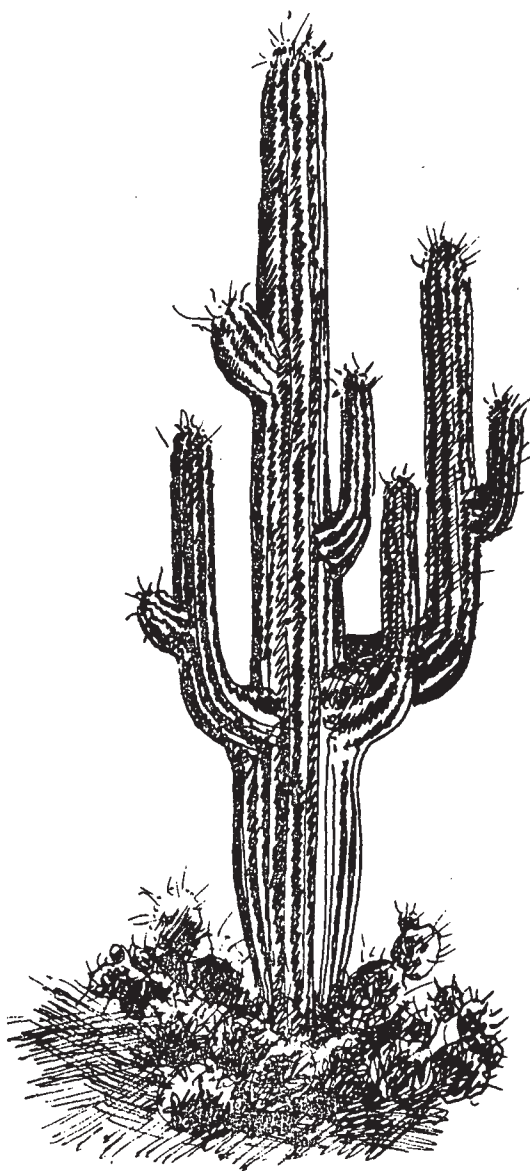




**Cooperative National Park
Resources Studies Unit**

ARIZONA

University of Arizona
Tucson, Arizona 85721

Western Region
National Park Service
Department of the Interior
San Francisco, Ca. 94102

COOPERATIVE NATIONAL PARK RESOURCES STUDIES UNIT
University of Arizona/Tucson - National Park Service

The Cooperative National Park Resources Studies Unit/University of Arizona (CPSU/UA) was established August 16, 1973. The unit is funded by the National Park Service and reports to the Western Regional Office, San Francisco; it is located on the campus of the University of Arizona and reports also to the Office of the Vice-President for Research. Administrative assistance is provided by the Western Archeological and Conservation Center, the School of Renewable Natural Resources, and the Department of Ecology and Evolutionary Biology. The unit's professional personnel hold adjunct faculty and/or research associate appointments with the University. The Materials and Ecological Testing Laboratory is maintained at the Western Archeological and Conservation Center, 1415 N. 6th Ave., Tucson, Arizona 85705.

The CPSU/UA provides a multidisciplinary approach to studies in the natural and cultural sciences. Funded projects identified by park management are investigated by National Park Service and university researchers under the coordination of the Unit Leader. Unit members also cooperate with researchers involved in projects funded by non-National Park Service sources in order to obtain scientific information on Park Service lands.

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NATIONAL PARK SERVICE

Denver, Colorado

SEP 27 1984

WITHDRAWN

COOPERATIVE NATIONAL PARK RESOURCES STUDIES UNIT
UNIVERSITY OF ARIZONA
125 Biological Sciences (East) Bldg. #43
Tucson, Arizona 85721

R. Roy Johnson, Unit Leader for Natural Resource Studies
National Park Service Senior Research Scientist

A. Heaton Underhill, Unit Leader for Resource Recreation Studies
National Park Service Senior Research Scientist

CPSU FTS
762-6885

TECHNICAL REPORT No. 14

GRAND CANYON NATIONAL PARK VISITORS

A. Heaton Underhill

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NATIONAL PARK SERVICE/UNIVERSITY OF ARIZONA
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Grand Canyon National Park
visitors

Executive Summary

From 1 August 1983 to 12 September 1983, a random sample of visitors leaving Grand Canyon National Park were handed a questionnaire (appendix 1) that sought to determine what they did in the Park, how satisfied they were, and certain other information thought to be useful to management.

The results of the 18 questions are analyzed in some detail in the main report. It is suggested that anyone concerned with the management of Grand Canyon National Park can benefit from reviewing the responses. In this summary, I have tried to cover some of the highlights and my interpretations.

Visitors to Grand Canyon (69% for the first time) are completely captivated by the grandeur and spectacular impact of this natural phenomenon. All other impressions pale by comparison. It is not surprising, then that 97% of those sampled reported that they viewed the canyon. Everything else they do on their visit falls far behind: Buy souvenirs - 62%, ride the shuttle - 56%, eat at concessions - 54%, view wildlife and flora - 49%. It should be of some concern to the National Park Service (NPS), however, that only 48% of visitors tour the visitor center, established to orient them in the park; only 42% visit Yavapai Museum, the principal facility to explain the background and history of the canyon. 40% report that they hiked canyon trails, but much of this was between overlooks while viewing the canyon. Studying geology--a rather vague activity, has 23% participation. From here, Park Service sponsored activities really drop off: Visit Tusayan ruin - 18%; tour with ranger - 14%; campfire talks - 13%; other activities - 12%, and overnight backpacking - 6%. (Actually, based on Park Service visitor figures and backpacking permits, less than 1.5% of visitors backpack overnight, so this figure is high.)

Visitors indicated their level of satisfaction on the activities they participated in 3537 times. Fifty percent, or 1779 times, they were highly satisfied, 34% or 1188 satisfied, 11% or 387 neutral, and 183 times or 5% dissatisfied. The text gives the breakdown by activity. Obviously, the level of satisfaction varies by activity. Managers should note that despite the generally high level of satisfaction expressed there were 349 reasons for dissatisfaction recorded. It should also be noted that 162 or 24% of all respondents reported that there were activities they had planned to do during their visit, but didn't. Of these 28 were day hikes, 16 backpack overnight, 30 were mule rides, 13 overflights, 6 camp at canyon and 6 take raft trips. The text gives a complete breakdown and reasons for not doing, but most important was failure to know or understand reservation or other advance requirements.

One question explains that the shuttle might be terminated. It asked who used the shuttle and then if they favored: a. adding a dollar to entrance fee to pay for it, b. selling a \$2-\$3 ticket good for 5 days for up to 4 in party, c. abolishing the shuttle, and d. didn't know. Results are shown in Table 1.

Table 1. Tram Future.

	Anad. Ques. 3 Did you ride tram		Anad. Ques. 4 on future of tram		Favor adding \$1 to Ent. fee		Favor \$2 to \$3 separate ticket		Abolish tram		Don't know		
Used tram	349	55.8%	341	57.3%	257	75.4%	61	17.9%	4	1.2%	19	5.6%	100%
Did not use tram	277	44.3%	254	42.7%	72	28.3%	112	44.1%	12	4.7%	58	22.8%	100%
Total	626		595	100%	329	55.3%	173	29.1%	16	2.7%	77	12.9%	100%
Without the "don't knows"													
Used tram			322	62.2%	257	79.8%	61	18.9%	4	1.3%			100%
Did not use tram			196	37.8%	72	36.7%	112	57.1%	12	6.1%			100%
Total			528	100%	329	63.5%	173	33.4%	16	3.1%			100%

Table 2. Future of flights.

	Continue		Expand		Stop		Don't Know			
Did not fly over canyon	423	79%	234	55.3%	16	3.8%	59	13.9%	114	27%
Flew over canyon	112	21%	91	81.2%	13	11.7%	2	1.8%	6	5.4%
Total	535	100%	325	60.7%	29	5.4%	61	11.4%	120	22.4%
Without "don't knows"										
Did not fly over canyon	309	74.4%	234	75.7%	16	5.2%	59	19.1%		
Flew over canyon	106	25.5%	91	85.8%	13	12.3%	2	1.9%		
Total	415	100%	325	78.3%	29	7.0%	61	14.7%		

The next question asked if they took scenic flights over the canyon. It then asked whether they felt flights should be: a. continued, b. abolished, c. expanded, or d. didn't know. Results are shown in table 2.

Four hundred of the 640 answering the question of visiting other parks reported that they had made 858 visits to other parks. Forty-nine parks were reported for an average of 2.145 visits to other parks. (See text for details.) Five hundred and fifty or 64% of these reported visits were to 6 parks: Zion - 127, Bryce - 113, Yosemite - 106, Yellowstone - 83, Petrified Forest - 64, and Mesa Verde - 57.

The text analyzes a number of cross-tabulations--differences by country, state, tour group, party composition, means of travel, etc. Some of these should be valuable to management and should be checked.

The information that should be most helpful, however, is the analysis of Question 18, the open-ended question. "Do you have additional opinions you would like to bring to the attention of the park management? Were there aspects of your trip that were especially satisfying or disappointing which managers should be aware of? If so please note."

