



United States  
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Natural Resource  
Manager

National Visitor  
Use Monitoring  
Program



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# Visitor Use Report

## Eastern Region (R9)

### USDA Forest Service

### Region 9

### National Visitor Use Monitoring

**Data collected FY 2005, FY 2006, FY 2007, FY  
2008, FY 2009**

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## 1. INTRODUCTION

### 1.1. Scope and purpose of the National Visitor Use Monitoring program

The National Visitor Use Monitoring (NVUM) program provides reliable information about recreation visitors to national forest system managed lands at the national, regional, and forest level. Information about the quantity and quality of recreation visits is required for 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. NVUM information assists 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 1998 a team of research scientists and forest staff developed a recreation sampling system (NVUM) that provides statistical recreation use information at the forest, regional, and national level. Several Forest Service staff areas including Recreation, Wilderness, Ecosystem Management, Research and Strategic Planning and Resource Assessment were involved in developing the program. From January 2000 through September 2003 every national forest implemented this methodology and collected visitor use information. This application served to test the method over the full range of forest conditions, and to provide a rough national estimate of visitation. Implementation of the improved method began in October 2004. Once every five years, each National Forest and Grassland has a year of field data collection.

This NVUM data is useful for forest planning and decision making. The description of visitor characteristics (age, race, zip code, activity participation) can help forest staff identify their recreation niche. Satisfaction information can help management decide where best to place limited resources that would result in improved visitor satisfaction. Economic expenditure information can help forests show local communities the employment and income effects of tourism from forest visitors. In addition, the visitation estimates can be helpful in considering visitor capacity issues.

### 1.2. Methods

To define the sampling frame, staff on each forest classify all recreation sites and areas into five basic categories called "site types": Day Use Developed Sites (DUDS), Overnight Use Developed Sites (OUDS), Designated Wilderness Areas (Wilderness), General Forest Areas (GFA), and View Corridors (VC). Only the first four categories are counted as national forest recreation visits and are included in the visit estimates. The last category is used to track the volume of people who view national forests from nearby roads; since they do not get onto agency lands, they cannot be counted as visits. For the entire sampling year, each day on each site was given a rating of very high, high, medium, low, or no use according to the expected level of recreational visitors who would be

observed leaving that location for the last time (last exiting recreation use) on that day. The combination of a calendar day and a site or area is called a site day. Site days are the basic sampling unit for the NVUM protocol. Results of this forest categorization are shown in Table 1.

In essence, visitation is estimated through a combination of traffic counts and surveys of exiting visitors. Both are obtained on a random sample of locations and days distributed over an entire forest for a year. All of the surveyed recreation visitors are asked about their visit duration, activities, demographics, travel distance, and annual usage. About one-third were also asked a series of questions about satisfaction. Another one-third were asked to provide information about their income, spending while on their trip, and the next best substitute for the visit.

### 1.3. Definition of Terms

NVUM has standardized measures of visitor use to ensure that all national forest visitor measures are comparable. These definitions are basically the same as established by the Forest Service in the 1970's. 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 visitation metrics are ***national forest visits*** and ***site visits***. NVUM provides estimates of both and confidence interval statistics measuring the precision of the estimates. The NVUM methodology categorizes recreation facilities and areas into specific site types and use levels in order to develop the sampling frame. Understanding the definitions of the variables used in the sample design and statistical analysis is important in order to interpret the results.

***National forest visit*** is 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. The visit ends when the person leaves the national forest to spend the night somewhere else.

***Site visit*** is the entry of one person onto a national forest site or area to participate in recreation activities for an unspecified period of time. The site visit ends when the person leaves the site or area for the last time on that day.

A ***confidence interval*** is a range of values that is likely to include an unknown population value, where the range is calculated from a given set of sample data. Confidence intervals are always accompanied by a ***confidence level***, which tells the degree of certainty that the value lies in the interval. Used together these two terms define the reliability of the estimate, by defining the range of values that are needed to reach the given confidence level. For example, the 2008 national visitation estimate is 175.6 million visits, with a 90% confidence interval of 3.2%. In other words, given the NVUM data, our best estimate is 175.6 million visits, and given the underlying data, we are 90% certain that the true number is between 170.0 million and 181.2 million.

***Recreation trip*** is the duration of time beginning when the visitor left their home and ending when they return to their home.

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

***Proxy*** - information collected at a recreation site or area that is directly related to the amount of

recreation visitation received. The proxy information must pertain to all users of the site 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, group reservations, 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** - for each day of the year for each recreation site or area, the site day was categorized as very high, high, medium or low last exiting recreation traffic, or no exiting use. No Use could mean either that the location was administratively closed, or it was open but was expected to have zero last exiting visitors. For example a picnic area may be listed as having no use during winter months (120 days), high last exiting recreation volume on all other weekends (70 days) and medium last exiting recreation use on the remaining midweek days (175 days). This accounts for all 365 days of the year. This process was repeated for every site and area on the forest.

## 1.4. Limitations of the Results

The information presented here is valid and applicable at the forest, regional, and national level. It is not designed to be accurate at the district or site level. The quality of the visitation estimate is dependent on the sample design development, sampling unit selection, sample size and variability, and survey implementation. First, preliminary work conducted by forests to identify and consistently classify sites and access points according to the type and amount of expected exiting visitation is the key determinant of the validity and magnitude of the visitation estimate. Second, the success of the forest staff in accomplishing its assigned set of sample days, correctly filling out the interview forms, and following the field protocols influence the reliability of the results, variability of the visitation estimate, and validity of the visitation descriptions. Third, the variability of traffic counts within a sampling stratum affects the reliability of the visitation estimates. Fourth, the range of visitors sampled must be representative of the population of all visitors. Finally, the number of visitors sampled must be large enough to adequately control variability. The results and confidence intervals will reflect all these factors.

Confidence intervals indicate the reliability of the visitation estimate, given the underlying data. Large confidence intervals indicate high variability in the national forest visit (NFV), site visit (SV) and Wilderness visit estimates. Variance is caused primarily by a small sample size in number of days or having a few sampled days where the observed exiting visitation volume was very different from the normal range. For example, on a particular 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 zero and twenty. The remaining day had a visitation estimate of 440. So the stratum mean was about 37 per day, standard error was about 116, and the 90% confidence interval width is 400% of the mean. Causes for such outlier observations are not known, but could include a misclassification of the day (a high use day incorrectly categorized as a low use day), unusual weather, malfunctioning traffic counter, or reporting errors. Eliminating the unusual observation from data analysis would reduce the variability. However, unless the NVUM team had reason to suspect the observation was incorrect they did not eliminate these unusual cases.

The descriptive information about national forest visitors is based upon only those visitors that were interviewed. Every effort was made to incorporate distinct seasonal use patterns and activities that

vary greatly by season into the sampling frame. The sampling plan took into account both the spatial and seasonal spread of visitation patterns across the forest. Even so, because of the small sample size of site-days, or because some user groups decline to participate in the survey, it is possible to under-represent certain user groups, particularly for activities that are quite limited in where or when they occur.

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.

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. Their characteristics are not included in the visit descriptions.

Caution should be used in interpreting any comparisons of these results with those obtained during the 2000 - 2003 period. Differences cannot be interpreted as a trend. Several method changes account for the differences, for both visitation estimates and visit characteristics. One key factor is that the first application of the NVUM process was largely a national beta-test of the method, and significant improvements occurred following it. The NVUM process entailed a completely new method and approach to measuring visitation on National Forest lands. Simply going through the NVUM process for the first time enabled forest staff to do a much better job thereafter in identifying sites, accurately classifying days into use level strata, and ensuring consistency across all locations on the forest. These improvements enhanced the validity of all aspects of the NVUM results. Sampling plans and quality control procedures were also improved.

## 2. VISITATION ESTIMATES

### 2.1. Forest Definition of Site Days

The population of site days for sampling was constructed from information provided by forest staff. For each site, each day of the year was given a rating of very high, high, medium, low, or none according to the expected volume of recreation visitors who would be leaving the site or area for the last time (last exiting recreation use). The stratum, a combination of site type and use level, was then used to construct the sampling frame. The results of the recreation site/area stratification and days sampled are displayed in Table 1.

Table 1. Site Days and Percentage of Days Sampled by Stratum

Stratum*		Days Sampled	Site Days# in Use Level/Proxy Population	Sampling Rate (%)&
Site Type†	Use Level‡ or Proxy Code§			
DUDS	VERY HIGH	82	1,174	7.0
DUDS	HIGH	208	4,159	5.0
DUDS	MEDIUM	278	13,923	2.0
DUDS	LOW	172	48,065	0.4
DUDS	DUR5	18	816	2.2
DUDS	FE3	18	927	1.9
DUDS	FR1	23	350	6.6
DUDS	FR3	30	1,046	2.9
DUDS	PTC1	45	810	5.6
DUDS	SV1	52	2,337	2.2
OU DS	VERY HIGH	10	40	25.0
OU DS	HIGH	80	716	11.2
OU DS	MEDIUM	104	2,162	4.8
OU DS	LOW	121	17,061	0.7
OU DS	DUR4	119	16,490	0.7
OU DS	DUR5	25	794	3.1
OU DS	FE4	113	8,794	1.3
OU DS	FR3	12	541	2.2
OU DS	FR5	10	12	83.3
OU DS	RE1	11	3,975	0.3
OU DS	RE2	1	259	0.4
OU DS	SUP4	19	1,201	1.6
GFA	VERY HIGH	97	1,850	5.2
GFA	HIGH	341	19,486	1.7
GFA	MEDIUM	476	77,267	0.6
GFA	LOW	309	325,195	0.1
GFA	FE3	13	47	27.7
GFA	FR1	41	2,236	1.8
GFA	FR3	19	864	2.2
GFA	TB1	8	26	30.8
WILDERNESS	VERY HIGH	18	44	40.9
WILDERNESS	HIGH	90	2,244	4.0
WILDERNESS	MEDIUM	119	6,921	1.7
WILDERNESS	LOW	158	18,467	0.9
WILDERNESS	MA1	35	25,703	0.1
WILDERNESS	MA2	20	509	3.9
<b>Total</b>		<b>3,295</b>	<b>606,511</b>	<b>0.5</b>

\* Stratum is the combination of the site type and use level or proxy code. Sample days were independently drawn within each stratum.

† DUDS = Day Use Developed Site, OUDS = Overnight Use Developed Site, GFA = General Forest Area ("Undeveloped Areas"), WILDERNESS = Designated Wilderness

‡ Use level was defined independently by each forest by defining the expected number of recreation visitors that would be last-exiting a site or area on a given day. The forest developed the range for very high, high, medium, and low and then assigned each day of the year to one of the use levels.

