

National Visitor Use Monitoring Results

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**USDA Forest Service
Region 3**

SANTA FE NATIONAL FOREST

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National Visitor Use Monitoring Project

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Table of Contents

INTRODUCTION.....	1
Scope and purpose of the National Visitor Use Monitoring project	1
Definition of Terms	2
CHAPTER 1: SAMPLE DESIGN AND IMPLEMENTATION.....	3
The NVUM Process and Definition of Terms.....	3
Constraints on Uses of the Results	4
The Forest Stratification Results	5
Table 1. Population of available site days for sampling and percentage of days sampled by stratum on Santa Fe National Forest.	5
CHAPTER 2: VISITATION ESTIMATES	6
Visitor Use Estimates	6
Table 2. Annual Santa Fe National Forest recreation use estimate.....	6
Table 3. Number of last-exiting recreation visitors by site type and form type 1/.....	6
Description of Visitors	7
Table 4. Gender distribution of Santa Fe NF recreation visitors.....	7
Table 5. Age distribution of Santa Fe NF recreation visitors.....	7
Table 6. Race/ethnicity of Santa Fe NF recreation visitors.....	7
Table 7. Most common zip codes of Santa Fe NF recreation visitors.....	8
Average number of people per vehicle and average axle count per vehicle in survey.....	8
CHAPTER 3: WILDERNESS VISITORS	9
Table 8. Age distribution of Santa Fe NF Wilderness visitors.....	9
Table 9. Race/ethnicity of Santa Fe NF Wilderness visitors.....	9
Table 10. Most common zip codes of Santa Fe NF Wilderness visitors.....	10
Table 11. Satisfaction of Santa Fe NF Wilderness Visitors.	11
CHAPTER 4: DESCRIPTION OF THE VISIT.....	12
Table 12. Site visit length of stay (in hours) by site/type on Santa Fe NF.....	12
Table 13. Santa Fe NF activity participation and primary activity	13
Use of constructed facilities and designated areas	14
Table 14. Percentage use of facilities and specially designated areas on Santa Fe NF.....	14
Economic Information.....	15
This trip away from home	15
Table 15. Substitute behavior choices of Santa Fe NF recreation visitors.....	15
Average annual outdoor recreation activity	15
Table 16. Annual recreation spending for visitors to the Santa Fe NF	16
Visitor Satisfaction Information.....	17
Table 17. Satisfaction of Santa Fe NF recreation visitors at Developed Day Use sites.....	18
Table 18. Satisfaction of Santa Fe NF recreation visitors at Developed Overnight sites	19
Table 19. Satisfaction of Santa Fe NF recreation visitors in General Forest Areas.....	20
Crowding	21
Table 20. Perception of crowding by Santa Fe NF recreation visitors by site type (percent site visits)....	21
Other comments from visitors	22
Table 21. List of comments received from Santa Fe NF recreation visitors	22

INTRODUCTION

Scope and purpose of the National Visitor Use Monitoring project

The National Visitor Use Monitoring (NVUM) project was implemented as a response to the need to better understand the use and importance of and satisfaction with national forest system recreation opportunities. This level of understanding is required by national forest plans, Executive Order 12862 (Setting Customer Service Standards), and implementation of the National Recreation Agenda. To improve public service, the agency's Strategic and Annual Performance Plans require measuring trends in user satisfaction and use levels. It will assist Congress, Forest Service leaders, and program managers in making sound decisions that best serve the public and protect valuable natural resources by providing science based, reliable information about the type, quantity, quality and location of recreation use on public lands. The information collected is also important to external customers including state agencies and private industry. NVUM methodology and analysis is explained in detail in the research paper entitled: Forest Service National Visitor Use Monitoring Process: Research Method Documentation; English, Kocis, Zarnoch, and Arnold; Southern Research Station; May 2002 (<http://www.fs.fed.us/recreation/programs/nvum>).

In conjunction with guidelines and recommendations from the Outdoor Recreation Review Commission, the USDA-Forest Service has estimated recreation use and maintained records since the 1950s. Many publications on preferred techniques for estimating recreation use at developed and dispersed recreation sites were sponsored by Forest Service Research Stations and Universities. Implementation of these recommended methodologies takes specific skills, a dedicated work force, and strict adherence to an appropriate sampling plan. The earliest estimates were designed to estimate use at developed fee recreation facilities such as campgrounds. These estimates have always been fairly reliable because they are based upon readily observable, objective counts of items such as a fee envelope.

Prior to the mid-1990s, the Forest Service used its Recreation Information Management (RIM) system to store and analyze recreation use information. Forest managers often found they lacked the resources to simultaneously manage the recreation facilities and monitor visitor use following the established protocols. In 1996, the RIM monitoring protocols were no longer required to be used.

In 1998 a group of research and forest staff were appointed to investigate and pilot a recreation sampling system that would be cost effective and provide statistical recreation use information at the forest, regional, and national level. Since that time, a permanent sampling system (NVUM) has been developed. Several Forest Service staff areas including Recreation, Wilderness, Ecosystem Management, Research and Strategic Planning and Resource Assessment are involved in implementing the program. A four-year timeframe of data collection was established for the first sampling cycle, and a five-year timeframe for succeeding cycles. The first sampling cycle was completed in September 2003. The second sampling cycle begins October 2004. This ongoing monitoring effort will provide quality recreation information needed for improving citizen centered recreation services.

This data can be very useful for forest planning and decision making. The information provided can be used in economic efficiency analysis that requires providing a value per National Forest Visit. This can then be compared to other resource values. The description of visitor characteristics (age, race, zip code, activity participation) can help the forest identify the type of recreation niche they fill. The satisfaction information can help management decide where best to place limited resources that would result in improved visitor satisfaction. The economic expenditure information can help forests show local communities the employment and income effects of tourism from forest visitors. In addition, the credible use statistics can be helpful in considering visitor capacity issues.