Four hundred and twenty-four or 65% of those responding took advantage of this opportunity. The text breaks these down in some detail. There were 682 comments broken down as: 247 by 188 respondents complimentary of the park, the Park Service, or the concessionaires. Three hundred and forty-seven were critical--212 in areas of NPS responsibility, 106 in areas of concession responsibility, and 29 of a general nature. In addition, there were 88 suggestions for various kinds of improvements.

Eighty-five of the complimentary comments were directed to the canyon--magnificent! awe inspiring! most satisfying, etc. Ninety-six were directed to the Park Service, 29 to the tram operation, 35 to the concessionaires, and 2 "other." (See Table 5 in main report for a further breakdown.)

There were 44 complaints about Mather Campground. Since next to the Fred Harvey lodges (26% vs 40%) this was the most used overnight facility in the park, management should investigate these complaints carefully.

The complaints of concession operations are basically centered on the quality of service. Here again they should be carefully investigated.

The one area of greatest complaints can be classified as "communications," and this applies to the Park Service and the concessionaires. There were 78 complaints that NPS gave out little or poor information on the park. (Features not adequately explained; impossible to get reliable information before traveling to the park; very poor signing within the park; inadequate brochure and maps at entrances; no weekly schedule of events, etc.) The concessionaires also appeared lax in this area: 10 respondents reported poor or faulty information from tour operators or advertisements, no information on raft or mule reservations, and bad service. Other complaints and suggestions for both the NPS and the concessionaires are covered in Table 5.

It should be noted that language is a serious barrier to a full park experience for non-English speaking visitors. The Park Service might consider using American university language majors as summer employees or foreign exchange students who speak English as well as their own language. This latter could be done very inexpensively and could do a great deal to develop better understanding between nations, as well as promote a better appreciation of our national parks, the National Park Service, and the United States' national park concept.

It should also be noted that respondents who had visited other parks were significantly more critical of the Grand Canyon Park Service staff than those who had not been to other parks. With the concessionaires the reverse was true. Those who had visited other parks were significantly less critical than those who only visited Grand Canyon.

In conclusion, it is felt that a survey of this kind can be a valuable tool to measure the public's reactions, impressions, and evaluation of their park experience. It can help management evaluate programs and plan actions; it is an inexpensive way to get public input into the management process. A survey of this kind every few years will keep management abreast of the public's needs and how best to meet them.

A. Heaton Underhill
Sr. Research Scientist
June 1984

Grand Canyon National Park Visitors
A. Heaton Underhill
National Park Service Senior Research Scientist

Introduction

Surveys of people's recreational activities are a relatively recent development. Earlier studies were concerned primarily with management and protection of the resources rather than the motivation of recreationists, what they did, or how satisfied they were. The Outdoor Recreation Resources Review Commission's (ORRRC) report in 1962 ushered in a whole new era of recreation research and management. Besides a National Recreation Survey conducted by the U.S. Census Bureau in 1960 (Ferris 1962), the ORRRC report included a survey of Wilderness Users (Wildland Research Center 1962), a survey of the quality of outdoor recreation as evidenced by user satisfaction (Reid and Barlow 1962), and a survey of Participation in Outdoor Recreation: Factors Affecting Demand Among American Adults (Mueller and Gurin 1962).

In 1965, the Bureau of Outdoor Recreation (BOR) had the Census Bureau make another national survey, similar to the 1960 ORRRC survey (U.S. Dept. Interior 1967). In 1970 the Census Bureau conducted a mail survey as additional information to a survey being conducted by the Bureau of Sports Fisheries and Wildlife (U.S. Dept. Interior 1971). In 1971, the Survey Research Center of the University of Michigan administered a household survey, and in 1972 Audits and Surveys, Inc. of New York, N.Y. conducted a national recreation survey for BOR (U.S. Dept. Interior 1973). In 1977 BOR again conducted a national household survey; this one was done by Opinion Research of Princeton, N. J. (U.S. Dept. Interior 1979a). Also in 1977, BOR conducted a survey of recreationists on federal lands (U.S. Dept. Interior 1979b). This Federal Recreation Estate survey consisted of on-site interviews of more than 11,000 summer visitors at 155 randomly selected federal areas. Grand Canyon National Park was one of these areas. One hundred and five visitors were interviewed there between June 24-28, 1977.

The earliest survey of visitors to Grand Canyon that I have located was conducted by Mark A. Boater (1972). Between 1967 and 1970 he surveyed persons who rafted the Colorado River through the park. Over this period 1,578 questionnaires were returned and analysed. He was interested in visitors' reactions to their trip and in their socio-economic demography.

In 1976, William L. Towler conducted a survey of backcountry hikers. He surveyed about 335 backpackers using Grand Canyon trails (1977). His objectives were to: (a) determine socio/economic and demographic characteristics of users, (b) to discover their motivations for backcountry hiking, and (c) to measure their perception of several attributes of wilderness.

During the 1960's and 70's, other than surveys for Statewide, Comprehensive, Outdoor Recreation Plans (SCORPS) required by the Land and Water Conservation Fund Act, most site surveys were for special user groups such as hikers, rafters, or wilderness travelers. The Boater and Towler surveys were among this group.

In 1955, the Arizona Department of Transportation conducted a brief survey of Grand Canyon travel (1955). It was primarily concerned with where canyon visitors came from, how long they were in Arizona, and how they traveled within the state. Again in 1977, the Arizona Department of Transportation conducted a brief study of South Rim usage (1977).

In 1981, G. E. Machlis and E. L. Wenderoth (1982) conducted a survey of certain foreign visitors who visited Grand Canyon National Park on the so called Three Hour Tours (flying into Grand Canyon airport, then taking a Fred Harvey bus for a three-hour tour of the South Rim that included a one-hour lunch stop in Tusayan). Besides a time analysis of tour participant activities (which was largely controlled by the bus driver), Machlis and Wenderoth administered a short questionnaire to about 1,000 foreign visitors, largely Japanese and French. They were primarily concerned with cultural differences in recreational activities between different nationals.

In 1982, Underhill and Fonken (1983) surveyed foreign visitors to the canyon between Memorial Day (30 May 1982) and Labor Day (6 September 1982). Their primary concern was to get as accurate a count as possible of foreign visitors to the park, both day and overnight. However, they also administered the Machlis-Wenderoth questionnaire to 1,846 overnight, foreign visitors so that they could be compared to the day visitors surveyed in 1981.

During the summer of 1983, Sheldon Solomonson, Glenn Haas, and David Ross (1984) conducted a survey of 1,619 visitors to South Rim in the park. Their primary concern was to measure visitors' perception of air quality and to evaluate its impact on recreational enjoyment, but they did ask a number of other questions.

In the current study, I will compare results of these other Grand Canyon surveys that had questions that were comparable to those asked in this survey.

In 1982, a panel of social scientists headed by W. W. Shaw (Shaw et al. 1982) published "Grand Canyon National Park Social Science Research Program." Among other things, this report recommended that the Park Service obtain some basic information about park visitors. Specific variables suggested were: number of people in party, party type, areas/facilities visited, activities, duration of stay, origin or permanent residence, age categories, sex, user satisfactions, mode of transportation, and crucial management issues. In June 1983, the Office of Management and Budget (OMB) approved a park visitor questionnaire for Park Service use. This basic questionnaire included most of the variables listed above and provided flexibility for individual parks. A small amount of money was left from the 1982 Foreign Visitor Study (Underhill and Fonken 1983) so it was decided to sample Grand Canyon visitors during August 1983 to obtain some of the basic information suggested by the Shaw panel.

Study Methods and Results

Questionnaires (Appendix 1) were handed to visitors as they left the park, and they were asked to fill them out and return them in the enclosed, addressed, franked envelopes. The numbers distributed, where, and the returns are shown below. There was a total of 1500 questionnaires in English, 250 in German, 228 in French (22 additional French speakers were not located), and 250 in Japanese for a total of 2228 distributed. Six hundred and fifty-five were returned (five too late to be included in this analysis).

Federal privacy regulations precluded the taking of names and following up on non-respondents. With only a 30% return there is, of course, a possibility of non-response bias, as far as the total user public is concerned. We believe, however, that the sample is valid, that the non-respondents basically represent procrastinators and those who generally do not respond to written questionnaires. There are several factors that lead us to this conclusion. A similar survey is being conducted at Saguaro National Monument where the response rate is only slightly higher, but here we have also had a number of questionnaires filled out in front of the ranger who distributes them so as to cut down on non-responses. Analysis of this group has shown no significant difference in responses from those who mail in the questionnaire. Furthermore, the 1983 study at Grand Canyon mentioned above (Solomonson et al. 1984) took names and followed up on non-respondents. They found no significant differences between the early and the late respondents.

Appendix 1 is a copy of the questionnaire used. Appendix 2 summarizes the raw data for each question. Distribution of the questionnaires, number of responses, and analysis of the replies to each question follows:

Questionnaires distributed and returned:

<u>Location</u>	<u>No. Distributed</u>	<u>Returns</u>	<u>%</u>
South Gate	1000 English 100 German 1300 100 French 100 Japanese	422	32
Airport	100 English 50 German 237 37 French 50 Japanese	61	26
East Gate	200 English 50 German 341 41 French 50 Japanese	93	27
North Gate	200 English 50 German 350 50 French 50 Japanese	74	21
	----- 2228	----- 650	----- 29.2

Question 1. Activities participated in, level of satisfaction, reason not satisfied.

