

Spending Profiles for National Forest Recreation Visitors by Activity

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This report presents spending profiles for national forest (NF) visitors participating in selected recreation activities. Results are based on spending reports of over 19,000 visitors, who completed the economics portion of the NVUM survey between 2000 and 2003. National spending profiles have previously been reported for seven NF visitor trip type segments and for selected activity subgroups (Stynes and White 2005a). The additional profiles for recreation activity subgroups reported here were requested by national forest planners for use in estimating economic impacts of spending by non-local visitors on individual forests. For completeness, spending profiles of both local and non-local visitors are reported here.

Seven trip type segments have been identified to help explain differences in spending of distinct subgroups of visitors (Stynes and White 2005a).

National Forest Visitor Trip Type Segments

1. **Non-local day trips:** Non-local residents on day trips
2. **Non-local OVN-NF:** Non-local residents staying overnight on the NF
3. **Non-local OVN:** Non-local residents staying overnight off the NF
4. **Local day trips:** Local residents on day trips
5. **Local OVN-NF:** Local residents staying overnight on the NF
6. **Local-OVN:** Local residents staying overnight off the NF
7. **Non-Primary:** Visits where recreating on the NF is not the primary trip purpose.

Local visitors are defined as living within 50 miles of the recreation site¹. Overnight visitors (OVN) are those that reported being away from home more than 24 hours on their trip². The OVN-NF segments are composed of those visitors who stated that they spent the previous night on the national forest. The “non-primary” segment covers visitors who reported recreating at other areas on the trip and did not identify the NF as their primary destination³.

Over the first cycle of NVUM surveys between 2000 and 2003, spending averages in 2003 dollars on a party trip basis were \$33 for local day trips, \$52 for non-local day trips, \$161 for non-local visitors on overnight trips involving a night on the forest and \$245 for non-local overnight trips staying off the forest (Stynes and White 2005a). In FY 2003 the NVUM survey

¹ Formally, locals were defined using the zipcode variable to determine the straight-line distance from the center of the zipcode to the forest boundary. Distances of 30 miles or less were defined as locals. Taking into account the additional distance from the forest boundary to the recreation site, distances from the residence to zipcode centroid and road circuitry, locals should be interpreted as living within roughly a 50 mile driving distance of the site.

² As the survey in the first three years did not measure nights spent in the local area, the overnight segments will include some visitors on extended trips that do not spend any nights locally. Spending reports were restricted to spending within 50 miles of the site.

³ The trip purpose question was modified in FY2003 to more directly ask if the primary purpose was recreation on “this” NF, recreation elsewhere, or for business, visiting friends and relatives or other purposes. This change increased the percentage of non-primary purpose trips from 7% to 12%. See Stynes and White (2005b) for details.

defined overnight trips more precisely, including the identification of lodging types in the local area. Visitors staying in motels, cabins or lodges averaged \$362 per trip, compared to \$281 for visitors camping off the forest, \$187 for visitors staying in private homes, \$138 for visitors staying in developed NF campgrounds and \$115 for visitors staying in undeveloped NF campsites (Stynes and White 2005b).

National forest planners expressed concerns about applying national spending profiles to individual forests. Since the NVUM sample sizes were too small to yield reliable spending estimates at the forest level, regional profiles were requested with the idea that these could be applied to forests within each region. Statistical tests demonstrated that **there are no significant regional differences in visitor spending**. Each region has some forests with high visitor spending and others with low spending and indeed, there is more variation in visitor spending between individual sites on a given forest than across forests or regions. As should be expected, visitors to sites near extensive commercial development with many spending opportunities and overnight facilities spend considerably more than visitors to sites in more remote locations. Most forests have a mix of such sites with the spending average depending on the distribution of visitors across these locations.

Since national forest recreation planning often focuses on recreation activities, spending profiles for specific activities were also desired. Spending profiles were developed for nine recreation activity categories in the four year NVUM report (Stynes and White 2005), but to maintain adequate sample sizes within trip type segments (e.g., day trips versus overnight trips) only national averages were presented. Just as regions do not explain spatial variations in spending, recreation activities are not very strong predictors of spending⁴. An angler on a day trip will spend very differently than one staying overnight in a motel or lodge. Spending patterns of visitors staying in lodges (or on day trips) are more similar than those of visitors engaged in the same activity. After controlling for trip and lodging types, there remain some differences in spending for particular activities. For example, motorized activities involve additional fuel purchases, anglers and hunters have additional equipment expenses, and downhill skiers incur additional expenses for lift tickets and rentals (Stynes and White 2005a). Variations in skier spending on a given forest depend on the mix of local and non-local visitors, the percentage of day and overnight trips, and types of lodging as well as lift fees and the amount of commercial development. The NVUM sample of skiers is not sufficient to predict skier spending on individual forests.

The compromise used in earlier reports to explain spatial variations in spending for visitor subgroups was to develop a set of high, average and low spending profiles for trip segments by pooling cases from forests with above or below average spending. In this report, we extend that analysis to individual recreation activities focusing primarily on non-local visitor segments. Although the majority of visitors on most forests are local residents, it is the spending of non-local visitors that is of primary interest when estimating local economic impacts.

⁴ The primary activity explains less than 2% of the variation in visitor spending, while trip segments explain 21%. Length of stay is the strongest predictor of spending, by itself explaining 20% of the spending variation in the FY2003 data. Length of stay and trip segments combined explain 36% of the variation in FY2003 data. The primary recreation activity adds less than 2%.

METHODS

During the first three years, the NVUM questionnaire measured spending of a randomly selected adult in the travel party. Based on analysis of the data gathered during the first two years (CY 2000 and FY 2001) and comparisons with other studies, it was concluded that most respondents were reporting spending for the entire travel party (Stynes, White and Leefers 2003). In FY 2003 the questionnaire was changed to request the spending of the entire travel party (all people in the vehicle). Visitors reported all spending on the trip within 50 miles of the recreation site where they were interviewed. Interviews were conducted with “last exiting” vehicles on randomly sampled sites and days on each forest (English et. al 2002). In FY 2003 visitors were reminded to include planned expenses prior to leaving the area.

National forest visitors reported spending in ten categories. There were some changes in the spending categories in FY 2003 that require aggregation of some spending categories to obtain consistency between the FY 2003 data and prior years. These and other changes are discussed further in Stynes and White (2005b).

This report focuses on the non-local visitor segments. To provide adequate samples to estimate spending averages by activity and high-average-low spending areas, the non-local OVN-NF and non-local OVN segments are combined into a single non-local overnight segment. Spending profiles for each activity are reported for non-local overnight trips, non-local day trips, local day trips and local overnight trips⁵.

Although the national sample of over 19,000 completed surveys is quite large, sample sizes for estimating spending become small when visitors are broken down by trip types, activities, and individual forests. The average usable sample for estimating spending on an individual forest is only 160 cases. Since the majority of visitors on most forests are local visitors on day trips, sample sizes for non-local visitors and visitors on overnight trips are small on individual forests. Even when data are pooled across all 119 national forests, there are frequently fewer than 100 spending cases available to estimate spending averages for individual visitor segment/activity combinations.

To capture spatial variations in spending, each national forest was classified as a high, average, or low spending area. A forest was classified as a high (low) spending area if the average spending for day and overnight trips to the forest (based on the NVUM sample) were above (below) the national averages⁶. After controlling for the mix of day and overnight trips, 44 forests had spending averages that were significantly less than the national average and 28 forests had spending averages significantly above the national average. High and low spending profiles were developed by pooling cases from the high and low spending forests, respectively (Stynes and White 2005a). Spending averages for high spending areas were generally 20-30%

⁵ Although the focus of economic impact analyses is usually non-local visitors, the largest number of national forest visitors are local residents on day trips. Their spending patterns are helpful in estimating the spending patterns for non-local day trip segments for individual activities, as they capture some of the patterns associated with the activity.