Definition of Terms

NVUM has standardized definitions of visitor use measurement to ensure that all national forest visitor measurements are comparable. These definitions are basically the same as established by the Forest Service since the 1970s, however the application of the definition is stricter. Visitors must pursue a recreation activity physically located “on” Forest Service managed land in order to be counted. They cannot be passing through; viewing from non-Forest Service managed roads, or just using restroom facilities. The NVUM basic use measurements are *national forest visits* and *site visits*. Along with these use measurements basic statistics, which indicate the precision of the estimate, are given. These statistics include the error rate and associated confidence intervals at the 80 percent confidence level. The definitions of these terms follow.

National forest visit - the entry of one person upon a national forest to participate in recreation activities for an unspecified period of time. A national forest visit can be composed of multiple site visits.

Site visit - the entry of one person onto a national forest site or area to participate in recreation activities for an unspecified period of time.

Recreation trip – the duration of time beginning when the visitor left their home and ending when they got back to their home.

Confidence level -- defines the degree of certainty that a range of values contains the true value of what is being estimated. For example, an 80% confidence level refers to the range of values within which the true value will fall 80% of the time. Higher confidence levels necessarily cover a larger range of values.

Confidence interval width (also called error rate) - these terms define the reliability of the visit estimates. The confidence level defines the desired level of certainty. The size of the interval that is needed to reach that level of certainty is the confidence interval width. The confidence interval width is expressed as a percent of the estimate and defines the upper and lower bounds of the confidence interval. The smaller the confidence interval, the more precise is the estimate. An 80 percent confidence level is very acceptable for social science applications at a broad national or forest scale. For example: There are 205 million national forest visits plus or minus 3 percent at the 80 percent confidence level. In other words we are 80 percent certain that the true number of national forest visits lies between 198.85 million and 211.15 million.

CHAPTER 1: SAMPLE DESIGN AND IMPLEMENTATION

The NVUM Process and Definition of Terms

To participate in the NVUM process, forests first categorized all recreation sites and areas into five basic categories called “site types”: Day Use Developed Sites (DUDS), Overnight Use Developed Sites (OUDS), Wilderness, General Forest Areas (GFA), and View Corridors (VC). Only the first four categories are considered “true” national forest visits and were included in the estimate provided. Within these broad categories (called site types) every open day of the year for each site/area was rated as high, medium or low last exiting recreation use. Sites/areas that are scheduled to be closed or would have “0” use were also identified. Each day on which a site or area is open is called a site day and is the basic sampling unit for the survey. Results of this forest categorization are shown in Table 1.

A map showing all General Forest Exit locations and View Corridors was prepared and archived with the NVUM data for use in future sample years. NVUM also provided training materials, equipment, survey forms, funding, and the protocol necessary for the forest to gather visitor use information.

NVUM terms used in the site categorization framework are defined below:

Site day - a day that a recreation site or area is open to the public for recreation purposes.

Site types -- stratification of a forest recreation site or area into one of five broad categories as defined in the paper: Forest Service National Visitor Use Monitoring Process: Research Method Documentation, May 2002, English et al. The categories are Day Use Developed sites (DUDS), Overnight Use Developed Sites (OUDS), General Forest Areas (GFA), Wilderness (WILD), and View Corridors (VC). Another category called Off-Forest Recreation Activities (OFRA) was categorized but not sampled.

Proxy – information collected at a recreation site or area that is related to the amount of recreation visitation received. The proxy information must pertain to all users of the site, it must be an exact tally of use and it must be one of the proxy types allowed in the NVUM pre-work directions (fee receipts, fee envelopes, mandatory permits, permanent traffic counters, ticket sales, and daily use records).

Nonproxy – a recreation site or area that does not have proxy information. At these sites a 24-hour traffic count is taken to measure total use for one site day at the sample site.

Use level strata - for either proxy or nonproxy sites, each day that a recreation site or area was open for recreation, the site day was categorized as either high, medium or low last exiting recreation traffic, or closed. Closed was defined as either administratively closed or “0” use. For example Sabino Picnic Area (a DUDS nonproxy site) is closed for 120 days, has high last exiting recreation use on open weekends (70 days) and medium last exiting recreation use on open midweek days (175 days). This accounts for all 365 days of the year at Sabino Picnic area. This process was repeated for every developed site and area on the forest.

Constraints on Uses of the Results

The information presented here is valid and applicable at the forest level. It is not designed to be accurate at the district or site level. The quality of the visitation estimate is dependent on the preliminary sample design development, sampling unit selection, sample size and variability, and survey implementation. First, preliminary work conducted by forests to classify sites consistently according to the type and amount of visitation influences the quality of the estimate. Second, visitors sampled must be representative of the population of all visitors. Third, the number of visitors sampled must be large enough to adequately control variability. Finally, the success of the forest in accomplishing its assigned sample days, correctly filling out the interview forms, and following the sample protocol influence the error rate. The error rate will reflect all these factors. The smaller the error rate, the better the estimate. Interviewer error in asking the questions is not necessarily reflected in this error rate.

Large error rates (i.e. high variability) in the national forest visit (NFV), site visit (SV) and Wilderness visit estimates is primarily caused by a small sample size in a given stratum (for example General Forest Area low use days) where the use observed was beyond that stratum's normal range. For example, on the Clearwater National Forest in the General Forest Area low stratum, there were 14 sample days. Of these 14 sample days, 13 days had visitation estimates between 0-20. One observation had a visitation estimate of 440. Therefore, the stratum mean was about 37 with a standard error of 116. The 80% confidence interval width is then 400% of the mean, a very high error rate (variability). Whether these types of odd observations are due to unusual weather, malfunctioning traffic counters, or a misclassification of the day (a sampled low use day that should have been categorized as a high use day) is unknown. Eliminating the unusual observation from data analysis could reduce the error rate. However, the NVUM team had no reason to suspect the data was incorrect and did not eliminate these unusual cases.

