0%
A- 20%	B- 74%	Neither- 3%	Both- 3%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 82%	B- 8%	Neither- 10%	Both- 0%
A- 49%	B- 43%	Neither- 7%	Both- 2%

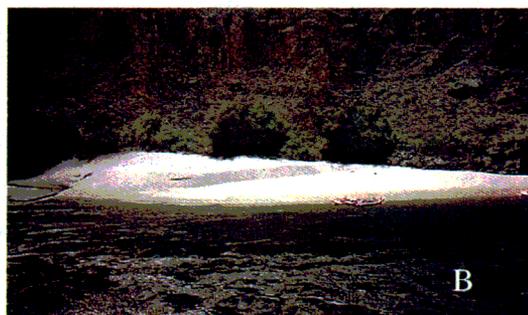


1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 100%	B- 0%	Neither- 0%	Both- 0%
A- 66%	B- 33%	Neither- 0%	Both- 2%

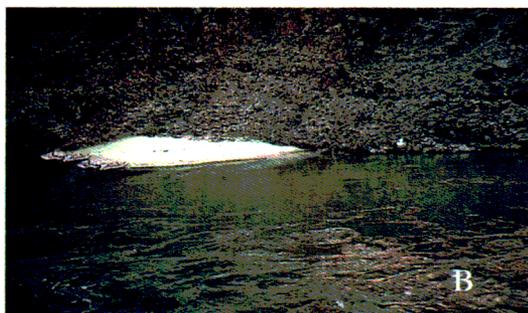
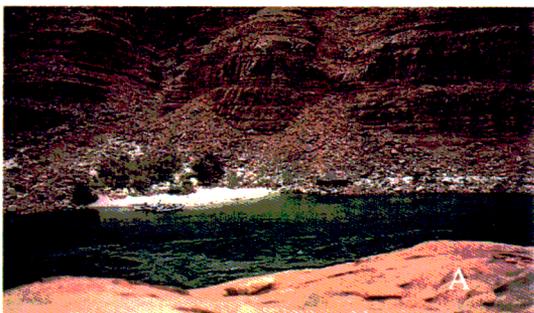
I (n = 62)

INSTRUCTIONS: During your raft trip, you camped and lunched at a variety of beaches. If you were on the river and it was time to lunch or set-up camp, please indicate the beach you most prefer from the pairs of beaches below. NEITHER indicates that you would pass-by both beaches and float further downstream in search of a better beach.



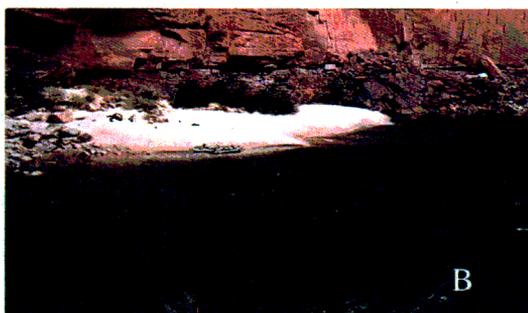
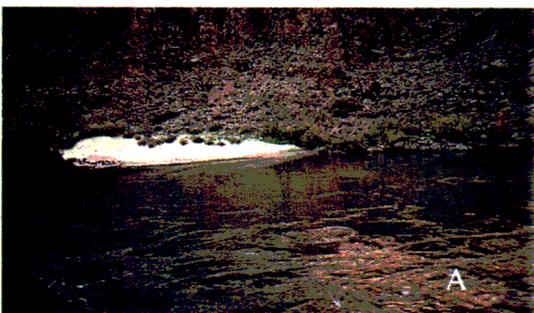
1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 12% B- 85% Neither- 3% Both- 0%
 A- 52% B- 45% Neither- 2% Both- 2%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 54% B- 16% Neither- 30% Both- 0%
 A- 70% B- 17% Neither- 12% Both- 2%



1. Which beach do you prefer as a place to *camp*?
2. Which beach do you prefer as a place to *lunch*?

A- 8% B- 87% Neither- 5% Both- 0%
 A- 25% B- 70% Neither- 3% Both- 2%

I (n = 62)

12. Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page? *(Please comment below)*

See Page 179 for List of Responses

- 13a. When you were planning your trip, did you know before you left home what the expected water level was for the dates of your trip? *(Please ✓ one)*

78% No

22 Yes



If yes, did this information about the expected water level have any influence on WHEN to take your trip? *(Please ✓ one)*

78% No

22 Yes (please explain) **N=11; Wanted optimal rapids to go (82%)**

- b. Did you notice whether the water level changed during your trip? *(Please ✓ one)*

31% No

69 Yes



If yes, how often did you notice it changing? *(Please ✓ one)*

42% Every day

31 Almost every day

27 Only on a few days

What made you aware of the water level change?

N=83; Beached rafts (77%) Observation (22) Rising water (16)

14. Overall, was the speed of the river water (current): *(Please ✓ one)*

3% Too slow

1 Too fast

87 About right

9 Don't know

1 Makes no difference to me

15. If you had a choice, would you have preferred a trip with daily fluctuations in the water level, or one with a constant water level? *(Please ✓ one)*

9% I would prefer a trip with daily fluctuations

36 I would prefer a trip with constant water levels

55 Makes no difference to me

16. On your trip, did you feel you had enough time to hike the side canyons and see other attractions? *(Please ✓ one)*

80% Yes, there was enough time for hiking

17 No, there was not enough time for hiking

3 There was too much time for hiking

17a. Which of the following did you hear the guide or trip leader(s) say they were concerned about? (Please ✓ all that apply)

- | | | | |
|----|--|----|---|
| 4% | Water was too high | 1% | Water was too fast |
| 10 | Water was too low | 2 | Water was too slow |
| 3 | Rapids were too big | 3 | Too much time rowing or with motor on |
| 3 | Lack of rapids | 5 | Large standing waves |
| 7 | Too many obstacles in the rapids | 20 | Dangerous holes or eddies in the rapids |
| 13 | Fluctuating water made mooring difficult | 11 | Dangerously cold water temperature |
| 5 | Water levels fluctuated too much | 56 | None of the above |

b. Did your guide or trip leader ever tell you to move your tent or gear higher on the beach to avoid water level changes? (Please ✓ one)

- 22% Yes
78 No

c. During your trip, how often do you recall that your guide or trip leader(s) did the following things? (Please circle one number for each item)

	Never Did	Sometimes Did	Often Did	Didn't Notice
Looked for an easier route to avoid rocks or a big hole	14%	56%	17%	13%
Waited above a rapid for water level to change	87	4	1	9
Stopped at a rapid to scout it	12	69	19	1
Waited above a rapid for another party to run it	42	50	6	2
Rowed or motored more than usual to make up some time	47	35	1	17
Rowed or motored less than usual because you were ahead of schedule	49	21	0	30
Hurried to get out of camp in the morning	53	29	11	7
Moved boat mooring during the night	42	31	3	25
Selected certain campsites because the water level might change	36	21	3	40
Had boat(s) float away	98	0	0	2

- 18a. Did you ever have to share the beach where you were camping with other groups during your trip? (*Please ✓ one*)
- 83% No
17 Yes
- ↓
- If yes, how many nights did this happen? (*Please ✓ one*)
- 92% One night
8 Two nights
0 Three nights
0 Four or more nights
- b. Could you see the camps of other groups from any of your campsites during your last trip? (*Please ✓ one*)
- 64% No
36 Yes
- ↓
- If yes, were these groups sharing the beach with your group or did they have a separate beach? (*Please ✓ one*)
- 16% We shared the beach
84 They were on a separate beach
- c. If you had a choice, would you prefer a campsite: (*Please ✓ one*)
- 1% On the same beach as another group
1 Where you might be able to see or hear another group
99 Out of sight and hearing of others
- 19a. Before arriving at the Colorado River, did you know what the river water temperature would be? (*Please ✓ one*)
- 24% No
76 Yes
- b. Would your river trip have been more enjoyable if the river water were warmer? (*Please ✓ one*)
- 53% No
47 Yes (*Please explain*)
N=65; Comfort (83%) Safety (5) Natural water flows (5)
- c. Did you notice whether the water temperature changed during your trip? (*Please ✓ one*)
- 56% No
44 Yes
- ↓
- If yes, how did the water temperature change? (*Please ✓ one*)
- 0% Became colder when moving downstream
99 Became warmer when moving downstream
2 Fluctuated in temperature when moving downstream

In this final section, we would like to ask you some questions about your background, which will help us compare your answers with those of other people. We stress that all of your answers are strictly confidential.

20a. How old are you? **Mean=50** years old

b. Are you (*Please ✓ one*):

62% Male
38 Female

c. How many years of school have you completed?

(*Please circle one or check the highest year or level*)

1 2 3 4 5 6 7 8 9 10=**1%** 11 12=**6%**

16%	Some college	24%	M.A., M.S.
32	B.A. or equivalent	23	Advanced degree (J.D., M.D., Ph.D.)

d. Please check the response that comes closest to your total family income before taxes.

(*Please ✓ one*)

0%	Less than \$10,000	7%	\$50,000 to \$59,999
1	\$10,000 to \$19,999	5	\$60,000 to \$69,999
1	\$20,000 to \$29,999	9	\$70,000 to \$79,999
3	\$30,000 to \$39,999	7	\$80,000 to \$89,999
8	\$40,000 to \$49,999	12	\$90,000 to \$99,999
47	\$100,000 or more		

e. With reference to your primary occupation, are you currently: (*Please ✓ one*)

72% Employed full-time
7 Employed part-time
1 Full-time homemaker
0 Temporarily unemployed
3 Not employed, not looking for work
12 Retired, not working
6 Retired, working part-time

21. Do you have any other comments about rafting on the Colorado River in Grand Canyon?

See Page 164 for List of Responses

Thank you for your time and responses. Please mail back your questionnaire in the enclosed postage-paid envelope. Your responses will be included within a summary report presented to the Grand Canyon Monitoring and Research Center.

Public burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington, DC 20503.

Responses to Open-Ended Question 21

Do you have any other comments about rafting on the Colorado River in Grand Canyon?

1. It was more of a spiritual experience than we imagined. The fragrance of the vegetation was wonderful. The sky at night was indescribable! Loved it!!!
3. It's a great experience—_____ is the best outfit I've been with—_____ has more loose ends and inconvenience and screwed up the duffel take out from Phantom Ranch—my only complaint is the water temperature during the Lee's Ferry to Phantom Ranch leg. (much too cold on account of dam release).
4. The trip turned out much better than I expected. I liked it so much I was sad to leave. The hiking was great and it was great to keep in shape during the trip. I also had a little set of paints and painting the beauty of the river while I was there created some great memories. The guides were fun and the whole trip created a great memory for me!
5. The local and federal government should be very careful about overregulating these trips. Specifically Coconino City should back off on food preparation rules. Let the passengers help and don't make the guides wear hairnets. The park rangers should be more forthright about their presence and why they are present. I found them sneaky and untrustworthy. This is not good for public servants. Do no increase access to bottom of canyon. I plan to go back because it is isolated and clean.
6. I loved this trip it was awesome I met some wonderful people. The guides made sure we were safe at all times and at no time did I ever feel unsafe. I am actually thinking of going again sometime soon. It was very restful and my friend and I did this for our graduation trip. This was fun to answer have fun with your study and smile.
9. I enjoyed it but would choose a less crowded river in the future. Having the experience one time was great, but I don't want it again.
10. Our guide at _____ were very experienced boatmen and boatwomen; however, having made the trip so many times they seemed totally bored and annoyed with having "tourists" enter their domain. At the prices they charge the concessionaires need a few lessons in training personnel and tourism.
11. It was the greatest "escape" I have ever had. Next time I'll go the full length (to not hike out).
12. It was great—very exciting. Very different. Very bonding with my wife.

14. Great trip, the whole family (4 of us) loved it!
15. One of the most incredible experiences I've ever had—would go on a trip every year if I could. I also think the company you travel with—and the philosophy of that company. Could make a difference. I thought the company I traveled with was excellent.
17. Had a great trip with a great company and experienced leader.
18. On page 5 my answers would be very different if the water was warmer. If the water was warmer the rapids would be much more fun.
19. The guides were exceptional—they exhibited a great knowledge and affection for the river and canyon. Especially enjoyed stargazing at night.
20. My trips on the Colorado River through GC are the most spiritually fulfilling times of my life. If the river were silt-laden, warm, and free, I would love it more. The helicopters at Whitmore are awful with their intrusive racket—I experienced this last year and previously—the riparian environment is so complex and has been impacted positively and negatively by man—tamarisk is invasive, but offers shelter to more birds. Trout are not native, but have increased eagles at Nankoweap, etc., etc...
22. I think water levels need to be raised. White, wonderful I could only imagine what it would be like in a truly natural state. Too much emphasis is placed on recreation and water levels of the lakes which causes more emphasis on making money and less on maintaining a more natural GC/Colorado River.
23. Too many surveys.
24. It is important to keep the river clean and wild. I would limit usage by large groups, but facilitate usage by experienced canoers and kayakers.
25. I would recommend this experience to anyone who enjoys themselves, likes an interesting, stimulating, energizing challenge—and is ready to be humbled—by the canyon herself.
26. Coco raft trips are powerful experiences. It will always be difficult to balance the needs to keep trips a wilderness venture without making them too expensive and for elite persons.
28. It was a great trip. Our guide was terrific, extremely competent. I felt safe during the trip. I traveled with an 11 year old son, 15 year old daughter and after the first day, I was very relaxed and comfortable.