⁶ The classifications are based on statistical tests of differences between spending averages for individual forests and the national averages. Due to small samples at the forest level and high variances tests were conducted at the 80% confidence level. Differences were tested at the 80% confidence level. See Stynes, White and Leefers (2003) for details.

above the national average, while spending averages for low spending areas were generally 20-30% below the national average.

Spending profiles are estimated for twelve distinct activity groups. Activities are defined based on the “primary” activity on the forest that each respondent identified in the survey. Visitors could check as many as 26 distinct activities from a list, but were then asked to name the primary activity on the sampled trip. Some activities were grouped for this analysis: hiking and biking, primitive camping and backpacking, and nature-related activities (viewing wildlife, viewing nature, visit nature center, nature study). We avoided grouping activities with distinct spending patterns as the resulting averages would then not apply to individual members of the group.

RESULTS

Table 1 reports the spending averages for twelve activity groups within four trip segments (non-local overnight trips, non-local day trips, local day trips and local overnight trips) and three spending levels (low, average and high). Spending averages are all on a party trip basis in 2003 dollars⁷. The corresponding detailed spending profiles itemized by spending category are presented in the tables that follow.

Table 1. Visitor Spending For High, Average, And Low Spending Areas By Activity, \$ per party per trip

Activity	Non-Local Day Trips			Non-Local Overnight Trips ^a			Local Day Trips			Local Overnight Trips ^a		
	Low	Avg	High	Low	Avg	High	Low	Avg	High	Low	Avg	High
Downhill skiing	\$66	\$80	\$101	\$220	\$342	\$400	\$47	\$53	\$60	\$132	\$205	\$240
Cross-country Skiing	44	53	68	215	335	436	31	34	38	129	201	261
Snowmobile	89	108	137	207	322	419	62	68	77	124	193	251
Hunting	66	80	101	142	221	287	36	51	57	119	151	183
Fishing	35	42	53	133	220	275	41	42	48	108	120	145
Nature-related	43	52	66	143	223	268	26	27	30	101	129	156
OHV-use	49	60	76	120	162	210	43	38	43	72	97	126
Driving	31	37	47	111	173	225	21	24	27	74	94	114
Developed camping				103	141	185				92	128	154
Primitive camp/Bpack				75	105	129				74	94	114
Hiking/Biking	30	37	46	133	246	316	19	20	18	72	87	105
Other	41	50	67	127	197	264	33	36	36	102	123	126
Total	43	52	65	134	208	271	30	33	37	95	121	146
Ratio to Avg	83%		127%	64%		130%	90%		113%	78%		121%

Note: Shaded cells with figures in red were filled using Rules 1,2, or 3 as described in the text. Other figures are estimated directly from the NVUM sample.

a. Includes visitors on overnight trips staying on or off the forest

Where sample sizes are adequate⁸, spending averages are estimated directly from the four year NVUM sample using cases that fall into the given cell. The overall activity averages are based on all cases identifying the given activity as the primary activity on the trip. Low and high

⁷ To convert to a person trip or recreation visit basis, divide by an average party size. Party sizes by primary activity are reported in Appendix A.

⁸ With a few exceptions, averages were estimated directly from cases in the designated subgroup when the subgroup sample size was at least 100 cases. As the standard deviations for spending distributions are at least equal to the mean, a sample size of 100 yields sampling errors of 20% or more (95% confidence level).

spending averages are based on cases from forests that were identified as low or high spending areas.

Across all activities (total row) the low spending figures are 83% of the average for all non-local day trips, 64% of the average spending for all non-local overnight trips, 90% of the average for all local day trips, and 78% of the average for local overnight trips. The high spending averages are 27% above average for non-local day trips, 30% above the average for non-local overnight trips, 13% above the average for local day trips, and 21% above the average for local overnight trips. These patterns in the NVUM data are used to fill shaded cells in Table 1 that contain fewer than 100 cases. Three rules were employed to fill cells with small N's.

Rule 1: For four activities⁹, the NVUM economic sample did not include 100 non-local day trips. The NL day trip spending averages for these activities were therefore based on the local day trip spending average for the activity. The overall non-local day trip spending average (\$52) is 57% higher than the local day trip average (\$33). This ratio is used to estimate the non-local day trip spending average for the four activities with fewer than 100 NL day trip cases. For these activities, the non-local day trip average is estimated as 1.57 times the local day trip average. For example, the cross country ski non-local day trip average was estimated as $\$34 * 1.57 = \53 .

Rule 2: For many activities there were not enough cases to independently estimate a low and high spending average directly from the NVUM sample. In these situations, the low and/or high spending averages were estimated using the ratios of low to average and high to average across all activities (the last row of Table 1). It was assumed that the deviations from the activity average for low and high spending areas would be the same as for the all visitor averages. For example, the low spending average for non-local cross country skiers on overnight trips is $\$215 = 64\% * \335 and the high average is $\$436 = 130\% * \335 . This same procedure is used to fill low and high spending cells for other segments and activities, using the ratios at the bottom of the corresponding columns in Table 1. This approach preserves the unique distribution of spending across categories for a given activity in the detailed tables that follow, as it adjusts spending in all categories proportionally up or down by a fixed percentage.

Rule 3: Five activities¹⁰ did not include enough local overnight trip cases to reliably estimate spending averages. For these activities the local overnight trip average was estimated at 60% of the non-local overnight trip average based on the overall ratio of spending averages of local and non-local overnight trips across all activities¹¹.

Two local day trip cells do not follow the general pattern from low to high. The low spending average for OHV use is above the average for the activity and the high spending average for hiking/biking is below the average. These differences are not statistically significant.

The detailed spending profiles for all visitors regardless of primary activity are reported in Table 2. Tables 3-1 to 3-12 give the spending profiles for individual activity groups. Tables for each activity are split between the local and non-local visitor segments. Each table includes low, average, and high spending figures for day and overnight trips. When the figures are estimated

⁹ Cross country skiing, hunting, OHV use, and driving.

¹⁰ Downhill and cross country skiing, snowmobiling, OHV use, and driving.

¹¹ The computed ratio of 58% was rounded to 60% for these estimates.

directly from the sample, the sample size, std. deviation, standard error (SE) and sampling errors¹² are given at the bottom of the column. If the averages are filled due to an inadequate sample, the rule used to fill the column is indicated.