The descriptive information about national forest visitors is based upon only those visitors that were interviewed. If a forest has distinct seasonal use patterns and activities that vary greatly by season, these patterns may or may not be adequately captured in this study. This study was designed to estimate total number of people during a year. Sample days were distributed based upon high, medium, and low exiting use days, not seasons. When applying these results in forest analysis, items such as activity participation should be carefully scrutinized. For example, although the Routt National Forest had over 1 million skier visits, no sample days occurred during the main ski season; they occurred at the ski area but during their high use summer season. Therefore, activity participation based upon interviews did not adequately capture downhill skiers. This particular issue was adjusted. However, the same issue- seasonal use patterns- may still occur to a lesser degree on other forests. Future sample design will attempt to incorporate seasonal variation in use.

Some forest visitors were counted and included in the total forest use estimate but were not surveyed. This included visitors to recreation special events and organization camps.

The Forest Stratification Results

The results of the recreation site/area stratification and sample days accomplished by this forest are displayed in Table 1. This table describes the population of available site days open for sampling based on forest pre-work completed prior to the actual surveys. Every site and area on the forest was categorized as high, medium, low, or closed last exiting recreation use. This stratification was then used to randomly select sampling days for this forest. The project methods paper listed on page one describes the sampling process and sample allocation formulas in detail. Basically, at least eight sample days per stratum are randomly selected for sampling and more days are added if the stratum is very large. Also displayed on the table is the percentage of sample days per stratum accomplished by the forest.

Table 1. Population of available site days for sampling and percentage of days sampled by stratum on Santa Fe National Forest.

Site type	TYPE	SAMPLING STRATUM	# DAYS SAMPLED	# DAYS IN POPULATION	SAMPLING RATE
DUDS	NONPROXY	HIGH	13	145	8.97
DUDS	NONPROXY	MEDIUM	16	539	2.97
DUDS	NONPROXY	LOW	12	1,956	0.61
DUDS	PROXY	DUR4	5	165	3.03
DUDS	PROXY	DUR5	3	43	6.98
DUDS	PROXY	SV1	4	121	3.31
GFA	NONPROXY	HIGH	17	238	7.14
GFA	NONPROXY	MEDIUM	38	1,696	2.24
GFA	NONPROXY	LOW	24	9,804	0.24
OU DS	NONPROXY	HIGH	9	75	12.00
OU DS	NONPROXY	MEDIUM	6	271	2.21
OU DS	NONPROXY	LOW	10	644	1.55
OU DS	PROXY	DUR4	7	440	1.59
OU DS	PROXY	DUR5	1	34	2.94
WILDERNESS	NONPROXY	HIGH	4	76	5.26
WILDERNESS	NONPROXY	MEDIUM	22	315	6.98
WILDERNESS	NONPROXY	LOW	20	962	2.08
WILDERNESS	PROXY	PTC1	27	636	4.25

CHAPTER 2: VISITATION ESTIMATES

Visitor Use Estimates

Visitor use estimates are available at the national, regional, and forest level. Only forest level data is provided here. For national and regional reports visit the following web site: (<http://www.fs.fed.us/recreation/programs/nvum>).

Table 2. Annual Santa Fe National Forest recreation use estimate

VISIT TYPE	VISITS	80 % CONFIDENCE INTERVAL
SITE VISITS	1,522,307	12.9
NATL FOREST VISITS	1,356,154	12.8
WILDERNESS VISITS	64,956	10.3

The Santa Fe National Forest participated in the National Visitor Use Monitoring (NVUM) project from October 2002 through September 2003. The forest coordinator was Ruth Doyle. No unusual weather patterns or forest fires that could affect recreation use levels were reported during the sample year.

Recreation use on the forest for fiscal year 2003 was 1,356,154 national forest visits. The 80 percent confidence interval width was +/- 12.8 percent. There were 1,522,307 site visits, an average of 1.10 site visits per national forest visit. Included in the site visit estimate are 64,956 Wilderness visits.

A total of 2,258 visitors were contacted on the forest during the sample year. Of these, 16 percent refused to be interviewed. Of the 1,896 people who agreed to be interviewed, 12.8 percent were not recreating, including 3.6 percent who just stopped to use the bathroom, 1.8 percent were working, 4.8 percent were just passing through, and 2.6 percent had some other reason to be there. About 87.2 percent of those interviewed said their primary purpose on the forest was recreation and 95.1 percent of them were exiting for the last time. Of the visitors leaving the forest agreeing to be interviewed, about 86 percent were last exiting recreation visitors (the target interview population). Table 3 displays the number of last-exiting recreation visitors interviewed at each site type and the type of interview form they answered.

Table 3. Number of last-exiting recreation visitors by site type and form type ^{1/}

FORM TYPE	DEVELOPED DAY USE	DEVELOPED OVERNIGHT	GENERAL FOREST AREA	WILDERNESS
BASIC	99	43	343	110
ECON	92	44	275	93
SATIS	93	38	247	95

^{1/} Form type means the type of interview form administered to the visitor. The basic form did not ask either economic or satisfaction questions. The Satisfaction form did not ask economic questions and the economic form did not ask satisfaction questions.

Description of Visitors

Descriptions of forest visitors were developed based upon the characteristics of interviewed visitors and expanding to the national forest visitor population. Tables 4 and 5 display the gender and age distributions for national forest visits.