29. It was the best family vacation that we have ever had. We have 2 teenage daughters and we all enjoyed the beauty, adventure, camaraderie. I know that we will do this vacation again. Also, guides were so informative regarding history, geography, conservation and preservation of the canyon.
30. The guides and boat mates I had made for a great experience.
31. If the water weren't so cold, I'd do the second half (from Phantom Ranch) in the next few years.
32. The total experience is more important than only one part. The canyon mesmerizes a person so that it is a spiritual experience. You did not ask about bathroom arrangements—they have much to be desired I know it's a problem, but there must be a better way.
34. When can I go again.
35. Good, environmentally sound camping practices are vital. Limiting the number of people to maintain wilderness experience, natural environment, and healthy habitat and water quality.
36. A wonderful experience. A privilege.
37. Rafting on the Colorado River, especially in the GC, is an experience that everyone should have. It would be great if the trips were less expensive so that more people could experience it. We will definitely go again.
40. The concessioners we have gone with the five+ _____ we have rafted the GC, Canyoners, is the large part of the reason why we raft this wonderful canyon. They respect the environment, and the passengers they take down this magnificent river. Both my wife and I have and respect GC and are so grateful for companies like _____ that are able to take enthusiasts like us rafting.
42. Great trip! Disappointed in the number of rapids and the size of them.
43. I know that there has been friction between the demands of single-parties and those of outfitters. I went on an outfitted _____ trip and thought it was incredible I would never have been able to see the Canyon in that way were it not for this opportunity. However, the waiting list time for private parties is ridiculous. There must be a good way to balance both. I do not believe that wilderness designation for the corridor, which would eliminate the motorized rafts such as I was on, is the answer. I felt that I had a wilderness experience (summer 98) that was not in the least marred by the occasional sights and sounds of other parties. Please keep some motorized use of the river—very few people can afford the time or have the skill to make the trip any other way. Our outfitters were

extremely careful of the canyon's ecology and do not, I believe, present a threat to its integrity.

44. Only that every person should be able to experience the canyon as I did there is a peace that you experience that you cannot find anywhere else. I oppose any law that would close the river to rafters.
45. If had been in a smaller raft/boat, rapids would have probably seemed large enough. Guides were careful. Was impressed with the cleanliness of canyon and the guides' attention to keeping it so. Was pleased and surprised that we did not see other groups more frequently. Call if you want other information or clarification .
46. It was a wonderful trip. I learned a great deal about the canyon and about myself. I will go again next year on a longer trip. Please stress that I believe preserving the canyon and the river to be of primary importance. I was impressed with how careful and meticulous the guides were.
47. Even with extremes of weather (high winds, cold, sleet, snow!!, fog, heat, no wind) I would not have missed this opportunity to travel the GC and hope to do it again in the near future. Our outfitter () were extremely knowledgeable about all aspects. I was traveling solo, and always felt I was in very capable hands. Entire crew handled adverse weather conditions and kept us very comfortable and quite an accomplishment. I thoroughly enjoyed all I experienced—met and made some wonderful friends and tell everyone I know that they should experience this trip at least once in their lifetime. After my trip was over, I rented a car and went to see GC from the top. It was awesomely incredible, but I prefer experiencing it on the river!
48. The temperature in August was rather hot, even in the evening hot air would blow quite strongly. When the water runs brown with sediment, it is difficult to keep clean.
50. High water flow makes it a much better trip. On my second trip, flow was low because it was June—the Large rapids (Hermit, Horn Creek, Crystal) were disappointing though the smaller rapids (Sapphire, etc.) were better. But high water is better by far and if possible the flows should be kept up throughout the summer.
52. This was the best trip I've ever taken. I loved everything about it! Beauty, history, fun, and excitement with nice people and good food. You just can't beat it. Our guides did everything possible to make the trip fabulous and safe. They were terrific!
53. It was a truly memorable experience. So much so, that I am going back again this weekend for a 5-day trip that starts where I left off last time. I only hope that the

U.S. Government can and will preserve the GC and its wonders for now and future generations.

55. Beautiful sights, sounds, smells, feelings, history, openness. My wife and love the outdoors and this place was outdoors at its best. We would both love to do it again and probably do it again.
57. The trip was exciting, beautiful and comfortable. I have very fond memories and now insist each year that our vacation include a raft trip. We've since rafted Cataract Canyon and the Salmon River. We plan to return to the Grand Canyon with the same outfitter. It would be sad to overcrowd that river. Currently it feels wild and isolated. Even seeing a plane fly overhead is shocking once you feel so far away from daily concerns.
58. The pristine nature of the Canyon is remarkable never in the world have I seen so little evidence of modern man (trash included). It's a tribute to park services that it is so well maintained. The guides are under-appreciated. They perform a major public service probably equal to a heart surgeon.
60. It was a fantastic experience, something my family and I will remember for the rest of our lives.
61. It was the experience of a lifetime. The raft crew (_____) were tremendous; the scenery and atmosphere were super. I wish I had taken the trip when I was much younger. The GC and the river are real treasures. I videotaped the trip and made copies for all those on trip. If a tape would be of interest, call me at _____ for a free copy.
62. Can't wait to go back in a few years—my trip was the best experience I have ever had in my life!
63. We have done the trip twice (1996, 1998). Very enjoyable each time. The connecting with nature and other limited people contact is important. You come home with a new refreshed outlook about our environment. The crew was great. I am a tour guide for a state park in Texas and our crew was what I believe makes the trip enjoyable for all of us. All the group members were compatible and sitting around on the boat during the day or on the beach at night was a cultural experience. The food was fabulous. It is amazing what can be done under-remote conditions such as a river trip. You come away with a renewed outlook about many things. I would be interested in the final report of this study if possible.
65. This trip is one of the most exciting, picturesque, exhilarating, etc. of all the trips I have ever taken. I have been all over the world and we do all types of exotic vacations. Rafting the GC stands out as one of the best trips we have ever been on. The concessionaires like _____ take out all the hassels and maximize the pleasures of the canyon for those who are short on time, etc.

66. Responsible concessionaires enhance the experience. Motorized permits the employed to run this river. I like the controlled (parameters) runoff, versus wild fluctuations 1976 to 1995! Majority of population cannot hike to river from (especially North) rim—but can hike to “fairy lands” from the river. I agree there are more people than in 1970’s, but consider complaints about that to be elitists.
67. We were not informed about trip adequately before hand. We had young guides (four were 21-25 and one was about 40) and they drank alcohol and smoked marijuana at nights. I didn’t feel safe with them leading my 5 sons on hikes the following days. I was too hot (temps up to 115 degrees), river too cold –45 degrees, tired of being woke up at 4:30 A.M. and then in fear for my family’s safety that day. It was an expensive trip that wasn’t successful. Guides should be drug tested!!! Call me for information.
69. The best vacation ever!
70. We love to explore our National Parks; I am a serious photographer. Our guide () was amazing as was everything else about this experience. I have hiked the Canyon to Phantom Ranch; we (my 2 children, husband and I) have done the mile ride down too. 7 days on the river was one of our very best experiences, and I was 6 months post surgery for a laminectomy and back fusion! I’d do the trip again more than willingly and hope I get the chance again! Our guide was not only skilled and informative, but knew where to stop and show us things, hike us, etc. etc. etc. It was an awesome experience!
73. Take down the dam.
75. We had an experienced guide who helped me feel safe. I didn’t worry about the rapids because he knew what he was doing. It was a great all-encompassing experience, I loved the river and the canyon.
76. The GC is a great love of ours. We hiked it in several place, also rim to rim, and continue to hike it. We’ve seen it from the top in many places. The very best way to see it from the water. I highly recommend it to anyone. Rafting the river is something you will either love or hate. We go to the GC every chance we get and would raft the river again the next chance we get. It is the best.
77. I am very impressed with the “take out what you bring in, leave things as you found them” philosophy which really works. The canyon and river were cleaner and more “natural” in 1998 than in 1971 when I last took the trip. The rapids were more exciting in 1971 because they were quite a bit bigger. Also, there are no rules then against riding the outrigger patrons in the front of the hot dog patrons. The guides on the 1998 trip seemed more qualified, and I especially like the fact that they had both male and female guides. While the trips were different, they were both unique, unforgettable and special experiences.

79. The trip we took was excellent. Our guides were so happy to have a “young” crowd. Everyone on our trip wanted to hike and explore. It was fantastic!
80. It was a great experience. I would recommend this trip to everyone.
81. _____ has a history with the river and canyon. It is/was personnel, we observed some “other trips” “Shamu” (white whale) and everybody had their “little matching outfits”. Appeared to be like a “disney land” adventure. Guides did this on summer job. It is my feeling the guides are the care takers of this very special place and they get the mood. There needs to be a valuable respect for the canyon or tourists will change it. Please keep this paradise pure.
82. I and my two sons who had graduated from college 10 days before went. We all consider this trip a life highlight and still talk about it. We are planning to put together another trip in about 2002 with 10 to 12 family members. It is a crime that the outlet to Glen Canyon dam is at the bottom—the cold water made out trip bad in that I hike to bathe every morning, it was flat too cold.
83. I have rafted on many rivers foreign and domestic and the Colorado in Grand Canyon is my favorite. If I had ran only one river in my lifetime, I would have wanted it to be Grand Canyon.
84. My river trip was one of the best experiences of my life. For God’s sake, keep corporate America out of the Canyon. Family owned businesses are the way to go. Don’t tamper with what checks and balances regarding the number of launches that are permitted each day, that seemed about right. Gave one a sense of solitude while allowing more people to have this wonderful experiences. Use outfitters/raft companies who care about giving their clients a quality trip and who are not so focused on the bottom line. Glad to help you out although I now want to do it all again!
87. The river and canyon are the major pleasures of the trip, but the skill and geniality of the crew can’t be overlooked. By the end of 2 weeks if the crew isn’t working well, the trip becomes very difficult. I’ve always gone downriver with the same company, _____, and have always been impressed with their skill not only with the river and canyon, but with the people.
88. For me, rafting on the Col. River in the GC and all that this encompasses has become a spiritual experience—one that I regard as the ultimate means of getting in touch with myself and the natural world. “The best and most beautiful things in the world cannot be seen or even touched. They must be felt with the heart”—Helen Keller. Let’s go boating!
90. It is a phenomenal experience! The remoteness is incredible.

91. Would prefer fewer motorized trips so we could find a time with warmer weather with no motors. Over-flight bans have greatly enhanced enjoyment. These need to be extended or preferably banned in all National Parks. Adult only trips. A little more time in camp occasionally to enjoy relaxing in solitude. Curtail number of trips per day/week/month. So it does not become overrun and too crowded for enjoyment of what it is really about.
92. The first time was in 87. #2 time in 88. #3 time in 98. Probably won't do again because I have arthritis, but I count the trips as those among the tops in vacations. Would like to ride the mules down again and hike the trails leisurely before I get too decrepit.
93. Great experience—don't sacrifice quality for any reason.
94. Keep the limit of total people on river per season. Guides should be more tolerant of people who are really not up to par when they arrive for a trip—with a little reinforcement, the person will become more confident and enjoy the trip. At least one guide should speak about the history of people in the canyon in the last few hundred years, especially since major Powell's trip in 1869.
96. While warmer water (as is being considered) outflows from Glen Canyon Dam would make the trip much more enjoyable, it should not occur at the expense of existing wildlife or plant species. The felling of "remoteness" during the entire trip is of utmost importance to me.
98. Fourteen women, age 50-76, went on this trip. I organized the trip to celebrate my 50th birthday. It was not only an adventure of a lifetime, but as one friend said, "a religious experience." We all came back slightly euphoric, and it took us several weeks to come down from the high. A truly exceptional experience I will never forget!
100. The trip of a lifetime! I'm going back for my 5th run this August. I use _____ . They're the best!
101. I feel there should be all types of rafts, motorized included. On this trip, we cut the motor and floated more than we had on previous trips. I believe the guides were more aware that others might be offended by the noise. As a result, we had less time to hike. Maintaining various methods to raft the river maximizes the ability for more people to enjoy this wonderful place.
102. I organize and lead geology field trips rafting the Colorado River through the GC. Trips have ranged from 9 days (to Lake Mead) to 6.5 or 7.5 days (to helicopter pad). Many participants have gone more than once, and most say it is the best trip they have ever taken. The best part seems to be the side canyon hikes. The rapids and fishing seem to make the trip a little better. The food has always been excellent. My next trip is June 8-15, 2000 for 30 people.

103. Our guides made our trip. Their knowledge and love for the canyon was evident in every way.
104. This trip was a life-altering experience. Part of what made it such was the incredible geology of the region but the other part was due to our guide—he was, without question, the best. Many times we were being told and shown things while other boats were passing by the point of interest. The smaller number of people on our boat also helped a lot; we were able to camp at places the larger groups couldn't. I have mixed emotions about the damming of Glen Canyon; on one hand, it has forever altered the life of the Colorado River. On the other hand, without the dam, people like me, "casual" adventurers, might never have the opportunity to experience it. I believe it is very important that the wildlife and vegetation of the river be protected and preserved without over-regulation because the final piece of the experience is being able to see and learn and try to comprehend all that the GC and the Colorado represents with as much personal freedom as possible—it can't be a free-for-all but you've gotta be able to take a 6-pack along. If preservation becomes a problem due to over-crowding or irresponsible visitors, I would not oppose limiting the number of people allowed to go each year. Thank you for including me in this study. It was great to be able to recall and reflect upon the trip.
105. Needs to continue with controls on independent groups that are not as concerned about keeping it clean and maintained.
106. Interesting survey, but lunch and camp choices are influenced by more than vegetation and rocks—i.e. sun expose, time of day where you are on the river. Some of your pictures were of same location, different view. HMM!
107. I have been leading Geology outreach trips (for students general public—no credit) for over 10 years. Motors are essential for safety when we have such a diverse mix of ages, health, and athletic ability. We are there to see the incredible geology, not challenge death or get thrills. Big groups are great, although they are not the choice of many who go for a wilderness experience or for challenging side-canyon hikes. There is now too much noise from those who want everyone to experience the canyon the way they want (maximum physical effort, danger, etc.). I really resent the way the private groups sent snag boats ahead to squat on the huge beaches—which we needed. Having groups of 10-12 occupy a huge beach in some stretches is criminal. They were also very hostile to us. Next you might just invade the squatters (who are sent ahead in late mornings).
108. Would you please send me a copy of your published report. More time should be spent on studying the life of major John Wesley Powell.
109. To me, this is the perfect rafting trip.