A1. 631 or 97% viewed the canyon - 511 or 82% of the 621 who answered A2 were highly satisfied; 97 or 16% were satisfied; 5 or 0.8% were neutral; 8 or 1.2% were dissatisfied. In A3, 38 viewers reported "reasons not satisfied": 3 or 8% of the 38 said park features were not well explained; 16 or 42% objected to the weather; 1 or 3% didn't see animals; 14 or 37% reported views too hazy; 2 or 5% thought park too crowded; 1 or 3% found it too noisy, and 1 or 3% marked "other comments."

B1. 259 or 39.8% reported they day-hiked trails (no trails were specified; we believe the Rim trail must make up a significant portion). B2. 250 expressed their levels of satisfaction: 166 or 66% were highly satisfied; 73 or 29% were satisfied; 5 or 2% were neutral, and 6 or 2.4% were dissatisfied. On B3, 29 or 4.5% reported reasons for dissatisfaction: 1 or 3% said park features were not well explained; 1 or 3% thought shuttle not adequate; 3 or 10% mentioned bad weather; 2 or 7% didn't see animals; 1 or 3% found views too hazy; 4 or 14% found park too crowded; 1 or 3% thought concessions below standard; 1 or 3% thought staff discourteous; 14 or 48% reported mule/hiker conflicts, and 1 or 3% marked "other."

C1. 401 visitors or 61.8% reported they bought souvenirs. C2. 387 commented on their level of satisfaction. Of these 113 or 29% were highly satisfied; 157 or 41% were satisfied; 83 or 24% were neutral, and 24 or 6% were dissatisfied. C3. 31 listed reasons for dissatisfaction: 1 or 3% of the 31 thought park features were not well explained; 1 or 3% thought shuttle inadequate; 2 or 6% found park too crowded; 1 or 3% thought park too dirty; 5 or 16% thought concessions below standard; 1 or 3% thought permit system unfair (?); 5 or 16% found staff discourteous, and 15 or 48% mentions "other" (mostly prices too high).

D1. Only 90 visitors or 14% reported that they toured with a Ranger. D2. Of the 88 reporting level of satisfaction, 54 or 61% were highly satisfied; 23 or 26% were satisfied; 6 or 6.8% were neutral, and 5 or 5.7% were dissatisfied. D3. 10 reported reasons for dissatisfaction: 1 or 10% of these thought park features were not well explained; 2 or 20% mentioned bad weather; 1 or 10% found the concessions below standard; 1 or 10% thought the permit system unfair (?), and 5 or 50% mentioned "other" reasons including poor acoustics and language barrier.

E1. 118 or 18.2% of all visitors reported visiting Tusayan Ruin. E2. Of 114 reporting level of satisfaction, 35 or 30.7% were highly satisfied; 47 or 41.2% were satisfied; 24 or 21% neutral, and 8 or 7% were dissatisfied. E3. 15 reported reasons for dissatisfaction: 7 or 47% thought park features not well explained; 1 or 7% found park too crowded; 1 or 7% found it too noisy; 1 or 7% thought concessions below standard; 1 or 7% found staff discourteous, and 4 or 27% mentioned "other" reasons including language barrier.

F1. 350 or 53.8% reported they ate at a concession. F2. 334 reported their level of satisfaction: 81 or 24.3% were highly satisfied; 128 or 38.3% were satisfied; 78 or 23.3% were neutral, and 47 or 14% were dissatisfied. F3. 58 listed reasons for dissatisfaction: 2 or 3% of the 58 thought park too crowded; 1 or 2% found park too noisy; 2 or 3% thought park too dirty; 32 or 58% found concessions below standard; 5 or 9% found staff discourteous, and 16 or 28% mentioned "other" reasons such as food being cold, too expensive, etc.

G1. 149 or 22.9% of the visitors surveyed reported that they studied geology in the park. We must assume that many consider looking at the canyon a geological study. G2. 140 reported their level of satisfaction: highly satisfied, 77 or 55%; satisfied 44 or 31%; neutral 17 or 11%, and dissatisfied, 3 or less than 3%. G3. 10 gave reasons for dissatisfaction: Of the 10, 1 or 10% thought park features were not well explained; 1 or 10% found shuttle not adequate (?); 1 or 10% thought views too hazy; 1 or 10% found the park too crowded; 1 or 10% thought the park too dirty; 10 or 100% thought concessions below standard (?), and 3 or 30% mentioned "other" reasons.

H1. 274 or 42.2% reported they visited Yavapai Museum. H2. 266 reported levels of satisfaction as: highly satisfied - 101 or 38%; satisfied - 113 or 42%; neutral - 44 or 16.5%, and dissatisfied - 8 or 3%. H3. 24 gave reasons for dissatisfaction: 5 or 21% - park features not well explained; 2 or 8% - shuttle inadequate; 2 or 8% - views too hazy; 6 or 25% - park too crowded; 2 or 8% - park too noisy; 1 or 4% - concessions below standard, and 6 or 25% - "other" reasons, usually language.

I1. 85 or 13% reported they attended evening campfire talk. I2. 81 listed their level of satisfaction. 37 or 46% were highly satisfied; 33 or 41% satisfied; 5 or 6% were neutral; 6 or 7% dissatisfied. I3. 8 gave reasons for dissatisfaction: 2 or 25% - park features poorly explained; 2 or 25% - bad weather; 1 or 13% - mule/hiker conflicts (?); 3 or 38% "other" (language or acoustics).

J1. 40 respondents or 6.2% reported that they backpacked overnight. J2. 35 expressed levels of satisfaction: 23 or 66% - highly satisfied; 8 or 23% - satisfied; 2 or 6% - neutral; 4 or 11% - dissatisfied. J3. 7 reported reasons for dissatisfaction as: didn't see animals - 1 or 14%; campground not well run - 1 or 14%; mule/hiker conflicts - 3 or 43%; "other" - 2 or 28%.

K1. 319 or 49.1% reported they viewed wildlife or flora. K2. 306 gave levels of satisfaction as: highly satisfied - 136 or 44%; satisfied - 125 or 41%; neutral - 33 or 11%; dissatisfied - 12 or 4%. K3. 38 listed reasons for dissatisfaction as: park features not well explain - 2 or 5%; bad weather - 2 or 5%; didn't see animals - 31 or 82%; views too hazy - 1 or 3%; park too crowded - 1 or 3%; "other" - 1 or 3%.

L1. 309 or 47.5% toured the visitor center. L2. 298 reported level of satisfaction: highly satisfied - 117 or 39%; satisfied - 130 or 47%; neutral - 31 or 10%; dissatisfied - 11 or 4%. L3. 18 gave reasons for dissatisfaction: park features not well explained - 3 or 17%; views too hazy - 1 or 6%; park too crowded - 5 or 28%; park too dirty - 1 or 6%; staff discourteous 1 or 6%; "other" - 6 or 33%, mostly language.

M1. In this question, the activity matrix question, 361 or 55.5% reported that they rode the shuttle. This compares closely with the 349 or 54% who answered question 3 that they rode the shuttle (actually, since 24 did not answer question 3, it is 55.7% of those replying). We interpret this almost identical response rate as an indication that respondents were seriously answering the questionnaire. M2. 346 reported levels of satisfaction: highly satisfied - 160 or 49%; satisfied - 123 or 36%; neutral - 33 or 10%, and dissatisfied - 21 or 6%. M3. Reasons given by 47 respondents for dissatisfaction were: park features not well explained - 2 or 4%; shuttle not adequate - 15 or 32%; bad weather - 3 or 6%; views too hazy - 1 or 2%; park too crowded - 5 or 11%; park too noisy - 1 or 2%; concessions below standards - 2 or 4%; staff discourteous - 1 or 2%; "other" - 7 or 15% (couldn't hear driver, all talk in English, need better rain shelter at stops, etc.).

N1. 75 respondents or 12% listed other activities they did in the park. These ranged from bike riding to picnicking and fishing. N2. 56 were satisfied or highly satisfied, 5 neutral and 10 dissatisfied. N3. 16 gave reasons for dissatisfaction: park features not well explained - 1 or 6%, bad weather - 4 or 25%; park too noisy - 3 or 19%, campground not well run - 5 or 31%, concessions below standard - 1 or 6%, and "other" 2 or 13%.

Question 2. Activities planned but not done - reasons.

161 respondents reported there were activities they had planned but did not do. This is 24% of all who sent in questionnaires. Activities most cited were: day-hike trails - 28; overnight backpack - 16; tour visitor center - 15; ride shuttle - 8; Ranger tours-campfire talks-museum visits - 8, and "other" - 86. Among these, 30 visitors listed mule rides, 13 overflights, 6 raft trips, and 6 camping as activities they had planned but did not do. Others listed were: rent car to sightsee - 4, birdwatch - 3, view sunrise - 4, swim - 3, visit Hermit Rest - 1, visit Grandview Point - 1, view Indian dances - 1.

