

Updated Spending Profiles for National Forest Recreation Visitors by Activity

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November, 2010

JOINT VENTURE AGREEMENT
BETWEEN THE
USDA FOREST SERVICE
PACIFIC NORTHWEST RESEARCH STATION
and
OREGON STATE UNIVERSITY
Joint Venture Agreement # 10-JV-11261955-018

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INTRODUCTION

Outdoor recreation on public lands produces a variety of benefits for recreating individuals. For communities near public lands, recreation can have positive impacts on local economies as recreation visitors spend money in businesses located around public lands and as natural resource agencies spend money to manage recreation opportunities. There is often interest in quantifying current and potential future recreation visitor spending in local forest communities, particularly when agency management actions have the potential to change recreation use patterns. To quantify the magnitude of recreation visitor spending, one needs an estimate of the amount of recreation use and a measure of how much visitors spend when recreating. In this report, we provide national-level estimates of recreation visitor spending in local communities around national forests.

This report updates a previous report (Stynes and White 2006) on the average spending of National Forest System (NFS) recreation visitors engaged in a variety of recreation activities. Additionally, the spending averages presented here complement the spending averages for visitors engaged in differing types of recreation trips reported in White and Stynes (2010). The spending averages presented in this report should be applied to analyses focused on specific recreation activities and the spending averages reported in White and Stynes (2010) should be used for general recreation analyses.

In the next section, we present the methods used in developing the visitor spending averages. In the results section, we report visitor spending for 12 specific recreation activities and all visitors collectively. Then, we discuss how to apply the spending averages to estimate recreation spending for specific analyses and identify a process to select specific spending profiles and associated parameters. In the appendix, we present national- and forest-level parameters needed for estimating total recreation visitor spending.

METHODS

Data

We rely on the USDA Forest Service National Visitor Use Monitoring (NVUM) (English et al. 2002) survey data collected from NFS recreation visitors during federal fiscal years 2005 to 2009 (NVUM Round 2). Previous estimates of recreation visitor spending (e.g., Stynes and White 2005, Stynes and White 2006) relied on NVUM data collected between 2000 and 2004 (NVUM Round 1). The NVUM program was implemented across the NFS in year 2000. Currently, each administrative national forest is sampled once every five years. The primary goal of NVUM is to develop national, regional, and forest-level estimates of recreation use. Secondary goals are to collect data to measure recreation visitor satisfaction and the spending of visitors in local forest communities. Under the NVUM program, locations within national forests are selected for sampling via a stratified random sampling approach. At those locations recreating individuals are selected, following an established procedure, to voluntarily complete a survey regarding

their recreation behavior. Interested readers can refer to English et al. (2002) and Zarnoch et al. (in press) for specific NVUM protocols and visit estimation procedures.

Approximately 1/3 of those completing an NVUM standard survey are asked to also complete a supplemental economic survey. That survey is designed to collect data on previous and planned spending of the entire recreation travel party within 50 miles of the interview site during the trip to the area. Visitor spending was reported within 10 standard recreation expenditure categories (e.g., lodging, food and beverage in restaurants/bars, gas and oil). To estimate visitor spending averages from those data, we rely on the analytical approach and outlier definitions reported in White and Stynes (2010). The approaches and outlier definitions are designed to provide reliable and meaningful estimates of recreation visitor spending.¹ In NVUM Round 2, 33,810 economic surveys were completed by NFS recreation visitors. After data cleaning, removing outliers, and excluding those who could not recall or did not wish to report their spending, 28,479 observations were available to estimate recreation visitor spending.

Recreation activities

When completing an NVUM survey, respondents are presented a list of 26 recreation activities and asked to select those they participated in during the national forest visit. Respondents are also asked to identify their single primary recreation activity on the visit to the national forest. The activity-specific spending averages presented here relate to the primary activity of recreation visitors. Small sample sizes do not allow us to construct spending averages for each NVUM activity. Additionally, the spending patterns of visitors engaged in many recreation activities are not statistically unique from that of visitors in other activities (e.g., hiking versus biking), especially after accounting for the type (e.g., day or overnight) of recreation trip. Based on discussions with USDA FS economists and planners and examination of sample sizes and spending patterns, we aggregated the full list of NVUM activities into 12 activities for this analysis (Table 1).

¹ The general approach and outlier definitions adopted here were developed over several years of analyzing the NVUM data and in consultation with USDA Forest Service economists and planners.

Table 1—Recreation activities considered in this analysis

Activity	Description
Downhill skiing	Downhill skiing or snowboarding
Cross-country skiing	Cross-country skiing or snowshoeing
Snowmobile	Snowmobile travel
Hunting	Hunting—all types
Fishing	Fishing—all types
Nature-related	Viewing nature, viewing wildlife, visiting a nature center, or completing nature study
OHV-use	Off-highway vehicle travel (four-wheelers, dirt bikes, etc.)
Driving	Driving for pleasure on roads
Developed camping	Camping in developed campground sites
Prim. camping/backpacking	Primitive camping, backpacking, or camping in dispersed areas
Hiking/biking	Hiking or walking, bicycling (including mountain biking)
Other	Any remaining activity, those visitors engaged in multiple primary activities, or those without a primary activity

Trip types

The type of recreation trip (e.g., day or overnight) undertaken has a greater influence on recreation visitor spending than the recreation activity in which the visitor is engaged (White and Stynes 2008). For example, an angler on a day trip has spending that is quite different from an angler who is staying overnight in a motel near the national forest, even after accounting for the difference in trip length. Furthermore, an angler on a day trip has spending more similar to someone visiting a nature center or driving for pleasure on a day trip than another angler staying overnight away from home during the trip.

For analyses of the NVUM spending data we typically segment visitors into seven trip types (Table 2). First, we divide visitors into locals and non-locals where locals are defined as those who claimed to have traveled 60 miles or less to reach the recreation site.² Next, we divide those on day trips to the local area from those on overnight trips away from home to the local area. Those spending the night away from home in the local area were identified by their response to two questions: if the respondent spent any nights away from home and how many nights were spent in the local forest area during the trip. Those not staying overnight away from home or not spending any nights in the local area are classified as day trips. Visitors on overnight trips are further divided into those staying overnight on the national forest (in campgrounds, cabins, or resorts) and those staying overnight off forest (in hotels/motels, homes of friends or relatives, other campgrounds, seasonal homes, etc.) based on the lodging types reportedly used by the

² Based on previous analysis of the NVUM data, reported travel distances of 60 miles roughly equate to a distance of 30 straight-line miles from the forest boundary. In reports using Round 1 NVUM data, locals were identified as those with ZIP codes having centroids located within 30 straight-line miles of the national forest boundary. Those respondents claiming residence in a foreign country are classified as non-locals.

respondent.³ Finally, those visitors who claim that their reason for being away from home on the current trip was for some purpose other than visiting the national forest (e.g., visiting friends/relatives, business, or recreating elsewhere) are classified into a “non-primary” segment. Because those trips were completed for some other purpose and the trip to the national forest was a side trip, the trip spending of those visitors is not fully applicable to the national forest and should be handled separately. In this report we do not present average spending for non-primary visitors, but do discuss how to handle the spending of these visitors in the application section.

Table 2—Trip-type segments used in NVUM spending analyses

Trip-type segment	Description
Non-local day trips	Non-local residents on day trips to the local forest area
Non-local OVN-NF ^a	Non-local residents staying overnight on the NF
Non-local OVN ^a	Non-local residents staying overnight off the NF in the local area
Local day trips	Local residents on day trips to the local forest area
Local OVN-NF ^b	Local residents staying overnight on the NF
Local-OVN ^b	Local residents staying overnight off the NF in the local area
Non-primary	Visits where recreating on the NF is not the primary trip purpose

^{ab} To increase sample sizes, in this analysis we combine the overnight on and off-forest trip types.

The standard seven trip-type visitor segments explain about 27 percent of the variation in trip spending by travel parties (White and Stynes 2008). The average spending estimated for the trip segments is statistically different between segments, with the exception of the Local OVN-NF and Local OVN comparison. The seven trip segments have proven useful in USDA Forest Service economic analyses and appear to now be intuitive to Agency economists and analysts.

High, average, and low levels of spending

The size of communities and the spending opportunities around individual national forests affect the level of visitor spending at individual national forests. However, because of small sample sizes at the forest-level in the NVUM data, it is not possible to reliably estimate visitor spending averages for each national forest. To account for differences in the spending opportunities around individual national forests, we develop three national-level spending profiles (high, average, and low spending) that can be applied to national forests in high, average, and low spending areas. In this analysis, each administrative national forest was classified as a high, average, or low spending area based on the data collected in NVUM Round 2 (see Table A-4). A national 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) was statistically above (below) the national average. After controlling for the mix of day and overnight trips to individual forests, in Round 2, 40 national forests had spending averages that were significantly lower than the national average and 15 forests had spending averages significantly higher than the national average. The national-level high and low spending profiles were

³ Those using lodging both on and off the national forest are classified into the overnight off-forest segment.

developed by pooling cases from the high and low spending forests, respectively. The national-level average spending profiles were estimated using data collected on all forests.

Small sample size conditions

Despite a sample of nearly 30,000 national forest visits, sample sizes become very small once visitors are split into activities, trip-type segments, and levels of spending. Although sample sizes for some popular activities were quite large (e.g., hiking), few visitors engaged in some other activities (e.g., OHV-use) completed economic surveys. In a number of instances there were fewer than 50 observations for some combination of activity, trip type, and spending level. For those instances with small sample sizes where we could not estimate spending directly from the data, we construct spending averages based on the following rules.

Rule 1: For one activity (OHV-use) the NVUM economic sample did not include 50 non-local day trips. The NL day trip spending profile for OHV use was therefore based on the local day trip spending profile for that activity (\$58). The non-local day trip spending average for all activities (\$65) is 90% higher than the local day trip average for all activities (\$34). This relationship is used to estimate the non-local day trip spending average for OHV use. Ultimately, average spending of non-local day trip OHV visitors was estimated as $\$58 * 1.90 = \110 .

Rule 2: For many activities there were too few cases to independently estimate a low or high spending average directly from the NVUM sample. In those situations, the low and/or high spending averages were estimated using the ratios of low to average and high to average spending across all activities for the respective trip type. 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 $\$315 = 0.59 * \537 and the high average is $\$951 = 1.77 * \537 . 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 3. 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. For local day trips, the high spending average for all activities was less than that of the national average for all activities. Because of that, for the local day trip segment, we assume the ratio for high spending to average spending areas to be 1.0.