112. I think I made most comments already in the margins of the survey. This trip was high adventure for my husband and me. We loved it! Since we went in September the temps were a bit cooler and we did have rain a few times. Also only 2 kids were in our party and also a few folks over 70 so we felt very comfortable with the group and all of us were laid back about how intensely we would hike, etc. Our guides were terrific and good fun and the food and the equipment fine though the potties reached over-fill by day 6!!!). "Nesting" instincts came out every evening as we would scramble for a good site—one with boulders for drying stuff and scrub and branches for hanging gear. Any chance of getting analyzed data from this survey?
113. I think there is room for both private and commercial craft. There is a much greater safety factor with large motorized craft. At Lava we're able to rescue 2 parties that flipped their rafts. In one of the cases I am sure we saved at least one life. I have been a boatsman for _____ since 1956 and am still running one trip a year down the Green River (4 day). I spent 2 years on GC—2 years on the M. Fork of the Salmon River and started with _____ and then Ted and Don. Enclosed is a book I published a few years ago, many memories enjoy!
114. I'm a young 69 year old-did the Rogue River (Oregon) in a two person raft several years ago. I liked the larger raft with guides so we could enjoy the scenery. Both trips were exceptional, each unique in their own way. The cold water is not a problem-expected in river travel. Our guides were delightful, born and bred on the Colorado. Their love of the environment was evident always. Being with three family members made it even better. Our co-rafters were the greatest—a representation of all areas of the USA. I'd read about the river-grew up with dams on the Columbia River-seeing their numbers increase during the last fifty years-alarming! My life long wish has /had been to raft the Colorado so the dream came true last summer, I'd been on the North and South rims, hiked on some of the trails but rafting was the ultimate experience. Our hikes, in May were good but did depend on our guides to help get over some areas. My only concern was the inadequate footwear in one climb to the Indian Ruins. Our young folks didn't come prepared for steep, gravelly slopes. It wasn't my problem but did worry for their safety. I hope the opportunity will always be there for others to raft the Colorado in its pristine beauty. I'd be happy to do it again!
116. I would love to see them tear down the dam and let the river run wild. At least they should flood the Canyon every spring to wash out the shrubs, racks, obstacles, etc. The canyon should be in a more natural state. Also should have more permits set aside for private groups rather than guided groups. Many people cannot afford the price of guided groups.
117. I organize a trip for 36 passengers every year and love it.
119. Great adventure for me in 1985 and 1998. Same group.

120. Great trip, expensive, would like to do it again sometime.
121. The canyon is very well managed for rafters. The numbers are reasonable, and the rules are ok. I have seen rules evolve over the last 30 years, and I think that situation is as good as it has ever been. I would like to see the river flow more even throughout the day. The controlled flood to re-flourish the beaches was silly—government PR biological changes from the dam cannot be reversed, and the Tamarisk cannot be eliminated. Keep it as natural as possible, and let nature take its course.
122. Completing this survey has made excited me by bringing back some great memories. I went with _____, and I would love to take another trip. Next time I would like to take a longer oar powered trip.
123. The rafting trip last summer was the best family vacation we have ever taken. The combination of adventure, excitement, challenging activity and relaxation was just right for each member of our family group. We traveled with _____ and they provided superb guides- _____ and _____—and superb meals. Our guides truly made a huge contribution to the enjoyment of the trip. They were experienced and confident and we never felt any danger of fear—just thrill.
124. There are few places I have not been. That make me well qualified to say the GC is the jewel of jewels. I also understand the situation at Glen Canyon dam. The water flow must be regulated without concern for power sales, with the utmost concern for the GC. Rafting through the Canyon turns everyone into an environmentalist.
126. Great experience!
130. I don't know what you are looking for but this does not mirror the experience. You need to rewrite this document. I have the feeling this document was written by someone who has gone down the Colorado once or twice and has listened to a lot of hearsay.
131. I ran a trip for 19 members of my ski club and had the same guide as I had 10 years earlier with a different group. Water flow was in 5000-8000 cfs during the first trip so BFRs were more of a problem. This time flow was more than 20,000 cfs and much smoother ride, but less exciting. Food was very good especially this last trip and supplemented by our own liquid refreshments. Going with friends produces cherished memories.
132. It was a great trip. I was so impressed with how clean the river and the campsites were. The water was very muddy but we did not see any trash.

134. We ended up having “to break in” a new campsite last night, so we wouldn’t have to share or overshoot the helicopter pad. Not one of our better experiences. Very unsatisfactory site and experience.
135. To keep the rafting trip in pristine condition—no increase in people allowed on river annually, nothing man-made to be (no signs, bathrooms), no dams, pollution from the or extra bridges, page, AZ power plant must be stopped. The painted desert is disappearing, everyone should be able to see it, but start in line and wait a turn.
139. Very enjoyable—_____ were both excellent.
140. Rafting on the Colorado in the GC is by far, the most incredible experience I’ve ever had. The first trip I took had such an impact on my life. I fell in love with the river and the magnificent canyon through which it flows. The size of the canyon and the mighty rapids bring a perspective to one’s life and demonstrate how small everyday problems really are. I feel so very fortunate to have had the opportunity to have been able to make the trip 4 times and can’t wait to make the 5th in 2000 in celebration of the millennium! It is very important to me to preserve and protect the GC and the Colorado while keeping it accessible for friends, family, and fellow citizens of the earth to experience and enjoy. My hope is that this survey somehow will contribute to this effort.
141. _____ is the funniest guide on the river! _____ runs the best operations!
142. The rapids don’t change drastically on the Colorado in GC because the flow is pretty much controlled by Hoover Dam. Even with the rain on the first night, the rapids and flow of the river did not change to a noticeable level.
145. Great trip! Would love to go again.
147. The last trip was with my son and youngest daughter (my son and I had done the same trip two years before)—and as usual it was simply wonderful in all respects. I recommend the trip to all who will listen, as I consider it a lifetime must! One must do it and see it to understand the awe and joy!
148. I love the GC. I’ve rafted from one end to the other and hiked from rim to rim. I could not have rafted it had there only been oar-powered rafts because of the restraints on my life. It was a great experience and I don’t feel like the motors harmed the river in any way. We saw few other groups and only for short periods of time. These outfitters are wonderful and responsible care takers of that place because they are there on a constant basis and are held accountable for the way they leave the canyon. I don’t feel like one trippers will be so responsible. Our guides picked up things that had been left by others. I don’t think the canyon should be left for only experienced rafters and elitists. I probably would never

have been able to take my family on the trip and I feel they as Americans are as entitled as anyone to experience this wonderful place!

154. It was a wonderful experience. The guides were excellent and professional. I felt safe. It was an excellent trip.
155. Some of the most important friendships I've made in my life were made on GC raft trips. Guides and fellow passengers alike. When they visit me in Missouri, I take them canoeing on the wild and scenic rivers of the Ozarks. Quite a different experience. (although the water's just as cold!) All my GC trips have been done with _____. Their young guides impress me more every year. There are 8 or 10 of us who do the final trip of the season year after year. It is a very emotional reunion at Lees Ferry. 12 to 15 days of unearthly scenery, challenging water, good food and great camaraderie!
156. It is a trip I cherished—fond memories—relaxing, fun, quite exciting, hiking, swimming, and a real get away. I would only do this river with a guided outfitter. I feel comfortable with their experience and knowledge. I like being able to do the upper 6 day or the lower 3 day. I hope the choice continues. I have done both.
157. This is a supreme experience! I love all facets of the trip and hope to do it again. I think for myself and others the priorities are: to experience the canyon with some sense of solitude—even the motor powered rafts shut down and float in silence for stretches. But mainly I mean this as being able to experience Canyon attractions without a crowd. My experience is that commercial rafters coordinate site visitations as well as campsites with each other. The privates don't and are often like flies everywhere. Privates also take up campsite space for more than 1 night. There needs to be maybe a destination—officially for sites hosting less than 10. Privacy at campsites is very important. I was the “postage stamp” with 30 and hated it. I really appreciate informed and enthusiastic guides and a certain level of athletic fitness is important for them. Food is important but shade at lunch is more important than food. This survey took me 1-2 hours to fill out in a thoughtful manner. Which I was happy to do.
158. Item C. Leader would plan river travel to reach different rapid at safer water level. About once or twice a trip—had to push beached rafts off of sand beach because water dropped.
160. I enjoyed the availability of 6 day trips and hope they don't ban motorized raft trips. Not many people can afford 12 days for a rowing trip to explore the canyon.
163. If you really want the best information and don't have an agenda you are trying to get the professional river guides have both the long-term interests of the river and the river experience of main concern and you should rely on their input.

165. It is so far and away the best and most awesome way to see and experience the GC. I had long waited to see the GC and will always treasure the memories and pictures of my first visit to the canyon. I also must commend my hosts, _____, for their professionalism and skill and knowledge in making my trip such a success.
166. This is one of my favorite vacations ever and I plan to do it every year if possible. The companies in the canyon treat it very well and this is very important to me as I don't want to see a lot of changes. The guides and trip leaders are well trained and know an amazing amount about the canyons history and geology.
171. Great trip. Canyon beautiful. Do not increase number of people on canyon in summer. Crowds would ruin.
173. White water rafting is the best trip I have ever taken. It is adventuresome along with relaxing. I met terrific people with my same interests and enjoyed spectacular scenery!
175. I have been 3 times, speaks for itself. My wife is not the outdoor type so I can understand why it is not for everyone. Frankly I love everything about the trip!
178. Our rafting trips on the Colorado have been the most enjoyable and memorable vacations we as a family have taken. The combination of the awesome beauty and excitement make it almost undescrivable. The only detractable issue for us would be if the river became so popular that you encountered people at all arts of your trip. A big part of the trip is the isolation of your rafting trip as it proceeds down the canyon and your individual smallness in such a huge place!
179. Unique and wonderful experience a first class trip. Although experienced with white water canoeing, I would not enjoy trips like this on my own—the experienced guides made it nominally safe and thus gave me the opportunity for enjoyment of the truth of the canyon.
180. The Colorado provides a great balance of beautiful scenery, thrilling rapids, pleasant nights, and being in a place where you can't be bothered by phones, client complaints, and/or crowded conditions.
181. It was one of the best experiences and, perhaps, one of the best vacations I have ever had the pleasure in which to participate. Unfortunately, the experience is almost indescribable and photos do not do justice to spectacular views. The GC is an incredible natural resource in this country and should be preserved in an unaltered state—without further commercialization or development of any kind. _____, our guide company, is the best host with an obvious love of the canyon.

184. The experience was more powerful than I imagined it would be. It was sort of a natural spiritual, almost religious experience. Being under the stars in the canyon, observing the beauty of the desert and hiking the side canyons were incredible (not to mention the river). Returning to the "real world" was a bit difficult after 12 days in such a wonderful place.
185. We were impressed with the support other crews gave us when needed, and we gave them when needed. We would never go on a motorized trip; the noise would be a major deterrent. We've been very impressed with the river guides of _____.
186. It is a great experience—hope the environmentalists don't foul it up with unnecessary demands.
187. One of the best experiences of my life! Don't cut back on for profit trips. That's the only way most people get to see the river.
189. This is just the most wonderful place to get away from all your everyday cares. The beauty of the canyon and the power of the river are awesome.

Responses to Open-Ended Question 12

Do you have any comments on the kinds of beaches at which you prefer to camp or lunch? Do you have any comments about the photographs on the previous page?

1. Prefer vegetation for shade and privacy.
3. Larger beaches are better to camp and eat lunch and availability of shade is also preferred. The photos were for the most part inadequate for the task of evaluating beaches for camping areas, so it was very hard for me to tell how large they were (whether they were large enough to comfortably accommodate the group of around 20 people).
4. I enjoyed the combination of sand beach and the rock slab beach was awesome.
6. Are they the same beaches in both pictures? I prefer overhang rocks to sleep under when it is raining that way you don't need a tent.
9. I like a few trees and shrubs.
12. Repetitive point.
14. Prefer to stay at camps with sand and shrubs for privacy. Don't like too many rock either.
15. Like shrubs for lunch (because of intense heat). Hard to tell size of locales in photo—actual size should be much larger than I think or smaller.
16. Shade is nice for lunch; space for camping. A little hard to ascertain size.
17. Camping—large enough to spread out. Pictures—no scale indicated.
18. Camping beaches need flat areas and trees or shrubs, lunch beaches must have shade.
19. It seems that the beaches that have some trees or bushes are more appealing and add some privacy.
20. Shade is essential for a lunch stop—if out flow from the dam will reduce beach size during the night, and your gear gets flooded then it is not a good beach. The boatmen must know the schedule of the dam—isn't this awful??
22. Best allowed some shade to escape sun.
23. Large better.

24. Scenic flat large to camp scenic shady to lunch.
25. Nice digital enhancements—adequate space, privacy and level land with potential side hikes if possible.
26. Camps—not too small. Lunch—doesn't matter but shade is good.
29. I would prefer to camp at a beach that is fairly good size so that everyone has their space.
30. I like different camping situations (variations) weather is a factor.
31. To camp—flat, clean, less sand—hard flat surface, no/few red ants.
32. I prefer fewer rocks and more sand.
33. The photos are repeated—its hard to tell what distance does to size and/or what else is available. I liked large beaches with side canyons leading off and easy routes up off the beach.
34. Prefer sandy beaches.
35. Shade at lunch is a good thing if available, access to side hikes at camps.
36. Bigger with trees(level) or bushes (camp) is better—from comparing same 4 beaches.
37. I like to lunch at places with lots of space and a couple of trees. Camping is fun with more trees.
38. I prefer sheltered beaches for protection of sun and monsoons.
41. Shade for lunch—open space for camp.
42. They all look alike except with the distance from the photograph.
43. I would lunch at most of the beaches pictured, but a beach with a fair amount of room and few rocks is best for camping.
44. Shade was most important we went in August.
45. Was not clear whether boats meant beach occupied. Responses assume beach not occupies; otherwise would keep looking. Larger beach and more area to explore around it, is important. Brush/no brush not determinant.

46. Seem to be the same beaches. Beaches need to be large enough to allow privacy.
47. Lunch—trees are helpful to get out of sun/wind. Photos, are the same with changes of added trees, rocks, etc.
48. With the daily temp. I would prefer shade from trees/bushes; also more beach to spread out.
50. Wider or longer beaches best so can spread out. On very hot days, best if rock walls further away.
51. Some are different photos of same beach. Depth of field is poor in these photos so your results from this section are questionable to me.
52. Any beach is fine for lunch. Large beach with private areas are best for camping.
55. Want privacy, and room to spread out for camping, prefer trees, saw many of same spots but couldn't tell how flat they were for sleeping.
56. Prefer some shade for lunch but not Tamarisk. Prefer diversity of spots for camping away from Tamarisk but with wind-breaks. Side canyons nice.
57. Lots of soft white beach for 20 people to spread out. Escape snores and night talkers for camping. For lunch, nice to be able to explore the area and maybe climb the rocks.
58. Clearly prefer beaches with vegetation.
59. I prefer to lunch at a beach while you can get some shade. To camp, size (larger) of beach is more important though places for privacy are nice.
61. Like large beaches for camp with trees or bushes. Photos-need options other than those give, such as "both".
62. Shade and wind break.
63. Sandy beach for camping. Shade for lunch. Pretty areas—brought back memories.
65. Large beaches with shade trees are best.
66. Scale is a problem—all but one look very small. For lunch, prefer out of sun—not important for camping.
67. I would like a place to sit—not on rocks/sand.