Reasons for not doing: most often cited was lack of reservations or knowledge that reservations were needed. This applied particularly to mule rides, camping, raft trips, and backpacking. Too expensive was cited 11 times for airflights and mule trips; lack of time was cited 12 times for various activities, bad weather 22 times, airflights passed up as too dangerous 3 times, no swimming pools 3 times, lack of adequate transportation 9 times, and 5 failed to take mule rides because: 1 was too heavy, 2 were too pregnant, and 2 were too young.

Question 3. Did you use the tram bus?

349 or 55.7% of the 626 respondents answering this question reported they used the shuttle; 277 or 44.3% did not.

Question 4. Future of the tram

595 had useable answers to question 4 on the future of the shuttle. 329 or 55.3% favored adding \$1.00 to the park entrance fee, 173 or 29.1% favored a separate tram ticket costing 2 or 3 dollars and good for 5 days for parties of 1 to 4 people, 16 or 2.7% said "abolish the tram," 77 or 12.9% didn't know. If we drop the don't knows, 63.5% favored adding a dollar to entrance fee, 33.4% favored the \$2 or \$3 ticket, and 3% favored abolishing the tram.

Cross analysis of the two previous questions reveals some interesting but not unexpected results. These are shown in Table 1.

Table 1. Tram Future.

	Ans. Ques 3: Did you ride tram	Ans. Ques. 4: future of tram	Favor adding \$1 to ent. fee	Favor \$2 to \$3 separate ticket	Abolish tram	Don't know	Total
Used tram	349 55.8%	341 57.3%	257 75.4%	61 17.9%	4 1.2%	19 5.6%	100%
Did not use tram	277 44.2%	254 42.7%	72 28.3%	112 44.1%	12 4.7%	58 22.8%	100%
Total	626 100%	595 100%	329 55.3%	173 29.1%	16 2.7%	77 12.9%	100%
Without the "don't knows"							
Used tram	322 62.2%	257 79.8%	61 18.9%	4 1.3%			100%
Did not use tram	196 37.8%	72 36.7%	112 57.1%	12 6.1%			100%
Total	528 100%	329 63.5%	173 33.4%	16 3.1%			100%

Human nature being what it is, those who used the tram favored by a large margin adding \$1.00 to the entrance fee. Those who did not use the tram strongly favored, but not by as wide a margin, selling a tram ticket for \$2 - \$3. Less than 3% favor abolishing the tram although more non-users than users are in this category.

Question 5. Did you take an air sightseeing trip? Future of flights.

640 answered the overflight question. 115 or 18% reported they took a sightseeing trip over the canyon while 525 or 82% did not. 13 more answered the question by saying that they planned to take such a flight but did not because of the weather, too high a cost, or all flights booked.

535 visitors gave useable answers to the second part of question 5 on their feelings toward the future of flights over the canyon. 325 or 60.7% said flights should be continued; 29 or 5.4% said they should be expanded; 61 or 11.4% felt they should be stopped, and 120 or 22.4% didn't know. Again, if we eliminate the "don't knows," 415 answered. 78.3% said continue; 7.0% said expand, and 14.7% felt they should be stopped.

Obviously the great majority of the visitors who answered this question favored flights over the canyon. With or without those who "didn't know," less than 15% felt flights should be stopped. Of those who had flown over the canyon 92% favored continuation or expansion; only 1.8% felt flights should stop, and only 5.4% had no opinion. Of non-fliers 59% favored flights; 13.9% felt they should stop, and 27% had no opinion. Obviously those who flew were more pro flights, but, if you take the totals, 66% favored flights, 11% felt they should stop, and 22% didn't know. Without the "don't knows" over 85% of those responding favored continuing flights. These results are summarized in Table 2.

Table 2. Future of flights.

			Continue		Expand		Stop		Don't Know	
Did not fly over canyon	423	79%	234	55.3%	16	3.8%	59	13.9%	114	27%
Flew over canyon	112	21%	91	81.2%	13	11.7%	2	1.8%	6	5.4%
Total	535	100%	325	60.7%	29	5.4%	61	11.4%	120	22.4%

Without "don't knows"

Did not fly over canyon	309	74.4%	234	75.7%	16	5.2%	59	19.1%
Flew over canyon	106	25.5%	91	85.8%	13	12.3%	2	1.9%
Total	415	100%	325	78.3%	29	7.0%	61	14.7%

Questions 6 and 7 (date and time of arrival) were not analyzed.

Question 8. Length of stay.

634 respondents gave useable answers to their length of stay at Grand Canyon. 232 or 37% reported 1 day, 255 or 40% - 2 days, 107 or 17% - 3 days, 20 or 3% - 4 days, 9 or 1% - 5 days, 4 or less than 1% - 6 days, and 7 or 1% - 7 days. The mean length of stay was 2 days.

Question 9 and 10. Did you spend one or more nights? Where?

154 or 24% said they did not stay overnight, 491 or 76% said they stayed overnight and indicated where. It thus appears that the 232 who reported their stay as 1 day included about 78 who arrived late, spent the night, left the next afternoon, and called it one day, or arrived early, spent the day and the night, left early and called it one day. Presumably the other figures indicate the respondent spent most of that number of days in the park.

As noted above 154 reported they did not spend the night; 491 reported they did. Table 3 lists where they reported they spent one or more nights.

Table 3. Lodging for one or more nights within park.

Lodge or motel on South Rim within park	196	40%
Lodge or motel in Tusayan	18	4%
North Rim Lodge	28	6%
Hostel in the park	14	3%
Camper Village (Tusayan)	15	3%
Trailer Village (in park)	9	2%
Mather Campground	127	26%
Desert View Campground	10	2%
North Rim Campground	9	2%
Ten-X Campground	7	1%
Backpack Camp	12	2%
Other	46 *	9%

484

* We have no breakdown on this - some indicated they slept in car, some informal camping, or just out of park, etc.

Question 11. Was this your first visit?

For 445 or 68.5% of the 650 respondents, it was their first visit to Grand Canyon. 206 or 31.5% reported they had visited the park before. 43 repeat visitors reported on the number of times they visited the canyon in the past year as follows: one time - 23; two times - 10; three times - 5; four times - 3, and five times - 2.

106 respondents reported they had visited the canyon during the past 5 years: 45 once, 25 twice, 17 three times; the remaining 19 reported up to 10 visits during that period.

Questions 12 and 13. Did you visit other parks? Which ones?

Other National Park Service units that visitors to Grand Canyon National Park reported they had or would visit on this trip are given in Table 4.

Table 4. Parks in order of number reporting visits and number reporting. 640 answered this question. 400 or 63% said they did visit other parks as shown below.

19.8	Zion	127	9.7	Olympics	5
17.7	Bryce	113	9.6	Great Smokies	4
16.3	Yosemite	106	500 or 9.5	Crater Lake	3
13.9	Yellowstone	83	64% of	Custer	3
10.0	Petrified Forest	64	visits 9.5	Mt. Ranier	3
8.9	Mesa Verde	57	9.3	Sunset Crater	2
7.2	Rocky Mountains	27		Montezuma Castle	2
3.9	Sequoia/King Canyon	25		Guadalupe	2
3.8	Carlsbad	25		Golden Gate NRA	2
3.6	Grand Teton	24		Great Sand Dunes	2
3.4	Arches	22		Everglades	2
4.8	Monument Valley	16		Chaco	2
2.3	Badlands	15	9.3	Black Hills	2
2.2	Capital Reef	14	9.2	Glacier Bay	1
4.0	Redwoods	13		Whiskeytown NRA	1
1.7	Death Valley	11		Wupatki	1
1.7	Mount Rushmore	11		White Sands	1
1.6	Canyon de Chelly	10		Navaho	1
1.6	Glacier	10		Natural Bridge	1
1.4	Muir Woods	9		Mammoth Castle	1
1.3	Gunnison (Bl. C) NRA	8		Lexington Hist.	1
1.3	Glen Canyon NRA	8		Joshua Tree	1
1.1	Cedar Breaks	7		Dinosaur	1
1.1	Canyonlands	7		Devil's Tower	1
			9.2	Big Bend	1

400 Grand Canyon visitors reported 858 visits to 49 other units of the National Park System. Average = 2.145 other parks

Question 14. What is your zip code or country?

Of the 650 reporting, 378 (58%) were U.S. residents and 272 (42%) were from foreign countries. Zip codes were recorded so that we could give a state by state breakdown. However, we have only separated US visitors into three groups: Arizona, California, and other U.S. The total distribution of visitors responding was as follows:

<u>Residence</u>	<u>Number</u>	<u>% of U.S. or Foreign</u>	<u>% of Total</u>
Arizona	54	14.2	8.3
California	90	23.8	13.8
Other U.S.	234	61.9	36.0
Total U.S.	378	100.0	58.2
Japan	73	26.8	11.2
Germany	59	21.7	9.1
France	34	12.5	5.2
England	20	7.4	3.1
Canada	10	3.7	1.5
Belgium	10	3.7	1.5
Australia	7	2.5	1.1
Netherlands	6	2.2	1.0
Sweden	5	1.8	0.7
Italy	5	1.8	0.7
Other Foreign	43	15.8	6.6
Total Foreign	272	100.0	41.8

Question 15. Are you with a tour group? If not, size of party.

