

# National Forest Visitor Use Monitoring National and Regional Project Results

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The national forest Visitor Use Monitoring (NVUM) project provides estimates of recreation and other visitor use on national forests throughout the United States. These results are from a survey of forest visitors at 6,000 recreation sites across 32 national forests. During the 5,846 sample days almost 37,000 visitors were interviewed. The survey results are compiled at the forest level, then expanded to provide estimates at the regional and national levels. As NVUM surveys continue through the next 3 years these estimates will be updated annually.

Existing national forest plans and other Forest Service direction mandate visitor use monitoring. Thus, NVUM was developed to provide statistically reliable estimates of visitor needed to assist with federal land management planning decisions. The survey also provides important information collected to Congress and external customers such as the states, private industry, and academia.

This report provides broad summary information about recreation use and visitor characteristics nationally and at the nine Forest Service Regions. Detailed information about visitors at the 32 sampled national forests will available in separate reports from <http://www.fs.fed.us/recreation/recuse/recuse.shtml>. In addition, the national and regional information can be used by planners and analysts to derive other specific information. This database will be available in the fall of 2001 from the Southern Research Station and the external web site:

<http://www.fs.fed.us/recreation/recuse/recuse.shtml>. Visitor use sampling protocols may also be obtained at <http://www.fs.fed.us/recreation/recuse/recuse.shtml>.

NVUM has standardized definitions of *national forest visits* and *national forest site visits* that provide conservative estimates of visitor use. NVUM is working with other federal agencies such as the National Park Service, Army Corp of Engineers, and Bureau of Land Management that provide recreation opportunities to the public to develop a standard interagency definition. The NVUM definitions are as follows:

*A national forest visit is: The entry of one person to 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 national forest site visit is: the entry of one person to a national forest site or area to participate in recreation activities for an unspecified period of time.*

Nationally, during calendar year 2000 there were 209 million national forest visits plus or minus 36 million visits (17% error rate) at the 80% confidence level. On the average

each national forest visitor went to 1.2 recreation sites thus producing 257million national forest site visits. Additionally, another 258 million people viewed national forest scenery (labeled Viewing Corridors in this survey) from non-Forest Service managed roads and waterways. Table 1 summarizes national forest visits and site visits by Region. Note that Viewing Corridors are a special category in the NVUM study intended to measure visitors who view Nation Forest scenery without using Forest Service facilities. It is important to consider these visitors when land management decisions deal with scenery and tourism strategies. Nationally, the five most popular recreation activities were viewing natural features, sightseeing, hiking, general relaxing, and driving for pleasure. The average forest visitor spends about \$3,700 annually on all outdoor recreation.

All estimates provided by NVUM except Viewing Corridors are accompanied by statistical measures of precision. These are referred to as error rates at the 80% confidence level. They are derived from standard error calculations but are expressed as a percentage of the visitation estimate. The 80% confidence intervals are lower and upper bounds around the estimate such that one is 80% sure that the true estimated parameter lies within this range. The error rate at the 80% level is simply the half width of the confidence interval expressed as a percent. Estimates that have a high level of precision (low variation) will have low error rates and narrow confidence intervals.

The quality of the estimate is dependent upon several factors. First, the sample size must be large enough to represent the population being estimated. Second, the variance for the sample days within each stratum (for example: Day Use Sites, high use days) affects the error rate. Finally, the success of the Forest in accomplishing their assigned sample days, filling out the interview forms correctly and following all the sample protocol correctly is extremely important in the quality of the estimate produced. The standard error, CV, confidence intervals and error rate for each forest will reflect these factors. Table 2 displays the number of assigned sample days per region versus the number of sample days accomplished. Regions 5 and 9 achieved almost 100% (99.7 and 99.1%) of their target sample days. Regions 1,4 and 8 achieved at least 95% of their assigned target. The reliability of their recreation use estimates reflects their rigorous implementation of NVUM protocols. Regions 2 and 10 achieved less than 85% of their assigned sample days and consequently their error rates at the forest level are higher.

**Table 1. national forest visit, site visit and Wilderness visit estimates by the nine Forest Service regions as well as national totals (in millions).**

	NF visits (Millions)	Error rate <sup>1</sup> (%)	Site visits (Millions)	Error rate (%)	Wilderness Visits (millions) (Included in NFV)	Viewing Corridors <sup>2</sup>
NATIONAL TOTAL	209	±17	256.9	±22.9	14.3	258
Region 1	12.4	±26.4	14.5	±25	.31	
Region 2	38.6	±56.7	48.6	±56.1	2.3	
Region 3	17.3	±38.5	20.9	±36.8	3.4	
Region 4	20.5	±25.3	22.7	±23.9	1.2	
Region 5	20.2	±57.1	24.5	±52.7	.6	
Region 6	34	±57.8	40.1	±52.3	3.6	
Region 8	24.9	±35.3	31.6	±30.1	.72	
Region 9	34.2	±29.4	46.1	±29	1.6	
Region 10	7	±23.1	7.8	±21.6	.6	

<sup>1</sup> Error rates express the precision of the estimate in percentage terms at the 80% confidence level

<sup>2</sup> The sample design for Viewing Corridors was not intended to provide estimates of statistical precision

**Table 2. Regional Accomplishment of assigned NVUM sample days.**

	Survey days assigned	Sample days accomplished	% Target achieved
NATIONAL TOTAL	5846	5577	95.3
Region 1	593	562	94.9
Region 2	597	503	84.2
Region 3	609	571	93.7
Region 4	783	750	95.7
Region 5	798	796	99.7
Region 6	957	893	93.3
Region 8	594	585	98.5
Region 9	786	779	99.1
Region 10	165	138	83.6

The first full cycle of the NVUM survey occurs from January 2000 through September 2003. During the four years, 25% of the national forests will be surveyed. Thus, as each survey year progresses, the database will include more forests and consequently, the recreation use estimates should become more precise. This should yield an excellent

picture of recreation use on national forests across the country. Each year the regional and national visitation estimates will be updated. As data analysis protocols are improved, some forest estimates from previous survey years might be updated to maintain consistency across forests.