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	25.35	47.08	63.43
Restaurant/Bar	11.23	13.60	17.23	26.29	43.98	58.53
Groceries	6.28	7.61	9.64	24.30	34.13	41.80
Gas and Oil	13.20	15.99	20.26	29.27	36.53	41.49
Other Transportation	0.81	0.98	1.24	3.03	5.42	8.16
Activities	3.20	3.87	4.90	5.81	12.32	19.67
Admissions/Fees	4.33	5.24	6.64	7.41	9.53	11.86
<u>Souvenirs/Other</u>	<u>3.56</u>	<u>4.31</u>	<u>5.46</u>	<u>12.36</u>	<u>19.26</u>	<u>25.61</u>
Total Spending	42.60	51.60	65.38	133.81	208.23	270.54
N	778	1,600	451	1,415	5,685	1,902
Std. Deviation	76	85	103	175	229	250
SE	2.7	2.1	4.8	4.7	3.0	5.7
Pct. Error (95% conf.)	13%	8%	15%	7%	3%	4%

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	10.90	16.82	26.43
Restaurant/Bar	5.75	6.12	6.43	12.11	16.96	23.51
Groceries	4.31	5.41	7.50	27.66	33.63	35.00
Gas and Oil	11.84	11.67	10.58	23.55	26.95	29.29
Other Transportation	0.21	0.21	0.33	0.12	0.58	2.24
Activities	1.77	1.82	1.96	5.09	5.06	5.24
Admissions/Fees	3.54	3.42	2.69	8.31	9.62	8.88
<u>Souvenirs/Other</u>	<u>2.29</u>	<u>4.19</u>	<u>7.63</u>	<u>7.04</u>	<u>11.32</u>	<u>15.36</u>
Total Spending	29.71	32.84	37.13	94.79	120.93	145.96
N	3,238	7,241	1,325	1,115	2,906	426
Std. Deviation	56	65	85	122	153	171
SE	1.0	0.8	2.3	3.6	2.8	8.3
Pct. Error (95% conf.)	7%	5%	13%	8%	5%	11%

¹² Percent errors represent a 95% confidence interval around the sample mean. In applying the spending averages to individual forests or management alternatives, the relevant errors involve generalizing from these national averages to the particular situation rather than sampling errors and therefore these percent errors do not strictly apply.

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	58.67	91.30	106.76
Restaurant/Bar	11.23	13.60	17.24	42.90	66.76	74.70
Groceries	4.52	5.47	6.93	16.74	26.06	30.53
Gas and Oil	10.91	13.21	16.74	20.53	31.95	36.17
Other Transportation	0.00	0.00	0.00	11.71	18.22	28.39
Activities	14.91	18.06	22.88	29.54	45.98	52.17
Admissions/Fees	20.35	24.65	31.23	21.83	33.98	44.36
<u>Souvenirs/Other</u>	<u>3.76</u>	<u>4.55</u>	<u>5.77</u>	<u>17.81</u>	<u>27.72</u>	<u>26.63</u>
Total Spending	65.67	79.54	100.78	219.73	341.95	399.69
N		138			193	83
Std. Deviation	Filled	93	Filled	Filled	294	315
SE	Rule 2	8.0	Rule 2	Rule 2	21.2	34.6
Pct. Error (95% conf.)		20%			12%	17%

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	35.20	54.78	64.05
Restaurant/Bar	9.37	9.79	12.18	25.74	40.05	44.82
Groceries	2.04	2.75	4.78	10.05	15.63	18.32
Gas and Oil	10.34	11.19	12.44	12.32	19.17	21.70
Other Transportation	0.00	0.01	0.00	7.02	10.93	17.03
Activities	12.03	11.95	9.79	17.73	27.59	31.30
Admissions/Fees	11.41	12.62	8.57	13.10	20.39	26.62
<u>Souvenirs/Other</u>	<u>1.72</u>	<u>5.03</u>	<u>12.06</u>	<u>10.69</u>	<u>16.63</u>	<u>15.98</u>
Total Spending	46.91	53.34	59.81	131.84	205.17	239.81
N	169	397	113			
Std. Deviation	54	84	109		Filled	
SE	4.19	4.21	10.3		Rule 3	
Pct. Error (95% conf.)	18%	16%	34%			

Table 3-2. Non-Local Visitor Spending Averages for Cross Country Skiers , \$ per party per trip

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	73.92	115.04	149.45
Restaurant/Bar	10.04	12.16	15.41	53.74	83.64	108.66
Groceries	9.49	11.49	14.56	20.94	32.58	42.33
Gas and Oil	9.98	12.09	15.32	21.63	33.66	43.73
Other Transportation	0.00	0.00	0.00	5.79	9.02	11.72
Activities	4.34	5.26	6.67	14.49	22.55	29.3
Admissions/Fees	6.54	7.92	10.04	7.28	11.33	14.72
<u>Souvenirs/Other</u>	<u>3.76</u>	<u>4.55</u>	<u>5.77</u>	<u>17.68</u>	<u>27.52</u>	<u>35.75</u>
Total Spending	44.16	53.49	67.77	215.47	335.32	435.65
N					72	
Std. Deviation	Filled	Filled	Filled	Filled	267	Filled
SE	Rule 2	Rule 1	Rule 2	Rule 2	31.5	Rule 2
Pct. Error					19%	

Table 3-2A. Local Visitor Spending Averages for Cross Country Skiers , \$ per party per trip

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	44.35	69.02	89.67
Restaurant/Bar	7.00	7.74	8.75	32.25	50.18	65.20
Groceries	6.62	7.31	8.27	12.56	19.55	25.40
Gas and Oil	6.96	7.70	8.70	12.98	20.19	26.24
Other Transportation	0.00	0.00	0.00	3.48	5.41	7.03
Activities	3.03	3.35	3.79	8.69	13.53	17.58
Admissions/Fees	4.56	5.04	5.70	4.37	6.80	8.83
<u>Souvenirs/Other</u>	<u>2.62</u>	<u>2.90</u>	<u>3.28</u>	<u>10.61</u>	<u>16.51</u>	<u>21.45</u>
Total Spending	30.80	34.04	38.49	129.28	201.19	261.39
N		227				
Std. Deviation	Filled	82	Filled		Filled	
SE	Rule 2	5.4	Rule 2		Rule 3	
Pct. Error (95% conf.)		32%				

Table 3-3. Non-Local Visitor Spending Averages for Snowmobilers , \$ per party per trip

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	56.42	87.80	114.07
Restaurant/Bar	18.92	22.92	29.04	62.72	97.60	126.81
Groceries	9.49	11.50	14.57	16.23	25.25	32.81
Gas and Oil	43.33	52.48	66.49	41.40	64.42	83.69
Other Transportation	0.62	0.75	0.96	1.08	1.67	2.18
Activities	8.85	10.72	13.58	15.40	23.97	31.14
Admissions/Fees	6.87	8.32	10.54	5.15	8.01	10.40
<u>Souvenirs/Other</u>	<u>1.18</u>	<u>1.42</u>	<u>1.80</u>	<u>8.74</u>	<u>13.59</u>	<u>17.66</u>
Total Spending	89.25	108.11	136.98	207.12	322.32	418.75
N		56			95	
Std. Deviation	Filled	155	Filled	Filled	291	Filled
SE	Rule 2	20.8	Rule 2	Rule 2	29.8	Rule 2
Pct. Error (95% conf.)		38%			19%	

Table 3-3A. Local Visitor Spending Averages for Snowmobilers , \$ per party per trip

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	33.85	52.68	68.44
Restaurant/Bar	10.20	11.28	12.75	37.63	58.56	76.08
Groceries	6.35	7.02	7.94	9.74	15.15	19.68
Gas and Oil	28.63	31.64	35.78	24.84	38.65	50.22
Other Transportation	0.24	0.26	0.29	0.65	1.00	1.31
Activities	1.94	2.14	2.42	9.24	14.38	18.68
Admissions/Fees	6.00	6.64	7.50	3.09	4.80	6.24
<u>Souvenirs/Other</u>	<u>8.57</u>	<u>9.48</u>	<u>10.72</u>	<u>5.24</u>	<u>8.16</u>	<u>10.60</u>
Total Spending	61.94	68.45	77.40	124.27	193.39	251.25
N		162				
Std. Deviation	Filled	82	Filled	Filled		
SE	Rule 2	6.5	Rule 2	Rule 3		
Pct. Error (95% conf.)		19%				