§ Proxy Code - If the site or area already had counts of use (such as fee envelopes or ski lift tickets) the site was called a proxy site and sampled independent of nonproxy sites.

# Site Days are days that a recreation site or area is open to the public for recreation purposes.

& 0.0 - This value is less than five one-hundredths.

## 2.2. Visitation Estimates

Visitation estimates are available at the national, regional, and forest level. This document provides only Region level data. Other documents may be obtained through the National Visitor Use Monitoring web page: [www.fs.fed.us/recreation/programs/nvum](http://www.fs.fed.us/recreation/programs/nvum).

When reviewing the results, users should discuss with forest staff if forests in this region experienced any unusual circumstances such as forest fires, floods, or atypical weather that may have created an unusual recreation use pattern for the year sampled. Table 2a displays the number of national forest visits and site visits for this region. Table 2b displays the number of site visits by site type.

Table 2a. Annual Visitation Use Estimate by Forest

Forest	National Forest Visits*		Site Visits†	
	Visits (1,000s)	90% Confidence Interval (%)‡	Visits (1,000s)	90% Confidence Interval (%)‡
Hoosier NF	338	18.7	379	17.6
Wayne NF	387	45.1	507	42.4
Green Mountain and Finger Lakes NF	2,857	50.6	3,205	49.4
Mark Twain NF	697	24.1	874	23.0
Shawnee NF	290	16.9	337	16.3
Allegheny NF	730	31.7	874	27.6
White Mountain NF	1,518	9.7	2,191	9.3
Superior NF	1,624	49.7	2,224	38.7
Hiawatha NF	400	30.6	524	30.0
Midwin National Tallgrass Prairie	16	41.8	17	42.9
Ottawa NF	359	31.7	420	28.8
Huron Manistee NF	3,174	29.2	3,745	27.4
Monongahela NF	463	13.9	644	12.7
Chippewa NF	1,042	45.7	1,281	44.0
Chequamegon-Nicolet NF	533	21.6	623	20.1

\* A National Forest Visit is defined as 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.

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

‡ Confidence interval - Defines the upper and lower bounds of the visitation estimate at the 90% confidence level, for example if the visitation estimate is 100 +/- 5%, one would say "at the 90% confidence level visitation is between 95 and 105 visits".

Table 2b. Annual Visitation Use Estimate by Site Type and Forest

Forest	Day Use Developed		Overnight Use Developed		Undeveloped Areas (GFA)		Wilderness	
	Visits (1,000s)†	90% Confidence Interval (%)‡	Visits (1,000s)†	90% Confidence Interval (%)‡	Visits (1,000s)†	90% Confidence Interval (%)‡	Visits (1,000s)†	90% Confidence Interval (%)‡
Hoosier NF	53	24.8	60	17.9	241	26.5	25	34.7
Wayne NF	47	34.8	58	39.8	403	52.9	0	0.0
Green Mountain and Finger Lakes NF	854	4.7	23	48.9	2,267	69.9	62	53.7
Mark Twain NF	145	16.9	37	34.4	591	33.0	101	41.1
Shawnee NF	184	23.0	12	21.3	120	28.3	21	42.4
Allegheny NF	130	17.1	52	13.3	678	35.4	14	50.5
White Mountain NF	1,533	8.7	215	6.5	415	36.9	27	49.6
Superior NF	461	64.3	59	29.0	1,419	56.9	286	0.7
Hiawatha NF	136	23.4	44	9.2	331	46.5	13	53.1
Midewin National Tallgrass Prairie	0	44.8	0	0.0	16	43.9	0	0.0
Ottawa NF	50	29.3	14	12.6	327	36.6	29	35.5
Huron Manistee NF	608	29.4	131	28.7	2,959	34.1	47	46.7
Monongahela NF	215	9.0	54	17.3	354	22.1	21	37.5
Chippewa NF	71	47.0	47	28.9	1,163	48.3	0	0.0
Chequamegon-Nicolet NF	90	13.6	108	12.7	423	29.2	2	63.9

† A Site Visit is the entry of one person onto a national forest site or area to participate in recreation activities for an unspecified period of time. A National Forest Visit can be composed of multiple Site Visits.

‡ Confidence interval - Defines the upper and lower bounds of the visitation estimate at the 90% confidence level, for example if the visitation estimate is 100 +/- 5%, one would say "at the 90% confidence level visitation is between 95 and 105 visits".

The quality of the use estimate is based in part on how many individuals were contacted during the sample day and how many complete interviews were obtained from which to estimate NVUM numbers and visitor descriptions. Table 3 and Table 4 display the number of visitor contacts, number of completed interviews by site type and survey form type. This information may be useful to managers when assessing how representative of all visitors the information in this report may be.

**Table 3. Number of Individuals Contacted by Site Type**

Site Type	Total Individuals Contacted	Individuals Who Agreed to be Interviewed	Recreating Individuals Who Are Leaving for the Last Time That Day
Day Use Developed Sites	10,649	8,612	5,039
Overnight Use Developed Sites	4,084	3,615	1,852
Undeveloped Areas (GFAs)	9,921	8,436	3,902
Designated Wilderness	1,406	1,267	932
<b>Total</b>	<b>26,060</b>	<b>21,930</b>	<b>11,725</b>

**Table 4. Number of Complete Interviews\* by Site Type and Form Type**

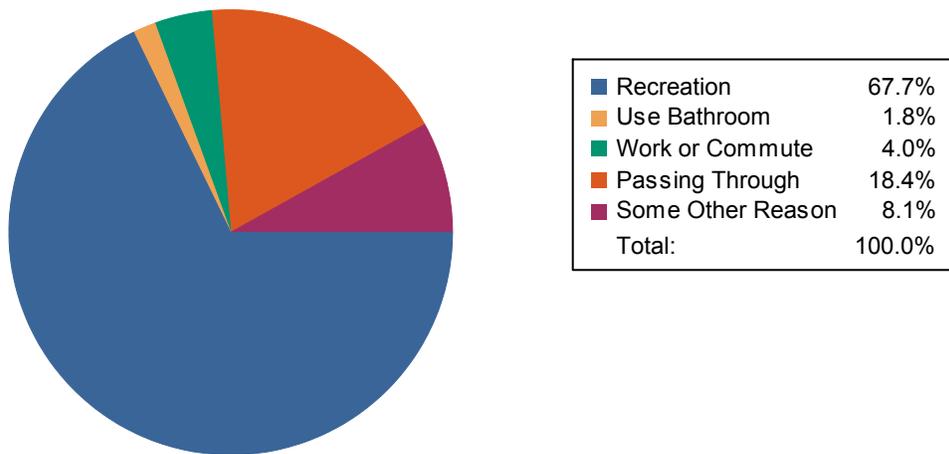
Form Type†	Developed Day Use Site	Developed Overnight	Undeveloped Areas (GFAs)	Wilderness	Total
Basic	1,876	709	1,440	335	4,360
Economic	1,582	567	1,270	300	3,719
Satisfaction	1,581	576	1,192	297	3,646
<b>Total</b>	<b>5,039</b>	<b>1,852</b>	<b>3,902</b>	<b>932</b>	<b>11,725</b>

\* Complete interviews are those in which the individual contacted agreed to be interviewed, was recreating on the national forest and was exiting the site or area for the last time that day.

† Form type is 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.

Visitors were interviewed regardless of whether they were recreating at the site or not, however the interview was discontinued after determining that the reason for visiting the site was not recreation. Figure 1 displays the various reasons visitors gave as their purpose for stopping at the sample site.

Figure 1. Purpose of Visit by Visitors Who Agreed to be Interviewed



### 3. DESCRIPTION OF THE RECREATION VISIT

#### 3.1. Demographics

Descriptions of forest recreational visits were developed based upon the characteristics of interviewed visitors (respondents) and expanded to the national forest visitor population. Basic demographic information helps forest managers identify the profile of the visitors they serve. Management concerns such as providing recreation opportunities for underserved populations may be monitored with this information. Table 5, Table 6 and Table 7 provide basic demographic information about visitors interviewed regarding Gender, Race/Ethnicity, and Age, respectively. Table 8 shows the 15 most common reported origins for recreation visitors. Table 9 provides information about self reported travel distance from home to the interview site.

Males account for over 71 percent of visits to forests in Region 9. Hispanic/Latino visitors are less than 2 percent of the visits, and Native Americans are about 2 percent. Children under age 16 make up less than 15 percent of visits. While about one-third of visits to these forests come from people who live within 25 miles, about 23% of visits are from people who live 100 to 200 miles away.

Table 5. Percent of National Forest\* Visits by Gender and Forest

Forest	Gender†	
	Male (%)	Female (%)
Shawnee NF	62.6	37.4
Superior NF	61.0	39.0
Hiawatha NF	65.9	34.1
Hoosier NF	64.2	35.8
Chequamegon-Nicolet NF	69.7	30.3
Wayne NF	77.6	22.4
Midewin National Tallgrass Prairie	77.4	22.6
Allegheny NF	74.1	25.9
Green Mountain and Finger Lakes NF	73.2	26.8
Monongahela NF	66.1	33.9
White Mountain NF	61.7	38.3
Chippewa NF	88.1	11.9
Huron Manistee NF	76.0	24.0
Mark Twain NF	68.8	31.2
Ottawa NF	83.5	16.5

\* A National Forest Visit is defined as 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.

† Non-respondents to gender questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits.

Table 6. Percent of National Forest Visits\* by Race/Ethnicity and Forest

Forest	Race†					Ethnicity‡
	American Indian	Asian	Black/African American	Hawaiian/Pacific Islander	White	
Shawnee NF	2.0	1.0	0.4	0.0	98.5	2.1
Superior NF	2.1	1.0	0.0	0.0	97.0	0.3
Hiawatha NF	4.6	0.5	0.0	0.3	97.1	1.2
Hoosier NF	2.4	1.2	1.1	0.0	99.2	0.6
Chequamegon-Nicolet NF	2.5	1.0	0.0	0.0	96.6	1.5
Wayne NF	2.6	0.0	0.1	0.1	97.3	0.8
Midwin National Tallgrass Prairi	7.6	1.0	0.0	2.1	89.5	5.3
Allegheny NF	0.1	0.0	0.6	0.0	99.3	0.1
Green Mountain and Finger Lake	0.5	1.8	0.3	0.0	97.9	1.7
Monongahela NF	1.6	0.6	0.7	0.1	98.2	1.0
White Mountain NF	0.1	1.2	0.6	0.1	98.6	1.5
Chippewa NF	6.4	0.0	1.0	0.5	93.1	0.3
Huron Manistee NF	6.5	0.0	3.1	0.0	96.9	6.8
Mark Twain NF	3.1	0.1	0.4	0.1	96.9	0.8
Ottawa NF	0.9	0.0	0.2	0.1	99.2	0.9

\* A National Forest Visit is defined as 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.