96 respondents or 15% of the 646 answering this question reported they were with a tour group. The size of the tours varied from 10 to 50 as follows:

<u>Size</u>	<u>Number of tours reported</u>	
10 - 20	29	30%
21 - 30	47	49%
31 - 40	15	16%
41 - 50	5	5%

551 respondents indicated they were not traveling with a tour. Of these 268 reported on the size of their party:

<u>Size</u>	<u>Number of parties reported</u>	
1	34	13%
2	109	41%
3	37	14%
4 Ave. 2.88 $\pm$ 1.47	55	21%
5	20	7%
6	6	2%
7	3	2%
8	4	2%

Question 16. Party composition.

559 reported on the make-up or composition of their party. Family groups were by far the most numerous 337 or 60.3%, followed by groups of Friends - 152 or 24.2%. Fellow Workers were 17 or 3%, Family and Fellow Workers 7 or 1.2%, Friends and Fellow Workers the same - 7 or 1.2%, and Family and Friends 39 or 7.0%.

Question 17. Means of transportation.

636 reported their means of travel to the park. 343 or 53.9% listed private vehicle; 132 or 20.7% listed public transport; 99 or 15.6% reported rented vehicle; 62 or 9.7% listed other, suggesting this question could have been worded better.

Question 18. Additional opinions.

The final question was open-ended. "Do you have additional opinions you would like to bring to the attention of the park management? Were there aspects of your trip that were especially satisfying or disappointing which managers should be aware of? If so, please note."

424 or 65.1% took advantage of this opportunity. Initially we coded these as favorable and unfavorable comments. 188 or 44.3% of the respondents were listed as favorable; 236 or 55.7% were classed as unfavorable. We hasten to point out, however, that included in unfavorable were combination answers that made suggestions such as "The rangers and staff were very helpful and courteous, but the restrooms were dirty and no hot water," etc. In all, both groups made a total of 682 comments or suggestions. These are broken down in Table 5. 247 or 36% were complimentary of the park, the Park Service, or various concessionaires. 347 or 51% are classified as critical, and 88 or 13% as suggestions also broken down in Table 5. Of the 347 critical comments, 212 or 61% were in areas of Park Service responsibility; 106 or 31% were concession operations, and 29 or 8% were of a general nature.

It being human nature to complain more than compliment, the favorable comments are gratifying. Grand Canyon is a unique and awe inspiring spectacle; it is not surprising that 85 visitors wrote that their visit was most satisfying, or used such comments as magnificent, humbling, or tremendous.

Discussion

With a few exceptions, the critical comments or suggestions were offered in a constructive spirit. Careful analysis and consideration of them should help both the National Park Service and the concessionaires to do a better job of meeting visitor needs and protecting the park resources.

Complaints concerning Mather Campground should be carefully investigated. Next to the Fred Harvey lodges, it was the most used accommodation of those who responded to the survey. 26% of our overnight visitors stayed there. They generated 44 complaints. If investigation substantiates this, management should take immediate steps to improve the operation of this important facility. In addition to specific campground comments there were a number that complained about a lack of knowledge or understanding of the reservation system, and of campers turned away, then empty spaces at night due to "no shows." This ties in with the subject of our most numerous complaint--communication.

As grouped here, "communication" includes: inability to get advance information on the park; no knowledge of need for campground reservations; poor signing; poor explanations or inadequate material on park geology, ecology, rules, etc.; inadequate interpretation; poor and conflicting maps; no comprehensive brochure when entering; no widely circulated or posted list or schedule of activities, and similar complaints that seemed to indicate that visitors felt the Park Service could do more to make their visit both more informative and more pleasant.

Most complaints of concession operations centered on the quality of service. Since the concessionaires conduct continuing surveys on their operations, comments are only summarized in Table 5 to show the feelings expressed by our respondents who answered question 18.

The listings in Table 5 should give managers an opportunity to judge what steps they may take to improve or continue operations.

Comparisons With Earlier Surveys

Some of the earlier surveys, mentioned at the beginning of this paper, had questions similar to some of those in our questionnaire. Comparisons should be viewed very cautiously because wordings were different, the time and length of sample period varied, as did the sample methods.

Table 5. Comments made by 424 respondents under Question 18.

Favorable Comments Made by 188 Respondents

Compliment NPS staff	57
Canyon magnificent	43
Satisfied with visit	42
Compliment tram and its staff	29
Compliment concessions staff	29
Ranger talks good	17
North Rim very enjoyable	10
Mather Campground good	8
Mule trips great	3
Bright Angel campground good	2
Store great	2
Chopper fights great	2
Improved over 10 years	1
Phantom Ranch great	1
Park less crowded than in '82	1

Total	247
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Critical Comments or Suggestions in Areas of NPS Responsibility
Made by 188 Respondents

Poor information on park	78 ¹
Complaints of Mather Campground	44 ²
Objected to reservations	14
Park dirty	14
Shuttle or tram complaints	14
Repair roads, improve parking	13
Better lighting	12 ³
Park too commercialized	10
Poor Ranger attitude	6
North Rim complaints	5 ⁴
Raw sewage, Indian Gardens	1

Total	213
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Critical of Concessions Made by 48 Respondents

Service	57 ⁵
Restaurants too expensive	20
Poor information or misinformation	
from tour operators or advertisement	10
Objected to mule reservations	8
Object to mules	5
Souvenirs poor and too expensive	5
Phantom below standard	1

Total	106
-------	-----

Table 5 (continued)

General Criticism Made by 22 Respondents

Weather	6
Park crowded	5
Chopper too expensive	3
Hazy view	3
Many campground spaces not used	3
North Rim arcade noisy	2
Desert View Campgrnd. didn't collect fee	2
North Rim showers dirty	2
No handicapped facilities	1
Why \$4 to change travellers checks	2
Total	29

Suggestions Made by 58 Respondents

More camping especially on rim	15
More restrooms	12
A lower bar at overlooks to protect children	7
Need foreign language signs and employees	7
Mark travel time with distance on trails	6
More night activities	6
Rain roof at tram stops	4
Swim pool	3
Activate railroad	3
More information on Indians	3
Better airconditioning	3
More trails	2
More water on Bright Angel trail	2
More benches and picnic tables	2
Better transport to airport	2
Mailbox at V.C.	2
Other (1 each)	9
Total	88

1. Features not adequately explained, no information away from park, poor pamphlets, maps, etc., very poor signing within park.

2. Toilets dirty 17, more water points 7, noisy 3, drier broken 4, more showers or repair 11, rocks block campers 11.

3. 6 for roads, 6 for Indian Gardens.

4. No visitor center 3, more auto overlooks 2.

5. Food cold or poor 12, lodges too expensive 6, restaurants too expensive 20, staff unfriendly 4, Yavapai lodge below standard 4, Bright Angel bad 2, Service slow 7, room dirty 3.

Grand Canyon South Rim Usage Study - 1977

Arizona Department of Transportation

This survey was conducted from July 29 through August 4, 1977; however, only five days were sampled (Sunday through Thursday). About 500 questionnaires were returned, but less than that number responded to the questions covered below:

(1) Entrance used	<u>AZ TD</u>		<u>Underhill</u>	
	E Gate	S Gate	E Gate	S Gate
	162 - 44.6%	201 - 55.4%	92 - 14%	483 - 74%

actual attendance based on NPS summer statistics: E Gate, 18%; S Gate, 72%; Other, 10%

(2) Visit Tusayan Ruins

235 - 48.7%	118 - 18%
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Part of this difference can be accounted for by their high percentage of E Gate visitors. Of Underhill E Gate entrants, 28% visited Tusayan Ruins.

(3) Previous visits to Grand Canyon

106 - 29.2%	206 - 32%
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(4) Home or origin

Arizona	4.7%	8.3%
California	17.6%	13.8%
Rest of U.S.	66.9%	36.0%
Foreign	6.1%	41.8%
Unknown	4.7%	0.0

I have no explanation for the difference in foreign visitors. The Underhill-Fonken study showed about 33% of all summer visitors were non-U.S. (Underhill and Fonken 1983)

(5) Length of stay

1 day or less	246 - 67.7%	156 - 24.0%
2 days-1 night	54 - 14.8%	331 - 51.4%
2 nights	34 - 9.3%	107 - 16.6%
3 nights or more	22 - 6.1%	49 - 8.0%

Again, this information was asked for in very different ways.

1977 BOR Federal Estate Survey

105 visitors to Grand Canyon National Park were interviewed June 24-28, 1977

	<u>Fed. Estate</u>	<u>Underhill</u>
(1) Number in party:		
1	6%	11%
2	31%	29%
3	12%	10%
4	16%	15%
> 4	35%	37%

(2) Time in area:

1 day or less	36%	24%
1 night or more	64%	76%

(3) Previous visits:

0	88%	68%
1-2	11%	
3-5	0%	
> 5	1%	

The Federal Estate Survey asked number of visits in past 12 months. Underhill asked if ever before. The other 26% had visited more than a year ago.