Table 3-4. Non-Local Visitor Spending Averages for Hunters, \$ per party per trip						
Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	18.48	28.77	37.37
Restaurant/Bar	6.30	7.63	9.67	27.76	43.20	56.12
Groceries	11.31	13.70	17.36	29.25	45.52	59.14
Gas and Oil	21.91	26.54	33.63	41.00	63.80	82.89
Other Transportation	0.00	0.00	0.00	0.73	1.14	1.48
Activities	2.59	3.14	3.98	4.78	7.43	9.66
Admissions/Fees	2.08	2.52	3.19	4.62	7.19	9.34
<u>Souvenirs/Other</u>	<u>21.62</u>	<u>26.19</u>	<u>33.19</u>	<u>15.57</u>	<u>24.22</u>	<u>31.47</u>
Total Spending	65.82	79.72	101.01	142.18	221.27	287.47
N					284	
Std. Deviation	Filled	Filled	Filled	Filled	220	Filled
SE	Rule 2	Rule 1	Rule 2	Rule 2	13.1	Rule 2
Pct. Error (95% conf.)					12%	

Table 3-4A. Local Visitor Spending Averages for Hunters, \$ per party per trip						
Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	12.21	15.58	18.80
Restaurant/Bar	4.36	4.86	5.49	13.39	17.08	20.61
Groceries	6.34	8.72	9.86	33.97	43.34	52.31
Gas and Oil	15.21	16.89	19.10	32.94	42.03	50.72
Other Transportation	0.00	0.00	0.00	0.47	0.60	0.72
Activities	2.17	2.00	2.26	3.40	4.33	5.23
Admissions/Fees	1.25	1.60	1.81	1.85	2.36	2.85
<u>Souvenirs/Other</u>	<u>6.19</u>	<u>16.67</u>	<u>18.85</u>	<u>20.35</u>	<u>25.96</u>	<u>31.33</u>
Total Spending	35.53	50.74	57.37	118.57	151.27	182.57
N	155	395			216	
Std. Deviation	57	90	Filled	Filled	176	Filled
SE	4.6	4.5	Rule 2	Rule 2	12.0	Rule 2
Pct. Error (95% conf.)	26%	18%			11%	

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	29.96	55.34	67.18
Restaurant/Bar	7.20	8.72	11.05	20.75	40.69	54.57
Groceries	6.92	8.38	10.61	29.51	40.17	44.96
Gas and Oil	12.59	15.25	19.32	31.10	45.19	54.92
Other Transportation	0.00	0.00	0.00	0.17	2.55	5.52
Activities	3.31	4.01	5.08	3.63	9.30	14.55
Admissions/Fees	2.52	3.05	3.86	5.22	7.69	9.78
<u>Souvenirs/Other</u>	<u>2.26</u>	<u>2.73</u>	<u>3.46</u>	<u>12.17</u>	<u>19.45</u>	<u>23.25</u>
Total Spending	34.79	42.14	53.39	132.51	220.39	274.72
N		169		108	544	216
Std. Deviation	Filled	63	Filled	141	222	230
SE	Rule 2	4.8	Rule 2	13.5	9.5	15.6
Pct. Error (95% conf.)		23%		20%	9%	11%

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	10.17	14.04	16.94
Restaurant/Bar	8.99	7.28	5.62	14.23	16.28	19.65
Groceries	6.98	8.19	9.93	28.67	33.35	40.25
Gas and Oil	13.56	14.90	18.12	29.17	32.13	38.78
Other Transportation	0.04	0.04	0.00	0.22	0.10	0.12
Activities	1.21	1.83	2.13	4.03	3.66	4.42
Admissions/Fees	5.73	3.77	2.81	8.28	7.76	9.36
<u>Souvenirs/Other</u>	<u>4.31</u>	<u>5.64</u>	<u>8.93</u>	<u>13.49</u>	<u>13.17</u>	<u>15.90</u>
Total Spending	40.82	41.65	47.54	108.26	120.48	145.41
N	306	646	108	105	245	
Std. Deviation	82	79	96	140	168	Filled
SE	4.7	3.1	9.2	13.7	10.8	Rule 2
Pct. Error (95% conf.)	23%	15%	39%	26%	9%	

Table 3-6. Non-Local Visitor Spending Averages for Nature-related activities, \$ per party per trip

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	41.64	57.39	62.82
Restaurant/Bar	13.95	16.90	21.41	34.25	50.13	54.43
Groceries	7.00	8.48	10.75	13.29	25.27	28.89
Gas and Oil	12.54	15.19	19.24	23.45	27.42	27.00
Other Transportation	0.42	0.51	0.64	4.39	7.83	14.28
Activities	0.74	0.90	1.14	7.33	22.12	40.70
Admissions/Fees	1.98	2.40	3.04	3.95	6.89	6.32
<u>Souvenirs/Other</u>	<u>6.39</u>	<u>7.74</u>	<u>9.81</u>	<u>14.76</u>	<u>26.41</u>	<u>33.77</u>
Total Spending	43.02	52.10	66.02	143.06	223.46	268.22
N		216		103	579	237
Std. Deviation	Filled	76	Filled	199	237	244
SE	Rule 2	5.2	Rule 2	19.6	9.8	15.8
Pct. Error (95% conf.)		20%		27%	9%	12%

Table 3-6A. Local Visitor Spending Averages for Nature-related activities, \$ per party per trip

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	23.63	30.15	36.39
Restaurant/Bar	4.68	6.00	9.72	27.04	34.50	41.64
Groceries	3.29	3.43	3.67	13.99	17.85	21.55
Gas and Oil	14.24	12.15	9.57	19.11	24.38	29.43
Other Transportation	0.09	0.41	0.00	0.33	0.42	0.51
Activities	0.73	0.76	1.64	3.08	3.93	4.75
Admissions/Fees	1.93	1.83	1.09	4.52	5.76	6.95
<u>Souvenirs/Other</u>	<u>1.00</u>	<u>2.40</u>	<u>4.45</u>	<u>9.58</u>	<u>12.22</u>	<u>14.75</u>
Total Spending	25.97	26.99	30.13	101.29	129.23	155.97
N	289	643	108		120	
Std. Deviation	48	51	81	Filled	199	Filled
SE	2.8	2.0	7.8	Rule 2	18.1	Rule 2
Pct. Error (95% conf.)	22%	15%	52%		30%	

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	9.00	22.83	29.66
Restaurant/Bar	9.07	10.99	13.92	20.44	28.99	37.66
Groceries	8.12	9.84	12.47	30.90	36.75	47.74
Gas and Oil	21.60	26.17	33.16	31.95	43.49	56.51
Other Transportation	0.00	0.00	0.00	0.00	0.00	0.00
Activities	2.97	3.60	4.56	1.66	4.83	6.28
Admissions/Fees	2.93	3.55	4.49	5.40	6.41	8.32
<u>Souvenirs/Other</u>	<u>4.78</u>	<u>5.79</u>	<u>7.33</u>	<u>20.70</u>	<u>18.48</u>	<u>24.01</u>
Total Spending	49.47	59.93	75.93	120.06	161.78	210.18
N				102	183	
Std. Deviation	Filled	Filled	Filled	142	177	Filled
SE	Rule 2	Rule 1	Rule 2	14.1	13.1	Rule 2
Pct. Error (95% conf.)				23%	16%	

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	5.40	13.70	17.80
Restaurant/Bar	7.18	6.99	7.91	12.27	17.39	22.60
Groceries	6.79	6.26	7.08	18.54	22.05	28.65
Gas and Oil	18.37	16.65	18.83	19.17	26.10	33.90
Other Transportation	0.00	0.00	0.00	0.00	0.00	0.00
Activities	3.56	2.29	2.59	1.00	2.90	3.77
Admissions/Fees	2.45	2.26	2.55	3.24	3.84	4.99
<u>Souvenirs/Other</u>	<u>4.50</u>	<u>3.68</u>	<u>4.16</u>	<u>12.42</u>	<u>11.09</u>	<u>14.41</u>
Total Spending	42.86^a	38.14	43.12	72.04	97.07	126.11
N	118	192				
Std. Deviation	51	55	Filled		Filled	
SE	4.7	3.9	Rule 2		Rule 3	
Pct. Error (95% conf.)	22%	21%				

a. The low spending average for this segment is higher than the overall average. As the difference is not statistically significant, we suggest using the overall local day trip average for all forests.