68. Camp—flat, sandy, some shade. Lunch—some shade.
69. Large sites are preferable so people can spread out and not get in each other's way.
70. Photos a bit confusing. I looked for sandy, flat terrain with bushes to camp, and beautiful spot to hike or explore for lunch (or to photograph close-up mid-day).
73. Need more room to camp less room to lunch. Don't much care about water level.
75. Prefer large area with vegetation.
76. It is nice to have a beach with bushes for a little more private areas and shade but it really isn't that important to me, I can go with whatever.
77. Camp—prefer beaches with physical divisions (trees, rocks). Lunch—prefer beach with shade trees.
79. Campsites are a lot more important than lunch sites (unless side hikes accompany lunch.) Camping close to water or near bush that provides shade is very important.
80. All of these pictures look similar. I prefer camping grounds where you can hike.
81. Need shade for lunch, long sandy beaches for camp.
82. I like a bigger beach for privacy.
86. Small size of photos makes it difficult to determine a preference.
87. Its hard to tell the slope of the beaches in the photos. Beaches aren't a big factor for me personally but a perfect trip would include camping on a beach large enough for me to get away from the group, a spot where I could camp very close to the water. Lunch? Shade close to the water is nice.
88. For lunch, I prefer wide shady places. Sandy beaches instead of rocky ones make camping more comfortable. I also prefer camp beaches with secluded spots for bathing.
90. I like camping where tents had more privacy, it's hard to tell what they were like.
91. Beaches with space, some cover, level areas for tents, hiking opportunities.
92. Shade provides protection from sun at lunch and privacy for camping.
93. Camping: roomy and shady. Lunch: shady.

94. Like any beach where you can find flat real estate to sleep. Same photos over and over?
96. I like beaches on narrow stretches of the river, with some vegetation and a feeling or "remoteness"
98. Prefer shady site for lunch and larger site for camping.
99. To camp, areas to hike nearby area and some vegetation is esthetically pleasing.
100. I enjoyed camping at beaches where interesting hiking was available.
101. Prefer some shade if its very hot.
102. Need a choice of "either". Prefer to camp where water is conducive to fishing. No rocky ledges. Same beach with or without vegetation.
103. Trees or low brush are good for campsite.
104. Need good shade for lunch; good vegetation and flat spots are good for camping. Appears to be same 3 photos with varying vegetation and water levels; more vegetation is better.
105. Camp beaches need room and trees. Some of the photos appear to be the same.
107. I run large, 3-boat trips, (geology outreach trips) we need big campsites.
108. Camps must be solitary and large enough.
109. With some shade.
110. Why do you use only 4 beaches with altered vegetation, location of camp really depends a lot on when afternoon shade arrives (time of year decides if want sun or shade).
112. For camping—need space, trees, shrubs, and boulders for privacy and hanging gear to dry. For lunch—less need for space—more need for shade.
113. Whenever possible I would like the larger beach with shade both for camp or lunch. However, any spot is fine for lunch.
114. Beaches with calmer water are best to "clean up" when camping—lunch where there is opportunity to explore the perimeter.
115. Shade trees important.

116. Camp at open beach. Lunch at rocks and vegetation. (Same two beaches in all pictures with different angles and vegetation.)
117. Lunch in shade. Camp in shade and some trees.
120. Lunch in shade. Camp in flat close to water, keeping cool.
121. A good camp (bad camp) has many attributes, not evident from photos.
122. It is more important to have shade at lunch than during camp. It is more important to have a large beach for camp. Some of the pictures are duplicates with foliage added or removed.
123. Lunch beaches should have something to explore or hike. Camp beaches should provide some protection—trees/shade.
124. Shade whether a tree or rock overhang is necessary for lunch. For camping, afternoon shade and a little breeze, fairly level and uncrowded is great.
126. Shade, rocks to sit on.
130. Where you eat lunch is where there is shade. The previous page is silly.
131. Lunch beaches should have some shade—more here do. Camp beaches should be larger and be relatively flat.
132. Always looked for shade at lunch. I love a beach that I can sleep on and not worry about water fluctuations.
134. Large beaches better with plenty of shade and other features—boulders, trails, etc.
135. Plenty of sand and small trees or bushes.
137. Need shade for lunch. Prefer campsite that offers some privacy.
138. I like trees, especially for lunch.
141. The larger the beach, the better.
142. I prefer to camp on beaches with a lot of space; same with lunch, but with rocks to sit on. Are all of the pictures the same?
145. Camp—large beach, small shrubs, interesting rocks, neat archaeology. Lunch—large beach, rocks to climb, some shade.

147. For camping, some seclusion and shade. For lunch, some shade and mobility.
148. I like lunch with shade and nearby rapids. I like camp with lots of space and side canyons or rapids nearby.
149. Camp—hiking trails large.
155. Same beaches, different level of vegetation.
156. I like to camp where all can spread out a bit for more privacy.
157. Lunch is about a shady place to sit. Camp is about some privacy and space from others. Trees and bushes are important.
160. Lunch needs to have some shade however small it may be. Camp beaches are better if there is some level ground.
161. Prefer larger areas for camping (privacy and walking) prefer shade for lunch.
162. I like lunch spots that have shade. Camping spots with nice kitchen area close to boats and place for privacy for girls to pee.
163. Stupid questions—depend on availability and size of group and time of day. Boat guides know best, best left to their decision.
166. It is a little difficult to determine the size of the beaches from the photos.
169. In some cases I would reverse choice, because of better hiking in side canyons.
170. Hard to see the difference in photos but I chose more privacy for camping and open for lunch.
171. Flat, able to spread out. Not crowded, shrubs, view is nice.
172. Like beaches with both sun and shade.
175. Many people like some privacy in trees and bushes. I prefer close to water as it is cooler.
176. I just like the bigger beaches with more options and where to set up your tent.
177. I like big beaches with good height trees for shade.
179. Shade for lunch. Room for volleyball. Boulders/trees for semi-privacy for camping.

181. Prefer larger beaches for camping and ability to camp/lunch close to raft.
184. Camp or lunch does not always have to be on a beach, rocky ledges are ok too. Beaches with vegetation are preferable, however, during a sunny day, or for privacy for camping.
185. Prefer bushes or trees. Beside a stream is ideal, like adjacent to Crystal, or National Canyon.
186. Large flat for camping. Lunch really doesn't matter.
187. Camping big. Lunch shade.
189. Like having shrubbery for privacy to sleep and for shade to eat—its easier to decide on a beach when its in front of you—pictures don't have enough information.

**APPENDIX D: ANGLER QUESTIONNAIRE WITH FREQUENCY
DISTRIBUTIONS**

Colorado River Angler Study



*Conducted by
University of Illinois
Department of Leisure Studies
104 Huff Hall
Champaign, IL 61820*

*Sponsored by
Grand Canyon Monitoring and Research Center*

In Fall of 1998, you were fishing on the Colorado River near Lee's Ferry and contacted to participate in a visitor study. When answering questions in this survey, we would like you to think about that trip in which you were contacted.

1. Overall, how would you rate the fishing on the trip in which you were contacted during the Fall of 1998? *(Please ✓ one)*

2% Poor
9 Fair
16 Good, but I wish a number of things could have been different
18 Very good, but could have been better
32 Excellent, only minor problems
23 Perfect

2. On that trip, did you use a boat as a means of getting upstream or downstream? *(Please ✓ one)*

80% Yes
20 No

3. On that trip, what was your main method of fishing? *(Please ✓ one)*

27% From a boat
73 From the bank

4. What type of fishing gear did you use at Lee's Ferry? *(Please ✓ all that apply)*

74% Fly-fishing gear
30 Ordinary spinning tackle with lures
4 Bait

5. Was 1998 your first year of fishing at Lee's Ferry? *(Please ✓ one)*

31% Yes
69% No → How many years have you fished at Lee's Ferry?

Mean=9 Years

6. Was the fishing trip in which you were contacted the only trip you have made to Lee's Ferry in the last 12 months? *(Please ✓ one)*
 36% Yes
 65% No → Including the trip in which you were contacted, how many trips have you made to Lee's Ferry in the last 12 months?
Mean=13 Fishing trips
 → Including the trip in which you were contacted, what is the average number of days you spend at Lee's Ferry on a typical fishing trip there?
Mean=4 Days
7. Some people have many other activities which they enjoy as much as fishing at Lee's Ferry. Others have very few. Which of the following statements most closely reflects how you feel? *(Please ✓ one)*
 4% If I couldn't go fishing at Lee's Ferry I probably would not miss it at all and would find something else that was just as enjoyable.
 34% If I couldn't go fishing at Lee's Ferry, I would miss it, but not as much as a lot of other things I enjoy.
 44% If I couldn't go fishing at Lee's Ferry, I would miss it more than most of the other interests I now enjoy.
 18% If I couldn't go fishing at Lee's Ferry, I would miss it more than all of the other interests I now enjoy.
8. We are interested in how you feel about certain issues concerning fishing in the Colorado River near Lee's Ferry. Please indicate the extent to which you agree or disagree with each of the following statements. *(Please circle one number for each item)*

	Level of Agreement				
	Strongly Agree				Strongly Disagree
I was satisfied with the number of fish I caught.	39	26	23	8	4
I was satisfied with the size of fish I caught.	19	32	31	12	6
Most of the fish I caught from the Colorado River were about the same size.	16	39	28	11	5
Almost all of my fishing in the Colorado River is catch-and-release.	77	9	6	3	5
The more fish I catch, the happier I am.	33	27	24	12	5
A successful trip is one in which many fish are caught.	22	22	36	14	6
I would rather catch a large number of medium-sized fish, than a small number of large-sized fish.	6	23	37	25	9
I would rather catch one or two big fish, than ten smaller fish.	18	27	33	19	4
I was bothered by catching too many smaller-sized fish.	5	10	19	31	35
N=29 Quantity and quality have declined over the years	78	0	10	5	7
N=29 Always catch and release	22	31	8	28	11

9. How important were each of the following reasons in your decision to fish near Lee's Ferry rather than going elsewhere? (Please circle one number for each reason)

	Not Important	Somewhat Important	Very Important
Thought I would catch a lot of fish	15%	52%	33%
Thought I would catch big fish	12	52	37
Wanted to catch a trophy fish	48	36	17
Wanted to fish in Glen Canyon	14	33	53
Close to home	50	31	19
Few other trout areas in Arizona	39	30	31
N=34 Business	0	9	91
N=34 Vacation	0	42	58

10. What do you consider a "trophy size" rainbow trout? (Please fill in a weight or ✓ the box)

80% Mean=6 lbs.

20 I don't know. I have not thought about "trophy size" fish.

11. Did you camp upstream along the river in 1998? (Please ✓ one)

85% No

15% Yes → How many nights? Mean=5

12. On average, how crowded did you feel the river was when you were fishing there?

(Please circle the number that best represents your feelings)

6%	13	16	13	13	16	14	5	4
Not at all	Slightly	Moderately	Crowded	Crowded	Crowded	Crowded	Extremely	Crowded

12. How important would each of the following be in contributing to an excellent or perfect fishing trip at Lee's Ferry for you? (Please circle one number for each item)

	Not Important	Somewhat Important	Very Important
Catching a trophy fish	34%	47%	20%
Catching your limit	55	29	16
Catching a lot of fish	17	53	30
Catching healthy-looking fish	1	14	85
Catching fish that have a lot of energy	2	13	85
Good weather	21	49	30
High water level	45	43	13
Low water level	33	47	20
Camping along the river	68	21	11
Seeing few others	17	52	30
Rising water level during the day	36	45	19
Falling water level during the day	45	42	13
N=17 Less Guide control	0	12	88
N=17 Constant water flow	3	31	66

13. How important would each of the following be in contributing to a poor fishing trip at Lee's Ferry for you? (Please circle one number for each item)

	Not Important	Somewhat Important	Very Important
Not catching your limit	55%	33%	13%
Not catching a trophy fish	65	26	8
Not catching a lot of fish	24	52	23
Catching no fish	8	21	72
Poor weather	24	49	27
High water level	30	50	21
Low water level	44	45	12
Rising water level	36	53	12
Falling water level	36	53	11
Seeing many others	13	51	36
Not being able to get upstream to fish	11	20	69
Boat/motor trouble due to the water level	20	29	52
Not being able to camp along the river	61	22	17
Other anglers at my fishing spot	23	42	35
N=8 Number of guide boats	0	25	75

14. Did you know the expected water level before your fishing trip to Lee's Ferry?
(Please \checkmark one)

59% No, didn't try to find out (Please skip to question 16)
1% No, tried to find out but couldn't (Please skip to question 16)
40% Yes \rightarrow What was your source of information?

N=92; Guide (40%) Internet (38)

\rightarrow Please estimate the water level in the Colorado River during the fishing trip in which you were contacted in the Fall of 1998.

(Please fill in the estimated water level or \checkmark the box)

Mean=16,000 cfs

21% I knew what the water level was during the trip, but don't remember now.

15. Have you ever fished at Lee's Ferry under the following conditions? (Please circle one number for each item)

	Yes	No	Don't know
High Water (greater than 16,000 cfs)	58%	11%	32%
Medium water (9,000-16,000 cfs)	70	4	26
Low water (less than 9,000)	58	13	29
Fluctuating water levels	78	5	17

17. How would you evaluate each of the following water levels for the fishing trip in which you were contacted in the Fall of 1998. Assume that the Colorado River water level was constant for the entire time of your fishing trip. (Please circle one number for each item)

Flow Level	Very Satisfactory	Somewhat Satisfactory	Neutral	Somewhat Unsatisfactory	Very Unsatisfactory
2,000 cfs	12%	6%	26%	12%	44%
3,000 cfs	11	8	26	13	41
4,000 cfs	14	9	27	15	35
5,000 cfs	15	11	34	14	26
7,500 cfs	24	15	38	12	12
10,000 cfs	34	22	35	4	4
15,000 cfs	33	24	32	6	6
20,000 cfs	17	15	31	17	19
25,000 cfs	5	7	33	17	39
30,000 cfs	3	3	26	13	54
40,000 cfs	1	3	23	7	65
50,000 cfs	1	2	23	5	69
60,000 cfs	1	1	23	3	71
80,000 or more	1	1	22	1	74

16. In this final section, we would like to ask some questions about your background and occupation which will help us compare your answers with those of other people. We stress that all of your answers are strictly confidential.

a. How old are you? **Mean=47** years old

b. Are you: (*Please ✓ one*)

99% Male
1 Female

c. How many years of school have you completed?
(*Please circle one or ✓ the highest year or level*)

1 2 3 4 5 6 7 8 9 10 11 12=**8%**

27% Some college
37 B.A. or equivalent

16% M.A., M.S.
11 Advanced degree (M.D., Ph.D.)

d. Please check the response that comes closest to your total family income before taxes.