Rule 3: For primitive camping/backpacking, there were insufficient cases to estimate spending for the NL OVN/high spending combination. If this value was filled following rule 2, spending for primitive camping/backpacking approached the observed spending for NL OVN developed camping at high spending areas. That result was inconsistent with the observed pattern of spending between developed camping and primitive camping. In this case, NL OVN high spending for primitive camping/backpacking was estimated using the observed ratio between developed camping and primitive

camping/backpacking for the NL OVN segment (0.65) and the observed spending average for developed camping in the NL OVN/high spending combination. Specifically, the NL OVN high spending average for primitive camping/backpacking was estimated as $\$300 * 0.65 = \196 .

Rule 4: Five activities (downhill and cross-country skiing, snowmobiling, OHV use, and driving for pleasure) did not have enough local overnight trip observations to reliably estimate spending averages for that trip type. For those activities the local overnight trip average was estimated at 48% of the non-local overnight trip average based on the overall ratio of spending averages of local and non-local overnight trips across all activities.

RESULTS

Across all activities combined, visitor spending ranges from \$29 per party per trip for local day trips in low spending areas to \$648 per party per trip for non-local overnight trips in high spending areas (Table 3, total row). The ratios between high and average and low and average spending areas were narrower for the local visitors compared to the non-local visitors. This is as expected because locals have less spending generally and tend to buy fewer souvenirs and restaurant meals, which may be more expensive in high spending areas, than their non-local counterparts. Within activities and trip types, the greatest observed spending was for non-local downhill skiers on overnight trips (\$893). The lowest observed spending was for locals hiking or biking on day trips (\$18).⁴

Table 3. Visitor spending for high, average, and low spending areas by activity, \$ per party per trip (\$2007)

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	\$126	\$130	\$181	\$468	\$798	\$893	\$68	\$64	\$69	\$359	\$386	\$489
Cross-country skiing	\$87	\$97	\$135	\$315	\$537	\$951	\$26	\$27	\$31	\$242	\$259	\$329
Snowmobile	\$116	\$129	\$180	\$377	\$642	\$1,139	\$72	\$74	\$74	\$289	\$311	\$394
Hunting	\$79	\$88	\$122	\$253	\$368	\$652	\$41	\$51	\$51	\$230	\$248	\$314
Fishing	\$52	\$55	\$77	\$214	\$331	\$548	\$36	\$38	\$38	\$154	\$161	\$205
Nature-related	\$56	\$65	\$90	\$269	\$473	\$826	\$36	\$37	\$42	\$182	\$195	\$247
OHV-use	\$98	\$109	\$151	\$219	\$277	\$491	\$63	\$58	\$58	\$125	\$134	\$170
Driving	\$42	\$54	\$75	\$338	\$576	\$1,021	\$28	\$32	\$30	\$259	\$278	\$353
Developed camping	n/a	n/a	n/a	\$183	\$206	\$300	n/a	n/a	n/a	\$178	\$171	\$217
Prim. camping/bpack	n/a	n/a	n/a	\$108	\$134	\$196	n/a	n/a	n/a	\$121	\$120	\$153
Hiking/biking	\$53	\$50	\$64	\$228	\$473	\$765	\$20	\$21	\$18	\$126	\$150	\$190
Other	\$60	\$72	\$100	\$216	\$330	\$569	\$36	\$40	\$32	\$170	\$187	\$237
Total	\$58	\$65	\$90	\$214	\$366	\$648	\$34	\$34	\$29	\$165	\$177	\$224
Ratio to average	0.90		1.39	0.59		1.77	0.98		0.84	0.93		1.27

Shaded cells were filled using rules 1, 2, 3, or 4 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.

⁴ Interestingly, at the national level, local day trips where hiking/biking is the primary activity is the most common type of national forest visit.

Non-locals spend about twice as much on recreation trips as their local counterparts (tables 4a and 4b). For those on day trips, expenses for gasoline and oil and food purchased in restaurants and grocery stores account for the majority of trip spending. For those on overnight trips, lodging expenses, gasoline and oil, and food purchased in restaurants and grocery stores account for the majority of trip spending. As spending areas move from low to average to high, non-local visitors tend to spend a greater share of their trip expenses on lodging (if on an overnight trip), restaurant meals, and souvenirs. Conversely, as spending levels increase, non-local visitors tend to spend a smaller share of their expenses on groceries and gas and oil. For locals, as spending areas move from low to average to high, they spend a smaller share of their trip expenses on lodging (if on overnight trips), groceries, gasoline and oil, and sporting goods.

Table 4a—Non-local visitor spending averages, all activities \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	57.39	116.84	222.37
Restaurant	11.06	14.16	23.69	25.08	58.94	128.45
Groceries	7.76	8.07	8.04	44.81	57.25	72.25
Gas & oil	25.27	27.34	33.43	58.52	71.79	102.55
Other transp.	0.83	0.60	0.17	0.51	2.86	2.54
Entry fees	4.23	4.36	5.67	5.94	12.51	24.67
Recreation & entertainment	4.40	4.13	6.56	7.24	15.46	32.77
Sporting goods	2.64	2.89	2.89	8.11	13.29	19.95
Souvenirs and other expenses	<u>2.02</u>	<u>3.12</u>	<u>9.52</u>	<u>6.88</u>	<u>16.57</u>	<u>42.60</u>
Total	58.21	64.68	89.97	214.49	365.51	648.15
Sample size	896	2,224	213	2,175	7,338	1,248
Std. deviation	63.0	71.2	91.5	267.8	531.5	739.0
Standard error	2.10	1.51	6.27	5.74	6.20	20.92
Pct error (95%)	7.2%	4.7%	13.9%	5.4%	3.4%	6.5%

Table 4b—Local visitor spending averages, all activities \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	33.11	36.08	47.87
Restaurant	3.89	4.80	4.90	6.87	11.57	22.20
Groceries	6.00	5.90	3.95	59.03	60.45	76.37
Gas & oil	15.38	15.15	12.18	42.50	45.01	45.75
Other transp.	0.00	0.14	0.39	0.18	0.64	4.00
Entry fees	2.10	2.08	1.71	3.04	4.21	3.14
Recreation & entertainment	1.64	1.43	1.05	4.14	3.77	3.58
Sporting goods	4.16	4.07	3.78	12.21	11.39	16.75
Souvenirs and other expenses	<u>0.51</u>	<u>0.72</u>	<u>0.78</u>	<u>3.46</u>	<u>3.66</u>	<u>4.51</u>
Total	33.68	34.29	28.74	164.54	176.77	224.17
Sample size	3,704	9,832	1,469	972	2,254	198
Std. deviation	45.2	49.6	50.1	183.6	225.1	340.6
Standard error	0.74	0.50	1.31	5.89	4.74	24.20
Pct error (95%)	4.4%	2.9%	9.1%	7.2%	5.4%	21.6%

Detailed spending averages for each of the 12 activities considered in this analysis are presented in tables 5a through 15b. When spending averages are computed directly from NVUM survey data, we present the sample sizes and percent errors (95% confidence interval) for the estimates. In most cases, percent errors are 20% or less. When sample sizes were insufficient, we identify the rule we used to construct the spending average.

Table 5a—Non-local visitor spending averages for downhill skiers, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	150.01	255.64	312.70
Restaurant	19.48	20.85	29.01	86.37	147.18	160.25
Groceries	4.69	4.30	5.98	41.64	70.96	77.34
Gas & oil	25.09	24.47	34.04	34.90	59.48	63.86
Other transp.	0.00	0.00	0.00	1.87	3.19	0.69
Entry fees	26.23	43.95	61.14	81.51	138.90	141.15
Recreation & entertainment	43.21	29.54	41.09	47.15	80.34	88.14
Sporting goods	5.39	5.19	7.22	12.78	21.78	30.12
Souvenirs and other expenses	<u>1.99</u>	<u>1.84</u>	<u>2.56</u>	<u>12.07</u>	<u>20.57</u>	<u>18.81</u>
Total	126.07	130.15	181.03	468.30	798.04	893.08
Sample size	134	459			516	157
Std. deviation	93.8	99.9	Filled	Filled	821.2	777.5
Standard error	8.1	4.7	using	using	36.1	62.1
Pct error (95%)	12.8%	7.2%	Rule 2	Rule 2	9.1%	13.9%

Table 5b—Local visitor spending averages for downhill skiers, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low ^a	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	115.08	123.63	156.79
Restaurant	15.00	12.57	11.68	66.26	71.18	90.27
Groceries	2.38	3.26	5.47	31.94	34.32	43.52
Gas & oil	12.50	11.80	10.05	26.78	28.77	36.48
Other transp.	0.00	0.01	0.00	1.44	1.54	1.96
Entry fees	17.42	19.90	17.86	62.53	67.18	85.19
Recreation & entertainment	17.61	12.51	15.01	36.17	38.86	49.28
Sporting goods	2.65	3.04	7.16	9.81	10.53	13.36
Souvenirs and other expenses	<u>0.26</u>	<u>0.76</u>	<u>2.24</u>	<u>9.26</u>	<u>9.95</u>	<u>12.61</u>
Total	67.81	63.85	69.47	359.25	385.95	489.45
Sample size	225	907	173			
Std. deviation	69.7	79.1	96.3	Filled	Filled	Filled
Standard error	4.6	2.6	7.3	using	using	using
Pct error (95%)	13.7%	8.2%	21.1%	Rule 2	Rule 4	Rule 2

^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 downhill skiing for low spending forests.

Table 6a—Non-local visitor spending averages for cross-country skiers, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	134.28	228.83	405.79
Restaurant	13.53	15.04	20.92	48.49	82.64	146.54
Groceries	7.95	8.84	12.29	29.81	50.81	90.10
Gas & oil	19.78	21.98	30.58	29.02	49.45	87.68
Other transp.	2.26	2.51	3.50	0.71	1.21	2.14
Entry fees	23.45	26.05	36.24	33.81	57.61	102.16
Recreation & entertainment	6.89	7.66	10.65	16.68	28.42	50.40
Sporting goods	9.90	11.00	15.30	15.10	25.73	45.63
Souvenirs and other expenses	<u>3.42</u>	<u>3.80</u>	<u>5.28</u>	<u>6.97</u>	<u>11.87</u>	<u>21.05</u>
Total	87.19	96.88	134.76	314.87	536.57	951.50
Sample size	Filled	50	Filled	Filled	92	Filled
Std. deviation	using	98.1	using	using	638.7	using
Standard error	Rule 2	13.9	Rule 2	Rule 2	66.6	Rule 2
Pct error (95%)		28.6%			24.8%	

Table 6b—Local visitor spending averages for cross-country skiers, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	103.01	110.67	140.35
Restaurant	3.85	3.92	2.60	37.20	39.97	50.68
Groceries	1.51	1.53	1.95	22.87	24.57	31.16
Gas & oil	7.89	8.03	8.94	22.26	23.91	30.33
Other transp.	0.03	0.03	0.00	0.54	0.58	0.74
Entry fees	4.74	4.83	2.02	25.94	27.86	35.34
Recreation & entertainment	3.42	3.48	4.67	12.80	13.75	17.43
Sporting goods	4.80	4.88	11.11	11.58	12.45	15.78
Souvenirs and other expenses	<u>0.21</u>	<u>0.22</u>	<u>0.00</u>	<u>5.34</u>	<u>5.74</u>	<u>7.28</u>
Total	26.45	26.93	31.29	241.55	259.50	329.09
Sample size	Filled	336	71	Filled	Filled	Filled
Std. deviation	using	54.6	62.0	using	using	using
Standard error	Rule 2	3.0	7.4	Rule 2	Rule 4	Rule 2
Pct error (95%)		22.1%	47.0%			