Table 3-8. Non-Local Visitor Spending Averages for Driving, \$ per party per trip

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	31.78	49.46	64.25
Restaurant/Bar	8.23	9.97	12.63	34.89	54.30	70.55
Groceries	3.34	4.05	5.13	9.81	15.26	19.82
Gas and Oil	14.97	18.13	22.98	15.76	24.52	31.86
Other Transportation	0.00	0.00	0.00	2.07	3.22	4.19
Activities	0.13	0.16	0.20	2.45	3.81	4.95
Admissions/Fees	1.26	1.53	1.93	2.59	4.03	5.24
<u>Souvenirs/Other</u>	<u>2.79</u>	<u>3.39</u>	<u>4.29</u>	<u>11.87</u>	<u>18.47</u>	<u>24.00</u>
Total Spending	30.72	37.22	47.15	111.21	173.07	224.86
N					110	
Std. Deviation	Filled	Filled	Filled	Filled	239	Filled
SE	Rule 2	Rule 1	Rule 2	Rule 2	22.8	Rule 2
Pct. Error (95% conf.)					26%	

Table 3-8A. Local Visitor Spending Averages for Driving, \$ per party per trip

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	19.07	29.67	38.55
Restaurant/Bar	5.74	6.34	7.17	20.94	32.58	42.33
Groceries	2.33	2.58	2.91	5.88	9.16	11.89
Gas and Oil	10.44	11.54	13.05	9.46	14.71	19.12
Other Transportation	0.00	0.00	0.00	1.24	1.93	2.51
Activities	0.09	0.10	0.11	1.47	2.28	2.97
Admissions/Fees	0.88	0.97	1.10	1.55	2.42	3.14
<u>Souvenirs/Other</u>	<u>1.95</u>	<u>2.15</u>	<u>2.44</u>	<u>7.12</u>	<u>11.08</u>	<u>14.40</u>
Total Spending	21.43	23.68	26.78	66.73	103.84	134.91
N		302				
Std. Deviation	Filled	32	Filled		Filled	
SE	Rule 2	1.8	Rule 2		Rule 3	
Pct. Error (95% conf.)		16%				

Spending category	Primitive Camping/Backpacking			Developed Camping		
	Low	Average	High	Low	Average	High
Lodging	9.60	8.76	11.68	13.07	14.65	19.97
Restaurant/Bar	15.12	17.54	16.36	12.04	20.83	35.88
Groceries	14.05	20.85	25.90	29.90	37.79	43.57
Gas and Oil	19.79	25.17	28.73	27.76	34.87	36.01
Other Transportation	2.77	6.24	9.31	0.43	1.48	5.55
Activities	1.97	5.29	6.08	4.50	7.01	9.95
Admissions/Fees	3.98	6.76	11.59	10.74	13.37	16.74
<u>Souvenirs/Other</u>	<u>7.61</u>	<u>14.07</u>	<u>19.49</u>	<u>4.99</u>	<u>11.29</u>	<u>17.69</u>
Total Spending	74.90	104.68	129.14	103.41	141.29	185.35
N	104	409	149	209	656	151
Std. Deviation	96	163	186	130	173	216
SE	9.4	8.1	15.2	9.0	6.8	17.6
Pct. Error (95% conf.)	25%	15%	24%	17%	10%	19%

Spending category	Primitive Camping/Backpacking			Developed Camping		
	Low	Average	High	Low	Average	High
Lodging	6.67	8.51	10.27	7.18	11.18	13.50
Restaurant/Bar	8.68	11.08	13.37	8.48	12.48	15.07
Groceries	26.04	33.22	40.10	35.93	46.28	55.85
Gas and Oil	16.18	20.64	24.92	19.32	27.39	33.06
Other Transportation	0.08	0.10	0.12	0.00	0.32	0.38
Activities	1.26	1.61	1.95	1.32	3.81	4.60
Admissions/Fees	6.11	7.80	9.41	16.10	18.10	21.85
<u>Souvenirs/Other</u>	<u>8.71</u>	<u>11.11</u>	<u>13.41</u>	<u>3.34</u>	<u>8.31</u>	<u>10.03</u>
Total Spending	73.74	94.07	113.54	91.66	127.87	154.33
N		228		219	588	
Std. Deviation	Filled	116	Filled	106	139	Filled
SE	Rule 2	7.6	Rule 2	7.1	5.7	Rule 2
Pct. Error (95% conf.)		7%		7%	2%	

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	27.98	73.88	97.27
Restaurant/Bar	10.25	12.42	15.74	39.26	61.17	80.23
Groceries	4.25	5.15	6.53	18.16	33.75	46.09
Gas and Oil	8.40	10.17	12.89	22.55	30.87	33.32
Other Transportation	2.20	2.67	3.38	5.16	10.44	11.21
Activities	0.77	0.94	1.19	6.85	8.44	12.01
Admissions/Fees	2.29	2.77	3.51	2.89	5.05	4.63
<u>Souvenirs/Other</u>	<u>2.10</u>	<u>2.54</u>	<u>3.22</u>	<u>10.03</u>	<u>22.07</u>	<u>30.89</u>
Total Spending	30.27	36.66	46.45	132.88	245.66	315.65
N		372		172	885	366
Std. Deviation	Filled	81	Filled	175	246	259
SE	Rule 2	4.2	Rule 2	13.3	8.3	13.5
Pct. Error (95% conf.)		23%		20%	7%	9%

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	10.00	15.23	18.38
Restaurant/Bar	3.74	4.24	3.25	10.03	15.97	19.28
Groceries	2.77	3.15	2.33	15.45	17.91	21.62
Gas and Oil	8.94	7.56	5.06	15.21	18.36	22.16
Other Transportation	0.05	0.14	0.50	0.00	1.67	2.01
Activities	0.96	0.63	0.47	14.99	6.55	7.91
Admissions/Fees	2.29	2.36	1.52	1.72	4.25	5.13
<u>Souvenirs/Other</u>	<u>0.71</u>	<u>2.07</u>	<u>4.83</u>	<u>4.51</u>	<u>6.73</u>	<u>8.13</u>
Total Spending	19.46	20.15	17.95^a	71.91	86.67	104.61
N	1,046	2227	414	108	318	
Std. Deviation	50	50	54	116	129	Filled
SE	1.5	1.1	2.6	11.2	7.2	Rule 2
Pct. Error (95% conf.)	16%	11%	29%	21%	5%	

a. The high spending average for this segment is lower than the overall average. As the difference is not statistically significant, we suggest using the overall local day trip average for all forests.