† Non-respondents to race/ethnicity questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits. An individual could select multiple categories so this may total more than 100%.

‡ Spanish, Hispanic, or Latino was asked as a separate question from other groups and was not mutually exclusive so race may total more than 100%.

Table 7. Percent of National Forest Visits\* by Age and Forest

Forest	Age (%)†							
	Under 16	16 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70+
Midwin National Tallgrass Prairie	6.3	0.3	11.3	19.6	25.6	21.5	11.3	4.2
Wayne NF	13.9	4.6	14.3	12.5	20.9	20.6	10.1	3.1
Shawnee NF	17.2	3.5	15.3	13.5	14.7	18.7	11.9	5.2
Hiawatha NF	17.8	2.9	9.2	14.8	18.8	19.6	12.3	4.7
White Mountain NF	19.6	5.6	20.1	13.1	21.8	11.9	5.9	1.9
Mark Twain NF	16.7	4.5	16.1	17.8	19.0	13.7	10.0	2.2
Chippewa NF	15.5	2.2	11.2	18.1	21.6	15.2	12.4	3.9
Huron Manistee NF	19.1	2.4	10.2	17.1	24.8	15.1	9.1	2.2
Green Mountain and Finger Lakes	5.5	3.4	9.0	15.1	29.9	21.9	11.2	4.0
Hoosier NF	17.1	2.8	14.6	12.7	18.9	20.1	6.6	7.1
Monongahela NF	18.8	4.3	12.2	14.3	16.0	17.2	12.6	4.6
Allegheny NF	17.1	1.7	11.5	14.9	21.4	19.5	8.7	5.2
Ottawa NF	10.7	2.6	11.9	16.2	28.5	16.0	11.9	2.3
Chequamegon-Nicolet NF	20.7	4.0	10.9	16.2	22.8	15.1	8.4	2.0
Superior NF	15.7	2.7	11.0	9.2	27.5	20.2	7.5	6.2

\* A National Forest Visit is defined as 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.

† Non-respondents to age questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits.

**Table 8. Top 15 Most Commonly Reported ZIP Codes, States and Counties of National Forest Survey Respondents**

ZIP Code	State	County	Percent of Respondents	Survey Respondents (n)
Unknown Origin*			20.8	226
Foreign Country			15.5	168
49855	Michigan	Marquette County	6.7	73
47586	Indiana	Perry County	6.2	67
49935	Michigan	Iron County	6.0	65
45638	Ohio	Lawrence County	5.3	58
49862	Michigan	Alger County	5.2	56
63935	Missouri	Ripley County	4.9	53
16365	Pennsylvania	Warren County	4.9	53
47454	Indiana	Orange County	4.4	48
54806	Wisconsin	Ashland County	4.2	46
54891	Wisconsin	Bayfield County	4.2	46
62946	Illinois	Saline County	4.0	43
03570	New Hampshire	Coos County	3.9	42
63901	Missouri	Butler County	3.9	42

\* Includes respondents reporting no ZIP code or an invalid ZIP code.

**Table 9. Percent of National Forest Visits\* by Distance Traveled**

Miles from Survey Respondent's Home to Interview Location†	National Forest Visits (%)
0 - 25 miles	33.6
26 - 50 miles	10.5
51 - 75 miles	6.1
76 - 100 miles	8.1
101 - 200 miles	22.4
201 - 500 miles	15.6
Over 500 miles	3.7
Total	100.0

Note: Blank cells indicate that insufficient data were collected to make inferences.

\* National Forest Visits are defined as 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.

† Travel distance is self-reported.

### 3.2. Visit Descriptions

Characteristics of the recreation visit such as length of visit, types of sites visited, activity participation and visitor satisfaction with forest facilities and services help managers understand recreation use patterns and use of facilities. This allows them to plan workforce and facility needs. The average national forest visit length of stay and average site visit length of stay by site type on each forest in the region is displayed in Table 10.

About half of all visits to forests in this region last less than 4.5 hours. nearly 90 percent of the visits involve recreation at only one location on the forest. Almost 58% of visits are from people who visit that forest at most 10 times per year.

Table 10. Visit Duration by Site Type and Forest

Forest	Average Length of Stay (hours)					
	National Forest Visit*	Site Visit† by Site Type				
		All Site Visits	Day Use Developed Sites	Overnight Use Developed Sites	Designated Wilderness	Undeveloped Areas (GFAs)
White Mountain NF	12.3	7.6	2.8	34.4	9.0	10.9
Hoosier NF	15.9	10.2	3.9	29.5	8.0	5.9
Hiawatha NF	15.8	12.9	1.2	82.5	16.2	7.7
Monongahela NF	26.1	15.1	3.2	57.8	29.7	14.4
Superior NF	52.0	21.3	1.8	32.4	50.8	18.5
Mark Twain NF	16.2	10.8	2.1	43.8	10.6	10.8
Shawnee NF	8.7	6.2	1.4	55.3	5.1	9.2
Allegheny NF	22.2	14.5	1.8	55.6	8.7	13.4
Chippewa NF	21.9	17.9	3.0	67.3		16.2
Midewin National Tallgrass Prairie	4.4	2.7	2.0			2.7
Ottawa NF	25.2	19.6	2.1	64.1	32.7	17.7
Chequamegon-Nicolet NF	17.0	17.0	1.6	61.3	4.4	7.9
Huron Manistee NF	33.4	20.5	2.9	58.5	22.9	22.8
Wayne NF	17.2	10.6	2.0	43.9		6.6
Green Mountain and Finger Lakes NF	7.0	6.5	3.8	25.6	3.3	7.9

\* A National Forest Visit is defined as 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.

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

Many of the respondents on this Region went only to the site at which they were interviewed ( Table 11). Some visitors went to more than one recreation site or area during their national forest visit and the average site visits per national forest visit is shown below. Also displayed are the average people per vehicle and average 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.

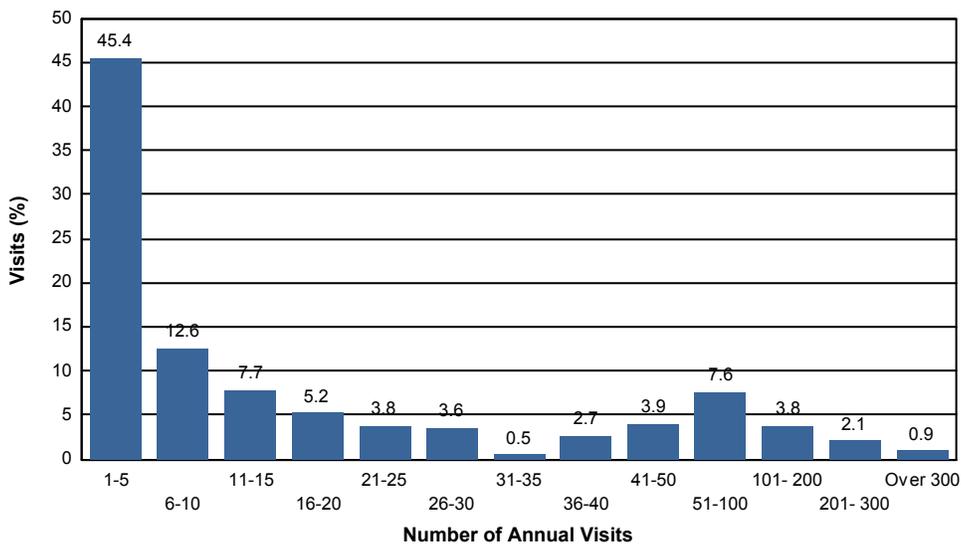
During the interview, visitors were asked how often they visit this national forest for all recreational activities, and how often for their primary activity. Table 12 summarizes the percent of visits that are made by those in each frequency category for this Region.

Table 11. Group Characteristics

Characteristic	Average
Percent of visits that were to just one national forest site during the National Forest Visit*	89.5
Number of national forest sites visited on National Forest Visit*	1.2
Group Size	2.6
Axles per Vehicle	2.1

Table 12. Percent of National Forest Visits\* by Annual Visit Frequency

Number of Annual Visits	Visits (%)†	Cumulative Visits (%)
1 - 5	45.4	45.4
6 - 10	12.6	58.0
11 - 15	7.7	65.8
16 - 20	5.2	71.0
21 - 25	3.8	74.8
26 - 30	3.6	78.4
31 - 35	0.5	78.9
36 - 40	2.7	81.6
41 - 50	3.9	85.5
51 - 100	7.6	93.1
101 - 200	3.8	97.0
201 - 300	2.1	99.1
Over 300	0.9	100.0



\* A National Forest Visit is defined as 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.

† The first row indicates the percent of National Forest Visits made by persons who visit 1 to 5 times per year. The last row indicates the percent of National Forest Visits made by persons who visit more than 300 times per year.

### 3.3. Activities

After identifying their main recreational activity, visitors were asked how many hours they spent participating in that main activity during this national forest visit. Some caution is needed when using this information. Because most national forest visitors participate in several recreation activities during each visit, it is more than likely that other visitors also participated in this activity, but did not identify it as their main activity. For example, on one national forest 63 % of visitors identified viewing wildlife as a recreational activity that they participated in during this visit, however only 3% identified that activity as their main recreational activity. The information on average hours viewing wildlife is only for the 3% who reported it as a main activity.

Viewing natural features is an activity that more than half of the visits include. It is also the most common primary activity (23.2%). The next most common primary activities are hunting (12.4%), hiking/walking (12.3%), and downhill skiing (9.0%).