Table 7a—Non-local visitor spending averages for snowmobilers, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	102.71	175.03	310.38
Restaurant	24.41	27.13	37.74	91.16	155.35	275.48
Groceries	15.51	17.24	23.98	27.65	47.12	83.56
Gas & oil	54.16	60.18	83.71	89.50	152.51	270.45
Other transp.	0.00	0.00	0.00	0.54	0.92	1.64
Entry fees	5.34	5.93	8.26	15.60	26.58	47.14
Recreation & entertainment	14.13	15.70	21.84	28.50	48.57	86.13
Sporting goods	2.18	2.42	3.36	9.50	16.19	28.71
Souvenirs and other expenses	<u>0.64</u>	<u>0.71</u>	<u>0.99</u>	<u>11.67</u>	<u>19.88</u>	<u>35.26</u>
Total	116.37	129.31	179.88	376.84	642.17	1,138.75
Sample size	Filled	67	Filled	Filled	136	Filled
Std. deviation	using	99.3	using	using	576.7	using
Standard error	Rule 2	12.1	Rule 2	Rule 2	49.4	Rule 2
Pct error (95%)		18.8%			15.4%	

Table 7b—Local visitor spending averages for snowmobilers, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	78.79	84.65	107.35
Restaurant	9.61	9.78	9.78	69.93	75.13	95.28
Groceries	9.25	9.42	9.42	21.21	22.79	28.90
Gas & oil	42.46	43.23	43.23	68.66	73.76	93.54
Other transp.	0.00	0.00	0.00	0.42	0.45	0.57
Entry fees	3.76	3.83	3.83	11.97	12.86	16.30
Recreation & entertainment	1.31	1.34	1.34	21.86	23.49	29.79
Sporting goods	4.28	4.36	4.36	7.29	7.83	9.93
Souvenirs and other expenses	<u>1.82</u>	<u>1.86</u>	<u>1.86</u>	<u>8.95</u>	<u>9.62</u>	<u>12.20</u>
Total	72.49	73.81	73.81	289.09	310.57	393.86
Sample size	Filled	222	Filled	Filled	Filled	Filled
Std. deviation	using	66.5	using	using	using	using
Standard error	Rule 2	4.5	Rule 2	Rule 2	Rule 4	Rule 2
Pct error (95%)		12.1%				

Table 8a—Non-local visitor spending averages for hunters, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	27.72	68.47	121.42
Restaurant	4.69	5.21	7.24	23.49	35.64	63.20
Groceries	13.43	14.92	20.75	59.15	70.85	125.63
Gas & oil	43.74	48.61	67.61	104.74	111.73	198.13
Other transp.	0.00	0.00	0.00	1.08	1.77	3.14
Entry fees	0.35	0.39	0.54	0.63	23.11	40.98
Recreation & entertainment	0.38	0.43	0.59	9.14	12.76	22.63
Sporting goods	12.96	14.40	20.04	24.90	36.77	65.20
Souvenirs and other expenses	<u>3.35</u>	<u>3.72</u>	<u>5.18</u>	<u>2.36</u>	<u>6.64</u>	<u>11.78</u>
Total	78.90	87.68	121.96	253.21	367.73	652.10
Sample size	Filled	74	Filled	141	328	Filled
Std. deviation	using	86.8	using	355.9	556.8	using
Standard error	Rule 2	10.1	Rule 2	30.0	30.7	using
Pct error (95%)		23.0%		23.7%	16.7%	Rule 2

Table 8b—Local visitor spending averages for hunters, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	39.04	41.94	53.18
Restaurant	1.91	2.08	2.08	7.33	7.87	9.98
Groceries	4.45	5.02	5.02	66.30	71.22	90.32
Gas & oil	18.99	22.42	22.42	65.12	69.96	88.72
Other transp.	0.00	0.00	0.00	4.45	4.78	6.06
Entry fees	0.52	1.76	1.76	1.57	1.69	2.14
Recreation & entertainment	0.72	0.85	0.85	1.26	1.35	1.72
Sporting goods	13.01	17.71	17.71	37.52	40.31	51.11
Souvenirs and other expenses	<u>1.20</u>	<u>1.11</u>	<u>1.11</u>	<u>7.81</u>	<u>8.39</u>	<u>10.64</u>
Total	40.79	50.97	50.97	230.38	247.51	313.88
Sample size	240	494	Filled	Filled	100	Filled
Std. deviation	56.9	71.5	using	using	220.7	using
Standard error	3.7	3.2	Rule 2	Rule 2	22.1	Rule 2
Pct error (95%)	18.0%	12.6%			17.8%	

Table 9a—Non-local visitor spending averages for anglers, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	49.58	85.74	168.93
Restaurant	8.06	7.38	10.27	23.92	43.23	89.07
Groceries	7.23	7.80	10.86	46.26	64.19	77.86
Gas & oil	28.99	27.51	38.27	67.14	79.10	101.97
Other transp.	0.00	0.00	0.00	0.00	1.84	3.80
Entry fees	0.62	1.19	1.66	4.11	10.77	33.13
Recreation & entertainment	1.59	3.50	4.86	3.89	12.69	10.54
Sporting goods	5.05	7.49	10.41	13.95	23.45	36.33
Souvenirs and other expenses	<u>0.88</u>	<u>0.45</u>	<u>0.63</u>	<u>4.66</u>	<u>9.70</u>	<u>26.40</u>
Total	52.44	55.32	76.95	213.51	330.70	548.03
Sample size	86	253		189	810	124
Std. deviation	63.4	61.9	Filled	240.7	429.4	711.5
Standard error	6.8	3.9	using	17.5	15.1	63.9
Pct error (95%)	26.1%	14.1%	Rule 2	16.4%	9.1%	23.3%

Table 9b—Local visitor spending averages for anglers, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High ^a	Low	Average	High
Lodging	0.00	0.00	0.00	28.87	33.74	42.79
Restaurant	2.05	2.52	2.04	5.86	8.38	10.63
Groceries	5.71	6.98	5.20	51.18	51.33	65.10
Gas & oil	19.03	18.85	17.90	42.91	41.61	52.77
Other transp.	0.00	0.11	0.00	0.62	0.97	1.23
Entry fees	1.04	1.19	1.54	3.09	2.32	2.94
Recreation & entertainment	1.35	1.61	1.66	2.49	3.98	5.05
Sporting goods	6.91	7.07	9.92	16.50	17.23	21.85
Souvenirs and other expenses	<u>0.02</u>	<u>0.05</u>	<u>0.00</u>	<u>2.19</u>	<u>1.77</u>	<u>2.24</u>
Total	36.11	38.37	38.26	153.70	161.33	204.59
Sample size	439	1,022	114	98	217	Filled
Std. deviation	39.3	44.1	50.3	135.4	154.9	using
Standard error	1.9	1.4	4.7	13.7	10.5	Rule 2
Pct error (95%)	10.4%	7.2%	24.6%	17.8%	13.0%	

^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 anglers for high spending forests.

Table 10a—Non-local visitor spending averages for nature-related activities, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	92.47	181.38	334.53
Restaurant	12.73	17.10	23.79	44.80	96.79	186.27
Groceries	6.35	6.02	8.38	31.48	47.99	65.13
Gas & oil	27.36	27.50	38.25	68.39	76.06	89.59
Other transp.	0.00	0.73	1.02	0.48	2.67	5.27
Entry fees	2.70	2.97	4.13	5.20	13.41	24.32
Recreation & entertainment	2.77	2.14	2.98	9.50	17.57	39.83
Sporting goods	1.45	0.88	1.23	7.62	8.71	14.24
Souvenirs and other expenses	<u>3.13</u>	<u>7.22</u>	<u>10.04</u>	<u>9.51</u>	<u>28.37</u>	<u>66.69</u>
Total	56.49	64.57	89.81	269.44	472.95	825.85
Sample size	160	329		227	705	156
Std. deviation	54.7	70.2	Filled	353.8	623.0	866.9
Standard error	4.3	3.9	using	23.5	23.5	69.4
Pct error (95%)	15.3%	12.0%	Rule 2	17.4%	9.9%	16.8%

Table 10b—Local visitor spending averages for nature-related activities, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	36.10	38.78	49.18
Restaurant	6.22	8.49	10.97	18.78	20.17	25.58
Groceries	4.61	4.45	3.09	47.17	50.68	64.27
Gas & oil	18.16	16.17	13.28	54.07	58.09	73.66
Other transp.	0.00	0.81	3.49	0.00	0.00	0.00
Entry fees	1.75	2.13	4.97	3.91	4.20	5.32
Recreation & entertainment	2.58	1.50	1.39	10.72	11.51	14.60
Sporting goods	1.36	1.86	0.46	7.90	8.49	10.76
Souvenirs and other expenses	<u>1.17</u>	<u>2.08</u>	<u>3.89</u>	<u>2.93</u>	<u>3.15</u>	<u>3.99</u>
Total	35.86	37.48	41.54	181.57	195.07	247.38
Sample size	262	824	152		75	
Std. deviation	46.3	50.6	62.5	Filled	178.4	Filled
Standard error	2.9	1.8	5.1	using	20.6	using
Pct error (95%)	16.0%	9.4%	24.4%	Rule 2	21.1%	Rule 2

Table 11a—Non-local visitor spending averages for OHV use, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	32.04	47.40	84.05
Restaurant	12.86	14.29	19.88	15.83	30.19	53.54
Groceries	14.33	15.92	22.14	63.97	73.00	129.44
Gas & oil	53.57	59.53	82.80	88.15	94.35	167.30
Other transp.	0.13	0.14	0.20	0.00	0.00	0.00
Entry fees	5.82	6.47	9.00	0.76	7.19	12.76
Recreation & entertainment	6.71	7.46	10.37	3.77	8.36	14.83
Sporting goods	4.27	4.74	6.59	0.89	3.67	6.50
Souvenirs and other expenses	0.14	0.15	0.21	13.25	12.64	22.42
Total	97.83	108.71	151.21	218.67	276.80	490.85
Sample size	Filled	Filled	Filled	67	112	Filled
Std. deviation	using	using	using	261.5	378.4	using
Standard error	Rule 2	Rule 1	Rule 2	31.9	35.8	using
Pct error (95%)				29.2%	25.8%	Rule 2

Table 11b—Local visitor spending averages for OHV use, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low ^a	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	21.34	22.92	29.07
Restaurant	10.98	7.58	7.58	13.59	14.60	18.52
Groceries	7.85	8.44	8.44	32.86	35.30	44.77
Gas & oil	32.83	31.56	31.56	42.47	45.63	57.86
Other transp.	0.00	0.08	0.08	0.00	0.00	0.00
Entry fees	5.50	3.43	3.43	3.24	3.48	4.41
Recreation & entertainment	3.53	3.95	3.95	3.77	4.04	5.13
Sporting goods	2.08	2.51	2.51	1.65	1.77	2.25
Souvenirs and other expenses	0.18	0.08	0.08	5.69	6.12	7.75
Total	62.94	57.63	57.63	124.61	133.87	169.77
Sample size	63	140	Filled	Filled	Filled	Filled
Std. deviation	46.4	48.5	using	using	using	using
Standard error	5.8	4.1	Rule 2	Rule 2	Rule 4	Rule 2
Pct error (95%)	18.6%	14.2%				

^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 OHV use for low spending forests.