Table 4. Gender distribution of Santa Fe NF recreation visitors

MALE	FEMALE
58	42

Table 5. Age distribution of Santa Fe NF recreation visitors

AGECLASS	PERCENT
UNDER 16	18.68
16 TO 19	2.72
20 TO 29	11.89
30 TO 39	16.69
40 TO 49	20.83
50 TO 59	18.31
60 TO 69	6.80
70 PLUS	4.09

Visitors categorized themselves into one of seven race/ethnicity categories. Table 6 gives a detailed breakout by category.

Table 6. Race/ethnicity of Santa Fe NF recreation visitors

WHITE	HISPANIC OR LATINO	NATIVE AMERICAN	AFRICAN AMERICAN	ASIAN	PACIFIC ISLANDER	OTHER
87.7	18.4	2.0	0.5	1.4	0.1	1.0

Less than one percent (0.6) of forest visitors indicated they were from another country. The survey did not collect country affiliation. The most common visitor zip codes are shown in Table 7. Additional zip code information was collected and is available upon request. This information can help determine the forest's primary market area.

Table 7. Most common zip codes of Santa Fe NF recreation visitors

ZIPCODE	COUNT	PERCENT
87505	102	7.90085
87501	87	6.73896
87544	63	4.87994
87111	56	4.33772
87109	44	3.40821
87508	44	3.40821
87124	41	3.17583
87507	39	3.02091
87120	33	2.55616
87114	32	2.47870
87112	28	2.16886
87110	27	2.09140
87121	26	2.01394
87123	24	1.85902
87105	22	1.70411
87107	22	1.70411
87031	20	1.54919
87506	19	1.47173
87144	16	1.23935
87024	15	1.16189
87701	15	1.16189

Average number of people per vehicle and average axle count per vehicle in survey

There was an average of 2.4 people per vehicle with an average of 2.03 axles per vehicle. This information in conjunction with traffic counts was used to expand observations from individual interviews to the full forest population of recreation visitors. This information may be useful to forest engineers and others who use vehicle counters to conduct traffic studies.

CHAPTER 3: WILDERNESS VISITORS

Several questions on the NVUM survey form dealt directly with use of designated Wilderness. Wilderness was sampled 69 days on the forest, and 298 interviews were obtained. There were 52.6 percent male and 47.4 percent female visitors to Wilderness on the forest. Tables 8 and 9 display the age distribution and race/ethnicity of Wilderness visitors.

Table 8. Age distribution of Santa Fe NF Wilderness visitors

AGECLASS	PERCENT
UNDER 16	16.62
16 TO 19	3.16
20 TO 29	13.69
30 TO 39	17.61
40 TO 49	21.65
50 TO 59	18.51
60 TO 69	5.96
70 PLUS	2.79

Table 9. Race/ethnicity of Santa Fe NF Wilderness visitors

WHITE	HISPANIC OR LATINO	NATIVE AMERICAN	AFRICAN AMERICAN	ASIAN	PACIFIC ISLANDER	OTHER
91.6	16.0	3.9	0.4	0.9	0.	0.2

The Wilderness visitors were from a wide variety of zip codes. The most common Wilderness visitor zip codes are shown in Table 10. Additional zip code information is available upon request.

Table 10. Most common zip codes of Santa Fe NF Wilderness visitors

WLDZIP	COUNT	PERCENT
87505	34	11.5254
87501	25	8.4746
87508	20	6.7797
87507	16	5.4237
87124	9	3.0508
87701	8	2.7119
87107	7	2.3729
87111	7	2.3729
87110	6	2.0339
87114	6	2.0339
87106	5	1.6949
87123	5	1.6949
87544	5	1.6949
87552	5	1.6949
87059	4	1.3559
87105	4	1.3559
87120	4	1.3559
93442	4	1.3559

The average length of stay in Wilderness on the forest was 14.3 hours. In addition, all visitors were asked on how many different days they entered into designated Wilderness during their national forest visit even if we interviewed them at a developed recreation site or general forest area. Of those visitors who did enter designated Wilderness, they entered 1.2 different days.

None of those interviewed in Wilderness said they used the services of a commercial guide.

Table 11 gives detailed information about how the Wilderness visitors rated various aspects of the area. A general example of how to interpret this information: If the visitors had rated the importance of the adequacy of signage a 5.0 (very important) and they rated their satisfaction with the adequacy of signage a 3.0 (somewhat satisfied) then the forest might be able to increase visitor satisfaction. Perhaps twenty-nine percent of visitors said the adequacy of signage was poor. The forest could target improving this sector of visitors for increased satisfaction by improving the signage for Wilderness.

Wilderness visitors on the average rated their visit 4.0 (on a scale from 1 to 10) concerning crowding, meaning they felt there were few people there. One percent said the area they visited was overcrowded (a 10 on the scale) and 16.4 percent said there was hardly anyone there (a 1 on the scale).

Table 11. Satisfaction of Santa Fe NF Wilderness Visitors.