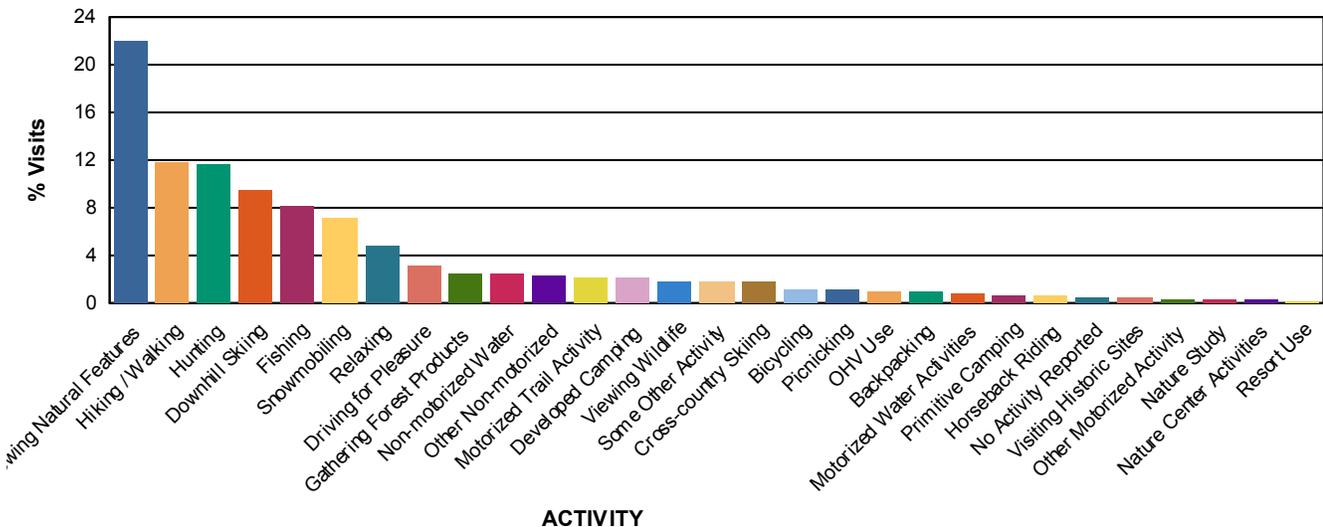
### Use of Constructed Facilities and Designated Areas

About one-third of recreation visitors interviewed were asked about whether they made use of a targeted set of facilities and special designated areas during their visit. These results are displayed in Table 14.

Table 13. Activity Participation

Activity	% Participation*	% Main Activity‡	Avg Hours Doing Main Activity
Viewing Natural Features	52.6	22.0	3.5
Viewing Wildlife	33.4	1.9	10.9
Relaxing	32.5	4.8	13.7
Hiking / Walking	32.5	11.8	4.9
Driving for Pleasure	18.7	3.1	2.5
Fishing	13.3	8.1	7.5
Hunting	12.5	11.6	13.0
Downhill Skiing	9.6	9.4	4.6
Picnicking	8.4	1.0	7.5
Gathering Forest Products	7.9	2.4	4.2
Snowmobiling	7.6	7.1	4.9
Other Non-motorized	6.5	2.2	3.6
Developed Camping	6.2	2.1	46.4
Nature Study	5.4	0.3	6.2
Non-motorized Water	5.3	2.4	8.3
Visiting Historic Sites	4.4	0.4	4.2
Some Other Activity	4.3	1.8	4.3
Motorized Trail Activity	3.6	2.2	5.7
Nature Center Activities	3.6	0.2	1.5
Primitive Camping	3.2	0.6	36.7
Motorized Water Activities	3.1	0.8	4.8
Bicycling	3.0	1.1	2.1
Backpacking	2.3	1.0	31.3
Resort Use	2.2	0.1	36.5
Cross-country Skiing	2.1	1.7	2.5
OHV Use	2.0	1.0	8.1
Other Motorized Activity	1.0	0.3	1.1
Horseback Riding	0.7	0.6	4.8
No Activity Reported	0.1	0.5	

% Main Activity



\* Survey respondents could select multiple activities so this column may total more than 100%.

† Survey respondents were asked to select just one of their activities as their main reason for the forest visit. Some respondents selected more than one, so this column may total more than 100%.

**Table 14. Percent of National Forest Visits\* Indicating Use of Special Facilities or Areas**

Special Facility or Area	% of National Forest Visits†
Developed Swimming Site	10.7
Scenic Byway	27.3
Visitor Center or Museum	8.0
Designated ORV Area	7.3
Forest Roads	10.0
Interpretive Displays	6.5
Information Sites	8.6
Developed Fishing Site	10.4
Motorized Single Track Trails	12.0
Motorized Dual Track Trails	15.9
None of these Facilities	40.5

\* A National Forest Visit is defined as 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.

† Survey respondents could select as many or as few special facilities or areas as appropriate.

## 4. ECONOMIC INFORMATION

Forest managers are usually very interested in the impact of National Forest recreation visits on the local economy. As commodity production of timber and other resources has declined, local communities look increasingly to tourism to support their communities. When considering recreation-related visitor spending managers are often interested both in identifying the average spending of individual visitors (or types of visitors) and the total spending associated with all recreation use. Spending averages for visitors or visitor parties can be estimated using data collected from a statistically valid visitor sampling program such as NVUM. To estimate the total spending associated with recreation use, three pieces of information are needed: an overall visitation estimate, the proportion of visits in the visitor types, and the average spending profiles for each of the visitor types. Multiplying the three gives a total amount of spending by a particular type of visitor. Summing over all visitor types gives total spending.

About one-third of the NVUM surveys included questions about trip-related spending within 50 miles of the site visited. Spending data collected from 2000 to 2003 were analyzed at Michigan State University by Dr. Daniel Stynes and Dr. Eric White. A description of that analysis and the results are in the report "Spending Profiles of National Forest Visitors: NVUM four-year report", available at <http://www.fs.fed.us/recreation/programs/nvum/NVUM4YrSpending.pdf>. Analysis of spending data for the 2005 - 2009 data collection periods was completed in summer of 2010.

### 4.1. Spending Segments

The spending that occurs on a recreation trip is greatly influenced by the type of recreation trip taken. For example, visitors on overnight trips away from home typically have to pay for some form of lodging (e.g., hotel/motel rooms, fees in a developed campground, etc.) while those on day trips do not. In addition, visitors on overnight trips will generally have to purchase more food during their trip (in restaurants or grocery stores) than visitors on day trips. Visitors who have not traveled far from home to the recreation location usually spend less than visitors traveling longer distances, especially on items such as fuel and food. Analysis of spending patterns has shown that a good way to construct segments of the visitor market with consistent spending patterns is the following seven groupings:

1. local visitors on day trips,
2. local visitors on overnight trips staying in lodging on the national forest,
3. local visitors on overnight trips staying in lodging off the national forest, and
4. non-local visitors on day trips,
5. non-local visitors on overnight trips staying in lodging on the national forest,
6. non-local visitors on overnight trips staying in lodging off the forest,
7. non-primary visitors.

Local visitors are those who travel less than 50 road miles from home to the recreation site visited and non-local visitors are those who travel greater than 50 road miles to the recreation site visited. Non-primary visitors are those for whom the primary purpose of their trip is something other than recreating on that national forest. Table 15 shows the distribution of visits by spending segment.

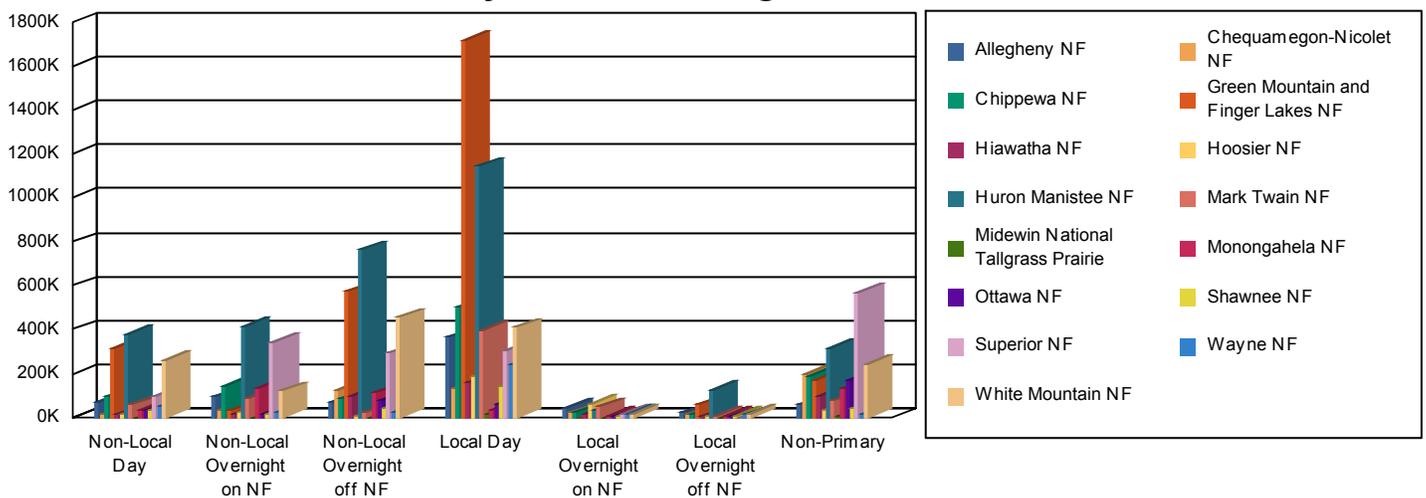
For over 17 percent of the visits, the National Forest is not the main recreation destination. Almost

55 percent of the visits are people on day trips away from home. Less than 10 percent of the visits to these forests are from people in households earning under \$25,000 per year.

Table 15. Distribution of National Forest Visits\* by Market Segment† and Forest

Forest	Non-Local Segments			Local Segments			Non-Primary‡	Total
	Day	Overnight on NF	Overnight off NF	Day	Overnight on NF	Overnight off NF		
Allegheny NF	73,003	94,904	73,003	365,016	43,802	21,901	58,402	730,031
Chequamegon-Nicolet NF	15,985	31,971	122,555	133,212	21,314	10,657	197,153	532,846
Chippewa NF	93,821	145,944	83,397	500,381	20,849	10,425	187,643	1,042,460
Green Mountain and Finger Lakes NF	314,281	28,571	571,420	1,714,260	0	57,142	171,426	2,857,100
Hiawatha NF	11,997	15,996	99,976	155,963	15,996	3,999	95,977	399,905
Hoosier NF	16,901	27,042	6,761	185,915	64,225	3,380	33,803	338,027
Huron Manistee NF	380,901	412,643	761,803	1,142,704	31,742	126,967	317,418	3,174,178
Mark Twain NF	55,772	90,630	20,915	397,377	48,801	6,972	76,687	697,153
Midewin National Tallgrass Prairie	487	0	162	13,795	0	0	1,785	16,229
Monongahela NF	37,065	134,362	111,196	37,065	4,633	9,266	129,728	463,316
Ottawa NF	28,682	14,341	75,289	60,948	3,585	3,585	172,090	358,520
Shawnee NF	31,887	17,393	46,381	139,142	5,798	8,696	40,583	289,880
Superior NF	97,414	340,950	292,243	308,479	16,236	0	568,251	1,623,573
Wayne NF	50,276	23,204	23,204	243,643	19,337	11,602	15,469	386,735
White Mountain NF	258,120	121,468	455,506	409,955	15,184	15,184	242,936	1,518,353

Number of Visits by Forest and Segment



\* A national forest visit is defined as 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.