Table 12a—Non-local visitor spending averages for driving, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	132.50	225.79	400.39
Restaurant	11.80	16.49	22.93	68.57	116.85	207.21
Groceries	4.55	6.72	9.34	27.93	47.60	84.40
Gas & oil	21.52	23.60	32.82	50.02	85.24	151.15
Other transp.	0.00	0.00	0.00	8.42	14.35	25.45
Entry fees	0.25	0.82	1.13	8.82	15.02	26.64
Recreation & entertainment	1.03	0.41	0.57	14.13	24.09	42.71
Sporting goods	1.26	1.12	1.56	3.05	5.19	9.21
Souvenirs and other expenses	<u>1.70</u>	<u>4.52</u>	<u>6.28</u>	<u>24.31</u>	<u>41.42</u>	<u>73.46</u>
Total	42.12	53.66	74.64	337.74	575.54	1,020.61
Sample size	52	136			167	
Std. deviation	38.5	57.1	Filled	Filled	640.7	Filled
Standard error	5.3	4.9	using	using	49.6	using
Pct error (95%)	25.4%	18.3%	Rule 2	Rule 2	17.2%	Rule 2

Table 12b—Local visitor spending averages for driving, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High ^a	Low	Average	High
Lodging	0.00	0.00	0.00	101.64	109.20	138.48
Restaurant	5.26	6.48	6.76	52.60	56.51	71.67
Groceries	2.38	4.03	3.56	21.43	23.02	29.19
Gas & oil	18.33	18.46	15.51	38.37	41.22	52.28
Other transp.	0.00	0.07	0.00	6.46	6.94	8.80
Entry fees	0.12	0.28	0.32	6.76	7.27	9.21
Recreation & entertainment	0.80	0.66	0.81	10.84	11.65	14.77
Sporting goods	0.32	0.80	2.36	2.34	2.51	3.18
Souvenirs and other expenses	<u>0.83</u>	<u>1.25</u>	<u>0.18</u>	<u>18.65</u>	<u>20.03</u>	<u>25.41</u>
Total	28.04	32.03	29.50	259.09	278.35	352.99
Sample size	161	429	66			
Std. deviation	36.4	48.8	58.3	Filled	Filled	Filled
Standard error	2.9	2.4	7.2	using	using	using
Pct error (95%)	20.5%	14.7%	48.7%	Rule 2	Rule 4	Rule 2

^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 driving for high spending forests.

Table 13a—Non-local visitor spending averages for camping, \$ per party per trip (\$2007)

Spending category	Primitive					
	Camping/Backpacking			Developed Camping		
	Low	Average	High	Low	Average	High
Lodging	11.16	22.51	39.87	35.59	45.80	60.99
Restaurant	13.65	18.68	17.99	10.98	15.17	27.52
Groceries	30.18	26.59	51.30	53.90	56.39	78.49
Gas & oil	32.42	38.85	66.00	51.48	58.07	100.97
Other transp.	0.30	0.59	0.25	0.00	0.05	0.39
Entry fees	9.30	7.16	4.98	8.50	6.56	7.61
Recreation & entertainment	1.87	3.72	4.48	8.31	8.63	6.85
Sporting goods	5.66	10.51	6.09	6.37	8.21	9.31
Souvenirs and other expenses	<u>3.23</u>	<u>5.78</u>	<u>4.93</u>	<u>7.77</u>	<u>6.74</u>	<u>7.54</u>
Total	107.78	134.40	195.88	182.90	205.62	299.67
Sample size	117	340		342	881	93
Std. deviation	117.0	218.4	Filled	161.2	256.1	306.5
Standard error	10.8	11.8	using	8.7	8.6	31.8
Pct error (95%)	20.1%	17.6%	Rule 3	9.5%	8.4%	21.2%

Table 13b—Local visitor spending averages for camping, \$ per party per trip (\$2007)

Spending category	Primitive					
	Camping/Backpacking			Developed Camping		
	Low ^a	Average	High	Low ^a	Average	High
Lodging	20.85	13.39	16.98	40.55	34.84	44.18
Restaurant	2.55	5.65	7.16	5.21	5.08	6.44
Groceries	48.61	47.63	60.41	65.41	67.06	85.04
Gas & oil	31.97	34.37	43.58	40.12	40.85	51.80
Other transp.	0.09	0.36	0.46	0.35	0.46	0.59
Entry fees	3.01	6.56	8.32	3.05	4.32	5.48
Recreation & entertainment	5.88	2.52	3.19	6.20	4.36	5.53
Sporting goods	4.69	7.94	10.06	13.67	11.79	14.95
Souvenirs and other expenses	<u>2.97</u>	<u>1.96</u>	<u>2.49</u>	<u>3.02</u>	<u>2.29</u>	<u>2.91</u>
Total	120.62	120.37	152.65	177.57	171.04	216.91
Sample size	65	186		310	589	Filled
Std. deviation	137.8	191.8	Filled	202.3	191.3	Filled
Standard error	17.1	14.1	using	11.5	7.9	using
Pct error (95%)	28.3%	23.4%	Rule 2	12.9%	9.2%	Rule 2

^aThe low spending average for this segment is higher than the overall average. As the difference is not statistically significant, we suggest using the overall average for primitive camping/backpacking or developed camping, as appropriate, for low spending forests.

Table 14a—Non-local visitor spending averages for hiking/biking, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low ^a	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	88.92	183.03	283.99
Restaurant	14.46	14.41	22.02	35.74	95.70	183.03
Groceries	5.63	5.37	5.20	37.04	64.39	82.74
Gas & oil	22.09	21.48	26.30	46.12	63.63	87.55
Other transp.	1.05	0.56	0.52	1.37	4.81	1.66
Entry fees	3.13	2.39	3.08	4.68	10.35	14.06
Recreation & entertainment	2.93	1.49	1.66	3.95	15.72	39.02
Sporting goods	1.22	1.18	0.62	3.90	11.74	20.80
Souvenirs and other expenses	<u>2.18</u>	<u>2.93</u>	<u>4.11</u>	<u>6.29</u>	<u>23.66</u>	<u>51.96</u>
Total	52.69	49.80	63.52	228.00	473.04	764.82
Sample size	240	616	60	323	1,377	310
Std. deviation	60.3	58.0	64.4	315.0	677.8	920.4
Standard error	3.9	2.3	8.3	17.5	18.3	52.3
Pct error (95%)	14.8%	9.4%	26.2%	15.4%	7.7%	13.7%

^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 non-local day trip average for h/b for low spending forests.

Table 14b—Local visitor spending averages for hiking/biking, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High ^a	Low	Average	High
Lodging	0.00	0.00	0.00	24.56	33.14	42.03
Restaurant	4.41	4.57	3.45	18.95	27.58	34.98
Groceries	3.19	3.56	2.82	33.36	38.00	48.19
Gas & oil	9.29	9.27	7.29	35.12	30.88	39.16
Other transp.	0.01	0.12	0.05	0.00	0.04	0.05
Entry fees	1.55	1.41	1.00	1.30	6.05	7.67
Recreation & entertainment	0.61	0.49	0.42	1.56	1.24	1.57
Sporting goods	0.78	1.56	2.16	7.35	7.55	9.58
Souvenirs and other expenses	<u>0.21</u>	<u>0.51</u>	<u>0.54</u>	<u>3.29</u>	<u>5.61</u>	<u>7.12</u>
Total	20.04	21.48	17.73	125.51	150.09	190.34
Sample size	1,010	3,284	639	85	231	Filled using Rule 2
Std. deviation	27.1	36.6	38.5	127.2	229.1	
Standard error	0.9	0.6	1.5	13.8	15.1	
Pct error (95%)	8.5%	5.9%	17.2%	22.0%	20.1%	

^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 local day trip average for h/b for high spending forests.

Table 15a—Non-local visitor spending averages for other activities, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	63.42	101.13	157.79
Restaurant	8.46	13.70	19.05	25.70	44.15	96.00
Groceries	9.22	9.21	12.81	42.87	56.78	67.43
Gas & oil	21.72	26.92	37.45	54.21	67.17	98.43
Other transp.	2.65	1.58	2.20	0.13	3.68	1.22
Entry fees	8.15	7.15	9.95	7.26	12.20	30.04
Recreation & entertainment	7.50	8.98	12.49	9.69	18.71	51.68
Sporting goods	0.72	1.94	2.70	6.69	9.67	13.41
Souvenirs and other expenses	<u>1.24</u>	<u>2.46</u>	<u>3.42</u>	<u>6.46</u>	<u>16.94</u>	<u>53.41</u>
Total	59.65	71.95	100.08	216.41	330.44	569.41
Sample size	174	394	Filled using Rule 2	550	1,812	233
Std. deviation	63.7	77.9		232.7	498.8	548.4
Standard error	4.8	3.9		9.9	11.7	35.9
Pct error (95%)	16.2%	10.9%		9.2%	7.1%	12.6%

Table 15b—Local visitor spending averages for other activities, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High ^a	Low	Average	High
Lodging	0.00	0.00	0.00	36.90	39.19	49.70
Restaurant	3.50	5.06	6.01	7.05	11.03	13.99
Groceries	7.30	8.69	5.05	63.52	68.29	86.60
Gas & oil	16.53	18.33	14.94	46.75	50.35	63.85
Other transp.	0.00	0.07	0.21	0.02	0.04	0.05
Entry fees	3.36	3.06	2.84	4.44	3.99	5.06
Recreation & entertainment	2.25	2.25	1.74	3.27	3.86	4.90
Sporting goods	2.09	2.25	1.20	6.47	6.40	8.12
Souvenirs and other expenses	<u>0.53</u>	<u>0.73</u>	<u>0.31</u>	<u>2.29</u>	<u>3.70</u>	<u>4.69</u>
Total	35.56	40.44	32.30	170.72	186.85	236.96
Sample size	923	1,905	163	254	610	Filled using Rule 2
Std. deviation	44.0	51.3	46.3	207.5	231.6	
Standard error	1.4	1.2	3.6	13.0	9.4	
Pct error (95%)	8.1%	5.8%	22.5%	15.3%	10.0%	

^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 “other activities” for high spending forests.