Table 3-11. Non-Local Visitor Spending Averages for Other Activities, \$ per party per trip

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	24.18	41.24	52.27
Restaurant/Bar	13.57	14.20	17.70	23.07	39.94	55.71
Groceries	8.12	9.54	12.28	24.93	36.74	52.38
Gas and Oil	14.40	16.20	20.52	28.16	36.68	46.17
Other Transportation	0.03	0.62	3.89	4.52	4.04	3.17
Activities	0.20	2.57	0.41	3.36	10.56	16.97
Admissions/Fees	2.73	2.56	3.83	8.08	10.23	13.70
<u>Souvenirs/Other</u>	<u>1.84</u>	<u>4.02</u>	<u>8.04</u>	<u>10.74</u>	<u>17.34</u>	<u>23.33</u>
Total Spending	40.89	49.72	66.66	127.04	196.78	263.71
N	180	421	63	419	1,675	506
Std. Deviation	86	73	74	173	227	245
SE	6.4	3.6	9.4	8.5	5.5	10.9
Pct. Error (95% conf.)	31%	14%	28%	13%	6%	8%

Table 3-11A. Local Visitor Spending Averages for Other Activities, \$ per party per trip

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	15.72	18.30	26.43
Restaurant/Bar	6.58	6.62	5.61	12.47	13.96	11.60
Groceries	5.64	7.50	10.67	29.13	37.64	38.52
Gas and Oil	11.69	12.43	11.07	22.35	26.54	19.07
Other Transportation	0.71	0.44	0.55	0.14	0.41	1.66
Activities	0.71	1.33	1.52	6.54	6.89	10.92
Admissions/Fees	4.13	3.39	1.81	10.45	10.65	11.28
<u>Souvenirs/Other</u>	<u>3.36</u>	<u>4.02</u>	<u>4.97</u>	<u>4.96</u>	<u>8.76</u>	<u>6.11</u>
Total Spending	32.81	35.74	36.20	101.76	123.15	125.59
N	849	2,016	333	242	648	113
Std. Deviation	56	65	73	127	152	153
SE	1.9	1.4	4.0	8.2	6.0	14.4
Pct. Error (95% conf.)	12%	8%	22%	16%	10%	23%

APPLYING ACTIVITY SPENDING PROFILES

To apply the activity spending profiles in national forest planning, recreation visits must be broken down into primary activities. Recreation visits for each activity must then be apportioned among local and non-local visitors and day and overnight trips and converted to a travel party basis. To facilitate these calculations, segment mixes and average party sizes by activity are reported in the Appendix. The procedure for estimating spending is illustrated with an example.

Assume the development of a winter sports recreation facility will attract an additional 50,000 visits, 30,000 primarily for snowmobiling and 20,000 cross country skiing. If local information about the mix of visitors is not available, the national average trip type shares for snowmobiling and cross country skiing in Table A-1 may be used¹³. Similarly, average party sizes by segment for these two activities may be taken from the national averages for these activities in Table A-2, forest-level estimates of party sizes for trip types¹⁴ or local sources. High, average or low spending profiles must then be selected for the application based on prices and spending opportunities in the area or using the overall classification of forests in Styne and White (2005a). Analysts may choose from the low, average or high spending profiles in Table 3-2 for cross country skiers and Table 3.3 for snowmobilers.

Table 4 summarizes the key parameters: (1) segment shares for allocating visits to trip segments, (2) party sizes for converting to a party visit basis, and (3) spending averages. For brevity we illustrate with the overall spending averages instead of the detailed itemization of spending categories in Tables 3.2 and 3.3.

Primary Activity	Non-Local Day	Non-local Overnight	Local Day	Local OVN	Not Primary
Segment shares					
Snowmobile	15%	32%	44%	7%	2%
Cross Country ski	10%	31%	54%	4%	1%
Average party Size					
Snowmobile	2.2	2.5	2.3	2.8	2.4
Cross Country ski	2.8	2.8	2.3	2.3	2.5
Average Spending (\$ per party per visit)					
Snowmobile	\$ 108	\$ 322	\$ 68	\$ 161	\$ 0 ^a
Cross Country ski	\$ 53	\$ 335	\$ 34	\$ 168	\$ 0 ^a

a. Spending for non-primary purpose trips is excluded here.

¹³ Alternatively, the segment mix for visitors to the individual forest could be used (Table A-3). Since we cannot reliably estimate trip segment shares for specific activities on an individual forest with NVUM data, one must assume the segment shares either follow the national pattern for that activity or that they mirror the shares observed for all visitors to the given forest.

¹⁴ Forest level party sizes are reported for trip types in Styne and White (2005a). Using the forest-level party sizes for particular activities assumes party sizes do not vary by activity.

The national averages for segment shares, party sizes and spending averages are assumed to apply to this example. In a high spending area, the spending averages would be replaced by the high spending figures in Tables 3.2 and 3.3.

Table 5 shows the results of applying the parameters in Table 4 to an increase of 30,000 snowmobile visits and 20,000 cross country skiing visits. Visits are allocated to segments using the segment shares and then converted to party visits by dividing by the average party sizes. Party visits are multiplied by average spending to estimate total spending. To obtain total spending in detailed spending categories, simply multiply the estimate of party visits by the detailed spending profiles in Tables 3-1 and 3-2. In this example, spending of local visitors and totals including locals are grayed out to focus attention on the impacts of non-local visitors coming primarily to recreate on the forest.

	Non-Local Visitors			Local Visitors			All Visitors
	Day Trips	Overnight Trips	Total	Day Trips	Overnight Trips	Not Primary	Total
Recreation Visits^a							
Snowmobile	4,500	9,600	14,100	13,200	2,100	600	30,000
Cross Country ski	2,000	6,200	8,200	10,800	800	200	20,000
Party Visits^b							
Snowmobile	2,045	3,840	5,885	5,739	913	240	12,778
Cross Country ski	714	2,214	2,929	4,696	348	80	8,052
Spending (\$000's)^c							
Snowmobile	\$221	\$1,236	\$1,457	\$390	\$176	\$0	\$2,023
Cross Country ski	\$38	\$742	\$780	\$160	\$70	\$0	\$1,010
Total Spending (\$000's)	\$259	\$1,978	\$2,230	\$550	\$246	\$0	\$3,034

a. Estimated by multiplying total visits by the segment shares in Table 4, e.g., 4,500 NL Day trip snowmobile visits = 15% * 30,000.

b. Estimated by dividing recreation visits by average party sizes in Table 4. e.g., 2,045 NL snowmobile party day trip visits = 4,500 person visits / 2.2 people per party.

c. Estimated by multiplying party visits by spending averages in Table 4 and dividing by 1,000, e.g., \$221,000 spending by NL day trip snowmobilers = 2,045 party visits * \$108 spent per party..

Forty-five percent of the visits (22,300 visits) are non-local visitors coming primarily for recreation on the forest. These visitors spend \$2,237,000 in the local area, with snowmobilers contributing \$1,457,000 and cross country skiers \$780,000. This spending represents “new” money to the local region attributable to the forest recreation opportunities and is the appropriate figure to use in a local impact analysis. This spending can be applied to an IMPLAN model for the local region to estimate local economic impacts¹⁵.

Including \$796,000 spent by local visitors brings the total spending to \$3 million. Local visitor spending is usually excluded in assessing economic impacts, as this spending does not represent

¹⁵ One must estimate spending using the detailed spending categories and then bridge the spending categories to the associated IMPLAN sectors.

“new money” to the local region. Spending on trips made for reasons other than recreating on the forest also would likely not be lost in the absence of the forest recreation opportunities.

In some cases arguments can be made for including a portion of the spending by local visitors or visitors not coming primarily to recreate on the forest. If local visitors would otherwise go outside the region for recreation, their spending is a conservative estimate of the spending that would be lost to the region in the absence of the forest recreation opportunities. To include spending on non-primary purpose trips, one must estimate the additional expenses associated with the national forest visit. For example, one might count the equivalent of what local visitors spend on day trips as an estimate of the marginal increment in spending associated with a visit to the forest for visitors already in the area for other reasons.