† The market segments shown here relate to the type of recreation trip taken. A recreation trip is defined as the duration of time beginning when the visitor left their home and ending when they got back to their home. "Non-local" trips are those where the individual(s) traveled greater than approximately 50 miles from home to the site visited. "Day" trips do not involve an overnight stay outside the home, "overnight on-forest" trips are those with an overnight stay outside the home on National Forest System (NFS) land, and "overnight off-forest" trips are those with an overnight stay outside the home off National Forest System land.

‡ "Non-primary" trips are those where the primary recreation destination of the trip was somewhere other than the national forest under consideration.

Individuals are urged to consult an economist when interpreting the NVUM economic tables.

## 4.2. Spending Profiles

Spending profiles for each segment for this forest can be found in the Stynes and White report noted above. Appendix Table A-1 in that report identifies whether the forest has a high-spending profile (Table 7 of Stynes and White), an average profile (Table 5), or a low-spending profile (Table 8). It is essential to note that these spending profiles are in dollars spent per **party**. Obtaining per-visit spending is accomplished by dividing the spending for each segment by the average people per party for the forest and segment found in Appendix Table A-3 of that report.

## 4.3. Total Direct Spending

Total direct spending made within 50 miles of the forest and associated with national forest recreation is calculated by combining estimates of per-visit spending averages from the spending profiles with estimates of the number of national forest visits in the segment. The number of visits in the segment equals the percentage in Table 15 times the number of National Forest visits reported in Table 2.

## 4.4. Other Visit Information

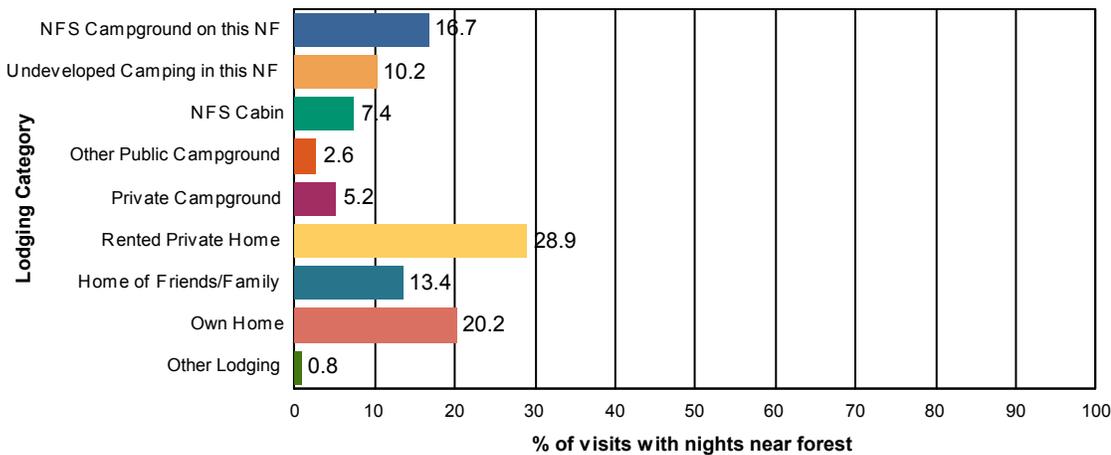
There are several other important aspects of the trips on which the recreation visits to the forest are made. These are summarized in Table 16. The first aspect relates to total amount spent by the recreating party on the trip. This includes spending not just within 50 miles of the forest, but anywhere. The table shows both the average and the median. Another set describes the overall length of the trips on which the visits are made. The table shows the percent of the visits that were made on trips where the person stayed away from home overnight (even though the forest visit may be just a day visit), and the average total nights away from home and nights spent within 50 miles of the forest. For those spending one or more nights in or near the forest, the table shows the percentage that selected each of a series of lodging options. Together, these results help show the context of overall trip length and lodging patterns for visitors to the forest.

Table 16. Trip Spending and Lodging Usage

Trip Spending	Value
Average Total Trip Spending per Party	\$354
Median Total Trip Spending per Party	\$100
% NF Visits made on trip with overnight stay away from home	38.1%
% NF Visits with overnight stay within 50 miles of NF	35.4%
Mean nights/visit within 50 miles of NF	4.1
Area Lodging Use	% Visits with Nights Near Forest
NFS Campground on this NF	16.7%
Undeveloped Camping in this NF	10.2%
NFS Cabin	7.4%
Other Public Campground	2.6%
Private Campground	5.2%
Rented Private Home	28.9%
Home of Friends/Family	13.4%
Own Home	20.2%
Other Lodging	0.8%

**Area Lodging Use**

% Visits with Nights Near Forest



## 4.5. Household Income

Visitors were asked to report a general category for their total household income. Only very general categories were used, to minimize the intrusive nature of the question. Results help indicate the overall socio-economic status of visitors to the forest, and are found in Table 17.

**Table 17. Percent of National Forest Visits\* by Annual Household Income**

Annual Household Income Category	National Forest Visits (%)
Under \$25,000	9.5
\$25,000 to \$49,999	29.4
\$50,000 to \$74,999	27.7
\$75,000 to \$99,999	13.1
\$100,000 to \$149,999	13.4
\$150,000 and up	6.9
Total	100.0

\* National Forest Visits are defined as 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.

## 4.6. Substitute Behavior

Visitors were asked to select one of several substitute choices, if for some reason they were unable to visit this national forest (Figure 3). Choices included going somewhere else for the same activity they did on the current trip, coming back to this forest for the same activity at some later time, going someplace else for a different activity, staying at home and not making a recreation trip, going to work instead of recreating, and a residual 'other' category. On most forests, the majority of visitors indicate that their substitute behavior choice is activity driven (going elsewhere for same activity) and a smaller percentage indicate they would come back later to this national forest for the same activity. For those visitors who said they would have gone somewhere else for recreation they were asked how far from their home this alternate destination was. These results are shown in Figure 4.

Figure 3. Substitute Behavior Choices

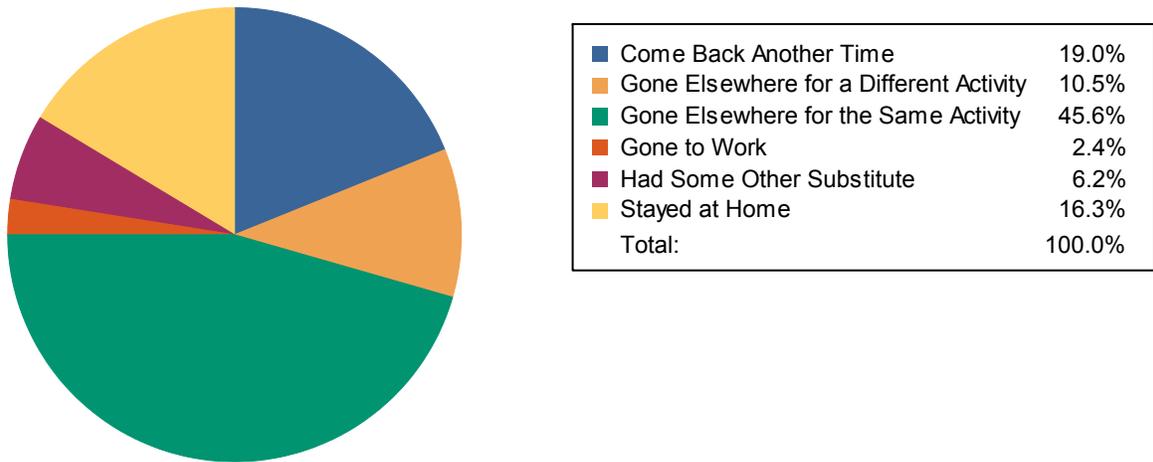
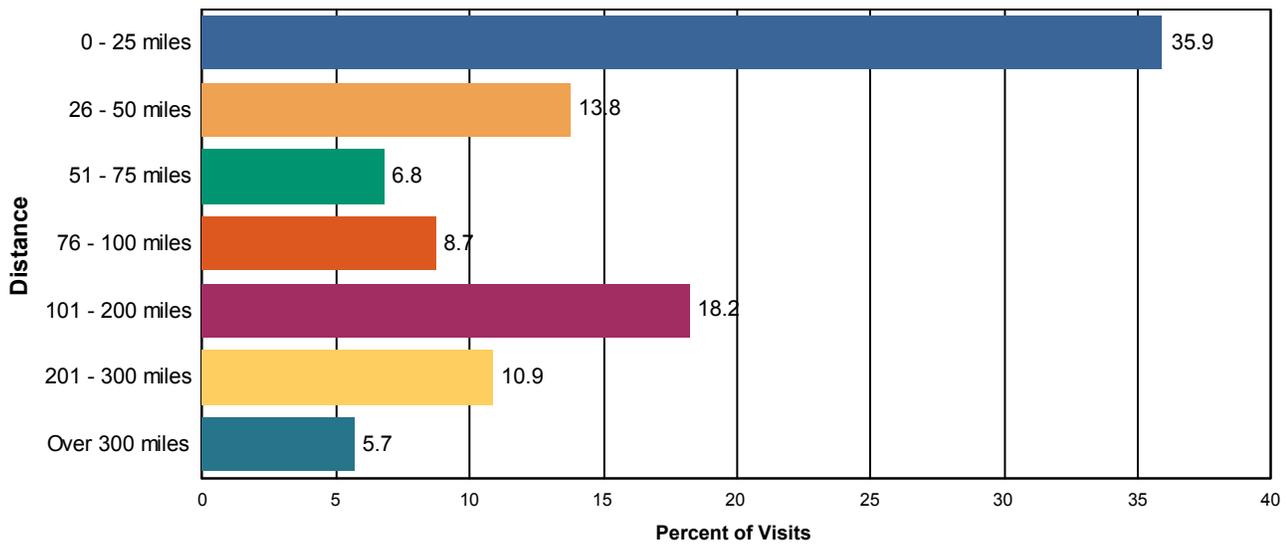


Figure 4. Reported Distance Visitors Would Travel to Alternate Location



## 5. SATISFACTION INFORMATION

An important element of outdoor recreation program delivery is evaluating customer satisfaction with the recreation setting, facilities, and services provided. Satisfaction information helps managers decide where to invest in resources and to allocate resources more efficiently toward improving customer satisfaction. Satisfaction is a core piece of data for national- and forest-level performance measures. To describe customer satisfaction, several different measures are used. Recreation visitors were asked to provide an overall rating of their visit to the national forest, on a 5-point Likert scale. About one-third of visitors interviewed on the forest rated their satisfaction with fourteen elements related to recreation facilities and services, and the importance of those elements to their recreation experience. Visitors were asked to rate the specific site or area at which they were interviewed. Visitors rated both the importance and performance (satisfaction with) of these elements using a 5-point scale. The Likert scale for importance ranged from not important to very important. The Likert scale for performance ranged from very dissatisfied to very satisfied. Although the satisfaction ratings specifically referenced the area where the visitor was interviewed, the survey design does not usually have enough responses for any individual site or area on the forest to present information at a site level. Rather, the information is generalized to overall satisfaction within the three site types: Day Use Developed (DUDS), Overnight Use Developed (OUDS), General Forest Areas, and on the forest as a whole.