WILDLIFE-RELATED SPENDING

For NFS programmatic analysis, there is often interest in estimating the spending of visitors engaged in wildlife-related activities. Those hunting, fishing, and viewing wildlife are engaging in wildlife-related activities. We identify wildlife-related visitors and estimate their average spending using the methods reported in White and Stynes (2010). Here, we augment the averages reported in that publication with figures applicable to high and low spending areas following the approach outlined in this report (tables 16a and 16b). These wildlife-related spending profiles are intended for programmatic analyses. Analysts considering spending for visitors engaged specifically in hunting, fishing, or wildlife viewing activities should use the appropriate profiles for those individual activities.

Table 16a—Non-local visitor spending averages for wildlife-related visits, \$ per party per trip (\$2007)

Spending category	NL- Day Trips			NL- Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	46.59	90.78	185.84
Restaurant	6.98	7.17	9.91	24.94	45.22	90.71
Groceries	9.38	9.41	13.00	50.32	65.45	87.17
Gas & oil	30.65	31.43	43.40	81.71	88.68	114.89
Other transp.	0.00	0.02	0.02	0.64	2.01	5.41
Entry fees	0.51	1.30	1.79	2.70	15.53	36.41
Recreation & entertainment	1.90	2.83	3.90	6.22	12.54	14.60
Sporting goods	7.80	8.03	11.09	18.92	26.51	39.99
Souvenirs and other expenses	<u>1.96</u>	<u>1.76</u>	<u>2.42</u>	<u>4.44</u>	<u>10.36</u>	<u>28.72</u>
Total	59.18	61.95	85.53	236.48	357.07	603.75
Sample size	144	375	Filled using Rule 2	359	1,250	184
Std. deviation	71.5	69.6		307.3	510.4	813.8
Standard error	6.0	3.6		16.2	14.4	60.0
Pct error (95%)	20.1%	11.6%		13.7%	8.1%	19.9%

Table 16b—Local visitor spending averages for wildlife-related visits, \$ per party per trip (\$2007)

Spending category	Local Day Trips			Local Overnight Trips		
	Low	Average	High	Low	Average	High
Lodging	0.00	0.00	0.00	28.63	37.06	47.01
Restaurant	2.06	2.82	4.16	5.73	8.46	10.73
Groceries	5.12	6.12	5.43	50.52	57.12	72.46
Gas & oil	18.72	19.57	18.40	46.54	51.53	65.37
Other transp.	0.00	0.32	2.04	0.39	2.29	2.91
Entry fees	0.92	1.45	1.69	1.95	2.20	2.80
Recreation & entertainment	1.11	1.29	0.97	1.68	3.43	4.35
Sporting goods	8.33	9.48	11.74	27.19	24.98	31.68
Souvenirs and other expenses	0.40	0.40	0.19	4.59	4.42	5.60
Total	36.66	41.45	44.62	167.22	191.50	242.91
Sample size	751	1,719	194	146	330	Filled using Rule 2
Std. deviation	45.2	54.1	65.4	148.4	181.6	
Standard error	1.7	1.3	4.7	12.3	10.0	
Pct error (95%)	9.0%	6.3%	21.0%	14.7%	10.4%	

DISCUSSION

Average spending levels can differ dramatically between activities, trip types, and spending areas. For example, average spending of hikers/bikers ranges from about \$20 per party per trip for locals on day trips in low spending areas to about \$765 per party per trip for non-locals on overnight trips in high spending areas. As such, care should be taken in correctly classifying visitors into trip types and primary activities and classifying areas as high, average, or low spending. In appendix table A-4 we report our classification of forests into high, average, and low spending areas and these classifications can be used to select a spending level. However, if the focus of the analysis is an area with few spending opportunities, a forest may choose to use a “low” spending profile even though the forest is classified as “average” spending across the whole forest. Alternately, if the focus of the analysis is an area with many spending opportunities, the forest may elect to use a high spending profile.

In a number of cases, the spending figures presented here are significantly greater than those shown in the previous report (Stynes and White 2006) using Round 1 NVUM data. This difference is particularly evident for the non-local overnight spending averages. A similar pattern of difference between rounds was found for general spending averages estimated for the seven trip types (White and Stynes 2010). One reason for the difference between the rounds is that the figures reported in the earlier report are in 2003 dollars and the averages here are in 2007 dollars, when costs of recreation purchases were slightly

greater. More importantly, however, are some substantive differences in the NVUM questionnaires used in rounds 1 and 2 and differences between rounds in how the data were analyzed. A detailed discussion and analysis of those differences is available in White and Stynes (2010). Briefly, changes in the NVUM questionnaire led to more complete enumeration of spending by respondents and improved identification of those respondents who could not recall or did not wish to report their spending. Alone, those two factors would have increased estimates of average spending. We exclude cases as outliers under several conditions. In Round 2, a new NVUM question allowed us to place spending on per day/night basis. That change allowed us to include in this analysis a greater number of cases with high spending solely because of long trips. In the Round 1 analysis, many of those long trips would have been excluded from consideration—leading to lower averages for trip spending.

Average spending for visitors on overnight trips engaged in some activities in high spending areas is quite high. However, it is useful to keep in mind that, in many cases, the number of visits in that activity and trip type is quite small. For example, average trip spending for non-local visitors “driving for pleasure” and staying overnight away from home in high spending areas is estimated to be more than \$1,000 per party per trip. Nationally, just 4% of visits have the primary activity of “driving for pleasure” and just 10% of “driving for pleasure” visits fall into the non-local overnight trip segment. Only 15 administrative national forests were classified as high spending forests. Similarly, the per party per trip average spending of those engaged in hiking and biking is \$21 if on a local day trip but nearly \$800 if on a non-local overnight trip in a high spending area. Although many visits have the primary activity of hiking/biking, nearly 2/3 of those visits are local day trips and just 12% are non-local overnight trips.

ESTIMATING TOTAL SPENDING

In this report, we have generated a number of distinct spending profiles that can be used for analyses focusing on specific recreation activities. These spending profiles can be used in national, regional, forest, and sub-forest level planning activities. For economic impact or contribution analyses, the spending profiles must be combined with 1) estimates of total visits, 2) estimates of the percentage of visits within given trip and activity segments, and 3) appropriate local input-output (I-O) models or multipliers.

Applying the Activity-specific Spending Profiles

To apply the activity spending profiles in national forest planning, recreation visits by primary activity under baseline and alternate conditions (if applicable) must be identified. The NVUM reports are one source for constructing estimates of visits by activity at the national, regional, or forest level. For sub-forest applications, analysts can estimate recreation use for portions of one or more forests from the NVUM data using the approach outlined in White et al. (2007). Alternately, analysts could rely on other data or information to estimate the number of visits within the sub-forest areas in the primary activities of interest. Recreation visits within activity must then be apportioned among

local and non-local visits and day and overnight trips. Analysts can use the segment shares reported in Table A-1 or local information. Keep in mind that management changes that affect recreation opportunities may change the mix of trip types attracted. For example, a management action that closes a popular attraction for non-local visitors engaged in an activity of interest may both reduce the number of visits for that activity and reduce the share of those visits associated with non-locals. After recreation visits are apportioned to trip types, they must be converted to party visits. This conversion can be completed using the average party sizes reported in the appendix at the national (Table A-2) or forest-level (Table A-5) or local information. The procedure for estimating total spending is illustrated below with an example.

In this example, we estimate total spending associated with increased visitation to a winter sports facility. We assume that the total spending figure we estimate will be combined with an economic model to complete an “economic contribution” analysis.⁵ To complete the analysis we must identify the expected change in recreation use (by primary activity) from the expansion and the appropriate spending averages to utilize.

Visits

We assume that expansion of a winter sports facility will attract an additional 50,000 recreation visits annually. To apply that visit estimate to the spending averages we report here, we need to convert that aggregate estimate of a change in visits to a change in party visits within activities and trip types (Table 17). Based on our local information, we believe that 30,000 of those additional visits will primarily be for snowmobiling and 20,000 will primarily be for cross-country skiing. Our next step is to apportion those aggregate visits into visits within trip type (i.e., local day trip, non-local overnight trip, etc.). To complete that step, we can rely on the national-level segment shares for those activities shown in Table A-1, the forest-level segment shares reported in Table A-3,⁶ or local information on the mix of trip types for those activities. Once we have computed visits within trip type, we divide the number of visits by average party sizes within each trip type to compute the number of “party visits.” Like the segment shares, we can use national estimates of party sizes within trip type for each activity (Table A-2), forest-level estimates of average party size within trip type (Table A-5), or local information. Because the average spending figures shown in this report are on a party basis, failure to complete this step will erroneously double, and may triple, the estimate of total spending.

⁵ The total spending figures we compute may be used as input into an economic model such as FEAST or IMPLAN to estimate the resulting affects on the local economy.

⁶ Because 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.

Table 17—Estimation of party visits within trip type for expansion of the winter facility

50,000 additional visits to the facility						Source
Snowmobiling						
30,000 additional visits						Given
	NL Day	NL OVN	L Day	L OVN	Non- primary	
Segment shares	16%	21%	50%	2%	11%	Table A-1
Visits w/in trip type	4,800	6,300	15,000	600	3,300	Calculated
Party sizes	2.5	2.8	2.3	2.9	2.7	Table A-2
Party visits w/in trip type	1,920	2,250	6,521	207	1,222	Calculated
Cross-country skiing						
20,000 additional visits						Given
	NL Day	NL OVN	L Day	L OVN	Non- primary	
Segment shares	7%	16%	68%	2%	7%	Table A-1
Visits w/in trip type	1,400	3,200	13,600	400	1,400	Calculated
Party sizes	2.4	2.5	1.9	2.6	2.0	Table A-2
Party visits w/in trip type	583	1,280	7,158	154	700	Calculated

Spending profile selection

Once we have quantified our expected change in recreation use, we then select an appropriate spending profile. Select the activity spending profile that is applicable to the primary activity under consideration. In this case, we will use spending profiles for both snowmobiling and cross-country skiing. The high, average, or low spending profiles must then be selected for the application based on knowledge about prices and spending opportunities in the area around the snow facility or based on the recommended profile for the forest under consideration (Table A-4). In this example we assume that the “average” spending profile is most applicable.

Total spending estimation

Total spending is calculated by multiplying the estimate of party visits within trip type computed above by the average spending estimates (Table 18). For brevity, we illustrate with the overall spending averages instead of the detailed itemization of spending within categories.