(*Please ✓ one*)

1% Less than \$10,000	9% \$50,000 to \$59,999
4 \$10,000 to \$19,999	9 \$60,000 to \$69,999
4 \$20,000 to \$29,999	7 \$70,000 to \$79,999
9 \$30,000 to \$39,999	3 \$80,000 to \$89,999
12 \$40,000 to \$49,999	5 \$90,000 to \$99,999
	38 \$100,000 or more

e. With reference to your primary occupation, are you currently (*Please ✓ one*):

75% Employed full-time
2 Employed part-time
0 Full-time homemaker
0 Temporarily unemployed
1 Not employed or looking for work
15 Retired, not working
7 Retired, working part-time

20. Do you have any other comments about fishing at Lee's Ferry?

See Page 196 for List of Responses

Thank you for your time and responses. Please mail back your questionnaire in the enclosed postage-paid envelope. Your responses will be included within a summary report presented to the Grand Canyon Monitoring and Research Center.

Public burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington, DC 20503.

Responses to Open-Ended Question 20

Do you have any other comments about fishing at Lee's Ferry?

1. Only the Indians fish with bait.
4. I would like to see less paid fishing trips. They seem to take all the best fishing holes and stay there all day. They have the best parking and a lot of say right or wrong. I think they use the system to help themselves. I have to fish the 1st and 2nd miles of the river, so we can enjoy ourselves.
5. Where is the Game & Fish Department? I haven't seen wardens checking boats for fish in years... And I know that many boaters keep way over the limit. Since no fish are stocked anymore, it seems like the poaching has a very negative effect on the number of fish and the size of the fish.
6. River & launching areas clean. Ranger helpful. Will go back!
7. I would like to see trophy fish 22+ inches back in the river. I do not keep fish most of the time, occasionally taking one or two 14-16" home to eat. But have only seen one fish over 20" in the last 100 fish caught.
10. It was a very memorable experience. My first attempt at fly-fishing for trout and from the east coast made it very enjoyable. Because I was guided the entire day was catch and release. We caught a lot of fish that were all about the same size (medium). I would have liked to keep one for a meal, but the day was fabulous, weather & scenery were outstanding and the people were friendly. I plan on repeating the trip in 1999.
11.
 - A. I drove over 10 hours up and back from Pasadena Ca. That is why catching a lot of healthy great fish is important to me.
 - B. I don't know how to figure out what water should or could be. It should be controlled for great fishing.
 - C. I don't like to see too many people as usually they leave a mess and pollute the entire area.
 - D. It would be a great idea to get more information on getting to Lees Ferry by train.
 - E. Most of the noise came from rafts with a lot of people having water fights, etc. It would be nice to keep the river pure for fishing, I don't know if that is possible. Lees Ferry is a truly beautiful serene place until the other rafters come through.
 - F. If you want my help or opinion on anything else, I'll be happy to help you.
 - G. I'm bringing 3 more people this year because of my great experience last year.

15. Thank you.
16. I am thankful that studies like this are being conducted. It is important to preserve this fishery/"sanctuary". Lees Ferry is one of the best and only well maintained trout fisheries in the West.
17. Being a resident of Phoenix, AZ, and an avid Western fly-fisherman, I am proud to call the Colorado River @ Lees Ferry my "home" water. I have fished many western rivers, freestone and trail waters and am very satisfied with my experiences at Lees Ferry. I feel that the AZ DOW is managing the water well in comparison to other Western states I've lived in, notably CO and NM.
18. I feel that the guides and their advertising has had a very negative long term effect on the quality of fishing and overall experience at Lees Ferry. As they continue to capitalize on the present fly-fishing fad the problem grows worse year by year. Fishing should be for fun not profit. At least the number of guided trips should be restricted and a heavy fee paid to the fish and game department.
19. I have fished this river since the early 1970's. Catching trout and cooking them on shore is a big part of my trip. I have worked with Game and Fish on quality regulations which are good. I would be disappointed if it went to catch and release.
20. Fishing at Lees Ferry is great in every way. I have had weeks of not catching any but that didn't matter. Catching fish is just a bonus. Glen Canyon Dam should never be torn down.
21. I hope a great deal of care is used to maintain this fishery and the local area. I love the area and always enjoy vacations in this place.
24. Fishing at Lees Ferry is one of the most pleasurable experiences for an outdoorsman. Beautiful and majestic a trip that is touching to the soul.
28. I would have been there a lot more if I had the time. I have now bought my own boat and am partially retiring. I will be there much more often in the future.
29. I think with some creative use of rocks and earthwork more slam dunk habitat could be available for both guides, locals and pilgrims. Over the past 30 years, from worms to flies, and from no respect to deep respect for this area the parties responsible for maintaining it can be proud of their efforts.
30. I wish our government in Washington, especially _____ would bug out-stay in Washington.
31. It is wonderful fishing! Don't fool with the temp. of the water.

33. If it's cruel to catch fish—then watch the grizzly bears feed on salmon. Since when is anything that man has done actually changed for the better the environment in which he lives? Creation is a form of destruction. Why do only a small amount of special interest fishermen (fly and lure) get to use such a large beautiful area? What about kids and elderly people who want to use bait? Can't the area be used by all?
35. The fishing has dropped since they started doing fluctuating water levels.
36. Need to keep the water level constant. Fish and all other wildlife are stressed to the constant change of the flows. The damn government sold the idea of Glen Canyon dam to the public in 63' for the flood control, not power usage, I think the FBI calls it fraud, so lets do what's right, that is what's wrong with America we don't stick to what we say, right or wrong, I have seen the hey days of 20 5 lb. Fish or better, to nothing caught at all, and its really hard watching man play God, especially when were so crappy at it. Thank you for all the work you have put into this, hopefully it won't end up buried in D.C. because there is an awful lot of manure over there. Long live the west coast.
40. High and low flows make fishing by wading dangerous and difficult. Fluctuating water between 10 and 16,000 cfs is tolerable. Children should have the opportunity to bait fish from the shore in designated areas.
42. Although I was concerned about the water level and temperature, I have no quantitative estimate in response to Question 17.. This was an excellent fishing spot and I hope someday to go back.
43. I am currently employed part time as a guide at the walk in area of Lees Ferry. I believe the quality of fishing there has improved over the last 5 years in quantity and quality of fish, but I feel some different strains of fish (Eagle Lake rainbows, Brook trout or possibly Snake river cutthroats) would greatly improve the fishing experience at Lees Ferry.
44. As I get older I appreciate the energy it takes to get into the walk in area to fish (and back). It would be nice to have a couple of rough graded paths to help with that (easier walking, etc.)
45. This is one of the first fisheries in the Southwest. Although I recognize there are many competing interests, I would hope that any and all measures are taken to preserve this section of the Colorado as the tremendous fishing opportunity that it is. Glen Canyon/Marble Canyon is one of the single most beautiful areas in the Western U.S. and I appreciate your efforts in researching this area.
46. It would be nice to see it preserved as a trophy fish habitat.
48. Your questions are too ambiguous.

49. The amount of advertising in the major fly-fishing and other fishing publications that the local guide "Lees Ferry Anglers" and "Ambassador Guide Service" are putting out plus other guides is causing a complete jam up on the river. The guide boats have fast jet boats that get them to the river spot (favorable) and from November to March, during winter high water condition, the guides are in all the best spots and don't leave until days end. Advertising by the internet, videos, magazines, sport shows by the guides along with too many articles by fishermen is causing so much crowding that this year (the worst yet) it is becoming a zoo. People from all over America are rushing to Lees Ferry because the season is 365 days. My home water is becoming too congested to be comfortable. Like all good things it will soon be just a memory. She's becoming a disneyland! They now allow motorized ski boats on the river.
50. Too many overlapping government services operating on the river. Too much commercial services operating on river.
53. If it gets any more "guides" on the river, nobody will find a place to fish! It is a race up river every morning with conflicts between fishermen at every hole...It's like running a slalom course with your boat and there are only a handful of places to get out to shore fish!!! The crowds, small fish, and guide competition ran me off-20 year guide throughout WY to AK.
54. This is a wonderful fishing resource and should be managed as a blue ribbon trout stream. Short of selective harvesting for balanced fish growth. I would prefer catch and release regulations only.
56. Our group fished just prior to spawning. Had the fish been spawning I wouldn't fish the river. I would like to see some effort made to protect spawning areas. (I have fished other rivers and avoid those areas). I think something should be done to eliminate any possibility of fishermen fishing the redds.
57. Fishing is always good at Lees Ferry. Over the years at times it can become very crowded on the river. So at those times I like to go up river. I fish the walk-in area and I also go upstream in my boat (especially when it is crowded). I also know the times when it's not as crowded. I don't harvest the fish I wish more people would so there can be bigger fish (less competition for food).
58. I would like to see more large fish in the river, and being caught. Catch and release is ok, but too many anglers kill the fish they are releasing (not necessarily on purpose). Have you considered closing the river to fishing for a couple of years, then have a draw to see who can fish it. (Just like the hunt draws).
60. The scenery was stunning and all the local people we met were accommodating. The fishing was very different than other fly-fishing experiences I have had. The fishing was good on day 1 and very good on day 2 and it was all relative to the

areas available to fish. (got a late start on day 1). I would definitely come back and feel every person should have the chance to land a fish in the Glen Canyon environment.

61. Actually the trip in 98 was the best fishing I ever had at Lees Ferry. _____ was the guide and he got us to an upstream spot that produced more fish and bigger fish than I had ever caught there.
62. First time fishing at Lees Ferry. Will certainly return.
63. I believe the trout are a different species than 10 years ago. According to the local guides the current species is shorter lived than the first trout that were at Lees Ferry, therefore less total growth. Extended periods of low water from November through March is devastating to the spawn. Improper and excessive handling of the trout, especially the larger trout causes a high death rate following their release. The lack of fishing regulation enforcement is allowing many violations to exist at the present time. I believe that raising the water temperature in or to enhance the various endangered species will allow the stripped bass to move into the Lees Ferry area and this will basically destroy the fishery, both trout and endangered species.
64. The stabilized (somewhat) flow regimes of the last few years have enhanced the fishery. A no-kill policy would be best but the recent change to no-kill above 16" is a step in the right direction.
65. Great experience.
66. It is frustrating to myself and many of my friends who fish Lees Ferry that there are so many guides on the river. In their quest to make their clients happy, many of them take the best spots all day. I wish that AZ fish and Game would limit the commercial aspect of the river.
67. The water is cold. Fishing hasn't improved over last few years. Too many guides. Charging to launch is bull. Fish are not very big, small-medium. Haven't caught a 22" plus fish in thousands caught. (wouldn't keep it anyway just like to catch nicer fish 18-24" type). Trout are a fish species also. Tired of worrying about all the endangered species. Quality means-good numbers, bigger size, more area to fish because water isn't too high. A follow-up would be nice to see how the survey went. I run a large sporting goods shop and send hundreds of anglers to Lees Ferry.
70. Beautiful place. Incredible fish.
72. Prefer 100% catch and release. Enjoy "artificial" lures and flies only. No bait. Limit number of anglers per day. Charge a premium daily fee for anglers. Ban all shooting or hunting on river. No overnight camping on river. Limit number of

guides per angler. Improve airstrip at Marble Canyon (ex. Lights). Stock fish of various ages to help enhance the natural spawn. A few brookies and browns would be nice. Enhance the environment and regulate water flows to help the food base. Finally...this is a premium fishery. Let mom and pop go to fish lake Utah to kill trout. Charge a healthy daily fee so the serious trout stalkers can expect to have a superior experience with a 100% catch and release.

74. I love it, and it is clear you do not really understand it. I am disappointed in this questionnaire.
77. Need more potties. Rangers are very nice. Keep it beautiful.
80. Leave the river alone. It seems to be working fine the way things are now.
81. Tailwater fisheries is an opportunity created by dams...if downstream resources (natural) are being compromised by dam operations, such as cold water temps, my preference would side on the natural resources over the man-made opportunities. Saying that, I also feel strongly that measures for protection or recovery of natural resources must be fully understood in regard to other implications (i.e., warming temps for natives could cause migration up-stream from Lake Mead of undesirable species). Both short and long-term risk must be evaluated prior to any actions.
83. Beautiful place, caught a lot of beautiful, healthy trout, all in all a great trip!
85. The scenery is unmatched! Lots of wildlife. The fishing always seems to be productive.
89. In terms of measuring the optimum water flows, viable concerns on ideas regarding the trout fishery at Glen Canyon I would recommend talking with _____ at Lees Ferry Guide Service. _____ is making a living off the fishery and seems to be much more knowledgeable than I regarding a better way to run it, etc. We also look forward to the Glen Canyon fishing trip and I think of it often throughout the year. It is a breathtaking place to fish. I also think it is great that someone is concerned enough to do a survey.
90. Utilize the guides that fish there to conduct studies. They are there all the time.
92. Fly-fishing Lees Ferry in the company of my son and my guide, _____, is an experience I shall never forget. It wasn't just the fishing that drew me to Lees Ferry it was also the environs, the wonderful silence and the exquisite beauty of the place.
93. Fishing was much better a few years ago. I assume fishing pressure has changed that. My first trip there, (about 20 years ago) I caught a 10 lb. Rainbow.