ITEM	Poor	Fair	Average	Good	Very Good	Average Rating *	Mean Importance **	N obs
Restroom cleanliness	4.5	1.5	21.8	38.3	34.0	4.0	3.9	59
Developed facility condition	2.9	0.0	0.0	39.2	57.9	4.5	3.8	34
Condition of environment	0.0	0.0	1.6	26.1	72.3	4.7	4.7	95
Employee helpfulness	0.0	0.0	0.0	17.6	82.4	4.8	4.3	51
Interpretive display	2.6	4.3	18.6	39.1	35.3	4.0	3.6	36
Parking availability	2.0	2.3	16.8	30.2	48.7	4.2	3.6	93
Parking lot condition	0.0	1.0	3.3	45.2	50.5	4.5	3.3	93
Rec. info. available	8.0	7.3	13.4	44.6	26.7	3.7	3.9	62
Road condition	1.2	0.0	14.2	50.9	33.7	4.2	4.0	53
Feeling of safety	1.0	0.0	1.0	33.3	64.7	4.6	4.4	93
Scenery	0.0	0.0	0.6	8.5	90.9	4.9	4.8	95
Signage adequacy	8.0	11.9	9.5	35.8	34.8	3.8	4.2	86
Trail condition	0.0	1.0	4.1	43.2	51.7	4.5	4.1	92
Value for fee paid	0.0	0.0	3.1	18.8	78.1	4.7	4.2	33

*Scale is: Poor = 1 Fair = 2 Average = 3 Good = 4 Very good = 5

** Scale is: 1= not important 2= somewhat important 3=moderately important 4= important 5 = very important

N obs means the number of visitors who responded to this item.

Note: For items with less than 10 responses the data was not reported

CHAPTER 4: DESCRIPTION OF THE VISIT

A description of visitor activity during their national forest visit was developed. This basic information includes participation in various recreation activities, length of stay on the national forest and at recreation sites, visitor satisfaction with national forest facilities and services, and economic expenditures.

The average length of stay on this forest for a national forest visit was 11.9 hours. Over 12 percent (12.25%) of visitors stayed overnight on the forest.

In addition, visitors reported how much time they spent on the specific recreation site at which they were interviewed. Average time spent varied considerably by site and is displayed in Table 12.

Table 12. Site visit length of stay (in hours) by site/type on Santa Fe NF

Site Visit Average	Developed Day Use	Developed Overnight Use	General Forest Area	Wilderness	National Forest Visit
8.5	2.9	37	6.7	14.3	11.9

The average recreation visitor went to 1.10 sites during their national forest visit. Forest visitors sometimes go to just one national forest site or area during their visit. For example, downhill skiers may just go the ski area and nowhere else. 94.2 percent of visitors went only to the site at which they were interviewed.

During their visit to the forest, the top five recreation activities of the visitors were viewing natural features, hiking/walking, relaxing, viewing wildlife, and driving for pleasure (see Table 13). Each visitor also picked one of these activities as their primary activity for their current recreation visit to the forest. The top primary activities were hiking/walking, relaxing, downhill skiing, viewing natural features, and fishing (see Table 13). Please note that the results of the NVUM activity analysis DO NOT identify the types of activities visitors would like to have offered on the national forests. It also does not tell us about displaced forest visitors, those who no longer visit the forest because the activities they desire are not offered.

Table 13. Santa Fe NF activity participation and primary activity

Activity	% Participating	% as Main Activity
Developed Camping	7.46	4.68
Primitive Camping	5.70	1.67
Backpacking	3.09	1.20
Resort Use	0.45	0.00
Picnicking	14.46	3.04
Viewing Natural Features	63.20	7.91
Visiting Historic Sites	10.54	1.03
Nature Center Activities	5.48	0.04
Nature Study	11.40	0.66
Relaxing	53.44	17.11
Fishing	9.35	5.02
Hunting	1.30	1.17
OHV Use	3.54	0.42
Driving for Pleasure	20.81	3.00
Snowmobiling	0.05	0.00
Motorized Water Activities	0.17	0.00
Other Motorized Activity	0.05	0.00
Hiking / Walking	62.89	33.90
Horesback Riding	1.18	0.65
Bicycling	2.49	1.60
Non-motorized Water	0.23	0.10
Downhill Skiing	15.64	15.62
Cross-country Skiing	2.01	1.59
Other Non-motorized	2.99	0.17
Gathering Forest Products	5.63	2.48
Viewing Wildlife	51.27	1.41

Note: this column may total more than 100% because some visitors chose more than one primary activity.

Use of constructed facilities and designated areas

One-third of the last exiting recreation visitors interviewed were asked about the types of constructed facilities and special designated areas they used during their visit. The five most used facilities/areas were: forest trails, scenic byway, downhill ski area, forest roads, and picnic area. Table 14 provides a summary of reported facility and special area use.

Table 14. Percentage use of facilities and specially designated areas on Santa Fe NF.

FACILITY	PERCENT
Developed Campground	6.05
Developed Swimming Site	2.32
Forest Trails	45.30
Scenic Byway	29.03
Wilderness	3.69
Museum	1.79
Picnic Area	10.62
Boat Launch	0.09
Designated OHV Area	0.05
Forest Roads	14.41
Interpretive Displays	1.66
Information Sites	0.51
Organization Camps	0.94
Developed Fishing Site	0.13
Snowmobile Area/Trails	0.00
Downhill Ski Area	15.21
Nordic Trails	0.00
FS Lodge	2.40
FS Fire Lookout	0.92
Snowplay Area	0.00
Motorized Trails	0.00
Recreation Residence	0.47

Economic Information

About one-third of visitors interviewed were asked a series of questions that enabled economic analyses. Several questions focused on the trip away from home that included their visit to the national forest, and others about their annual visits to the forest and annual spending on all outdoor recreation.

This trip away from home

While away from home, some people just go to the forest, while others incorporate a national forest visit as part of a larger trip away from home. On this forest, 85.76 percent said that recreating on this forest was their primary trip destination. Visitors were asked to select one of several substitute choices, if for some reason they were unable to visit this national forest. Their responses are shown in Table 15. Slightly more than thirty percent (30.27) percent of visitors indicated their trip would include at least one night away from home. The average number of nights away for those staying away overnight was 5.3. About 24 percent indicated they would be staying overnight within 50 miles of this forest, and for them, the average number of nights in the local area was 3.8. Visitors estimated the amount of money spent during their trip within 50 miles of the recreation site at which they were interviewed (the trip may include multiple national forest visits, as well as visits to other forests or parks). This information will be available in a separate report and data file that can be used to estimate the local jobs and income that are generated by recreation visits to this forest.