New visits for snowmobiling to the expanded snow facility are estimated to result in about \$2.2 million in visitor spending annually. The spending of non-local visitors

constitutes the majority of this spending. However, because there are many local day trip visits (half of snowmobile visits), that segment accounts for nearly \$500,000 in spending. New visits for cross-country skiing generate about \$1.0 million in visitor spending—about 75% associated with non-local overnight visits. Combined, snowmobile use and cross-country skiing at the expanded snow facility are estimated to generate about \$3.2 million in spending by visitors within the local communities around the snow facility. If one was interested in quantifying the economic contribution or impacts, this total spending figure could be applied to a FEAST or IMPLAN model for the local region.⁷

Table 18—Total spending resulting from additional visitation to snow facility

	NL Day	NL OVN	L Day	L OVN	Non- primary	Sum
Snowmobiling						
Party visits	1,920	2,250	6,521	207	1,222	
Average spending	\$129	\$642	\$74	\$311	\$0	
Total spending (\$1,000s)	248	1,444	482	64	0	2,238
Cross-country skiing						
Party visits	583	1,280	7,158	154	700	
Average spending (\$ per party visit)	\$97	\$537	\$27	\$259	\$0	
Total spending (\$1,000s)	56	687	193	40	0	976
Snow facility sum (\$1,000s)						
	304	2,131	675	104	0	3,214

In this example, we have not included spending associated with “non-primary” visits because the spending made on those visits would likely occur regardless of whether or not the snow facility was expanded. This is because those visitors were away from home for some reason other than visiting the national forest and the visit to the forest was completed as a side trip. In some cases, arguments can be made for including a portion of the spending associated with non-primary visits. One option for including some spending of non-primary visitors is to apply the average spending for local day trips to the number of non-primary visits. Local day trip spending is a good representation of what it costs someone already in the local area to take a day trip to the national forest. Applying the local day trip spending to the non-primary visits to the expanded snow facility would yield about \$90,000 in spending for those snowmobiling (1,222 * \$74) and \$19,000 for those cross-country skiing (700 * \$27).

In our example, we have included the spending of local visitors because we are assuming we are completing an economic contribution analysis. If we were completing an economic impact study, the spending of locals would typically not be considered because

⁷ One must estimate spending using the detailed expenditure categories and then bridge the spending categories to the appropriate IMPLAN sectors.

that spending does not represent “new” money to the region. However, at least some local visitor spending can be included in economic impact analysis if local visitors would otherwise go outside the region for recreation if the snow facility was not expanded. If locals are included in economic impact analysis on that basis then their spending is a conservative estimate of the spending that would be lost to the region in the absence of the recreation opportunities.

This example is readily modified to handle other activities or different assumptions. As can be seen in this example, for applications involving multiple activities it is important that visitors be divided into mutually exclusive activity groups representing the primary activity on the national forest trip.

Estimating Spending with Trip Type Segments

For trips involving many activities or a broad mix of activities, the “all visitor” spending profiles in Table 4 or the spending profiles shown in White and Stynes (2010) can be used. In our previous example, we assumed 50,000 additional recreation visits that were a mix of snowmobiling and cross-country skiing. In this calculation, we assume that the same number of visits is a broad mix of activities. As in the above calculation, we first apportion these visits to trip types and then convert the visits from individual visits to party visits (Table 19). Because we are completing this procedure for a broad mix of activities, we use the segment shares and party sizes from the “all activities” rows of tables A-1 and A-2.

Attracting 50,000 visits with a broad mix of activities generates total spending of about \$2.3 million (Table 19). Non-local overnight visits account for about \$1.6 million in spending; non-local day visits account for about \$130,000 in spending. The spending of non-primary visits is excluded in the calculation, but we could apply the spending of local day trips to the non-primary segment. If we did that, non-primary visits would generate about \$88,000 in spending ($\$34 * 2,600$). Compared to the activities in the winter sports facility calculation above, the average spending of a broad mix of visitors is generally lower, resulting in lower total spending for the same number of additional visits.

For this example, if the estimates for the winter sports facility above had not taken into account the distinct characteristics of cross-country skiers and snowmobilers and instead the general trip-type spending profiles and characteristics were used, total spending would have been underestimated. However, this pattern will not always be the case. If a management alternative attracts mostly hikers, bikers, and other activities dominated by local visitors and non-locals with below average spending, the use of activity-specific spending profiles would generate lower total spending than if the general trip-type spending profiles were used. In the case of an action affecting hikers and bikers, use of the general trip-type spending profile would overestimate total spending.

Table 19. Visits and spending for 50,000 additional visits using general spending profiles

Measure	NL Day	NL OVN	L Day	L OVN	Non- primary	Sum	Source
Segment share	10%	24%	48%	5%	13%	10%	Table A-1
Visits	5,000	12,000	24,000	2,500	6,500	5,000	Calculated
Party size	2.5	2.7	2.1	2.6	2.5		Table A-2
Party visits	2,000	4,444	11,428	961	2,600	21,508	Calculated
Average spending (\$ per party visit)	\$65	\$366	\$34	\$177	\$0		Table 4
Total spending (\$000's)	130	1,626	388	170	0	2,314	Calculated

Which Spending Profiles to Use?

National forest visitor spending profiles have been developed for both specific activities and trip types across all activities. For applications focused on forest-level recreation across many or all activities, we recommend using the White and Stynes (2010) profiles. That approach doesn't require information about specific activities and avoids problems in identifying a primary activity. Additionally, NVUM may not provide reliable estimates of the activity mix on individual forests. The trip type spending profiles are also useful when evaluating management alternatives that affect a general mix of visitors. For forests where downhill skiing represents a significant share of visits, the spending of downhill skiers should be treated separately from other visits. In those cases, we recommend treating downhill skiers as a distinct segment, using the spending profiles for downhill skiers (Table 5) to supplement the general trip type segments for all other visitors. Note that the skier spending averages likely do not include the cost of season passes purchased by locals.

The activity-specific spending profiles presented in this report should be used primarily when estimating impacts of management alternatives that affect particular activity groups. Care must be taken in selecting a spending profile to match the primary activity of the group under consideration and in quantifying only those visits with that activity as a primary activity. In many instances, it can be challenging to determine what visits should be included for a primary activity analysis. For example, many individuals who have a primary activity of developed camping may also participate in fishing during their visit. Management actions that change fishing opportunities will likely have limited impact on those who are primarily recreating for developed camping. In this case, care should be taken to not include developed camping visits in an analysis of management actions affecting fishing opportunities. Conversely, closing a camping area used primarily by anglers may have a greater impact on those with angling as a primary activity than those with developed camping as a primary activity (who may already be recreating elsewhere or can substitute other campgrounds on the forest). The activity-specific profiles are best applied when the primary activities affected by the management action are clearly defined.

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, although 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 other 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.

CONCLUSIONS

In this report we constructed spending profiles for visitors engaged in a variety of recreation activities at forests with high, average, and low spending opportunities. This analysis, which used the most recent visitor survey data, updated previous reports that were based on NVUM Round 1 data. Spending can differ significantly between visitors engaged in some activities and between high and low spending areas. However, in many cases, the spending of visitors engaged in different activities is not statistically unique. The type of recreation trip (day or overnight, local or non-local) is more important than activity in explaining visitor spending. Regardless, the spending profiles we present here should be useful for a number of analyses focused on management actions affecting specific recreation activities.

The spending profiles for activities can be used for planning and economic analyses at the national, regional, forest, and sub-forest levels. Previous activity-specific spending profiles have been particularly useful for analyses related to downhill skiing and OHV use. Care should be taken in selecting an appropriate spending profile to match the primary activities of the visitors affected by the management action under consideration. If visitors in a broad mix of activities are under consideration, it is likely that the general trip-type expenditures contained in White and Stynes (2010) will be more useful. Developing the estimate of party visits to apply to the spending profiles presented here may be the more challenging analytical step. The NVUM data can be used for national, regional, forest, and, with some adjustment (White et al. 2007), sub-forest analyses. However, local information on visits may be the best source of information in some sub-forest analyses. In the appendix, we have presented parameters that can be used to distribute estimated visits across trip types and convert visits to party visits. We have also presented a classification of national forests into high, average, and low spending areas that can be used to select an appropriate spending profile. However, when the analysis is focused on a local sub-forest area, the analyst may have to use judgment to select the most appropriate profile.

Future research could focus on developing better activity-specific indicators of which spending area profiles (high, average, or low) to employ in sub-forest analyses. Also, the

share of expenses within categories appears to change as the spending areas move from low to average to high and future research could develop rules for filling spending averages for high and low spending areas that are expenditure category specific rather than the general rules we employ here of relying on the ratios of total spending for all activities within a trip type. Finally, changes in the NVUM survey between rounds 1 and 2 have greatly improved our ability to estimate visitor spending. Unfortunately, those changes also precluded pooling the round 1 and 2 data to increase sample size for individual recreation activities and spending areas. Pooling survey data across rounds should be more feasible between NVUM rounds 2 and 3 because the economic survey has remained static between rounds. Once enough data is available, pooling across rounds should enable us to develop spending estimates for most activity/trip type/spending area combinations directly from the survey data. The ability to pool data across rounds should improve our estimation of activity-specific recreation spending on NFS lands.

ACKNOWLEDGMENTS

We thank Susan Winter (USDA FS Washington Office) and Barbara Ott (USDA FS TEAMS enterprise team) for their support of this project. The Pacific Northwest Research Station and its Urban-Wildlands Interactions research team were key in facilitating the linkage between Susan Winter, Barb Ott, and researchers at Oregon State University. We thank Don English, NVUM Program Manager, for providing the NVUM survey data collected from USDA FS lands.