97. Fishing at Lees Ferry is a unique experience to enjoy a beautiful area and site and to experience the best trout fishing in the state. I have noticed during the last two years the following:
- A. more fish
 - B. healthier fish
 - C. more fishermen on the river
 - D. more aggressive/rude fishermen
 - E. higher water flows
 - F. more pressure to restore certain native fish (generally thought of as undesirable/non sporting fish).
99. The folks who asked the question were very nice. Pay them more.
100. More catch and release.
108. The fluctuation of water is o.k. But to _____ the lake at any one time is not acceptable. Any amount of water over 50,000 cfs scours the stream bed and sides. This leaves no food for fish.
109. Don't let special interest groups destroy the big trout habitat!!!
116. They have good food at the _____.
119. I have fished Lees Ferry more than any other place. I have always enjoyed myself there. My brothers and I consider Lees Ferry the best trout fishing we've ever had!
120. I enjoy my son (6 year old) and hike, collect rocks, avoid the crowds, fish. I plan to obtain a boat to camp upstream and avoid the crowded "walk-in" area.
121. Lees Ferry is a fun treat. Every other month my friend and I drive up from Tempe and spend the weekend. The rest of the time we head for the Lakes in the White Mountains. My only complaint about Lees Ferry is too many people. We try to plan our trips on holidays when most people stay home. Our most fun trips have been on Christmas weekend, Easter weekend. We practically had the place to ourselves. A little bad weather helps too. People normally don't like rain. I'd rather be in the rain with no people, than lots of people and sunny skies. A good old fashion snow storm in the Flagstaff area, with chains and 4WD required to get up that way, and I'm heading to Lees Ferry instead of the White Mts. Easter weekend had the combo snowstorm. Religious holiday thing going and it was heaven.
123. It is a beautiful place. Don't destroy the dam, don't change the water temperature or clarity. Maintain 100% catch and release for fish over 16".

132. I enjoy the total experience of "the Ditch" the Lees Ferry area is a quality place where I can take customers for a great weekend whether they are good fishermen or not. We can have fun and relaxing times just sitting there. I believe that use should be limited to guided access only. It is a dangerous river that should only be run by experienced personnel. Thank you for the opportunity to respond. Please send the summary to me.
133. All of Lees Ferry should be catch & release. Taking down the dam is not an option. More research needs to be done before warming the water at Lees Ferry.
134. While I fished the Colorado I was not informed of varying water levels and their ramifications. Although I knew flow rates were controlled. So I would not know the difference between conditions @ 7,500 cfs and 25,000 cfs. I don't even know what the rate was at the time we fished.
136. Though I dislike the option ultimately, fishing will have to be regulated by permit and scheduling because of population pressure. I have fished with and know guides on the river, each good anglers and caretakers, but the numbers of tours should be reduced. I prefer to camp at 11 mile, but also motel and go upstream early am. There just aren't that many places for good fly-fishing. We all deal with population pressure (I'm part of it) but numbers of people (including tour barges) should be regulated to preserve a high quality experience for all. Also the care for all wildlife other than the fish. I fish mid-week to avoid weekend traffic on the river. Again though I dislike regulations and quotas, human population on the river must be set at a position to maintain environmental integrity and each individuals experience in paradise.
139. No other place like it in AZ. By far the best trout fishing in AZ. I will return for many times to come.
140. I have fished all over the world and I find Lees Ferry to be an American treasure! Very few places can have such a true fishing experience. Perhaps raising water temperature to promote insect population. To increase diversity of food sources.
143. I recently heard that the Department of Interior is considering taking steps to increase the water temperature of the river during the summer months. This proposal is intended to benefit the native squawfish and other native species. I strongly oppose such a proposal. The risk of stripped bass moving into this section of the river, far outweighs any potential benefit. The river is very healthy and productive in its current condition. If any changes are to be made, it should be to regulate flows in attempt to reduce the extreme fluctuations the river now experiences. In a recent Fly fisherman article, an Arizona Department of Game and Fish representative was quoted as stating that the river contains 50,000 trout over six inches per mile; possibly the highest concentration of trout in the world! Why would we want to jeopardize that? (Fly-fisherman May 1999).

148. I believe that the Navajo Nation Laws regarding fishing should be observed while fishing on the Navajo Nation side of the river. The parks laws should be accordingly observed on the park side of the river. I fish for enjoyment and to feed my family of 5. Every fish we take from the river we eat. I feel that the park laws on a 2 fish limit is absurd. It takes more than 2 fish to feed a family. My grandpa and his dad used to fish the river for food. Now there are too many regulations. This was and will remain our land for many centuries.
153. Everything is perfect at Lees Ferry good place to fish.
159. Tourist in barges are very disrupted to fishing- no problem in 1997, but will spoil the fishing if it gets much worse.
161. I've always said that even a "bad day" at Lees Ferry beats most any other "fishing experience". It is a unique place to fish with a tremendous amount of potential. I've seen how good the fishing can be at the Ferry years ago when we used to catch and release 10 or 12 fish over 4 lbs. Each day.
162. Do your best to bring it back as it was in the early 80's. Replant the fish that were there at that time they had both size and energy. Most other rivers have small fish make this river as it was in the past something special.
164. I found I liked to fish below Navaho dam best due to easy access and easy to wade. It is in New Mexico near Aztec.
165. I do feel the limits could be increased by 1-2 fish and that the slot could be altered so that more fish could be taken within reason.
166. It was a pleasure to fish at Lees Ferry. It is an excellent fishery. Most of the fish caught and released were 18-24" and very healthy. Water levels varied as well as our technique of fishing. Higher water levels yielded slower fishing but not un-fishable. Boat rentals, fly shops, and lodging were more than adequate. Proper regulations and the enforcement of such regulations were witnessed by me. The officers were polite, knowledgeable, and a pleasure to talk to. With proper management, Lees Ferry should remain the blue ribbon fishery that I think it deserves. We are coordinating a trip back to the "Ferry" as of this writing.
167. This was my first trip to the "Ferry". It could not have been better. The weather was good, fishing was great according to my standards... (I'm originally from the northeast). I was with good friends and fulfilling my passion for fly-fishing. That trip to Lees Ferry was the first of an annual trip "out west". I'm not sure what "politics" has in store for Lees Ferry, but I only hope it is for the better for the fishing public. Too many of our public waterways have been degraded due to ignorance and greed!

169. I feel that the trout fishing at Lees Ferry should be protected at all costs. The GC dam is an integral part of the flood control system for the Colorado River system. It should be kept in place for as long as it is structurally safe to do so. The fishing industry fully supports the marble canyon, vermilion cliffs, and cliff dwellers communities during the Down River rafting off season. Leave the fishing alone or make it better. This survey was very biased toward getting answers skewed to what GCMRC wanted to hear so they can further attempt to take down the Glen Canyon Dam. Shame on U of I for letting them do that!
171. It's beautiful. Keep it the way it is. Don't advertise it or build it up. Current fishing slot limits are good. Encourage people to keep some smaller fish to limit numbers and allow fish to grow larger. Or, plant more shrimp and/or minnows upstream to keep fish healthy and growing.
172. This has now become an annual trip for me and two of my high school friends. We very much look forward to this trip and will be back at Lees Ferry in September again. The fishing is great and the natural beauty is outstanding. If there's anything else I can do to help, please ask.
173. Keep river flow above 8,000 cfs. Then any reasonable size boat can get up river. Do not let the guides be the sole voice on the river as to what it should be. Many of them would allow fly-fishing (from bank) only. I pay as much (or more) taxes as they do and have many friends and acquaintances who do also. This is a Federal Park and all taxpayers are entitled to use it as long as they follow the rules of fishing. Not just fly-fishing.
174. Too many guides on river who feel they own river.
175. 10 to 15 years ago few guides were promoting fly-fishing. Now they all do. This is causing over crowding of all the gravel bars. Also guides and Game and Fish Department are doing everything to promote fly-fishing and discourage boat fishing. This will eliminate boat fishing, which is the only kind of fishing I can do at my age. I'm afraid that fishing at Lees Ferry has come to an end for me.
177. Maybe a fishing guide hand out for the average fisherman on this area. Big fish and clear water!
178. I would be very interested in receiving the results of this survey!
179. If water levels were kept constant at 12,500 to 14,000 cfs it would open more spots for fishing. Also no fish kept over 10 inches. Would like to see it catch and release only and only fly-fishing. Too many fish get hurt by lures and lure fisherman do not seem to respect the fish.
182. More restroom facilities would be helpful. Markers for low water level areas would help. (prop. Damage).

184. The trip you contacted me on was my first trip to Lees Ferry. I enjoyed it and have been back since, but I thought it was very crowded. I have been fly-fishing for well over ten years and Lees Ferry is a good spot the fish are healthy and for the most part good sized. The people I encountered up there were what I liked least I swear to God I thought L.L. Bean himself had personally dressed every person on that river. I wish that Lees Ferry was 1/2 as accessible. I think the quality of angler would go up. I will go back because the place is beautiful and the fishing good. I enjoy fishing rivers and Lees Ferry is one of the best in Arizona.
189. Outlaw jet skis before someone dies.
191. Lees Ferry is a great place to fish. The winter months seem to be really busy. I have had excellent trips in the "heat" of the summer and there seemed to be a lot fewer people.
192. Great day of fishing!
193. Good breakfast at the restaurant.
194. First, let me say Arizona has a lot of good trout fishing water. The part I like about Lees Ferry is you don't know if the next fish will be a lunker or a minnow. That adds to the excitement of fishing. If ever in the state to fish try the White Mountains including the White Mountain Apache Indian Reservation for both lake fishing or rivers and streams.
199. Love to fish there more than anywhere! This state needs more such areas where the water is cold and the fish are healthy. More good trout fishing is needed.
201. I had a great morning of fishing. I only fished the area. Caught 30 trout in 4 1/2 hours. Largest about 18 inches. The action was pretty fast.
204. Too many fly-fishermen taking up fishing space.
205. We love Lees Ferry. We went fishing in Montana, B.C., and enjoyed Lees Ferry just as much. The beauty is breathtaking.
206. The guides stressed catch and release, and proper release techniques. He also stressed maintenance of the fishery-no junk throwers into water or bank. We used bobbless hooks to assist in release of fish. The canyon is worth seeing regardless of the fishing (we saw a condor too).
207. Great trip!
211. Limit the # of guides, and the # of people they can bring up river.

213. Overall, I found the whole experience at Lees Ferry to be very enjoyable. I had never been there before, but had heard good things about it. The fish were beautiful and strong rainbows that seemed to be in excellent condition. The weather and scenery were nice and the river wasn't too crowded. I enjoy dry-fly fishing which isn't the areas main strength, but the water level was appropriate for wading. I do prefer wading to fly fish over drifting in a boat. Some more heavily fished catch and release areas e.g. San Juan River have many large fish, but do not seem to be nearly as well-conditioned fish as at Lees Ferry. Many San Juan River fish have torn jaws, damaged eyes, etc. which make the catching less enjoyable.
216. Manage water flow to better accommodate fish and wildlife with less emphasis on power generation. Create conditions where bigger fish can be caught once in a while. Restrict the number and size of fish that can be harvested, e.g., you can keep 1 fish over 20 inches. Create more access to river while on foot (e.g, fishing trails that are safe to hike on).
217. The best experience would be to have constant water flows with no fluctuations!! Fluctuating water harms the resource. Periodic flooding is worse!
220. A fantastic area, I hope to return someday.
221. Thank you for sending the 2nd copy. I did misplace my first survey!
223. Beautiful country, excellent fishing, my only concern is high water (20,000 Cfs) and the high daily water level fluctuations.
225. We come from San Diego every year. Really look forward to 5 days of fishing from Lees Ferry to dam. Too much water and too fast an increase makes for poor fishing. In 1998 fishing near dam was wiped out by high fast water.
230. I will not go back, fishing stinks!
231. Lees Ferry is a beautiful experience because it is maintained and managed. Should this dam be removed this area would no longer be special and it would be a loss. I just took up fly-fishing in mid-1997 and still consider myself a novice.
232. It can be a great place if the fish are hitting!
234. Need more trash cans.
237. Fabulous spot.
238. The most important factor for me is that Glen Canyon Dam operations are modified to protect natural resources in GCNP as the #1 priority, with

maintenance/enhancement of the non-native trout populations a distinct secondary goal.

241. It was a bit dangerous to fish in the river for a person of my age, especially with rising waters. There should be a way of notifying fishermen if the water is rising or more is soon to be released.
242. There are so many guides on the river that there isn't any space for someone else to fish (wading) and most guides feel they own the spot regardless of the numbers of clients they have.
243. Enjoy it for the scenery.
246. There are very few places as Grand as Lees Ferry & Marble Canyon. The landscape is beautiful and the trout fishing is normally very consistent. This stretch of the Colorado River is my all-time favorite spot to fly-fish. I hope this area remains for generations to come.
247. Guide boats contribute to ruining the fishing at Lees Ferry than any other factor.
248. Beautiful place. Don't try to sell it to the public. Don't build any further accommodations.
249. Fishing is not the sole reason we return to Lees Ferry. It is the pristine beauty of the entire area. I do not know, if by these answers (and others) the purpose is to determine whether or not to allow for increased use, or decrease the access to this area; and if either point be true I would place my vote for this status quo. We have never experienced anything but satisfaction regardless of weather, fishing or flow, so I hope my answers do not contradict this statement. Will I receive a summary of this survey?
251. My last trip there was great (except for the second day when a storm blew in). Every day we were at the Ferry we caught something...we definitely did not go home unhappy.
253. A spectacular fishery that needs to be carefully managed and protected. Fee system seems lax and haphazard, not enforced. If not already in place, a rigid fee system should be enforced for profit-making guide services.
254. Lees Ferry is the best trout fishing in the Western U.S. and should be managed as such! The flows need to be stabilized, to support the growth of big fish. It also is not good to fluctuate the flows during spawning season which kills (dries out) many spawning beds. I think that as a tax payer in the state of AZ, they owe me a play spot, and big fish in Lees Ferry is what I am looking for.

255. Lees Ferry can be one of the best places to fish. Higher water levels have provided the best angling in my experience on the river. If people want to kill fish that's fine. The limits need to be more vigorously enforced. I have had my license checked twice in ten trips. Creating a section of catch and release only water could and most likely would provide better numbers of larger fish 20+". I prefer sportfishing rather than put and take fishing. Wherever catch and release fishing is practiced the fishing is 99.9% of the time better than catch and kill.
257. They need to develop more walk-in areas, currently it is geared for guide services and boat owners. Also, there is talk of altering the environment (via water flow) to encourage another fish species. I am against anything that harms the trout environment. Additionally, need better enforcement of barbless and should be catch and release.
259. Don't raise the water temperature!
262. There are too many tour boats going up and down the river, and the guides/outfitters think they own the place!
263. It is a unique wonderfully beautiful backdrop for a fishery. It is my hope and concern that the BOR, National Park Service and Game and Fish have the diligence and responsible position to effectively govern this unique resource for the benefit of its greatly appreciative audience of users.
264. Only fished one time. Looking forward to going back. Great trip, good fishing and awesome scenery.
270. After catching and keeping your limit, you should be able to continue fishing as long as you are catching and releasing.
272. Size of a legal fish should be increased 14-18" releasing those 13" and smaller. 19" and larger the limit being two.
273. I believe that there is too much public interference. Such as the overgrowing of tourists who come through, catch twice to five times their restricted limit. Thus lowering the number of fish in the Colorado River, and especially around Lees Ferry. I feel that if more "interference" is to occur it should be spread out and more hatcheries should be placed up and downstream. To try to even out the expense of this (if it should be taken into action) the game commission should raise fishing licenses a nudge. If that should happen only adults should be raised. I feel that only adults prices should be raised, for seniors are the teachers for youngsters. If their prices went up, there goes past and future anglers. If it comes to be a problem the hatcheries should be in place and evenly divided tourist attractions. With that in mind there will be a surplus of fish, anglers will be happy, and then the license price will hopefully return to normal. Thank you for hearing my response, and I hope you will keep in mind my idea.