The satisfaction responses are analyzed in several ways. First, a graph of overall satisfaction is presented in Figure 5. Next, two aggregate measures were calculated from the set of individual elements. The satisfaction elements most readily controlled by managers were aggregated into four categories: developed facilities, access, services, and visitor safety. The site types sampled were aggregated into three groups: developed sites (includes both day use and overnight developed sites), dispersed areas, and designated Wilderness. The first aggregate measure is called “Percent Satisfied Index (PSI)”, which is the proportion of all ratings for the elements in the category where the satisfaction ratings had a numerical rating of 4 or 5. Conceptually, the PSI indicator shows the percent of all recreation customers who are satisfied with agency performance. The agency’s national target for this measure is 85%. It is usually difficult to consistently have a higher satisfaction score than 85% since given tradeoffs among user groups and other factors. Table 18 displays the aggregate PSI scores for this forest.

Another aggregate measure of satisfaction is called “Percent Meet Expectations (PME)”. This is the proportion of satisfaction ratings in which the numerical satisfaction rating for a particular element is equal to or greater than the importance rating for that element. This indicator tracks the congruence between the agency’s performance and customer evaluations of importance. The idea behind this measure is that those elements with higher importance levels must have higher performance levels. Figure 6 displays the PME scores by type of site. Lower scores indicate a gap between desires and performance.

An Importance-Performance Analysis (IPA) (Hudson, et al, Feb 2004) was calculated for the importance and satisfaction scores. A target level of importance and performance divides the possible set of score pairs into four quadrants. For this work, the target level of both was a numerical score of 4.0. Each quadrant has a title that helps in interpreting responses that fall into it, and that provides some general guidance for management. These can be described as:

1. Importance at or above 4.0, Satisfaction at or above 4.0: **Keep up the good work.** These are items that are important to visitors and ones that the forest is performing quite well;
2. Importance at or above 4.0, Satisfaction under 4.0: **Concentrate here.** These are important items to the public, but performance is not where it needs to be. Increasing effort here is likely to have the greatest payoff in overall customer satisfaction;
3. Importance below 4.0, Satisfaction above 4.0: **Possible overkill.** These are items that are not highly important to visitors, but the forest's performance is quite good. It may be possible to reduce effort here without greatly harming overall satisfaction;
4. Importance below 4.0; Satisfaction below 4.0: **Low Priority.** These are items where performance is not very good, but neither are they important to visitors. Focusing effort here is unlikely to have a great impact.

We present tables that show the I-P rating title for each satisfaction element. Each sitetype is presented in a separate table. Results are presented in Tables 19 - 22.

The numerical scores for visitor satisfaction and importance for each element by site type, and the sample sizes for each are presented in Appendix B (Tables B1 - B4). Most managers find it difficult to discern meaning from these raw tables; however they may wish to examine specific elements once they have reviewed the other satisfaction information presented in this section. Note that if an element had fewer than 10 responses no analyses are performed, as there are too few responses to provide reliable information. Finally, visitors were asked about their overall satisfaction with and the importance of road condition and the adequacy of signage. Figure 7a and Figure 7b show the results.

Satisfaction levels are quite high with the recreation opportunities in this region. Over three-fourths of visits report being very satisfied, and 17 percent are somewhat satisfied. Among satisfaction index elements, the perception of safety ranks very high; over 95% in each of the three types of sites. Satisfaction with the services component is about 75% in dispersed settings, and just under 85% in developed settings.

Figure 5. Percent of National Forest Visits by Overall Satisfaction Rating

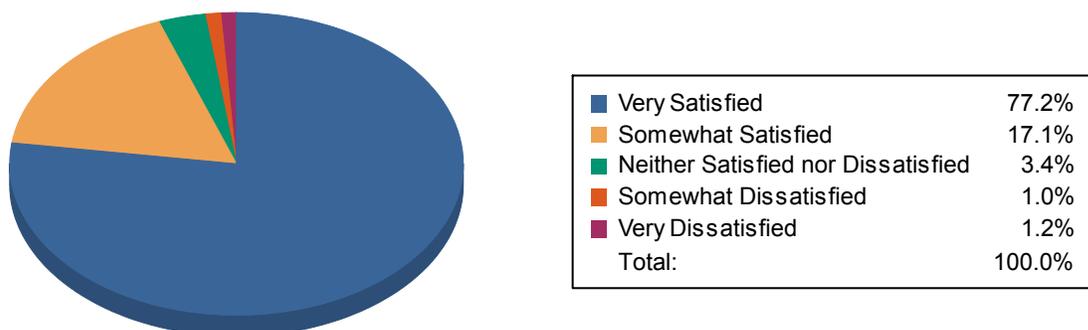


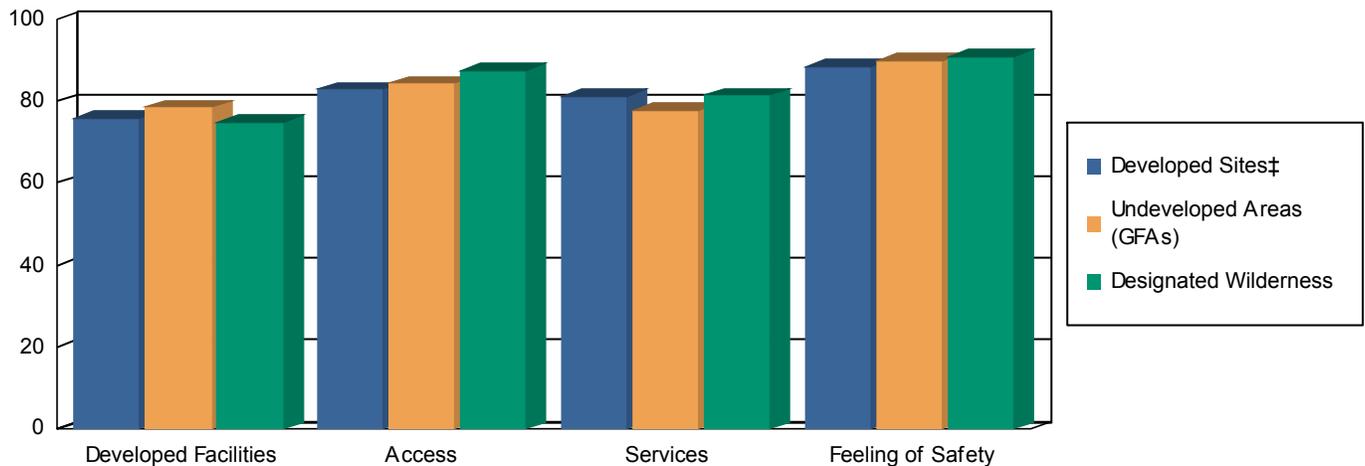
Table 18. Percent Satisfied Index† Scores for Aggregate Categories

Satisfaction Element	Satisfied Survey Respondents (%)		
	Developed Sites‡	Undeveloped Areas (GFAs)	Designated Wilderness
Developed Facilities	86.0	81.6	66.9
Access	91.2	83.9	86.4
Services	84.1	77.4	73.6
Feeling of Safety	96.9	94.7	96.4

† This is a composite rating. It is the proportion of satisfaction ratings scored by visitors as good (4) or very good (5). Computed as the percentage of all ratings for the elements within the sub grouping that are at or above the target level, and indicates the percent of all visitors that are reasonably well satisfied with agency performance.

‡ This category includes both Day Use and Overnight Use Developed Sites .

Figure 6. Percent Meets Expectations Scores\*



\* “Percent Meet Expectations (PME)” is the proportion of satisfaction ratings in which the numerical satisfaction rating for a particular element is equal to or greater than the importance rating for that element. This indicator tracks the congruence between the agency’s performance and customer evaluations of importance . The idea behind this measure is that those elements with higher importance levels must have higher performance levels. Lower scores indicate a gap between desires and performance.

‡ This category includes both Day Use and Overnight Use Developed Sites .