This example is readily modified to handle other activities or different assumptions. For applications involving multiple activities it is important that visitors be divided into mutually exclusive activity groups representing the primary activity on the trip.

Estimating Spending with Trip Type Segments

For trips involving multiple activities or a broad mix of activities, the “all visitor” spending profiles in Table 2 can be used. Table 7 illustrates the spending computations for 50,000 visits using national averages for trip types. In this scenario the 50,000 visits are assumed to mirror the national averages in terms of the trip segment mix, party size and spending. Seven percent of visits are assumed to be non-primary purpose trips and are omitted from the spending calculations.

Spending by the 17,000 non-local visitors is \$1,178,000 with the vast majority from overnight trips. Compared to the winter sports facility example above, the general mix of visitors includes fewer non-locals, and they spend less per visit, yielding total non-local spending about half of the winter sports facility scenario. Overall spending including locals is also less.

If the estimates for the winter sports facility above had not taken into account the distinct characteristics of cross country skiers and snowmobilers, total spending would have been underestimated. Conversely, if a management alternative attracts mostly hikers, bikers and other activities dominated by local visitors and non-locals with below average spending, the activity approach would generate lower spending than using general trip type segments.

Measure	Non-local Visitors			Local Visitors		Non-Primary	Total
	Day Trips	Overnight trips	All Non-Local	Day Trips	Overnight trips		
Segment share	8%	26%	34%	46%	13%	7%	93%
Visits	4,000	13,000	17,000	23,000	6,500	3,500	46,500
Party size	2.30	2.64	2.55	2.10	2.50	2.60	2.30
Party visits	1,739	4,919	6,658	10,952	2,600	1,346	20,210
Spending average (\$ per party visit)	\$52	\$208	\$177	\$33	\$121	--	\$331
Total spending (\$000's)	\$90	\$1,089	\$1,178	\$360	\$312	--	\$1,850

Which Spending Profiles to Use?

National forest visitor spending profiles have been developed for both trip types and activities. We recommend using the trip type segments when estimating spending of all recreation visitors on a given forest (Table 2). This doesn't require information about specific activities and avoids problems in identifying a primary activity. NVUM may not provide reliable estimates of the activity mix on individual forests¹⁶. The trip type spending profiles are also useful when evaluating management alternatives that affect a general mix of visitors.

The activity spending profiles presented in this report should be used primarily when estimating impacts of management alternatives that affect particular activity subgroups. Spending does not vary as much across activities as trip types, although some activities require extra expenses for fuel (motorized activities), supplies (hunting and fishing) or fees (ski lift tickets).

Itemizing visits and spending by activity will yield slightly different results than with the trip type segments, as the overall trip type spending averages do not take into account potential differences in spending due to the activity mix on a given forest.

The trip type approach will underestimate spending for forests with extensive downhill ski activity as skiers are underrepresented in estimating the trip type spending averages¹⁷. For these forests we recommend treating downhill skiers as a distinct segment, using the spending profiles for downhill skiers to supplement the general trip type segments for all other visitors. Note that the skier spending averages do not include the cost of season passes or extended stays at seasonal or rented homes/condos.

Broad national surveys are good at capturing general use and spending patterns, but national averages must be adapted for local applications. Local information and some judgment are required to assess which spending averages are most applicable in a given situation. For example, even though a forest has been classified as a low spending area based on the NVUM data, in an application to a particular site near a highly developed tourist area, the high spending profiles likely apply. The spending averages reported here and in earlier NVUM reports should provide reasonable estimates of spending for most general planning applications. The high and low spending profiles are indicative of the variations across forests, although very specific applications will fall outside of these ranges. Local prices, lodging rates, and spending opportunities in an area will influence spending levels.

¹⁶ As activities tend to occur at particular kinds of sites during particular seasons, the NVUM estimates of activity shares will be sensitive to when and where visitors were sampled. Due to small random samples of site days in GFA and proxy strata on individual forests, the NVUM estimates of snowmobilers, hunters, anglers, canoeists and other activity groups may therefore be unreliable at the forest level. Downhill ski visits are based mainly on proxy data and will therefore be more reliable. In the second NVUM cycle seasonal and spatial adjustments to the NVUM sampling plan will be added to improve the representativeness of the NVUM samples.

¹⁷ Weights based on the NVUM sampling strata were not used in estimating spending averages to avoid undue influence of cases with very high weights. Downhill skiers are therefore underrepresented in the unweighted NVUM sample.

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APPENDIX A – Supplemental Tables

Primary Activity	Non-Local Day Trips	Non-Local Overnight Trips ^a	Local Day Trips	Local Overnight Trips ^a	Not Primary	Total
Downhill skiing	15%	32%	44%	7%	2%	100%
Cross-country Skiing	10%	31%	54%	4%	1%	100%
Snowmobile	7%	13%	57%	13%	10%	100%
Hunting	5%	20%	50%	22%	3%	100%
Fishing	11%	24%	50%	11%	4%	100%
Nature-related	10%	25%	42%	7%	16%	100%
OHV-use	11%	23%	48%	14%	4%	100%
Driving	6%	9%	71%	3%	11%	100%
Hiking/Biking	8%	17%	63%	6%	6%	100%
Developed camping	1%	44%	2%	46%	7%	100%
Primitive						
Camping/Backpacking	0%	47%	4%	47%	2%	100%
Other activity	9%	22%	48%	16%	5%	100%
All Activities	8%	26%	46%	13%	7%	100%

Note: Based on the national economic subsample.

^a Includes visitors on overnight trips staying on or off the forest.

Primary Activity	Non-Local Day Trips	Non-Local Overnight Trips ^a	Local Day Trips	Local Overnight Trips ^a	Non-Primary Purpose trips
Downhill skiing	2.2	2.9	2.1	2.3	1.9
Cross-country Skiing	2.8	2.8	2.3	2.3	2.5
Snowmobile	2.2	2.5	2.3	2.8	2.4
Hunting	2.1	1.9	1.7	1.9	2.0
Fishing	2.0	2.3	2.1	2.5	2.1
Nature-related	2.5	2.7	2.5	2.4	2.7
OHV-use	2.1	2.5	2.0	2.5	2.6
Driving	2.1	2.6	1.8	2.2	2.4
Hiking/Biking	2.1	2.3	1.8	2.2	2.7
Developed camping	2.2	2.8	3.0	3.1	2.9
Primitive					
Camping/Backpacking	2.9	2.6	1.3	2.6	2.3
<u>Other</u>	<u>2.7</u>	<u>2.8</u>	<u>2.4</u>	<u>2.5</u>	<u>2.9</u>
Total	2.3	2.6	2.1	2.5	2.6