Table 15. Substitute behavior choices of Santa Fe NF recreation visitors

Substitute response	Percent who would have:
Come back another time	14.0
Stayed at Home	12.1
Gone elsewhere for the Same activity	62.6
Gone elsewhere for a Different activity	7.1
Gone to Work	1.8
Had some other substitute	3.4

Average annual outdoor recreation activity

In the 12 months prior to the interview the typical visitor had come to this forest 39.8 times for all activities, including 33.2 times to participate in their identified main activity. Visitors were also asked about the amount of money they spent in a typical year on all outdoor recreation activities including equipment, recreation trips, memberships, and licenses. Over 35% said they spent less than \$500 per year, and about 3.5% said they spent over \$10,000 per year (Table 16).

Table 16. Annual recreation spending for visitors to the Santa Fe NF

\$\$ spent each year on outdoor recreation	Percent of Total
UNDER 500	35.09
500 - 999	21.30
1000 - 1999	16.54
2000 - 2999	10.03
3000 - 3999	7.02
4000 - 4999	2.26
5000 - 9999	4.26
OVER 10000	3.51

Visitor Satisfaction Information

About one-third of visitors interviewed on the forest rated their satisfaction with the recreation facilities and services provided. Although their satisfaction ratings pertain to conditions at the specific site or area they visited, this information is not valid at the site-specific level. The survey design does not usually have enough responses for every individual site or area on the forest to draw these conclusions. Rather, the information is generalized to overall satisfaction with facilities and services on the forest as a whole.

Visitors' site-specific answers may be colored by a particular condition on a particular day at a particular site. For example, a visitor camping in a developed campground when all the forest personnel are off firefighting and the site has not been cleaned. Perhaps the garbage had not been emptied or the toilets cleaned during their stay, although the site usually receives excellent maintenance. The visitor may have been very unsatisfied with the cleanliness of restrooms.

In addition to how satisfied visitors were with facilities and services they were asked how important that particular facility or service was to the quality of their recreation experience. The importance of these elements to the visitors' recreation experience is then analyzed in relation to their satisfaction. Those elements that were extremely important to a visitor's overall recreation experience and the visitor rated as poor quality are those elements needing most attention by the forest. Those elements that were rated not important to the visitors' recreation experience need the least attention.

Tables 17 through 19 summarize visitor satisfaction with the forest facilities and services at Day Use Developed sites, Overnight Developed sites and General Forest areas. Wilderness satisfaction is reported in Table 11. To interpret this information for possible management action, one must look at both the importance and satisfaction ratings. If visitors rated an element a 1 or 2 they are telling management that particular element is not very important to the overall quality of their recreation experience. Even if the visitors rated that element as poor or fair, improving this element may not necessarily increase visitor satisfaction because the element was not that important to them. On the other hand, if visitors rated an element as a 5 or 4 they are saying this element is very important to the quality of their recreation experience. If their overall satisfaction with that element is not very good, management action here can increase visitor satisfaction.

Table 17. Satisfaction of Santa Fe NF recreation visitors at Developed Day Use sites

ITEM	Poor	Fair	Average	Good	Very Good	Average Rating *	Mean Importance **	N obs
Restroom cleanliness	2.8	2.6	17.2	61.8	15.7	3.9	3.9	65
Developed facility condition	0.0	0.0	17.1	38.7	44.2	4.3	4.1	83
Condition of environment	0.6	0.0	5.1	42.0	52.3	4.5	4.5	91
Employee helpfulness	0.0	2.2	12.4	36.2	49.2	4.3	4.1	58
Interpretive display	9.2	7.4	18.4	52.5	12.5	3.5	3.2	45
Parking availability	0.0	7.3	4.9	55.5	32.2	4.1	4.1	91
Parking lot condition	0.0	0.6	23.5	56.2	19.7	4.0	3.5	91
Rec. info. Available	9.0	5.2	22.2	44.2	19.3	3.6	3.6	60
Road condition	0.0	0.0	23.7	60.1	16.3	3.9	3.6	42
Feeling of safety	0.0	0.0	9.9	32.0	58.1	4.5	4.3	90
Scenery	0.0	0.8	2.9	24.1	72.2	4.7	4.4	91
Signage adequacy	0.3	11.9	8.4	48.5	30.9	4.0	3.7	84
Trail condition	0.0	0.0	1.6	45.7	52.7	4.5	3.6	47
Value for fee paid	0.0	0.3	9.9	35.9	53.9	4.4	4.4	55

*Scale is: Poor = 1 Fair = 2 Average = 3 Good = 4 Very good = 5

** Scale is: 1= not important 2= somewhat important 3=moderately important 4= important 5 = very important
N obs means the number of visitors who responded to this item.