Table 19. Importance-Performance Ratings for Day Use Developed Sites

Satisfaction Element	Importance-Performance Rating
Restroom Cleanliness	Keep up the Good Work
Developed Facilities	Keep up the Good Work
Condition of Environment	Keep up the Good Work
Employee Helpfulness	Keep up the Good Work
Interpretive Displays	Keep up the Good Work
Parking Availability	Keep up the Good Work
Parking Lot Condition	Keep up the Good Work
Rec. Info. Availability	Keep up the Good Work
Road Condition	Keep up the Good Work
Feeling of Safety	Keep up the Good Work
Scenery	Keep up the Good Work
Signage Adequacy	Keep up the Good Work
Trail Condition	Keep up the Good Work
Value for Fee Paid	Keep up the Good Work

Table 20. Importance-Performance Ratings for Overnight Developed Sites

Satisfaction Element	Importance-Performance Rating
Restroom Cleanliness	Keep up the Good Work
Developed Facilities	Keep up the Good Work
Condition of Environment	Keep up the Good Work
Employee Helpfulness	Keep up the Good Work
Interpretive Displays	Keep up the Good Work
Parking Availability	Keep up the Good Work
Parking Lot Condition	Keep up the Good Work
Rec. Info. Availability	Keep up the Good Work
Road Condition	Keep up the Good Work
Feeling of Safety	Keep up the Good Work
Scenery	Keep up the Good Work
Signage Adequacy	Keep up the Good Work
Trail Condition	Keep up the Good Work
Value for Fee Paid	Keep up the Good Work

Table 21. Importance-Performance Ratings for Undeveloped Areas (GFAs)

Satisfaction Element	Importance-Performance Rating
Restroom Cleanliness	Keep up the Good Work
Developed Facilities	Keep up the Good Work
Condition of Environment	Keep up the Good Work
Employee Helpfulness	Keep up the Good Work
Interpretive Displays	Possible Overkill
Parking Availability	Keep up the Good Work
Parking Lot Condition	Keep up the Good Work
Rec. Info. Availability	Keep up the Good Work
Road Condition	Keep up the Good Work
Feeling of Satefy	Keep up the Good Work
Scenery	Keep up the Good Work
Signage Adequacy	Keep up the Good Work
Trail Condition	Keep up the Good Work
Value for Fee Paid	Keep up the Good Work

Table 22. Importance-Performance Ratings for Designated Wilderness

Satisfaction Element	Importance-Performance Rating
Restroom Cleanliness	Low Priority
Developed Facilities	Possible Overkill
Condition of Environment	Keep up the Good Work
Employee Helpfulness	Keep up the Good Work
Interpretive Displays	Low Priority
Parking Availability	Possible Overkill
Parking Lot Condition	Possible Overkill
Rec. Info. Availability	Keep up the Good Work
Road Condition	Possible Overkill
Feeling of Satefy	Keep up the Good Work
Scenery	Keep up the Good Work
Signage Adequacy	Keep up the Good Work
Trail Condition	Keep up the Good Work
Value for Fee Paid	Keep up the Good Work

Figure 7a. Satisfaction with Forest-wide Road Conditions & Signage Adequacy

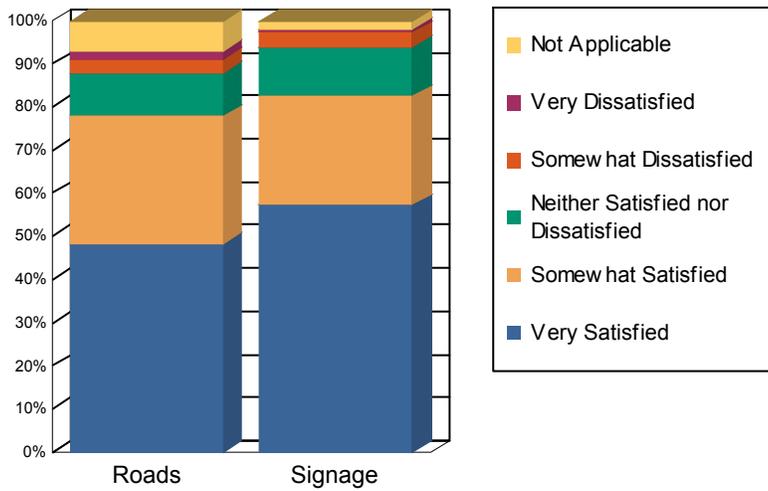
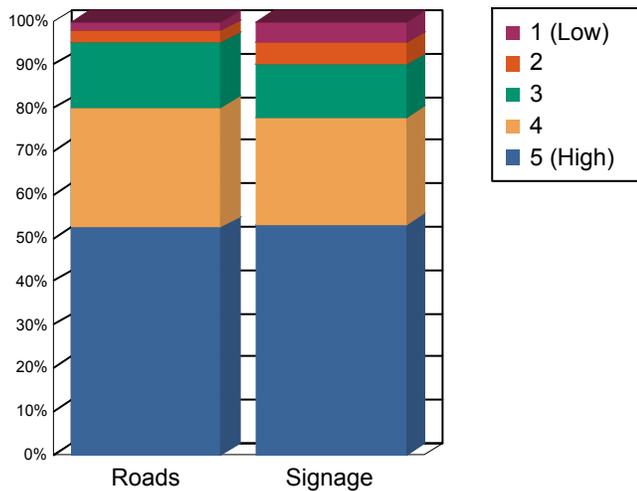


Figure 7b. Importance of Forest-wide Road Conditions & Signage Adequacy



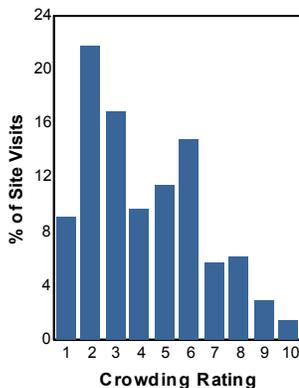
### 5.1. Crowding

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 23 shows the distribution of responses for each site type. Crowding was reported on a scale of 1 to 10 where 1 denotes hardly anyone was there, and a 10 indicates the area was perceived as overcrowded.

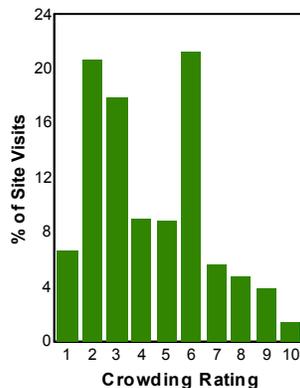
Table 23. Percent of Site Visits\* by Crowding Rating and Site Type

Crowding Rating†	Site Types (% of Site Visits)			
	Day Use Developed Sites	Overnight Use Developed Sites	Undeveloped Areas (GFAs)	Designated Wilderness
10 - Overcrowded	1.5	1.5	0.5	4.3
9	2.9	3.8	3.2	4.8
8	6.1	4.7	3.8	0.9
7	5.7	5.7	4.3	5.6
6	14.8	21.3	9.6	11.7
5	11.4	8.9	12.6	17.0
4	9.7	9.0	12.6	12.5
3	16.9	17.8	18.0	6.1
2	21.8	20.6	24.2	24.6
1 - Hardly anyone there	9.1	6.6	11.2	12.4
<b>Average Rating</b>	<b>4.2</b>	<b>4.4</b>	<b>3.8</b>	<b>4.2</b>

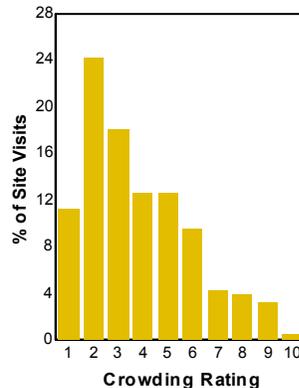
**Day Use Developed Sites**



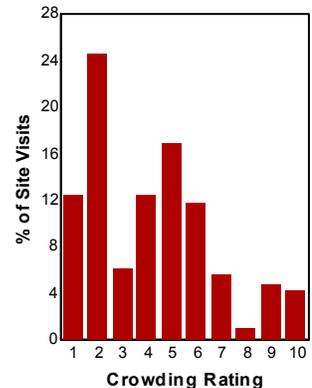
**Overnight Use Developed Sites**



**Undeveloped Areas (GFAs)**



**Designated Wilderness**



\* A Site Visit is the entry of one person onto a national forest site or area to participate in recreation activities for an unspecified period of time.

† Survey respondents rated how crowded the site or area they were interviewed at was using a scale of 1 to 10 where 1 meant hardly anyone was there and 10 meant the site or area was overcrowded.

## 5.2. Disabilities

Providing barrier-free facilities for recreation visitors is an important part of facility and service planning and development. One question asked if anyone in their group had a disability. If so, the visitor was then asked if the facilities at the sites they visited were accessible for this person ( Table 24).

Table 24. Accessibility of National Forest Facilities by Persons with Disabilities

Item	Percent
% of visits that include a group member with a disability	7.9
Of this group, percent who said facilities at site visited were accessible	79.3

## 6. WILDERNESS VISIT DEMOGRAPHICS

Visits to Wilderness are sometimes made by a particular subset of the overall visitor population. In this chapter, tables are presented that describe the demographic characteristics of those who visit designated wilderness on forests in this region. Table 25 shows the gender breakdown, Table 26 the racial and ethnicity distribution, and the Table 27 age composition. In Table 28, a frequency analysis of Zip Codes obtained from respondents is presented, to give a rough idea of the common origins of Wilderness visitors.

Table 25. Percent of National Forest\* Visits by Gender and Forest

Forest	Gender†	
	Male (%)	Female (%)
Shawnee NF	67.8	32.2
Superior NF	61.6	38.4
Hiawatha NF	68.3	31.7
Hoosier NF	66.1	33.9
Chequamegon-Nicolet NF	57.3	42.7
Allegheny NF	66.0	34.0
Green Mountain and Finger Lakes NF	54.9	45.1
Monongahela NF	81.6	18.4
White Mountain NF	68.0	32.0
Huron Manistee NF	64.4	35.6
Mark Twain NF	72.0	28.0
Ottawa NF	70.4	29.6

\* A National Forest Visit is defined as 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.

† Non-respondents to gender questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits.

Table 26. Percent of National Forest Visits\* by Race/Ethnicity and Forest

Forest	Race†					Ethnicity†
	American Indian	Asian	Black/African American	Hawaiian/Pacific Islander	White	
Shawnee NF	0.1	0.2	1.7	0.0	98.2	1.6
Superior NF	3.0	6.1	0.0	0.0	90.9	2.9
Hiawatha NF	0.0	0.0	0.0	0.0	100.0	0.0
Hoosier NF	0.0	1.4	0.0	0.0	98.6	0.7
Chequamegon-Nicolet NF	0.0	0.0	0.0	0.0	100.0	
Allegheny NF	0.0	0.0	0.0	0.0	100.0	0.0
Green Mountain and Finger Lake	3.8	0.0	3.8	0.0	100.0	4.9
Monongahela NF	6.5	0.0	0.0	0.0	93.5	0.0
White Mountain NF	0.0	2.9	3.2	0.0	93.9	3.0
Huron Manistee NF	0.0	0.0	14.0	0.0	86.0	14.9
Mark Twain NF	0.0	0.0	0.0	0.0	100.0	0.0
Ottawa NF	2.8	0.0	1.4	1.4	95.8	3.4

\* A National Forest Visit is defined as 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.

† Non-respondents to race/ethnicity questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits. An individual could select multiple categories so this may total more than 100%.

‡ Spanish, Hispanic, or Latino was asked as a separate question from other groups and was not mutually exclusive so race may total more than 100%.