(4) Satisfaction level:

+	95%	95%
-	5%	5%

Federal Estate asked, "Have you been satisfied with your experiences during your visit?" Underhill asked level of satisfaction with 14 activities they could do at Grand Canyon National Park.

(5) Activities done in park:

Sightsee	81%	view canyon	96%
Observe nature	55%	view fauna & flora	49%
Hiking	55%	day hike trails	40%

(6) Activities planned but not done

19%	24%
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(7) Suggestions to improve communications

6%	11%
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(8) Location of home:

Arizona	6.7%	8.3%
California	28.5%	13.8%
Other U.S.	60.0%	36.0%
Foreign	4.8%	41.8%

Grand Canyon Air Quality Survey, 1983

(mail back questionnaire, N = 1619)

The CSU questionnaire was given out at three overlooks; the Underhill questionnaire to parties leaving the gates.

	<u>CSU</u>	<u>Underhill</u>
(1) Size of party: 1	2%	11%
2	38%	29%
3	16%	10%
4	25%	15%
> 4	18%	37%

CSU didn't get any tour groups

(2) Length of stay:

1 day or less	47%	24.0%
2 days, 1 night	33%	51.4%
2 nights	12%	16.6%
3 nights or more	8%	8.0%

(3) Where stayed:

Lodge or motel	53%	58%
Camped in park	23%	30%
Camped outside park	23%	10%
Backpack camp	3%	2%

(4) Activities participated:

Viewing canyon	97%	96%
Tour visitor center	77%	48%
Visit Yavapai Museum	55%	42%
Visit Tusayan Ruins	41%	18%
Day hike trails	40%	40%
Park Naturalist talk	32%	14%
Evening campfire talk	11%	13%
Air tour	7%	18%

The previous backcountry surveys (Booster and Towler) had no comparable questions except backcountry users were generally more critical of air flights than South Rim visitors.

The Underhill-Fonken study was handed out to overnight foreign visitors. The only common questions were the composition of the visiting party or group and other parks visited.

	<u>U & F</u>	<u>Underhill</u>
(1) Party composition:		
Alone	5.0%	5.7%
Family	43.5%	56.8%
Friends	36.7%	25.8%
Family/friends	10.4%	6.5%
Fellow workers	1.7%	2.8%
Other	6.1%	2.3%
(2) Other parks visited: % of total reported visits		
Zion	14.7%	14.8%
Bryce	14.8%	13.2%
Yosemite	18.5%	12.4%
Yellowstone	2.9%	9.7%
Petrified Forest	6.4%	7.5%
Mesa Verde	9.1%	6.6%
Sequoia/Kings Canyon	8.3%	2.9%
Grand Teton	1.1%	2.8%
Glacier	0.4%	1.2%
Rocky Mountains	0.6%	3.1%
Other	23.2%	25.8%
	-----	-----
N	4737	858

As stated above, comparisons are dangerous because all of these surveys were for different purposes and were conducted differently. The 1977 Dept. of Transportation survey was just of the East Rim Drive. The 1977 Federal estate sampled only 105 people; it was part of a much larger survey that covered 159 federal areas. The CSU survey was designed to evaluate perceptions of air quality. The questionnaires were given only to parties that visited three overlooks (Moran Point, Hopi Point, and Yaki Point). The Underhill-Fonken survey was of overnight foreign visitors.

The current survey sought to sample all visitors to the South Rim as they left the park. A smaller sample of North Rim visitors was also included. The number of questionnaires distributed was approximately the same ratio as the number of summer visitors leaving the three main gates (South, East, and North).

Cross Tabulations

A number of cross tabulations were run on the questionnaire data. Those that are felt to be of any significance are summarized here.

Point of entry had some impact on the activities done in the park (see Table 6). For viewing the canyon, buying souvenirs, studying geology and overnight backpacking there were no significant differences between entrances. However, as one might expect, airport visitors, a category that included many 3-hour tours, were significantly lower participants in day hiking, touring with Ranger, visiting Tusayan ruin, evening campfire talks, viewing wildlife and flora, touring visitor center, and riding the shuttle.

North Gate departees quite logically reported a lower percentage of visits to Tusayan ruin, eating at concession, visiting Yavapai Museum, evening campfire talks, and riding the shuttle.

East Gate departees were significantly above the average for: day hiking Ranger tours, Tusayan ruin visits, concession eating (not significant), geology study (not significant), visiting Yavapai Museum, evening campfire talks, overnight backpacking (not significant), viewing wildlife and flora (minor significance), touring the visitor center, and riding the shuttle. One might almost say they came closest to the National Park Service ideal as far as activities they participated in.

275 of the visitors reporting visited Yavapai Museum. 310 of the visitors reporting visited the Visitor Center. Of those who visited Yavapai, 105 did not tour the Visitor Center. Of those who toured the Visitor Center, 140 did not visit the Yavapai Museum. 170 of the 650 visitors reporting indicated they visited both Yavapai and the Visitor Center.

What visitors do is linked somewhat to how long their visit to the park lasts. Table 7 plots activities participated in against length of stay. As can be seen, viewing the canyon--the reason most people are there--is not affected by length of stay. Also eating at a concession shows little change in relation to length of visit. Among one day visitors (again including the 3-hour tours on the Harvey bus from the airport) only 35% rode the shuttle. Visitors who stayed longer about doubled this figure. For all the other activities, the percent of respondents participating increased as the length of stay increased. A corollary of this is that the number of different activities participated in during the park visit also increased with length of stay.

There was very little difference between those visiting the park for the first time and those on repeat visits in terms of the activities pursued. Participation was almost identical for viewing the canyon, day hiking, buying souvenirs, eating at concessions, and studying geology. Repeat visitors had a slightly higher percentage of participation in touring with ranger--4.1%, visiting Tusayan ruin--4.3%, evening campfire talks--6.6%, overnight backpacking--4.6%, viewing wildlife and flora--9.3%, and touring visitor center--6.4%. First time visitors participated 5.8% more in visits to Yavapai Museum and in riding the shuttle. The only differences with statistical significance are that repeat visitors tend to participate more in the Park Service sponsored activities.

Table 6. Activities participated in/point of entry

	Totals		S. Gate Departees		Airport Departees		E. Gate Departees		N. Gate Departees	
Totals	647	100%	423	65%	60	9%	92	14%	72	11%
View Canyon	622	96%	413	98%	56	93%	87	95%	72	100%
Day hike trails	258	40%	169	40%	8	13%	53	58%	27	38%
Buy souvenirs	402	62%	267	63%	37	62%	57	62%	39	54%
Tour with Ranger	90	14%	50	12%	6	10%	25	27%	9	12.5%
Visit Tusayan R.	118	18%	81	19%	6	10%	24	26%	7	10%
Eat at Concession	350	54%	220	63%	35	58%	62	67%	31	43%
Study Geology	149	23%	91	22%	12	20%	26	28%	17	24%
Visit Yavapai Museum	275	42%	182	43%	30	50%	49	53%	11	15%
Evening campfire talks	85	13%	55	13%	2	3%	22	24%	6	8%
Overnight back packing	40	6%	27	6%	4	7%	7	8%	2	3%
View wildlife or flora	319	49%	208	49%	12	64%	52	57%	46	64%
Tour visitor center	310	48%	206	49%	17	28%	55	60%	29	40%
Ride shuttle	362	56%	258	61%	23	38%	66	72%	13	18%
Other	75	12%	49	12%	5	8%	11	12%	10	14%

Table 7. Activities participated in/length of stay.

	1 day		2 days		3 days		4 days		5-9 days		Total	
View canyon	225	97%	252	98.8%	99	92.5%	20	100%	28	100%	624	96.0%
Day hike trails	160	25.9%	107	42 %	64	59.8%	12	60%	15	53.6%	258	39.8%
Buy souvenirs	130	56%	164	64.3%	70	65.4%	13	65%	20	71.4%	397	61.8%
Tour with Ranger	15	6.5%	36	14.1%	30	28 %	5	25%	4	14.3%	90	14 %
Visit Tusayan R.	24	10.3%	55	21.6%	27	25.2%	7	35%	5	17.8%	118	18.4%
Eat at Concession	104	44.8%	163	46.6%	51	47.7%	14	70%	13	46.4%	350	54.5%
Study geology	40	14.2%	54	21.2%	38	35.5%	6	30%	11	39.3%	149	23.3%
Visit Yavapai Museum	66	28.4%	110	43.1%	61	57%	16	80%	19	67.9%	272	42.4%
Evening campfire talks	9	3.9%	25	9.8%	32	29.9%	9	45%	10	35.7%	85	13.2%
Overnight backpack	9	3.9%	8	3.1%	13	12.1%	5	25%	5	17.9%	40	6.2%
View wildlife and flora	89	38.4%	130	51 %	65	60.7%	16	80%	17	60.7%	317	49.4%
Tour visitor center	90	38.8%	123	48.2%	61	57 %	13	65%	18	64.3%	305	47.5%
Ride shuttle	81	34.9%	161	63.1%	80	74.8%	14	70%	21	75 %	357	55.6%
Other	17	7.3%	35	13.7%	16	15 %	2	10%	5	17.8%	75	11.7%
Total visitors by stay	232		255		107		20		28		642	

Activities participated in at the park were analyzed by the visitor's place of residence. We used five main areas: California, Arizona, Rest of United States, All of United States, and Foreign Country. Foreign Country was broken down to eleven countries and other. There were no significant differences in participation rates between these groupings for viewing the canyon, studying geology, visiting Yavapai Museum, overnight backpacking, and riding the shuttle.