Note: For items with less than 10 responses the data was not reported

Table 18. Satisfaction of Santa Fe NF recreation visitors at Developed Overnight sites

ITEM	Poor	Fair	Average	Good	Very Good	Average Rating *	Mean Importance **	N obs
Restroom cleanliness	7.5	0.0	14.9	31.3	46.3	4.1	4.5	34
Developed facility condition	0.0	4.2	0.0	41.4	54.4	4.5	4.4	33
Condition of environment	0.0	0.7	3.3	30.6	65.4	4.6	4.6	37
Employee helpfulness	0.0	0.8	0.8	30.0	68.3	4.7	4.7	29
Interpretive display	8.1	4.1	14.3	48.1	25.4	3.8	3.9	18
Parking availability	0.0	0.6	6.7	47.7	45.0	4.4	3.8	38
Parking lot condition	0.0	7.5	4.0	46.5	42.0	4.2	3.5	35
Rec. info. Available	5.3	6.2	15.8	37.2	35.5	3.9	4.2	26
Road condition	0.0	1.0	10.2	42.1	46.7	4.3	4.0	26
Feeling of safety	0.0	0.7	3.9	34.1	61.3	4.6	4.6	37
Scenery	0.0	0.0	3.2	16.9	80.0	4.8	4.8	38
Signage adequacy	4.9	8.6	26.8	40.5	19.3	3.6	3.8	35
Trail condition	4.1	0.8	4.6	40.1	50.4	4.3	4.3	29
Value for fee paid	4.8	0.0	5.3	36.8	53.0	4.3	4.5	24

*Scale is: Poor = 1 Fair = 2 Average = 3 Good = 4 Very good = 5

** Scale is: 1= not important 2= somewhat important 3=moderately important 4= important 5 = very important
N obs means the number of visitors who responded to this item.

Note: For items with less than 10 responses the data was not reported

Table 19. Satisfaction of Santa Fe NF recreation visitors in General Forest Areas

ITEM	Poor	Fair	Average	Good	Very Good	Average Rating *	Mean Importance **	N obs
Restroom cleanliness	6.7	17.5	25.2	26.6	23.9	3.4	4.0	51
Developed facility condition	0.0	0.8	12.0	55.5	31.7	4.2	3.9	60
Condition of environment	4.2	11.4	8.5	28.5	47.5	4.0	4.7	164
Employee helpfulness	0.0	0.0	3.4	45.4	51.2	4.5	4.1	66
Interpretive display	18.0	7.7	26.9	24.4	23.0	3.3	3.2	54
Parking availability	4.6	2.3	33.0	27.9	32.1	3.8	3.5	139
Parking lot condition	6.2	4.8	26.1	41.6	21.3	3.7	3.0	113
Rec. info. Available	9.1	8.3	29.1	42.5	10.9	3.4	3.3	94
Road condition	12.1	12.3	9.0	36.5	30.1	3.6	3.8	137
Feeling of safety	1.7	4.4	4.7	34.7	54.5	4.4	4.4	160
Scenery	2.2	0.5	2.2	17.5	77.6	4.7	4.7	165
Signage adequacy	13.3	6.6	27.2	43.0	9.9	3.3	3.6	141
Trail condition	4.9	6.9	10.0	42.4	35.8	4.0	3.9	104
Value for fee paid	0.0	2.5	27.9	31.7	37.9	4.0	4.2	34

*Scale is: Poor = 1 Fair = 2 Average = 3 Good = 4 Very good = 5

** Scale is: 1= not important 2= somewhat important 3=moderately important 4= important 5 = very important
N obs means the number of visitors who responded to this item.

Note: For items with less than 10 responses the data was not reported.

Crowding

Visitors rated their perception of how crowded the recreation site or area felt to them. This information is useful when looking at the type of site the visitor was using since someone visiting a designated Wilderness may think 5 people is too many while someone visiting a developed campground may think 200 people is about right. Table 20 summarizes mean perception of crowding by site type on a scale of 1 to 10 where 1 means hardly anyone was there, and a 10 means the area was perceived as overcrowded.

Table 20. Perception of crowding by Santa Fe NF recreation visitors by site type (percent site visits)

Crowding Rating	Developed Day Use	Overnight Use	General Forest Area	Wilderness
10 Overcrowded	0.4	6.7	1.0	1.0
9	0.4	0.0	0.0	5.1
8	3.1	7.0	1.0	7.3
7	3.5	25.9	9.1	7.9
6	7.3	8.0	3.4	4.6
5	13.2	15.9	8.0	15.7
4	4.1	7.3	6.5	5.1
3	26.3	10.1	27.1	21.0
2	13.1	12.4	20.1	16.0
1 Hardly anyone there	28.6	6.7	23.8	16.4

Other comments from visitors

Visitors were asked if there were any accommodations or assistance that the forest could offer that would be helpful to the visitor and anyone in their group to improve their recreation experience. Responses are summarized in Table 21.

Table 21. List of comments received from Santa Fe NF recreation visitors

Site Name	What Accommodation could be made
169b) Chamisa TH-6	better signs at trail junctions
169b) Chamisa TH-6	expand parking lot
169b) Chamisa TH-6	more law enforcement at trailheads
169b) Chamisa TH-6	signs with mileage on trail
169b) Chamisa TH-6	widen trail
169b) Chamisa TH-6	restroom facility at Chanusa; dog waste bags available
169b) Chamisa TH-6	post no water available
169b) Chamisa TH-6	parking lot patrol and improved trail maintenance
169b) Chamisa TH-6	drop leash requirements and exhibits/displays; keep natural and independent
169b) Chamisa TH-6	pooper scooper- signage on cleaning up dog waste
169c) Bear Wallow TH-6	maps -> board
169c) Bear Wallow TH-6	better security
169d) Tesuque TH-6	maps sign
169d) Tesuque TH-6	trails map
169d) Tesuque TH-6	more trash cans during peak season
169d) Tesuque TH-6	less human interference/development- keep it natural
169d) Tesuque TH-6	added parking during peak season
169e) Aspen Vista-6	dog bags (at trailheads and gates)
43g) Las Conchas TH-3	handicap access
46) FR 289-3	maps of area at entrance
59) FR @ Old RR Grade	handicap access
79) Hwy 290	a little more signs
79) Hwy 290	longer time to get Wool Permit (Blade Roads)
79) Hwy 290	trash recycle; user created many more trails
79) Hwy 290	pilot receptor at LA airport
79) Hwy 290	blade roads
81a) Battleship Parking-3	someone to gather trash on trail
81b) FR 126-3	improve roads; get rid of Graffiti by tunnels
81b) FR 126-3	more camping spaces
81b) FR 126-3	have a place to wash hands
81b) FR 126-3	more, clean bathrooms