274. Too many rules and regulations. Fish size doesn't or shouldn't matter, or how you catch it. Fish limit too low.
277. I believe that no live bait is a very bad decision. I think that a person should be able to use what type of bait they feel works the best. The slot limit was a very good idea it makes more trophy fish for the future. Barbless hooks is a good idea.
280. The high water levels are washing the beaches down. Which makes it real hard to fish. Because of the trees. And the Fish I catch. A lot of them are pretty skinny and small compared to the fish that I caught when I was younger.
281. Yes, more fish.
284. There are only two kinds of trout fishing in the southwest. Lees Ferry and then everywhere else! They changed the slot from 16" to 22" to 16" and under this year. I wish they would or will change back. We'll see.
287. It would be nice to have access upstream via a dirt or paved road, for people who don't have boats. I think it would alleviate some of the crowding at the walk in area, and spread-out some of the anglers. Overall, Lees Ferry is fantastic (fishing and scenery).
289. I have tried to get to Lees Ferry for many years. In 1998 I finally had my chance to experience the best trout fishing in the state. I am aware that the water level and flow rate changed throughout the day, but do not know what the flow rates were, nor how the change affected my ability to catch fish. If I had known what the change had been and what the flow rates were, I would be more educated in my fishing experience.
290. This is the best fishing we have in AZ and I would like to see it get better. I would like to see reduction of the fish kept over 22" so there would be more large fish to catch.
291. It was a fantastic experience!
292. If you are willing to share any information from this study I would appreciate receiving it.

**APPENDIX E: DAY-TRIP RAFTER QUESTIONNAIRE AND
FREQUENCY DISTRIBUTIONS**

Colorado River Rafter Study

One-Day Rafters



Conducted by
University of Illinois
Department of Leisure Studies
104 Huff Hall
Champaign, IL 61820

Sponsored by
Grand Canyon Monitoring and Research Center

This questionnaire refers to the recent trip you took downstream from Glen Canyon Dam. Please refer to this trip when responding to items in this questionnaire.

1a. Do you live in northern Arizona? (*Please ✓ one*)

95% No
5% Yes → Skip to Question 6

b. How many days did you stay in Northern Arizona as part of your one-day raft trip on the Colorado River?

Mean=5 Days

c. Were you aware of one-day Colorado River raft trips before you came to Northern Arizona?

(*Please ✓ one*)

22% No → Where did you learn about it?
40% In the Page area
20 At the South Rim of the Grand Canyon
N=9; **Elderhostel (33%); Internet (22)**

79% Yes → How did you learn about the raft trip?
7% Ad in travel magazine
28 From others who had taken the trip
11 Raft trip company brochure
9 Wrote to Grand Canyon National Park
N=34; **Elderhostel (24%); Internet (24)**

d. Was the chance to go on a one-day raft trip an important reason to you in deciding to come to Northern Arizona? (*Please ✓ one*)

23% Not at all important reason
39 Somewhat important reason
26 Very important reason
13 I wasn't aware of the one-day raft trip when I decided

e. If you had the opportunity, would you take the raft trip again? (*Please ✓ one*)

3% Definitely not
19 Probably not
34 Probably yes
45 Definitely yes

2. Overall, how would you rate your raft trip? (Please ✓ one)

- 2% Poor
- 3 Fair, it just didn't work out very well
- 3 Good, but a number of things could have been different
- 21 Very good, but could have been better
- 30 Excellent, only minor problems
- 41 Perfect

3. How many white water raft or kayak trips have you taken? Do not include your one-day raft trip on the Colorado River. (Please ✓ one)

- 55% None
- 29 1-2
- 10 3-5
- 4 6-10
- 1 11-20
- 1 More than 20

4a. What things would contribute most to an excellent or perfect one-day raft trip on the Colorado River for you?

N=115; Good guides (56%) Good weather (45) Unrushed pace, more layovers (25) Wilderness experience (15)

b. What things would contribute to a poor one-day raft trip on the Colorado River for you?

N=99; Bad weather (65%) Poor guides (35) Unsafe conditions (17) Crowding (13) Poor social interaction (11)

5. Including yourself, how many people were there on your raft trip?
(Please include the guide/trip leader and all the people on all the boats in your group.)

Mean=24 People

6. Would you have liked a tour of the Glen Canyon Dam as part of your raft trip?
(Please ✓ one)
 40% No
 37% Yes → How do you think this would have improved your raft trip experience?
 N=25; **Been more interesting (72%); Been more educational (24)**
 23% I took a tour of the dam on my own.
7. What was your main reason for taking the one-day Colorado River raft trip?
(Please ✓ only one)
 30% To take a trip through the canyon
 22 To take a trip on the Colorado River
 11 To see scenery
 8 To take a raft trip
 17 To relax and enjoy nature
 Other N=18; **Elderhostel (22%); Education (33%)**
8. These next questions are about the river water level on the day you took your trip.
- a. When you signed up for the trip, did you know the expected water level on the Colorado River for the date of your trip? *(Please ✓ one)*
 92% No
 8 Yes → Did this information about the expected water level have any influence on your decision WHEN to take this trip?
 80% No
 20 Yes (please explain) **N=2; Will not go if water is to low**
- b. Did you notice the water level changing during your raft trip? *(Please ✓ one)*
 95% No
 6 Yes
- c. Was the speed of the water (the current) during your raft trip: *(Please ✓ one)*
 25% Too slow
 70 About right
 0 Too fast
 6 Don't know
- d. If you had your choice, would you have preferred the water level to be: *(Please ✓ one)*
 1% Lower
 37 About the same
 9 Higher
 53 Don't know or doesn't matter

9. Raft trips on the Colorado River have a number of features and people differ in what they feel is important to them personally. In this next section, we list a number of features of a Colorado River raft trip. Please indicate how important each feature was for you on your trip.

(Please circle one number for each item)

	Not at all Important	Somewhat Important	Very Important	Did Not Experience
Being in a natural setting	0%	5%	95%	1%
Seeing wildlife	6	29	60	5
Being with family or friends	6	28	63	3
Interacting with my guide or trip leader	1	41	57	2
Learning about the history of the river	1	11	80	8
Relaxing: getting away from it all	12	23	65	1
Stopping for lunch along the river	27	32	20	21
Well paced and organized trip	2	20	78	1
Starting the trip at the dam	20	37	41	2
Good weather	2	14	81	3
Stopping to explore along the river	2	32	65	0
Seeing few others while on the river	19	39	42	0
Learning about others on the trip	55	33	9	2
Feeling safe	5	25	70	1
Having confidence in my guide or trip leader	0	16	83	2
Not having to make advance plans for the river trip	18	32	37	13
Seeing the Canyon in one day	18	33	47	2
Seeing archaeological sites in the Canyon	3	26	70	1
Floating without the motor on a quiet stretch of the river	4	27	68	2
Learning about Glen Canyon Dam	14	33	49	4
Being on the Colorado River	0	18	81	1
N=6 Good guide to learn from	0	0	100	0

- 10a. What a guide or trip leader does and says during a trip can also affect a person's trip. During your trip, how often did your guide or trip leader do the following: (Please circle one number for each item)

	Never	Sometimes	Often	Didn't Notice
Turned the motor on to make time	14%	61%	18%	7%
Maneuvered raft around rocks	26	39	8	27
Commented that the water level was too low	69	4	0	27
Commented that the water level was too high	72	2	0	27
Commented that the current was too fast	81	1	0	18
Commented that the current was too slow	73	6	1	21
Shut off the motor to talk about the river/canyon	72	10	3	1
Shut off the motor because of low water or rocks	68	6	2	25
Pointed out archaeological or other attractions	0	21	77	0
N=16 Read literature from source	0	0	100	0

- b. Did your guide or trip leader discuss how the Glen Canyon Dam affected your trip? (Please ✓ one)
 30% No
 70 Yes → What did s/he say? N=64; Knowledge of dam (53%) Gave facts (25) Interjected opinions (13)

- 11a. Before arriving at the Colorado River, did you know what the river water temperature would be? (Please ✓ one)

68% No
 32 Yes

- d. Would your river trip have been more enjoyable if the river water were warmer? (Please ✓ one)
 89% No
 11 Yes (Please explain) N=13; Comfort (77%)

12. In this final section, we would like to ask some questions about your background and occupation which will help us compare your answers with those of other people. We stress that all of your answers are strictly confidential.

a. How old are you? **Mean=51** years old

b. Are you: (*Please ✓ one*)

39% Male
61 Female

c. How many years of school have you completed?
(*Please circle one or check the highest year or level*)

2=1% 3 4 5 **6=1** 7 **8=2** 9 10 **11=1** **12=14**

22% Some college **24%** M.A., M.S.
31 B.A. or equivalent **5** Advanced degree (M.D., Ph.D.)

d. Please check the response that comes closest to your total family income before taxes.

(*Please ✓ one*)

3% Less than \$10,000	10 \$50,000 to \$59,999
4 \$10,000 to \$19,999	8 \$60,000 to \$69,999
5 \$20,000 to \$29,999	10 \$70,000 to \$79,999
10 \$30,000 to \$39,999	7 \$80,000 to \$89,999
10 \$40,000 to \$49,999	6 \$90,000 to \$99,999
	27 \$100,000 or more

e. With reference to your primary occupation, are you currently: (*Please ✓ one*)

48% Employed full-time
11 Employed part-time
5 Full-time homemaker
0 Temporarily unemployed
2 Not employed or looking for work
29 Retired, not working
5 Retired, working part-time

13. Do you have any other comments about your one-day raft trip on the Colorado River?

See Page 220 for List of Responses

Thank you for your time and responses. Please mail back your questionnaire in the enclosed postage-paid envelope. Your responses will be included within a summary report presented to the Grand Canyon Monitoring and Research Center.

Public burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB#0596-0108), Washington, DC 20503.

Responses to Open-Ended Question 13

Do you have any other comments about your one-day raft trip on the Colorado River?

3. It was a perfect day-just made for river rafting.
4. It was a wonderful trip!
6. Guide was excellent. Enjoyed trip.
8. It was a very enjoyable day and our guide (_____) was great and a very personable young man.
10. Would like to do it again.
13. It was a wonderful experience. Would like to know more.
15. Excellent to start at Peach Springs.
16. Wonderful trip!
17. It was very enjoyable. A way of glimpsing the canyon from the bottom. Different perspective. Our guide was great. Intelligent and knowledgeable.
19. Enjoyed it!
21. Great float trip. Outstanding guide. A memorable experience.
23. I felt it was an excellent opportunity to get on the river without white-water as our child is only 9 and less than 60 lbs. We are always looking for adventures that expose us to new wildlife and information. The guides' information and willingness to share is extremely important. More access (further than Lees Ferry) would have been nice. I do feel very strongly about limitation on usage from the preservation point of view. I also feel there should be an attempt at balancing the man-made burden of the dam with the health of the canyon.
24. It was an excellent trip. _____did a great job.
25. I believe our leader was _____-he was the greatest-so knowledgeable and his love for the area is obvious. Excellent, excellent.
29. It was perfect. The only thing I did not care for was that the raft had too many people. Oh one more thing they said to bring a lunch but we did not stop to eat. So bringing the lunch was useless.

33. I was told that there were no questions about the dam. And there is, so I will not complete this. Everything is fine and should not be changed.
39. My second trip. I took someone who had never gone.
40. We had a Navajo Indian guide named _____ she was a fantastic guide.
42. We took the trip as an opportunity to see the canyon below the dam. We knew it would be a "snooze cruise" because of the dam. We also were interested in seeing the ending destination, where the rafters put in for the Grand Canyon. We are interested in the dam, the reservoir (Lake Powell) and the effects of the dam. We took a tour of the dam by the Bureau of Reclamation, which was great, and believe they would do a better job interpreting the dam than a river guide, who usually are young and inexperienced. Going through the construction tunnel to put in the rafts was very interesting. The woman driving the rafting bus was very experienced, well informed and interesting.
44. I would have really enjoyed walking around the dam. Maybe a guide to explain to the people how and why the dam was built and the ecology, both good and bad. How much has the wild life been effected? Maybe how the dam has affected the local peoples and Native Americans. The guide that we had did try to elaborate on some of the above issues. I personally would have liked to have had walked on the dam to see both sides of it.
45. A most wonderful trip and day. We drove from Grand Canyon National Park in the A.M.. Beautiful drive to Page. We had excellent weather and excellent guide. We take only a 1/2 day trip due to our kids. My wife and I would have liked a full day trip. We don't know when we'll be back to Arizona, but we do know that a Colorado River Raft trip will be part of it.
46. Great day—we loved it!
47. My husband and I have been to the canyon before, but wanted our 15 (B), 13 (G) to experience it also. It is one of our favorite family memories now. We have wonderful pictures to reflect and a great home video. Awesome, don't change a thing!
49. This helped wet our appetite for more. We're all looking forward to going back for a 5-7 day trip. Our one day trip was perfect for our family of four—2 boys—ages 5 1/2 and 11 1/2 and they both enjoyed it but 4 hours in the river was just enough for the 5 1/2 year old—beyond that amount of time he would have lost interest for the 11 1/2 year old the trip was ok—for the first time on a raft—but next time he'll want rapids!
50. The guide was new (she told us we were her first one), but she did a great job. The trip is a good length and runs smoothly. I felt that there were a little too

- many people on the raft, and too many people on the river (that were not a part of the trip),,they seemed to disrupt the wildlife and the rafters. Overall, the trip was great—thanks mostly to the dynamic guide...she knew her facts, was sweet and friendly, and stopped frequently to tell stories, point things out, or just read some poetry. It was wonderful.
52. One-day trips enable vacationers to experience the canyon without having to spend too much time on the river. Not everyone can make a multi-day commitment or want to be subjected to violent rapids and other hazards of longer trips.
55. What made it enjoyable was the guide. He was very knowledgeable about the southwest literature and the history of the area. I wish I could remember his name because he made the trip very interesting. We really had wanted to go white water rafting but could find nothing shorter (that was nearby) than 3 days. This was a nice intro.
56. We had a wonderful time; our guide shared history and literature about the river. Saw petroglyphs. Boat was comfortable and water was smooth.
58. Enjoyed seeing fisherman using the river. Could have been enhanced somewhat by having lunch at a covered picnic area on the river although it was bright and sunny on our ride and could eat comfortably.
59. I was attending a 6 day Elderhostel at _____ outside Page, AZ. I was so excited when I found out that one of our options was a 15+ mile raft trip from Glen Canyon Dam to Lees Ferry. I signed up immediately. It brought back such wonderful memories of my 1978 trip with _____ from Lees Ferry to Diamond Creek with my late husband and our daughter. I love the river and the canyon. The view from the rim down to the river doesn't begin to compare with the view from the river, on a raft trip, up to the rim. I am truly a river lover. On my one day trip I can't say enough good things about our guide Steve. He truly loved the river also.
62. We really enjoyed it.
63. When our newborn becomes of the age of five, we will probably do the trip for her. We like N. AZ and my wife has a sister that lives there. Navajo Reservation. I hate the fact that some people (probably young) deface the interior of the canyon, especially near the petroglyphs. It would be nice and beneficial if the water level wouldn't rise more than 8 feet high or low. This would help the ecosystem inside the canyon.
65. Steve our guide was excellent, would definitely try to take a longer (5 day) trip and have him as our guide.