For day hiking trails, the percentage of participation by category was: all respondents--40%, all U.S.--42%, California--51%, Arizona--43%, Rest of U.S.--38%, Foreign Countries--37%, Japanese--15%, French--68%. The differences that are statistically significant are California, Japan, and France. Why the Californians and French reported more day hiking is anybody's guess. The low Japanese participation is probably due to the large percentage of Japanese on 3-hour bus tours of the park with little or no opportunity to hike.

There was little difference in buying souvenirs except that the Germans and French were 10% below and Japanese 14% above. These national differences are not statistically significant.

There are some statistically significant differences in participation in Park Service sponsored activities, especially as they relate to foreign visitors. 14% of all respondents toured with a ranger; for U.S. residents the participation rate was 19%; for foreign visitors it was 7%. We assume this was the result of the language barrier, because 14% of British, Canadians and Australians toured, dropping the percentage of non-English language nationals to 6%.

Much the same holds true for visiting Tusayan ruin and touring the visitor center. 24% of U.S. visitors reported visiting Tusayan ruin; for foreign visitors it fell to 11% with only 6% of the French and 1.4% of the Japanese reporting they participated in this activity. Touring the visitor center was reported by 56% of the U.S. respondents, but by only 35% of foreign visitors. Again, British, Canadian, and Australian visitors reported 54%; their removal lowered participation by non-English speaking countries to 32%. Visiting Yavapai Museum apparently was not affected by language. This may very well be because it offers such magnificent views of the canyon.

Eating at a concession was pretty uniform across groups. 54% for all reporting, but only 46% for U.S. citizens other than Arizona and California. This is of borderline significance statistically, but why is difficult to say.

The only significant difference in viewing wildlife and flora was for the Japanese--reporting 23% participations compared to 52% of all others. Again this is probably accounted for by the large number of Japanese on 3-hour tours.

Members of organized tour groups were compared to non-tour visitors with regards to participated activities. There were no significant differences between the two groups for viewing the canyon, buying souvenirs, studying geology, visiting Yavapai Museum, overnight backpacking, and riding the shuttle. A significantly greater percentage of tour participants ate at concessions (67.4%) than other visitors (51.5%), probably because most of them didn't camp or have access to other food sources. For the other reported activities, non-tour party members recorded higher participation rates in day hike trails, 41.4%/30.5%; tour with ranger, 14.7%/9.5%; visit Tusayan ruin, 19.1%/12.6%; evening campfire talks, 14.3%/6.3%; view wildlife and flora, 51.7%/34.7%, and tour visitor center, 49.9%/31.6%.

Activities by party make-up were compared. The number reporting in each group are: Family 337, Friends 152, Workers, Workers & Friends, and Workers and Family 31, and Family and Friends 39. The only significant differences were that family groups were less likely to day-hike; families and families and friends toured the visitor center in higher proportion; groups of friends and of family and friends were more likely to backpack overnight; and groups of friends participated significantly less in ranger tours, Tusayan ruin visits, and campfire talks.

Activities planned but not participated in were analyzed by geographic origin of the visitor, i.e., California, Arizona, Rest of U.S., total U.S., and Foreign Visitor. Only 9% of Arizonans planned activities they did not do; for the rest it was California 23%, Rest of U.S. 26%, and Foreign Visitors 27%. Significantly more foreigners had planned to backpack, hike trails, ride mules, and raft than had U.S. visitors. Other than these, there are no significant differences between geographic origin of respondents.

There appears to be no significant difference in length of stay between the geographic areas measured.

A significantly larger percentage of foreign visitors did not stay overnight in the park or its vicinity. Of the 159 visitors who said they did not spend a night there, 88 or 56% were foreigners. Expressed another way, 71 or 19% of 378 U.S. citizens did not spend a night while 88 or 32% of the foreign visitors did not. Table 8 gives park lodging by visitors' geographic origin. The only significant differences are the higher percentage of foreigners using the Harvey lodges and the lower percentage using Mather Campground.

Table 8. Lodging place by geographic origin.

	Calif.		Ariz.		Rest of U.S.		All U.S.		Foreign Country		All Respondents	
Did not stay at park	17	19%	7	13%	47	20%	71	19%	88	32%	159	24%
South Rim Lodges	24	33%	16	34%	68	36%	108	35%	88	48%	196	40%
Tusayan Motel	2	3%	1	2%	9	5%	12	4%	6	3%	19	4%
North Rim Lodge	4	5%	3	6%	12	6%	19	6%	9	5%	28	6%
Hostel in park	1	1%	0	0%	4	2%	5	1.6%	9	5%	14	3%
Camper Village Tusayan	1	1%	1	2%	8	4%	10	3%	5	3%	15	3%
Mather Campground	29	40%	13	28%	48	26%	90	29%	37	20%	127	26%
Desert View Campground	1	1%	1	2%	5	2.6%	7	2%	3	1.6%	10	2%
North Rim Campground	0	0%	2	4%	5	2.6%	7	2%	2	1%	9	2%
Ten-X Campground	1	1%	2	4%	3	1.6%	6	2%	1	0.5%	7	1%
Backpack Camp	2	3%	0	0%	3	1.6%	5	1.6%	7	4%	12	2%
Trailer Village in park	3	4%	2	4%	4	2%	9	3%	0	0%	9	2%
Other	5	7%	6	13%	18	9.6%	29	9%	17	9%	46	9%
Stayed at park	73	81%	47	87%	187	80%	307	81%	184	68%	491	76%

Respondents from tour groups were compared to private parties as to whether or not they had visited other parks. 92 members of tour groups responded; 60 or 65% had visited other parks. 544 respondents reported they were not in tour groups. 314 of these or 58% reported they had visited other parks. This difference, while possibly real, is below the statistically significant level.

Visits to other parks was checked by the composition of the party. There were slight differences between the six categories, but none was significant. Of the 3 largest categories, 62% of Family groups, 53% of Friend groups, and 55% of Family and Friends reported visiting other parks.

Visits to other parks was also cross-checked against method of transportation. 197 or 58% of the 339 reporting private transportation visited other parks; 61 or 48% of the 128 using public transportation reported other park visits, and 75 or 76% of the 98 using rented vehicles reported other park visits. All of these differences are significant. (Interesting to know, but not very useful.)

As indicated earlier, open-ended comments to question 18 were classified as favorable or unfavorable. The latter were broken down between the Park Service, the concessionaire, the visiting public, and other (weather, haze, etc.). Unfavorable comments were cross-tabbed against entrance used, whether or not it was a first visit, home location, and party make-up. There was very little difference between any of these. Among foreign nationals, the Japanese were slightly less critical of the Park Service and of the park in general, but it is barely significant. Those who had visited other parks were significantly more critical of the Park Service and significantly less critical of the concessionaires than those who had not visited other parks (see Table 9 below).

Table 9. Critical comments by those who had and those who had not visited other parks.

Critical of:	Visited other parks		Not visited other parks	
Park Service	85	60%	42	47%
Concessionaires	44	31%	37	41%
Public	1	1%	2	2%
Other	12	8%	9	10%

Slightly more foreigners used the tram than U.S. nationals--149 or 58% of 256 who answered. For the U.S. it was 200 out of 370 or 54%. Of the three nations with 60% of the foreign visitors, there were significant differences in the use of the tram: Germans - 39 or 71% of 55, French - 28 or 85% of 33, and Japanese - 28 or 42% of 66.

The further away the visitors' home, the more likely they were to take a scenic flight over the canyon. 8 or 6% out of 142 Arizonans and Californians took flights. 27 or 12% of 234 other U.S. citizens flew. 80 or 30.4% of 263 foreign visitors answering this question took overflights. Foreign nationals broke down as follows: Germans - 22 or 39% of 57, English - 6 or 31%, Canadians - 2 or 20% of 10, French - 10 or 29% of 34, Japanese - 18 or 25% of 42, Australians - 4 or 57% of 7, Dutch - 0 of 6, Belgians - 3 or 30% of 10, Italians 1 or 20% of 5, Swedish and Dutch - 1 of 5 or 20%, others 14 of 42 or 33%.

The geographic origin of respondents on the future of flying over the canyon is summarized in Table 10. By far the most significant conclusion is the overwhelming percentage of all reporting visitors who favor continuing or expanding flights over the canyon. Actually there are few significant differences between groups. No Arizonans favored expanding the number of flights and a significantly higher percentage of Arizonans (24%) favored stopping overflights. The only other significant figure in Table 10 is that a significantly larger percentage of foreign nationals favored more flights.

The 3 nations with the most respondents expressing opinions: Germans (42), French (29), and Japanese (43) are compared in Table 11.

Significantly more Germans felt flights should be stopped and the total of Germans favoring overflights is significantly lower than other visitor groups except for Arizonans. Significantly more French felt flights should be expanded. Significantly more Japanese favored overflights. I leave the interpretation of these differences between Asians, Americans, and certain Europeans to the cultural sociologists.