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APPENDIX A – Supplemental Tables

Table A-1—Trip type segment shares by activity

Primary Activity	Non-Local Day	Non-Local Overnight^a	Local Day	Local Overnight^a	Non Primary	Total
Downhill skiing	16%	41%	35%	2%	6%	100%
Cross-country skiing	7%	16%	68%	2%	7%	100%
Snowmobile	16%	21%	50%	2%	11%	100%
Hunting	10%	25%	55%	7%	3%	100%
Fishing	13%	21%	56%	4%	6%	100%
Nature-related	10%	16%	39%	2%	33%	100%
OHV-use	7%	21%	62%	5%	5%	100%
Driving	10%	9%	51%	1%	29%	100%
Developed camping	3%	46%	2%	39%	10%	100%
Primitive						
Camping/backpacking	5%	53%	3%	30%	9%	100%
Hiking/biking	8%	13%	62%	2%	15%	100%
Other	9%	25%	43%	8%	15%	100%
All activities	10%	24%	48%	5%	13%	100%
Wildlife-related only	11%	22%	54%	6%	7%	100%

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

Table A-2—Average party size by activity and trip type

Primary Activity	Non-Local Day	Non-Local Overnight^a	Local Day	Local Overnight^a	Non Primary
Downhill skiing	2.5	3.1	2.2	2.9	2.9
Cross-country skiing	2.4	2.5	1.9	2.6	2.02
Snowmobile	2.5	2.8	2.3	2.9	2.7
Hunting	1.9	1.9	1.6	2.0	1.7
Fishing	2.2	2.4	2.0	2.5	2.4
Nature-related	2.5	2.7	2.2	2.4	2.6
OHV-use	2.5	2.4	2.1	2.3	2.7
Driving	2.4	2.5	2.1	2.1	2.2
Developed camping	2.8	2.9	2.7	3.1	2.7
Primitive					
Camping/backpacking	2.1	2.5	3.5	2.4	2.1
Hiking/biking	2.4	2.5	1.9	2.5	2.5
Other	3.0	3.0	2.6	2.7	2.7
All activities	2.5	2.7	2.1	2.6	2.5
Wildlife-related only	2.1	2.2	1.8	2.2	2.3

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

Table A-3—Trip type segment shares by forest for use in activity spending analyses

Forest	NL Day	NL- OVN^a	Local Day	Local OVN^a	Non Primary	Total
National average	10%	23%	49%	5%	13%	100%
Allegheny	10%	23%	50%	9%	8%	100%
Angeles	12%	2%	73%	4%	9%	100%
Apache-Sitgreaves	8%	39%	38%	3%	12%	100%
Arapaho-Roosevelt	21%	26%	39%	5%	9%	100%
Ashley	10%	35%	37%	9%	9%	100%
Beaverhead-Deerlodge	13%	22%	46%	6%	13%	100%
Bighorn	18%	27%	25%	10%	20%	100%
Bitterroot	4%	7%	80%	7%	2%	100%
Black Hills	6%	32%	50%	3%	9%	100%
Boise	12%	22%	54%	8%	4%	100%
Bridger-Teton	5%	30%	51%	2%	12%	100%
Caribbean	7%	17%	24%	2%	50%	100%
Caribou-Targhee	13%	22%	42%	5%	18%	100%
Carson	11%	32%	39%	3%	15%	100%
Chattahoochee-Oconee	11%	12%	55%	5%	17%	100%
Chequamegon-Nicolet	3%	29%	25%	6%	37%	100%
Cherokee	12%	18%	50%	6%	14%	100%
Chippewa	9%	22%	48%	3%	18%	100%
Chugach	9%	21%	21%	5%	44%	100%
Cibola	6%	12%	49%	1%	32%	100%
Clearwater	22%	21%	33%	8%	16%	100%
Cleveland	4%	4%	77%	10%	5%	100%
Coconino	11%	31%	33%	2%	23%	100%
Columbia River Gorge	8%	7%	56%	2%	27%	100%
Colville	19%	12%	48%	10%	11%	100%
Coronado	5%	8%	65%	5%	17%	100%
Custer	19%	22%	39%	4%	16%	100%
Dakota Prairie	7%	16%	50%	15%	12%	100%
Daniel Boone	10%	21%	52%	8%	9%	100%
Deschutes	6%	26%	48%	9%	11%	100%
Dixie	11%	33%	25%	8%	23%	100%
Eldorado	16%	22%	36%	4%	22%	100%
Fishlake	7%	44%	30%	7%	12%	100%
Flathead	7%	15%	61%	5%	12%	100%
Francis Marion-Sumter	11%	4%	69%	6%	10%	100%
Fremont	15%	14%	53%	9%	9%	100%
Gallatin	4%	17%	66%	4%	9%	100%
George Washington- Jefferson	4%	10%	69%	8%	9%	100%
Gifford Pinchot	24%	21%	26%	4%	25%	100%
Gila	21%	28%	25%	5%	21%	100%
Grand Mesa Uncomp						
Gunnison	7%	25%	53%	5%	10%	100%
Green Mountain and Finger Lakes	11%	21%	60%	2%	6%	100%

Table A-3—Continued

Forest	NL Day	NL- OVN^a	Local Day	Local OVN^a	Non Primary	Total
Helena	9%	9%	66%	7%	9%	100%
Hiawatha	3%	29%	39%	5%	24%	100%
Hoosier	5%	10%	55%	20%	10%	100%
Humboldt-Toiyabe	3%	12%	65%	6%	14%	100%
Huron Manistee	12%	37%	36%	5%	10%	100%
Idaho Panhandle	9%	13%	64%	8%	6%	100%
Inyo	3%	62%	20%	2%	13%	100%
Kaibab	11%	28%	11%	2%	48%	100%
Kisatchie	13%	7%	71%	7%	2%	100%
Klamath	6%	31%	45%	7%	11%	100%
Kootenai	17%	7%	59%	4%	13%	100%
Lake Tahoe Management Unit	3%	32%	27%	0%	38%	100%
Land Between the Lakes	9%	31%	31%	14%	15%	100%
Lassen	14%	18%	49%	7%	12%	100%
Lewis & Clark	27%	27%	22%	7%	17%	100%
Lincoln	15%	29%	40%	2%	14%	100%
Lolo	5%	10%	65%	5%	15%	100%
Los Padres	10%	16%	50%	6%	18%	100%
Malheur	5%	51%	29%	4%	11%	100%
Manti-La Sal	16%	20%	43%	9%	12%	100%
Mark Twain	8%	16%	57%	8%	11%	100%
Medicine Bow	15%	24%	44%	5%	12%	100%
Mendocino	11%	26%	50%	5%	8%	100%
Midwin Tallgrass Prairie	3%	1%	85%	0%	11%	100%
Modoc	5%	20%	66%	3%	6%	100%
Monongahela	8%	53%	8%	3%	28%	100%
Mt Baker-Snoqualmie	14%	8%	62%	8%	8%	100%
Mt Hood	34%	11%	42%	5%	8%	100%
National Forests in Alabama	18%	3%	60%	14%	5%	100%
National Forests in Florida	12%	13%	61%	11%	3%	100%
National Forests in Mississippi	8%	4%	81%	3%	4%	100%
National Forests in North Carolina	5%	15%	62%	6%	12%	100%
National Forests in Texas	7%	7%	74%	7%	5%	100%
Nebraska	7%	12%	64%	0%	17%	100%
Nez Perce	11%	33%	27%	13%	16%	100%
Ochoco	8%	21%	53%	7%	11%	100%
Okanogan	12%	27%	46%	1%	14%	100%
Olympic	18%	12%	44%	8%	18%	100%
Ottawa	8%	25%	17%	2%	48%	100%
Ouachita	8%	31%	49%	7%	5%	100%
Ozark-St Francis	3%	13%	61%	9%	14%	100%

Table A-3—Continued

Forest	NL Day	NL- OVN^a	Local Day	Local OVN^a	Non Primary	Total
Payette	29%	33%	22%	4%	12%	100%
Pike-San Isabel	12%	17%	47%	4%	20%	100%
Plumas	11%	19%	45%	11%	14%	100%
Prescott	6%	14%	61%	4%	15%	100%
Rio Grande	9%	42%	35%	4%	10%	100%
Rogue River	8%	9%	54%	11%	18%	100%
Routt	4%	49%	34%	3%	10%	100%
Salmon-Challis	19%	45%	21%	3%	12%	100%
San Bernardino	20%	21%	46%	6%	7%	100%
San Juan	5%	24%	49%	4%	18%	100%
Santa Fe	13%	13%	61%	3%	10%	100%
Sawtooth	6%	40%	36%	4%	14%	100%
Sequoia	14%	44%	17%	5%	20%	100%
Shasta Trinity	7%	27%	46%	8%	12%	100%
Shawnee	11%	22%	48%	5%	14%	100%
Shoshone	15%	20%	44%	7%	14%	100%
Sierra	22%	25%	38%	8%	7%	100%
Siskiyou	11%	12%	48%	6%	23%	100%
Siuslaw	10%	26%	33%	4%	27%	100%
Six Rivers	4%	14%	43%	7%	32%	100%
Stanislaus	28%	42%	18%	6%	6%	100%
Superior	6%	39%	19%	1%	35%	100%
Tahoe	14%	31%	48%	3%	4%	100%
Tongass (All Years)	3%	9%	52%	3%	33%	100%
Tonto	6%	10%	67%	8%	9%	100%
Uinta	11%	20%	45%	17%	7%	100%
Umatilla	15%	15%	55%	8%	7%	100%
Umpqua	14%	29%	39%	5%	13%	100%
Wallowa Whitman	14%	35%	13%	6%	32%	100%
Wasatch-Cache	2%	9%	80%	4%	5%	100%
Wayne	13%	12%	63%	8%	4%	100%
Wenatchee	20%	29%	38%	4%	9%	100%
White Mountain	17%	38%	27%	2%	16%	100%
White River	11%	53%	23%	4%	9%	100%
Willamette	22%	21%	34%	9%	14%	100%
Winema	5%	21%	31%	31%	12%	100%

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

Table A-4—Spending area classification for National Forests based on NVUM Round 2 data

Forest	Spending level
Black Hills	High
Bridger-Teton	High
Carson	High
Chippewa	High
Chugach	High
Cibola	High
Coconino	High
Gallatin	High
Hiawatha	High
Inyo	High
Nebraska	High
Rio Grande	High
San Juan	High
Tongass-Chatham	High
White River	High
Apache-Sitgreaves	Average
Arapaho-Roosevelt	Average
Ashley	Average
Beaverhead-Deerlodge	Average
Bighorn	Average
Caribbean	Average
Caribou-Targhee	Average
Chattahoochee-Oconee	Average
Chequamegon-Nicolet	Average
Columbia River Gorge	Average
Colville	Average
Coronado	Average
Custer	Average
Dakota Prairie	Average
Deschutes	Average
Dixie	Average
Eldorado	Average
Fishlake	Average
Flathead	Average
Francis Marion-Sumter	Average
Grand Mesa Uncomp Gun	Average
Green Mountain and Finger Lakes	Average
Helena	Average
Humboldt-Toiyabe	Average
Huron Manistee	Average

Table A-4—Continued

Forest	Spending level
Kaibab	Average
Klamath	Average
Lake Tahoe Management Unit	Average
Land Between the Lakes	Average
Lassen	Average
Lewis & Clark	Average
Lincoln	Average
Lolo	Average
Medicine Bow	Average
Midewin Tallgrass Prairie	Average
Mt Baker-Snoqualmie	Average
Mt Hood	Average
National Forests in Mississippi	Average
National Forests in North Carolina	Average
Nez Perce	Average
Okanogan	Average
Olympic	Average
Ottawa	Average
Payette	Average
Pike-San Isabel	Average
Plumas	Average
Routt	Average
Salmon-Challis	Average
Santa Fe	Average
Sawtooth	Average
Sequoia	Average
Shasta Trinity	Average
Shoshone	Average
Sierra	Average
Siskiyou	Average
Six Rivers	Average
Stanislaus	Average
Superior	Average
Tahoe	Average
Tongass-Ketchikan	Average
Tongass-Stikine	Average
Tonto	Average
Uinta	Average
Umpqua	Average
Wallowa Whitman	Average
White Mountain	Average