^a Includes visitors on overnight trips staying on or off the forest

Table A-3. Full Information Segment Shares by Forest

Forest	Non-Local Segments		Local Segments		Non-Primary	Total
	Day	Overnight	Day	Overnight		
National Average	8%	26%	46%	13%	7%	100%
Allegheny	4%	35%	50%	8%	3%	100%
Angeles	9%	1%	81%	9%	0%	100%
Apache-Sitgreaves	3%	77%	8%	10%	2%	100%
Arapaho-Roosevelt	5%	12%	54%	19%	10%	100%
Ashley	16%	44%	18%	11%	11%	100%
Beaverhead-Deerlodge	2%	17%	39%	28%	14%	100%
Bighorn	9%	23%	32%	19%	17%	100%
Bitterroot	10%	7%	63%	17%	3%	100%
Black Hills	0%	16%	65%	6%	13%	100%
Boise	7%	2%	64%	26%	1%	100%
Bridger-Teton	9%	22%	52%	10%	7%	100%
Caribbean	5%	44%	2%	20%	29%	100%
Caribou-Targhee	0%	15%	57%	19%	9%	100%
Carson	6%	60%	22%	4%	8%	100%
Chattahoochee-Oconee	10%	23%	50%	15%	2%	100%
Chequamegon-Nicolet	17%	40%	34%	5%	4%	100%
Cherokee	11%	6%	56%	19%	8%	100%
Chippewa	5%	33%	53%	8%	1%	100%
Chugach	12%	4%	47%	6%	31%	100%
Cibola	5%	18%	60%	9%	8%	100%
Clearwater	12%	24%	22%	29%	13%	100%
Cleveland	0%	8%	79%	9%	4%	100%
Coconino	16%	31%	31%	6%	16%	100%
Columbia Gorge NSR	5%	7%	72%	3%	13%	100%
Colville	11%	22%	51%	9%	7%	100%
Coronado	7%	14%	62%	11%	6%	100%
Custer	31%	28%	31%	2%	8%	100%
Dakota Prairie	4%	20%	49%	19%	8%	100%
Daniel Boone	8%	16%	65%	11%	0%	100%
Deschutes	5%	30%	43%	12%	10%	100%
Dixie	1%	35%	35%	13%	16%	100%
Eldorado	21%	25%	40%	7%	7%	100%
Fishlake	10%	35%	31%	17%	7%	100%
Flathead	0%	17%	55%	23%	5%	100%
Francis Marion and Sumter	7%	9%	70%	12%	2%	100%
Fremont	17%	34%	30%	18%	1%	100%
Gallatin	2%	22%	59%	9%	8%	100%
Gifford-Pinchot	13%	24%	40%	13%	10%	100%
Gila	1%	33%	24%	21%	21%	100%
Gd Mesa, Uncomp. & Gunn.	5%	23%	56%	12%	4%	100%
Green Mountain	16%	23%	49%	9%	3%	100%
GW & Jefferson	2%	11%	70%	10%	7%	100%
Helena	14%	8%	66%	7%	5%	100%
Hiawatha	1%	35%	35%	8%	21%	100%
Hoosier	13%	14%	60%	10%	3%	100%
Humboldt-Toiyabe	1%	33%	52%	7%	7%	100%

Table A-3 (Continued). Full Information Segment Shares by Forest

Forest	Non-Local Segments		Local Segments		Non-Primary	Total
	Day	Overnight	Day	Overnight		
Huron-Manistee	19%	49%	24%	7%	1%	100%
Idaho Panhandle	5%	7%	65%	19%	4%	100%
Inyo	2%	72%	16%	1%	9%	100%
Kaibab	7%	35%	33%	3%	22%	100%
Kisatchie	2%	1%	97%	0%	0%	100%
Klamath	2%	22%	55%	11%	10%	100%
Kootenai	10%	12%	49%	20%	9%	100%
Lake Tahoe Mgmt. Unit	9%	50%	27%	3%	11%	100%
Land Between the Lakes	10%	25%	51%	12%	2%	100%
Lassen	3%	41%	38%	11%	7%	100%
Lewis and Clark	11%	27%	38%	19%	5%	100%
Lincoln	14%	39%	36%	7%	4%	100%
Lolo	4%	13%	70%	10%	3%	100%
Los Padres	12%	8%	71%	7%	2%	100%
Malheur	1%	47%	40%	3%	9%	100%
Manti-La Sal	2%	9%	41%	12%	36%	100%
Mark Twain	6%	6%	77%	8%	3%	100%
Medicine Bow	10%	27%	40%	16%	7%	100%
Mendocino	27%	21%	48%	4%	0%	100%
Midewin Tallgrass Prairie	21%	0%	78%	0%	1%	100%
Modoc	4%	13%	50%	24%	9%	100%
Monongahela	11%	44%	25%	8%	12%	100%
Mt. Hood	13%	23%	41%	13%	10%	100%
Mt. Baker-Snoqualmie	7%	16%	43%	26%	8%	100%
Nebraska	2%	33%	41%	5%	19%	100%
Nez Perce	7%	54%	28%	2%	9%	100%
NFS of Alabama	4%	8%	70%	17%	1%	100%
NFS of Florida	5%	14%	67%	8%	6%	100%
NFS of Mississippi	1%	5%	65%	26%	3%	100%
NFS of North Carolina	9%	28%	38%	18%	7%	100%
NFS of Texas	3%	24%	62%	11%	0%	100%
Ochoco	0%	27%	30%	42%	1%	100%
Okanogan	2%	58%	28%	6%	6%	100%
Olympic	1%	14%	52%	15%	18%	100%
Ottawa	4%	29%	18%	10%	39%	100%
Ouachita	2%	15%	67%	10%	6%	100%
Ozark-St. Francis	9%	26%	33%	28%	4%	100%
Payette	26%	37%	30%	3%	4%	100%
Pike San Isabel	6%	14%	50%	20%	10%	100%
Plumas	11%	20%	49%	14%	6%	100%
Prescott	17%	16%	58%	7%	2%	100%
Rio Grande	3%	12%	37%	20%	28%	100%
Rogue River	2%	12%	35%	28%	23%	100%
Routt	3%	50%	34%	5%	8%	100%
Salmon-Challis	16%	57%	14%	9%	4%	100%
San Bernardino	27%	13%	45%	7%	8%	100%

Table A-3 (Continued). Full Information Segment Shares by Forest

Forest	Non-Local Segments		Local Segments		Non-Primary	Total
	Day	Overnight	Day	Overnight		
San Juan	4%	30%	38%	16%	12%	100%
Santa Fe	16%	18%	54%	4%	8%	100%
Sawtooth	10%	26%	41%	19%	4%	100%
Sequoia	5%	35%	38%	10%	12%	100%
Shasta-Trinity	4%	28%	38%	22%	8%	100%
Shawnee	12%	20%	46%	16%	6%	100%
Shoshone	3%	24%	35%	16%	22%	100%
Sierra	8%	32%	31%	27%	2%	100%
Siskiyou	1%	17%	48%	20%	14%	100%
Siuslaw	11%	33%	39%	4%	13%	100%
Six Rivers	3%	24%	35%	21%	17%	100%
Stanislaus	21%	44%	24%	4%	7%	100%
Superior	2%	37%	49%	8%	4%	100%
Tahoe	9%	32%	43%	8%	8%	100%
Tongass (All Years)	1%	25%	62%	8%	6%	100%
Tonto	9%	5%	60%	25%	1%	100%
Uinta	9%	4%	67%	15%	5%	100%
Umatilla	13%	28%	40%	16%	3%	100%
Umpqua	2%	21%	37%	24%	16%	100%
Wallowa-Whitman	18%	23%	43%	8%	8%	100%
Wasatch-Cache	2%	9%	76%	10%	3%	100%
Wayne	17%	15%	57%	9%	2%	100%
Wenatchee	17%	26%	27%	28%	2%	100%
White Mountain	10%	63%	20%	4%	3%	100%
White River	13%	59%	20%	5%	3%	100%
Willamette	15%	18%	46%	13%	8%	100%
Winema	4%	29%	44%	22%	1%	100%

NOTE: The full information segment shares are computed using NVUM case weights and some information from the general portion of the NVUM survey. See Stynes and White (2005a) for details.