Table 10. Future of flying over the canyon.

	Californians		Arizonans		Rest of U.S.		All U.S.		Foreign Countries		Total	
No. with Opinions	60		34		146		240		179		419	
	N	%	N	%	N	%	N	%	N	%	N	%
Continue flights	50	83	26	76	117	80	193	80	136	76	329	79
Expand flights	2	3	0	0	8	5	10	4	19	11	29	7
Total favoring flights	52	86	26	76	125	85	203	84	155	87	358	86
Stop flights	8	13	8	24	21	14	37	15	24	13	61	15
Don't know (not included above)	14		10		48				50		122	

Table 11. Opinions on overflights by Germans, French, and Japanese.

	Germans		French		Japanese		All Foreign Countries	
Number of Opinions	42		29		43		179	
Continue flights	28	66%	18	62%	35	81%	136	76%
Expand flights	2	5%	7	24%	5	12%	19	11%
Total favor flights	30	71%	25	86%	40	93%	155	87%
Stop flights	12	29%	4	14%	3	7%	24	13%
Don't know	8		3		11		50	

Conclusions and Recommendations

The National Park Service mission at Grand Canyon, as elsewhere, is: (1) to preserve and protect the unique resource for which the park was established, and (2) to manage it for the enjoyment of present and future generations. This survey is primarily concerned with the second half of that mission.

The results clearly demonstrate that everyone (97%) who comes to Grand Canyon views the canyon, and is awed and inspired by the spectacle. Participation in other activities drops to 62% buying souvenirs, 65% riding shuttle, 54% eating at concessions. For traditional National Park Service sponsored activities, participation is much lower: view wildlife and flora 49%, tour visitor center 58%, visit Yavapai Museum 42%, day hike trails (including Rim Trail) 40%, study geology 23%, visit Tusayan ruin 18%, tour with ranger 14%, evening campfire talks 13%, and backpack 6%.

The great majority of respondents favored continuing the tram and were willing to pay for it.

Over 85% of all respondents favored continuing scenic overflights of the canyon.

When commenting on their visit, a significantly larger percentage of persons who had visited other parks criticized areas of National Park Service responsibility than did those who only visited Grand Canyon. The reverse was true of criticisms in the area of concessionaire responsibility.

Approximately 2/3 of all respondents offered open-ended comments. Two hundred and forty-seven were favorable, 436 were critical or suggested improvements. Two hundred and thirteen critical comments were in areas of National Park Service responsibility; 106 were critical of concession operations.

Mather Campground, second most used overnight facility, drew a number of complaints.

The broad area of communication was often criticized: hard to get advance information, no knowledge of reservation systems, inadequate maps and brochures, poor signing in park, faulty information from tour operators, and similar comments on information exchange. See text for details.

Many foreign nationals (from 1/3 to 40% of summer visitors) have a language barrier and participate in fewer park activities. They also have less advance information about the park.

Surveys of this kind are inexpensive and can provide management with better information on what their visitors do, how satisfied they are, and how they can increase visitor education and enjoyment.

It is recommended that park management:

- 1. Review Mather Campground operation and if complaints are justified, take steps to correct.**
- 2. Consider hiring foreign students or U.S. students with language capabilities for summer interpretive jobs.**
- 3. Form a committee, including concession representatives, to review and make recommendations in the whole area of communications (advertising, advance information sources, brochures, maps, signing, etc.).**
- 4. Have staff review this survey carefully, including the raw replies, so they can get a feeling toward public reaction to the park's programs. Grand Canyon is such a tremendous experience that there appears to be a tendency to let it speak for itself.**

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Appendix 2

Raw Results, Grand Canyon Questionnaires, August 1983
654 Questionnaires returned, 2228 issued.

Question 1.	Park Activity		Level of Satisfaction						Reason DS*		
	N	%	HS		S		N		DS		No. Replies
1. View canyon	622	96	511	82%	97	16%	5	1%	8	1%	38
2. Day-hike trails	258	40	166	64%	73	28%	5	2%	6	2%	29
3. Buy souvenirs	402	62	113	28%	157	39%	93	23%	24	6%	31
4. Tour w/ranger	90	14	54	60%	23	26%	6	7%	5	6%	10
5. Visit Tusayan Ruin	118	18	35	30%	47	40%	24	20%	8	7%	15
6. Eat at Conces.	350	54	81	23%	128	32%	78	22%	47	13%	58
7. Study geology	149	23	77	52%	44	30%	16	11%	7	5%	10
8. Visit Yavapai Museum	275	42	101	37%	113	41%	44	16%	8	3%	24
9. Eve. campfire talks	85	13	37	44%	33	39%	5	6%	6	7%	8
10. Overnight backpack	40	6	23	58%	8	20%	2	5%	2	5%	7
11. View wildlife and flora	319	49	136	43%	123	39%	33	10%	12	4%	38
12. Tour visitor center	310	48	117	38%	139	45%	31	10%	11	4%	18
13. Ride shuttle	362	56	169	47%	123	34%	33	9%	21	6%	37
14. Other	75	12%							10	13%	16

* See text

N = number, HS = highly satisfied, S = satisfied, N = neutral, DS = dissatisfied

Question 2. Planned activities not done

Reasons

	N
1. View Canyon	0
2. Day-hike trails	26
3. Buy souvenirs	2
4. Tour w/ranger	4
5. Visit Tusayan ruin	0
6. Eat at concession	1
7. Study geology	2
8. Visit Yavapai Mus.	1
9. Evening campfire talks	0
10. Overnight backpack	14
11. View wildlife & flora	2
12. Tour visitor center	15
13. Ride shuttle	8
14. Other	86

See text

Question 3. Did you use tram? Yes 350 56%; No 277 44%

Question 4. Should Grand Canyon National Park:

- a. Add \$1.00 to park entrance fee to pay for tram? 333 - 55%
- b. Sell tram ticket at \$2 to \$3? 181 - 30%
- c. Abolish tram? 16 - 3%
- d. Don't know 79 - 12%

Question 5a. Did you take a sightseeing flight over the canyon? Yes 115 18%;
No 525 82%

b. Flights over canyon should be:

1. continued	329	61%	79%
2. stopped	61	11%	15%
3. expanded	29	5%	7%
4. Don't know	122	23%	

Total 541

Question 6. Date of arrival: All between 1 August and 15 September

Question 7. Time of arrival: Not analyzed

Question 8. How many days did you spend in the park?

1 -	232	37%
2 -	255	40%
3 -	107	17%
4-7 -	49	6%

Question 9. Did you spend one or more nights in the park or immediate vicinity?

Yes	492	76%
No	153	24%
No answer	5	

Question 10. If yes, where: No answer 158

a. Lodge or motel on S. Rim	196	40%
b. Lodge or motel in Tusayan	18	4%
c. North Rim Lodge	28	6%
d. Hostel within park	14	3%
e. Camper Village (Tusayan)	15	3%
f. Trailer Village (in park)	9	2%
g. Mather Campground	127	26%
h. Desert View Campground	10	2%
i. North Rim Campground	9	2%
j. Ten-X Campground	7	1%
k. Backpack camp	12	2%
l. Other	46	9%

Question 11. Was this your first visit to Grand Canyon National Park?

Yes	444	68%;	No	206	32%
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Question 12 & 13. Did you visit other national parks on this trip?

Yes	400	63%;	No	240	37%. See text
No answer	10				

858 visits reported to 49 units: Zion, Bryce, Yosemite, Yellowstone, Petrified Forest, and Mesa Verde accounted for 550 or 64% of visits.

Question 14. What is your zip code or country?

Arizona	54	8.3%	German	59	21.7% of foreign
California	90	13.8%	English	20	7.3%
Rest of U.S.	234	36 %	Canadian	10	3.7%
Foreign coun.	272	42 %	French	34	12.5%
			Japanese	73	26.8%
			Australian	7	2.6%
			Dutch	6	2.2%
			Belgian	10	3.7%
			Italian	6	2.2%
			Swedish	4	1.5%
			Other	44	15.9%

Question 15. Are you with a tour group? Yes 96 15%; No 550 85%
No answer 4

Size	10-20	20	30%
	21-30	47	49%
	31-40	15	16%
	41-50	5	5%

Size of non-tour groups:

1	34	13%
2	109	41%
3	37	14%
4	55	21%
5	20	7%
6	6	2%
7	3	1%
8	4	1%

Question 16. Party make-up:

Family	337	60.3%
Friends	152	27.2%
Fellow workers	17	3 %
Family & fellow workers	7	1.2%
Friends & fellow workers	7	1.2%
Family and friends	39	7 %
No answer	91	

Question 17. Means of travel to park:

a. private vehicle	343	54%
b. public transportation	132	21%
c. rented vehicle	99	16%
d. other	62	9%
No answer	14	

Question 18. Open ended comments (see text).

Wrote something	424	65%
Blank	226	35%
Favorable comment	188	44%
Suggestions or critical comments	236	56%
Critical of NPS	127	54%
Concessions	88	35%
Public	3	1%
Other	23	10%