Site Name	What Accommodation could be made
81b) FR 126-3	hook up at camp site; keep loops open longer
81b) FR 126-3	less cows/over grazing
81b) FR 126-3	open developed campsites longer- site was closed construction
81b) FR 126-3	brochures/signage
81e) Soda Dam-3	very helpful
81e) Soda Dam-3	more trash cans
81e) Soda Dam-3	Valley Caldera more accessible
81e) Soda Dam-3	wheelchair access
81e) Soda Dam-3	more signage with description
81f) Spence Hot Springs-3	warning signs for valuables
81i) Battleship Rock @ Picnic-3	mile markers on road- to know distance
82) Hwy 485-3	get rid of ATV's; fishing does not interfere with them, they interfere with fishing
82) Hwy 485-3	public trash dumpsters
82) Hwy 485-3	ban ATV
82) Hwy 485-3	trash cans, bear proof
82) Hwy 485-3	clean up Graffiti; penalty signs for defacing
82) Hwy 485-3	why roads closed in winter? Explain
82) Hwy 485-3	get rid of Graffiti
82) Hwy 485-3	open Parter for wood (standing dead)
82) Hwy 485-3	free beer
82) Hwy 485-3	clean up Graffiti
82) Hwy 485-3	more snow and moisture
82) Hwy 485-3	tell him where fish are
82) Hwy 485-3	clean up graffiti at tunnels
Holy Ghost Family CG	maps at trailhead
Holy Ghost Family CG	people using chainsaws to cut wood on Sat night, more patrolling of campground to prevent
Holy Ghost Family CG	reservations allowed, at 6 p.m. campground was already full
Holy Ghost Family CG	more kids only fishing areas also more envelopes at self-pay stations
Holy Ghost Family CG	improve information about trail on webpage
Holy Ghost Family CG	more shaded sites
Jacks Creek CG Non-Proxy	better maps at trailheads
Jacks Creek CG Proxy	showers
Jacks Creek Horse Camp	more corrals; more wilderness signage
La Cueva Picnic	more fish
Las Conchas Picnic	more fish
Las Conchas Picnic	stock river
Las Conchas Picnic	learn more about area with maps, etc.
Paliza Family CG Non-Proxy	no shooting anywhere near recreation areas
Rio Chama CG	keep cows out of campground

Site Name	What Accommodation could be made
San Antonio CG Proxy	San Gregorio was closed and people were not informed when they called FS office
Santa Fe Ski Area	replace triple chair with high speed quad; expand ski area into Big Tesuque
Santa Fe Ski Area	keep season open longer
Santa Fe Ski Area	restrooms on top of mountain
Santa Fe Ski Area	no more signage; parking in upper lot-non-handicapped seniors; snowboarders not controlled
Santa Fe Ski Area	rethink int. (mogul) designations; season open longer; millennium 3x chair lift operable
Santa Fe Ski Area	expand runs
Santa Fe Ski Area	keep mtn. Open longer
Santa Fe Ski Area	stay open longer in year
Santa Fe Ski Area	FS be on ski slope every weekend- good PR and ed benefit, could be on slope or in facility
Santa Fe Ski Area	put in a new lift, open it up
Santa Fe Ski Area	ski school
Santa Fe Ski Area	lots of rest facilities/restrooms
Santa Fe Ski Area	upgrade of space and facilities- mid mountain lodge
Santa Fe Ski Area	build the new lift
Seven Springs Picnic	first aid station
W-14) Palomas TR - SWCu-2	water and electric hookups
W-15) San Gregorio TH - SWCu-3	maps/ map available at TH; better restrooms
W-15) San Gregorio TH - SWCu-3	electricity and water
W-15) San Gregorio TH - SWCu-3	signs saying bottles and cans taken out
W-15) San Gregorio TH - SWCu-3	establish ATV trails; stop closing roads
W-36) Hermit's Peak - PWP - 1	signs in Spanish and English
W-36) Hermit's Peak - PWP-1	signs in Spanish and English
W-45) Jacks Creek - PWP-2	more information on website
W-45) Jacks Creek - PWP-2	maps available at trail heads
W-45) Jacks Creek - PWP-2	limit number of dogs and put on leash; more crews; trails need work
W-46) Panchuela CG TH - PWP-3	complimentary trail maps
W-46) Panchuela CG TH -PWP-3	fix road between Mora and Cornles- too narrow
W-50) Holy Ghost - PWP-6	more maps available at check in
W-50) Holy Ghost - PWP-6	more campgrounds on Vegas side and water
W-50c) Winsor TH - PWP-7	trail marker
W-50c) Winsor TH - PWP-7	maps (availability)
W-50c) Winsor TH - PWP-7	better signage
W-50c) Winsor TH - PWP-7	get rid of the cows
W-50c) Winsor TH - PWP-7	inadequate signs and confusing getting to Nambe Lake
W-50c) Winsor TH - PWP-7	might be nice to have maps at trailheads
W-50c) Winsor TH - PWP-7	map
W-50c) Winsor TH - PWP-7	refreshment stand
W-50c) Winsor TH - PWP-7	signage on trails

Site Name	What Accommodation could be made
Windy Bridge Picnic	allow more campfires; better restrooms (not pit toilets)
Windy Bridge Picnic	need trash cans