Table A-4—Continued

Forest	Spending level
Allegheny	Low
Angeles	Low
Bitterroot	Low
Boise	Low
Cherokee	Low
Clearwater	Low
Cleveland	Low
Daniel Boone	Low
Fremont	Low
George Washington-Jefferson	Low
Gifford Pinchot	Low
Gila	Low
Hoosier	Low
Idaho Panhandle	Low
Kisatchie	Low
Kootenai	Low
Los Padres	Low
Malheur	Low
Manti-La Sal	Low
Mark Twain	Low
Mendocino	Low
Modoc	Low
Monongahela	Low
National Forests in Alabama	Low
National Forests in Florida	Low
National Forests in Texas	Low
Ochoco	Low
Ouachita	Low
Ozark-St Francis	Low
Prescott	Low
Rogue River	Low
San Bernardino	Low
Shawnee	Low
Siuslaw	Low
Umatilla	Low
Wasatch-Cache	Low
Wayne	Low
Wenatchee	Low
Willamette	Low
Winema	Low

Table A-5—Trip type average party sizes for use in activity spending analyses

Forest	NL Day	NL OVN ^b	L Day	L OVN ^b	Non	
					Primary	Total
Allegheny	2.4	2.3	2.0	2.7	2.5	2.2
Angeles	2.6	3.1	2.1	2.9	2.4	2.2
Apache-Sitgreaves	2.5	3.2	1.8		2.6	2.5
Arapaho-Roosevelt	2.4	2.7	2.1	2.4	2.8	2.4
Ashley	3.1	2.8	2.7	3.1	2.4	2.8
Beaverhead-						
Deerlodge	2.1	2.4	2.0	2.7	2.1	2.2
Bighorn	3.0	2.7	2.6	2.3	2.5	2.7
Bitterroot	1.9	2.2	2.1	2.2	2.6	2.1
Black Hills	2.7	2.6	2.2	2.9	2.6	2.4
Boise	1.9	2.2	2.0	2.4	2.2	2.1
Bridger-Teton	2.5	2.8	1.9	2.1	2.6	2.2
Caribbean	3.6	2.7	3.3		3.1	3.1
Caribou-Targhee	2.7	2.7	2.0	3.2	2.8	2.4
Carson	1.9	2.5	2.4	2.0	2.9	2.4
Chattahoochee-						
Oconee	2.3	2.5	2.1	2.8	2.7	2.3
Chequamegon-Nicolet	2.1	2.1	1.8	2.0	2.1	2.0
Cherokee	2.8	3.1	2.2	2.5	2.9	2.5
Chippewa	2.6	2.3	1.8	2.2	2.3	2.1
Chugach	2.5	3.0	2.0	2.8	2.9	2.7
Cibola	2.5	2.5	2.5	2.9	2.9	2.6
Clearwater	2.0	2.3	2.0	2.0	2.2	2.1
Cleveland	2.8	2.6	2.2	2.5	2.2	2.3
Coconino	2.8	2.6	2.0	2.3	2.5	2.4
Columbia River Gorge	2.6	2.9	2.3	2.8	2.6	2.4
Colville	2.6	2.4	2.2	2.3	2.1	2.3
Coronado	2.3	2.4	2.1	2.6	2.5	2.2
Custer	2.4	2.7	2.1	2.5	2.7	2.4
Dakota Prairie	2.0	2.3	2.5	2.2	3.1	2.4
Daniel Boone	3.1	2.6	2.3	2.7	2.3	2.5
Deschutes	3.1	2.7	2.1	2.5	2.5	2.3
Dixie	2.5	2.9	2.6	3.0	2.5	2.7
Eldorado	2.4	2.6	2.4	2.5	2.8	2.5
Fishlake	2.3	2.8	2.5	2.4	2.7	2.6
Flathead	2.2	2.6	1.9	2.9	2.6	2.2
Francis Marion-						
Sumter	2.3	2.4	2.2	1.5	2.9	2.3
Fremont	1.6	2.3	2.7	2.1	2.8	2.4
Gallatin	2.4	2.9	2.0	2.9	2.6	2.3
George Washington-						
Jefferson	2.0	2.3	2.0	2.6	2.4	2.1
Gifford Pinchot	2.7	2.5	2.3	2.5	2.6	2.5
Gila	2.7	2.4	2.3		2.4	2.4

Table A-5—Continued

Forest	NL Day	NL OVN^b	L Day	L OVN^b	Non Primary	Total
Grand Mesa Uncomp Gun	2.4	2.5	2.3	2.1	2.8	2.4
Green Mountain and Finger Lakes	2.0	2.2	1.7	2.4	2.2	1.8
Helena	2.9	2.9	2.1	2.2	3.6	2.3
Hiawatha	2.4	2.7	1.9	2.5	2.5	2.3
Hoosier	2.4	2.3	2.1	2.5	2.9	2.3
Humboldt-Toiyabe	2.3	2.8	2.2	2.9	2.5	2.3
Huron Manistee	2.2	2.1	2.1	2.3	2.2	2.1
Idaho Panhandle	2.5	2.3	1.8	2.4	2.7	2.0
Inyo	1.7	2.6	1.5		2.4	2.3
Kaibab	2.7	2.6	2.4	2.8	2.7	2.6
Kisatchie	2.6	2.6	2.2	3.1	2.1	2.3
Klamath		2.1	2.2	2.1	2.5	2.2
Kootenai	2.4	2.5	2.0	2.7	2.8	2.3
Lake Tahoe Management Unit	3.7	2.7	2.1	2.3	2.5	2.5
Land Between the Lakes	1.9	2.1	1.9	1.9	2.1	2.0
Lassen	3.3	2.3	2.2	3.3	1.8	2.4
Lewis & Clark	2.6	2.2	2.7		2.3	2.5
Lincoln	2.9	2.7	2.2	3.2	2.8	2.6
Lolo	2.3	2.3	1.8	2.3	2.5	2.0
Los Padres	2.7	2.7	2.2	2.4	2.3	2.4
Malheur	2.0	2.4	2.6	1.8	2.3	2.4
Manti-La Sal	2.9	2.8	2.4	3.5	2.6	2.7
Mark Twain	2.4	2.9	2.1	2.2	2.6	2.4
Medicine Bow	2.3	2.8	2.2	2.8	2.3	2.4
Mendocino	2.3	2.4	1.6	2.6	1.7	1.9
Midewin Tallgrass Prairie			1.6			1.6
Modoc	2.5	2.2	2.5	2.4	2.4	2.4
Monongahela	2.3	2.8	2.0	2.6	2.6	2.6
Mt Baker-Snoqualmie	2.6	2.7	2.4	2.8	2.7	2.5
Mt Hood	2.5	3.2	2.2	2.5	3.0	2.6
National Forests in Alabama	3.1	3.3	2.2	3.4	2.8	2.6
National Forests in Florida	2.3	2.9	2.1	2.5	2.1	2.3
National Forests in Mississippi	1.8		1.7	3.2		1.8
National Forests in North Carolina	2.7	2.6	1.7	2.0	2.4	2.0
National Forests in Texas	2.2	2.3	2.2	3.2	2.1	2.3
Nebraska		3.5	2.3		2.9	2.6

Table A-5—Continued

Forest	NL Day	NL OVN ^b	L Day	L OVN ^b	Non	
					Primary	Total
Nez Perce	2.9	2.5	2.3	3.0	2.7	2.6
Ochoco	3.6	2.1	2.6	2.8	2.5	2.6
Okanogan	1.8	2.3	1.5		2.2	1.9
Olympic	2.3	2.3	2.1	3.0	2.1	2.2
Ottawa	2.3	2.6	2.0	2.6	2.9	2.6
Ouachita	2.6	2.7	1.9	2.4	2.3	2.3
Ozark-St Francis	2.0	1.8	2.3	2.2	2.7	2.3
Payette	3.0	2.7	2.4		2.5	2.7
Pike-San Isabel	1.9	2.1	1.9	2.2	2.5	2.1
Plumas	2.2	2.6	2.6	2.7	2.6	2.6
Prescott	2.6	2.5	1.7	2.4	2.5	2.0
Rio Grande	1.7	2.7	2.2	2.7	2.4	2.4
Rogue River	3.1	2.5	2.7	2.1	2.9	2.7
Routt	1.6	2.7	1.7	3.2	2.6	2.2
Salmon-Challis	2.6	2.7	2.5		2.7	2.6
San Bernardino	2.8	2.7	2.2	2.2	3.0	2.4
San Juan	2.2	2.6	2.0	2.4	2.6	2.3
Santa Fe	2.2	2.5	1.8	2.2	2.4	2.0
Sawtooth	2.7	2.6	2.0	2.6	2.6	2.4
Sequoia	2.1	3.2	2.3	2.2	2.9	2.8
Shasta Trinity	2.7	2.7	2.0	2.0	2.3	2.3
Shawnee	2.9	2.4	2.2	2.5	2.2	2.4
Shoshone	2.6	2.5	2.1	2.0	2.6	2.3
Sierra	3.6	3.3	3.5	2.8	2.7	3.4
Siskiyou		2.2	2.5	2.5	2.2	2.4
Siuslaw	2.3	2.5	2.0	2.0	2.2	2.2
Six Rivers	3.3	2.6	2.4	2.8	2.7	2.6
Stanislaus	3.1	3.0	2.3	2.2	2.5	2.8
Superior		2.5	2.1		2.0	2.3
Tahoe	2.3	2.5	1.9	2.3	2.5	2.1
Tongass (all years)	2.8	2.6	1.9	3.2	2.6	2.3
Tonto	2.6	3.0	2.2	2.2	2.5	2.4
Uinta	2.7	3.4	2.5	4.2	2.4	3.0
Umatilla	2.1	2.4	2.4	2.9	2.7	2.4
Umpqua	2.9	2.9	2.5	2.1	2.5	2.6
Wallowa Whitman	2.9	2.5	2.7	3.2	2.3	2.6
Wasatch-Cache	2.6	3.0	2.2	3.2	2.8	2.3
Wayne	2.1	2.8	2.0	2.3	2.1	2.2
Wenatchee	2.2	2.2	2.5	2.2	2.5	2.4
White Mountain	2.2	2.7	2.0	2.0	3.3	2.6
White River	2.3	2.7	1.9	2.3	2.6	2.3
Willamette	2.5	2.3	2.1	2.6	2.8	2.4
Winema	2.5	2.7	2.5	2.5	2.5	2.5
Total	2.5	2.6	2.1	2.6	2.5	2.3

^a Estimated using the full dataset and the case weights. If a forest has less than 15 cases in a segment the value is left blank. In these instances the national average at the bottom of the column may be used.

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