Table 27. Percent of National Forest Visits\* by Age and Forest

Forest	Age (%)†							
	Under 16	16 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70+
Shawnee NF	10.2	1.8	15.9	17.5	15.2	18.1	16.9	4.4
Hiawatha NF	21.0	0.3	12.2	21.8	24.2	16.0	1.9	2.6
White Mountain NF	31.7	3.4	9.8	13.9	20.6	10.7	8.7	1.2
Huron Manistee NF	27.7	2.1	20.3	8.6	16.6	19.3	3.9	1.5
Mark Twain NF	21.0	4.6	14.2	15.2	13.3	13.4	14.3	4.0
Hoosier NF	11.9	6.4	24.5	13.8	15.1	17.4	8.0	2.8
Green Mountain and Finger Lakes	17.4	0.0	14.3	14.1	30.4	15.7	5.0	3.1
Allegheny NF	10.9	12.3	13.9	14.5	13.1	22.0	8.7	4.5
Ottawa NF	19.8	3.6	6.0	9.9	20.6	20.5	15.6	3.9
Monongahela NF	36.8	5.9	6.7	18.1	7.0	23.8	1.7	0.0
Chequamegon-Nicolet NF	21.1	4.9	19.7	2.5	33.3	18.5	0.0	0.0
Superior NF	19.2	7.6	20.0	13.8	15.5	18.4	3.7	1.8

\* A National Forest Visit is defined as 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.

† Non-respondents to age questions were excluded from analysis. Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits.

Table 28. Top 15 Most Commonly Reported ZIP Codes, States and Counties of Wilderness Survey Respondents

ZIP Code	State	County	Percent of Respondents	Survey Respondents (n)
49855	Michigan	Marquette County	23.4	34
47401	Indiana	Monroe County	11.0	16
Unknown Origin*			10.3	15
49503	Michigan	Kent County	6.2	9
46220	Indiana	Marion County	6.2	9
Foreign Country			4.8	7
54501	Wisconsin	Oneida County	4.8	7
49837	Michigan	Delta County	4.8	7
48103	Michigan	Washtenaw County	4.8	7
49660	Michigan	Manistee County	4.1	6
49969	Michigan	Gogebic County	4.1	6
47408	Indiana	Monroe County	4.1	6
49829	Michigan	Delta County	4.1	6
49885	Michigan	Marquette County	3.4	5
54401	Wisconsin	Marathon County	3.4	5

\* Includes respondents reporting no ZIP code or an invalid ZIP code.

## 7. APPENDIX TABLES

## APPENDIX B - Detailed Satisfaction Results

Table B-1. Satisfaction for Visits to Day Use Developed Sites

Satisfaction Element	Percent Rating Satisfaction as:					Mean Rating§	Mean Importance†	No. Obs‡
	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied			
Restroom Cleanliness	3.4	4.1	13.9	32.4	46.2	4.1	4.5	942
Developed Facilities	0.4	2.5	6.6	25.2	65.3	4.5	4.4	1309
Condition of Environment	0.1	1.1	4.0	17.3	77.6	4.7	4.8	1517
Employee Helpfulness	0.4	1.0	6.0	15.0	77.6	4.7	4.6	689
Interpretive Displays	2.1	5.3	14.0	26.8	51.8	4.2	4.3	1006
Parking Availability	0.1	3.0	6.9	16.3	73.8	4.6	4.5	1497
Parking Lot Condition	0.1	1.4	4.6	21.4	72.4	4.6	4.2	1489
Rec. Info. Availability	2.5	3.4	13.1	23.4	57.5	4.3	4.3	1161
Road Condition	1.2	2.7	8.6	25.6	61.9	4.4	4.4	1104
Feeling of Safety	0.1	0.9	2.4	13.6	83.0	4.8	4.7	1493
Scenery	0.0	0.2	2.4	7.4	90.1	4.9	4.8	1526
Signage Adequacy	1.3	5.0	10.6	23.8	59.3	4.3	4.4	1476
Trail Condition	0.1	2.5	6.1	32.9	58.4	4.5	4.6	975
Value for Fee Paid	0.5	2.1	8.7	26.2	62.5	4.5	4.6	548

NOTE: The data was not reported for items with fewer than 10 responses. Satisfaction and Importance were asked as two separate questions so one of these may have 10 responses even though the other does not.

§ Scale: Very Dissatisfied = 1, Somewhat Dissatisfied = 2, Neither Satisfied nor Dissatisfied = 3, Somewhat Satisfied = 4, Very Satisfied = 5

† Scale: Not Important = 1, Somewhat Important = 2, Moderately Important = 3, Important = 4, Very Important = 5

‡ No. Obs is the number of survey respondents who responded to this item.

Table B-2. Satisfaction for Visits to Overnight Developed Sites

Satisfaction Element	Percent Rating Satisfaction as:					Mean Rating§	Mean Importance†	No. Obs‡
	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied			
Restroom Cleanliness	2.4	5.3	5.8	25.2	61.3	4.4	4.6	485
Developed Facilities	1.2	1.8	5.1	22.9	69.0	4.6	4.5	452
Condition of Environment	0.5	2.5	2.1	17.7	77.2	4.7	4.7	565
Employee Helpfulness	0.4	1.5	5.9	17.1	75.1	4.7	4.6	341
Interpretive Displays	0.4	3.2	11.6	32.0	52.8	4.3	4.1	293
Parking Availability	1.0	3.0	5.0	9.7	81.2	4.7	4.3	509
Parking Lot Condition	0.3	1.6	3.3	16.1	78.7	4.7	4.2	438
Rec. Info. Availability	1.8	4.9	10.9	22.8	59.6	4.3	4.3	487
Road Condition	2.7	2.5	4.5	26.6	63.8	4.5	4.2	483
Feeling of Safety	0.3	0.3	1.2	13.2	85.1	4.8	4.6	565
Scenery	0.2	0.3	4.1	14.1	81.3	4.8	4.7	569
Signage Adequacy	1.3	5.8	5.5	20.3	67.1	4.5	4.4	546
Trail Condition	0.6	3.1	4.5	31.0	60.8	4.5	4.4	378
Value for Fee Paid	1.2	3.7	6.8	20.2	68.1	4.5	4.5	464

NOTE: The data was not reported for items with fewer than 10 responses. Satisfaction and Importance were asked as two separate questions so one of these may have 10 responses even though the other does not.

§ Scale: Very Dissatisfied = 1, Somewhat Dissatisfied = 2, Neither Satisfied nor Dissatisfied = 3, Somewhat Satisfied = 4, Very Satisfied = 5

† Scale: Not Important = 1, Somewhat Important = 2, Moderately Important = 3, Important = 4, Very Important = 5

‡ No. Obs is the number of survey respondents who responded to this item.

Table B-3. Satisfaction for Visits to Undeveloped Areas (GFAs)

Satisfaction Element	Percent Rating Satisfaction as:					Mean Rating§	Mean Importance†	No. Obs‡
	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied			
Restroom Cleanliness	4.0	7.0	10.9	16.8	61.2	4.2	4.3	402
Developed Facilities	0.5	1.3	13.4	29.1	55.7	4.4	4.2	379
Condition of Environment	0.5	4.1	2.5	27.1	65.8	4.5	4.7	983
Employee Helpfulness	0.1	4.8	12.2	24.7	58.2	4.4	4.2	300
Interpretive Displays	2.5	4.2	23.7	29.5	40.2	4.0	3.8	445
Parking Availability	2.3	1.4	8.9	20.5	67.0	4.5	4.1	783
Parking Lot Condition	2.4	2.1	11.2	19.1	65.2	4.4	4.0	716
Rec. Info. Availability	2.4	3.4	16.3	31.2	46.8	4.2	4.3	756
Road Condition	1.3	6.2	12.3	30.1	50.2	4.2	4.2	759
Feeling of Safety	0.0	1.8	3.5	21.9	72.8	4.7	4.6	949
Scenery	0.4	1.4	2.8	12.2	83.2	4.8	4.6	998
Signage Adequacy	1.1	9.0	10.8	27.0	52.0	4.2	4.2	880
Trail Condition	0.5	4.7	10.4	31.6	52.9	4.3	4.3	783
Value for Fee Paid	2.3	8.7	14.8	14.0	60.2	4.2	4.2	350

NOTE: The data was not reported for items with fewer than 10 responses. Satisfaction and Importance were asked as two separate questions so one of these may have 10 responses even though the other does not.

§ Scale: Very Dissatisfied = 1, Somewhat Dissatisfied = 2, Neither Satisfied nor Dissatisfied = 3, Somewhat Satisfied = 4, Very Satisfied = 5

† Scale: Not Important = 1, Somewhat Important = 2, Moderately Important = 3, Important = 4, Very Important = 5

‡ No. Obs is the number of survey respondents who responded to this item.

Table B-4. Satisfaction for Visits to Designated Wilderness\*

Satisfaction Element	Percent Rating Satisfaction as:					Mean Rating§	Mean Importance†	No. Obs‡
	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied			
Restroom Cleanliness	6.0	5.4	28.4	27.7	32.5	3.8	3.7	104
Developed Facilities	7.7	11.0	7.6	20.2	53.5	4.0	3.8	84
Condition of Environment	0.0	0.2	0.8	19.3	79.8	4.8	4.8	289
Employee Helpfulness	0.0	0.0	15.0	8.7	76.3	4.6	4.0	87
Interpretive Displays	7.7	6.3	19.3	22.0	44.7	3.9	3.4	147
Parking Availability	0.1	0.9	8.6	14.0	76.4	4.7	3.8	258
Parking Lot Condition	0.0	2.4	13.3	13.8	70.4	4.5	3.6	255
Rec. Info. Availability	1.0	7.9	16.2	24.6	50.3	4.2	4.1	231
Road Condition	0.1	5.2	11.1	30.9	52.7	4.3	3.9	190
Feeling of Safety	0.0	0.6	3.0	19.9	76.5	4.7	4.4	284
Scenery	0.0	0.0	2.4	13.4	84.2	4.8	4.6	289
Signage Adequacy	1.6	6.5	20.8	24.2	46.9	4.1	4.2	254
Trail Condition	0.8	2.5	10.2	33.8	52.8	4.4	4.5	251
Value for Fee Paid	4.8	1.8	2.7	16.9	73.9	4.5	4.1	125

NOTE: The data was not reported for items with fewer than 10 responses. Satisfaction and Importance were asked as two separate questions so one of these may have 10 responses even though the other does not.

§ Scale: Very Dissatisfied = 1, Somewhat Dissatisfied = 2, Neither Satisfied nor Dissatisfied = 3, Somewhat Satisfied = 4, Very Satisfied = 5

† Scale: Not Important = 1, Somewhat Important = 2, Moderately Important = 3, Important = 4, Very Important = 5

‡ No. Obs is the number of survey respondents who responded to this item.

\* Data supplied is for all Designated Wilderness on the forest combined. Data was not collected for satisfaction for each individual Wilderness on the forest.