67. We all had a great time. And everyone enjoyed the raft trip.
68. We look forward to doing it again!
69. Very enjoyable.
70. We loved it. Wished it had been much longer.
72. I believe this trip on the Colorado River was the highlight of my vacation. It was a wonderful surprise. I feel fortunate to have experienced the wonderful trip.
75. It was a wonderful experience.
76. Enjoyed very much. Seat not comfortable.
77. Very pleasant and peaceful. Enjoyable and educational for all of us, but particularly for children, ours were 15, 13, 7, and 6 years old.
79. Trip taken spur-of-the-moment for children's sake. Husband and I familiar with area. Would not have done trip except for them. Good trip for smallish children. No rapids, short time.
84. I wish I could remember the name of the young girl (about 24) . It was a very unusual name--because she deserves to be recognized by your company. She was a real delightful person. Informative, funny, happy in her work, and life in general. I think she alone could make a miserable trip--fun to be on. We did enjoy our trip and hope to do the G C in a year or two with other family members. A great experience!!!
85. When my husband told me that we were doing a raft trip, I was a nervous wreck. I am terrified of the water, and I didn't know what to expect. I would do it again in a heartbeat. Our tour guide was warm, sincere, and so knowledgeable, plus we had the most perfect day of weather.
86. Had a great time will return and recommend to friends.
87. I didn't realize that this part of the river was not in GC. Was not aware that GC was all white water, no flat water, due to the dam.
88. My wife and I enjoyed it. Very interesting; canyon was awesome. Very pleasant and well-informed guide.
89. Wanted to sample River below dam. Know it is more impressive after Lees Ferry. The tunnel and other features on the outlet side of the dam were interesting. As environmentalists, we have strong sentiments about the dam, but do not consider the push to eliminate it a rational cause.

91. I found out that our 4-5 hour trip was the same distance as the longer trip. I was happy to be on the shorter trip. I didn't mind motoring or not having a set time to eat. Overall, we had a very positive experience.
92. We loved every bit of it--including our walk the following day to view the horseshoe bend from above.
94. This trip was a total farce. Our guide did not know the names of birds, trees, rock formations or much of anything else. We were basically bored to death. This was most unfortunate since we had visitors from Europe on our float. We got stuck on the beach at the archeological drawings, the other boats left us and the men in our raft had to get out and push us off. These men were in their 60's. Four of us got up early from _____ Hotel and drove for 4 hours to take this miserable trip and then back 4 hours. We were very unhappy rafters--the trip stunk.
96. The raft operator (pilot), which in this case was a girl of about college age, was very knowledgeable about the canyon and was an absolute joy to talk with.
98. It was a wonderful one-day trip for the whole family. God's creation continuing to educate our minds of his bounty and not man's.
99. Loved it.
100. Had a wonderful time!
102. We enjoyed _____, our guide. We also enjoyed the bus driver.
104. The speed of the raft could have been faster. The guides need to have knowledge and passion of the history and culture and need to be believable when they speak to others who really want to find out about the history. My group (of four) found them to be "wishy-washy".
108. We love Lake Powell
109. I took the trip because I thought it would be a good break from hiking and touring. However, the views were basically the same. The trip was too slow--too long--too hot. I wouldn't recommend it to friends.
111. Our "guide" was very young with very limited knowledge. Navigating the river on this particular day required little skill. Suggest guide be checked out before giving them a job on the river.
113. I would enjoy some rapids as part of the trip. It is a very nice trip. Also a map showing the river route before the trip begins might be interesting.

115. I would like to see the water temperature increased, in order to effect changes in entomology. (and hopefully improve food resource for the trout). Guides--tour leaders--often talk too much and feel they have to fill the air with words. If I were in charge, I'd train them to speak sparingly, and meaningfully--but not all the time!
118. Very enjoyable, once in a lifetime experience, stunning scenery.
119. Our guide _____ was excellent.
121. It would not have been so pleasant if boat had been full. I am getting too old for big white water but I love to paddle an inflatable kayak. Would prefer upstream without motor for stretch from Glen Canyon to Lees Ferry.
All who want paddle in 8-10 person raft.
Center oared by crew member.
Inflatable kayak.
Separate trip with motor or no motor at all.
That stretch doesn't need motors eliminated. Then from Glen Canyon to Lee's Ferry totally.
124. I only did a 4 hour trip. I definitely would like to spend more time on the river and camp out a few days. I then would be able to experience more of the canyon.
127. Excellent adventure, quite expensive compared to Lake Powell tours and comparable length. The bus trip back is a drag, but I see no other solution.
132. Our guide was very informative and did an excellent job to satisfy all our questions, etc.
133. The trip is too slow.
135. I go and have taken friends, strictly as a tourist attraction=beautiful scenery, relaxation, something I can't do at home. Weather is the only problem--I think they should cancel or postpone more frequently. (or even call and tell people to come earlier based on accurate weather reports, in detail). Perhaps boats could be equipped with solar blankets or something. It is no fun to be freezing cold or stuck in pouring rain for hours. Especially after you've paid a lot of money.
136. It was very enjoyable.
140. Enjoyed it very much--wish the weather had been better!
141. Very enjoyable but a very cold day!

142. Great trip. Awesome sights. Recommending to others. Would book a weekday trip in lieu of weekend leaving those days for students, working people and fishermen.
146. It was fun.
147. It was good but could have been better if weather was a little warmer and not rainy. But it was fun!
150. It was very beautiful, but a little too calm.
154. It was a wonderful day I had a great time with the pilot and other people on the raft. Made some new friends. And also learned about the river and canyon.
155. It was great fun! America at it's best.
156. Our trip was very enjoyable. Our guide was excellent--the weather could have been a bit nicer (warmer)--now we're ready to move on to white water rafting.
157. Motorboats ride too fast. They are very noisy. They disturb the wildlife and us. Fishing boats should not be allowed to move above 5 miles an hour.
162. Had fun. Don't screw it up.
163. We took the calm peaceful raft trip—not white water. It was one of my favorite parts of our one-week vacation in AZ. I loved the peace I felt on the river.
165. One member of my party was having an allergic reaction to something eaten the previous day. This could have proven to be a life-threatening situation. However, my group was prepared to be able to administer epinephrine, if needed. I guess my concern is for the safety of people traveling in an emergency situation. Are the guides trained in CPR? Is emergency airlift service available? And is there a way to contact more help than whatever the guide may offer. I know there is a first aid kit available on rafts.

**APPENDIX F: LIST OF 1998 TECHNICAL WORK GROUP
MEMBERS**

Technical Work Group (TWG) Members, 1998

Mark Anderson, U. S. Geological Survey
Cliff Barrett, R.W. Beck & Assoc./Uamps
Kerry Christensen, Hualapai Tribe
Dave Cohen, Trout Unlimited
Wayne Cook, Upper Colorado River Commission
William Davis, Ecoplan Associates/Creda
Joseph Dishta, Pueblo of Zuni
Kurt Dongoske, Hopi Tribe
Alan Downer, Navajo Nation
Don Metz, U. S. Fish and Wildlife Service
Christopher Harris, Arizona Department of Water Resources
Norm Henderson, National Park Service
Amy Heuslein, Bureau of Indian Affairs
Tom Latousek, American Rivers
Eugene Jencsok, Colorado Water Conservation Board
Robert King, Utah Division of Water Resources
Phillip Lehr, Colorado River Commission of Nevada
Carlos Mayo, Southern Paiute Consortium
Tom Moody, Grand Canyon Trust
Bruce Moore, Bureau of Reclamation
Clayton Palmer, Western Area Power Administration
Bill Persons, Arizona Department of Game and Fish
Andre Potochnik, Grand Canyon River Guides
John W. Shields, Wyoming State Engineer's Office
Robert Winfree, National Park Service
Fred Worthley, Colorado River Board of California

APPENDIX G: RESPONSE TO REVIEW COMMENTS

We appreciated receiving the thoughtful comments on the previous version of this report. The comments were well-explained and helpful in providing constructive suggestions to improve the quality of the final report. Many of the comments were editorial in nature and each of these has been addressed to clarify text. We also have integrated most of the substantive comments into the final report. The text below is to further respond to review comments beyond the revisions contained in the final version of the report.

COMMENT: There was concern about other sources of variation within the photographic imagery besides size, shade from a tree, and low growing vegetation. An example of such external variation would be that three different base images have been used and that respondents who know the river corridor would also recognize the location of the beach. Such a recognition (or knowledge of the beach outside the stimuli of the image, also known as context effects) would affect the respondents preferences.

OUR RESPONSE: This is a great comment and one that we struggled with during our design. As alternatives, we could have used completely hypothetical beaches, or beaches from other rivers, but we didn't think either of these alternatives would be as acceptable as our current one. Along with base image variation, there's also some color variation of the river water, distance from camera or scale, and presence of foreground rock in some of the photos, to name a few other sources of external variation. We also did not want to make the photographs so similar that respondents could identify our hypotheses and understand our research problem. There's another whole set of problems that emerge when respondents are able to know what it is that the researchers want to know (there's various threats in the form of response strategies that they can take). All these sources of external variation would be problematic if the sets of photographs were not properly balanced within the research design and if results did not converge. Since our design balanced setting characteristics within base image, and since our results converge *regardless of base image*, we indeed have strong preferences for beach sizes over 800 square meters with shade from a tree.

Several segmentation variables were used to examine differences on beach preferences between groups of respondents. For example, do more experienced boaters have different preferences than less experienced? Do boaters using motorized crafts have different preferences than non-motorized users? In general, the preferences reported in the final report were robust and did not substantially vary across segments of respondents. In addition, the guides are the most knowledgeable about beaches within the river corridor and, arguably, would be the ones most likely influenced by context effects. However their results, particularly for camping, converged with the results from both privates and patrons regarding beach preferences. As a bottom line, this study has identified valid user preferences for size of beach, shade from a tree, and low growing vegetation.

COMMENT: There was concern about seasonal variation on preferences for such things as shade on a beach, and suggested that it would be worthwhile to explore such variation.

OUR RESPONSE: This is a meaningful direction for further analysis and one that could provide a context to understand the attitudes and preferences of users. There are numerous "intervening" variables that could potentially explain many of the relationships found in the analyses, such as: gender, income, type of boat, past experience in recreation, rural/urban residence, motor/oar raft, and so forth. The analyses of this report are considered the essentials to provide to the GCMRC and TWG, but by no means are the end of the potential investigation for these data sets.

COMMENT: There was concern about non-response bias and whether we performed a non-response bias check.

OUR RESPONSE: Non-response bias is concerned with representing the sample from those that responded; the problems are related with threats to the generalizability of the findings. Non-response bias is considered a problem when response rates are low, with the threat being that those who respond are systematically different than those who did not respond. The threat of non-response bias gets weaker as response rate increases. In our case, our lowest response rate is a very respectable 65% (with the river guide sample) and our highest response rate is a near perfect 91% (with commercial patrons). The threat of non-response bias is weak across all five of our samples due to our high response rates, and was not consider a significant threat to generalizing the findings of this study.

COMMENT: There was a request for further details about the experimental design.

OUR RESPONSE: We have expanded text within the final version of the report and have added considerable detail regarding methods and the theory upon which they are based. However, the exact steps to develop the experimental design are not appropriate for the body of the final report but are itemized here:

The discrete choice experimental design was constructed from statistical optimal design principles. The primary setting characteristics (variables) were size 3 levels, vegetation 2 levels, and shade 2 levels. These characteristics (or attributes) were to be represented in only three base photos, and these three had different initial sizes. The following experimental design steps were implemented.

1. Twelve design images were constructed to appear in alternative A as a full factorial 3X2X2 with respect to the primary attributes.
2. Twelve corresponding design images were cyclically generated for alternative B thus giving a second full factorial of the primary attributes with optimum pairing between alternatives A and B.

3. The 24 images generated in 1 and 2 above were partitioned into three sets of eight to be assigned to the base photos available again using statistical design principles. Each base photo has the four combinations of vegetation and shade exactly twice. The three levels of size appeared in patterns (2 3 3), (3 2 3), and (3 3 2) with random assignment of pattern to base photo.
4. The assignment of base photos to pairs within a choice set was also cyclic so that all pairs of base photos appeared equally often, and no choice sets had the same base image in both A and B.
5. Since the three base photos were of varying initial size, a check of the distribution of the final sizes and the pairings was made. The resultant final design is highly efficient for all effects.
6. The twelve choice sets as constructed above were blocked into three versions of four such that each version was perfectly balanced on all primary attributes and base photo.
7. Two additional choice sets varying only in size were added to each version (hence common to all respondents).

- END OF REPORT -