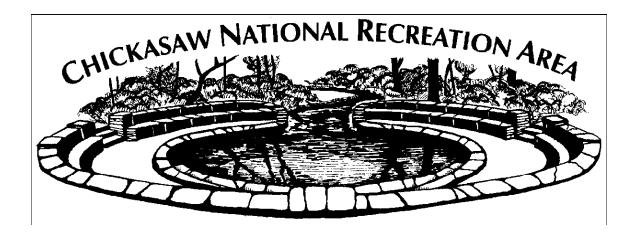
# Impacts of Visitor Spending on the Local Economy: Chickasaw National Recreation Area, 2005



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### **Executive Summary**

Chickasaw National Recreation Area (NRA) hosted 1,295,212 recreation visits in 2005. Based on the 2005 visitor survey 23% of the visitors are local residents, 42% are visitors from outside the local area not staying overnight within 50 miles of the park, and 35% are visitors staying overnight in the local area. About 38% of the overnight visitors are camping, 28% are staying in motels, and 35% are staying with friends or relatives or other unpaid lodging.

The average visitor party spent \$82 in the local area. Visitors reported expenditures of their group inside the park and within 50 miles of the park. On a party trip basis, average spending in 2005 was \$63 for local residents, \$52 for non-local day trips, \$307 for visitors in motels, \$127 for campers and \$99 for other overnight visitors. On a per night basis, visitors staying in motels spent \$193 in the local region compared to \$62 for campers and \$48 for other overnight visitors. The average per night lodging cost was \$95 per night for motels and \$6 for campgrounds.

Total visitor spending in 2005 within 50 miles of the park was \$15.93 million. Overnight visitors staying in motels, cabins or B&B's accounted for 29% of the total spending. Visitors on day trips from beyond the local area accounted for 35% of the spending. Thirty-one percent of the spending was for gas and oil, 26% for groceries, 16% for restaurant meals and bar expenses, and 14% for lodging.

About a quarter of the non-local visitors indicated the park visit was not the primary reason for coming to the area, so only a portion of their expenses can be attributed to the park visit. Omitting spending by local visitors and reducing spending attributed to the park visit for visitors in the area for other reasons yields a total of \$11.37 million in spending attributed to the park, about 71% of the \$15.93 million spent by park visitors on the trip.

The economic impact of park visitor spending is estimated by applying this spending to a model of the local economy. The local region was defined as a fourteen county area in south central Oklahoma. The tourism spending sales multiplier for the region is 1.61.

Visitor spending in 2005 directly supported 183 jobs in the area outside the park, generating \$3.1 million in wages and salaries and \$4.4 million in value added. Value added includes wages and salaries as well as profits and rents to area businesses and sales taxes. An additional 65 jobs are supported through secondary effects. The total impact on the local economy including direct and secondary effects is 249 jobs, \$4.7 million in wages and salaries and \$7.0 million in value added. Visitor spending supports 52 jobs in hotels, 58 jobs in area restaurants, and 46 jobs in retail trade.

The park itself employed 74 people in FY 2005 with a total payroll including benefits of \$3.34 million. Including secondary effects, the local impact of the park payroll in 2005 was 94 jobs, \$3.73 million in personal income and \$4.11 million total value added. Including both visitor spending and park operations, the total impact of the park on the local economy in 2005 was 343 jobs and \$11.1 million value added. Park operations account for 27% of the employment effects and 37% of value added.

# Impacts of Visitor Spending on the Local Economy: Chickasaw National Recreation Area, 2005

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### Introduction

The purpose of this study is to document the local economic impacts of visitors to Chickasaw National Recreation Area (NRA) in 2005. Economic impacts are measured as the direct and secondary sales, income and jobs in the local area resulting from spending by park visitors. The economic estimates are produced using the Money Generation Model 2 (MGM2) (Stynes and Propst, 2000). Three major inputs to the model are:

- 1) Number of visits broken down by lodging-based segments,
- 2) Spending averages for each segment, and
- 3) Economic multipliers for the local region

Inputs are estimated from the Chickasaw NRA Visitor Survey, National Park Service Public Use Statistics, and IMPLAN input-output modeling software. The MGM2 model provides a spreadsheet template for combining park use, spending and regional multipliers to compute changes in sales, personal income, jobs and value added in the region.

# Chickasaw NRA and the Local Region

Chickasaw NRA is located in south central Oklahoma just south of the town of Sulpher. The park is 90 miles south of Oklahoma City and 120 miles north of Dallas. The park hosted 1,295,212 recreation visitors and 82,585 overnight stays in 2005 (Table 1).

The local region was defined as a fourteen county area within 50 miles of the park. The region includes Atoka, Bryan, Carter, Coal, Garvin, Hughes, Johnston, Love, Marshall, McClain, Murray, Pontotoc, Pottawatomie, and Seminole counties in Oklahoma. This region roughly coincides with the area for which visitor spending was reported in the visitor survey. The region had a population of about 350,000 in 2001.

A park visitor study was conducted at Chickasaw NRA from July 1-10, 2005 (Manni and Hollenhorst, 2006). The study measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a sample of 883 visitors at five sampling locations within the park. Visitors returned 475 questionnaires for a 54% response rate. Data generated through the visitor survey were used as the basis to develop the spending profiles, segment shares and trip characteristics for Chickasaw NRA visitors.

Table 1. Recreation Visits to Chickasaw NRA, 2005-2007

Month	2005	2006	2007
January	44,725	51,204	27,660
February	54,433	53,535	59,030
March	94,818	93,203	109,630
April	90,602	137,435	102,469
May	146,250	171,651	171,329
June	200,615	188,290	190,491
July	204,678	202,793	226,801
August	165,938	111,569	160,526
September	94,193	106,340	111,181
October	79,784	96,876	89,359
November	70,646	65,835	67,131
<u>December</u>	<u>48,530</u>	65,062	<u>53,199</u>
Total	1,295,212	1,343,793	1,368,806

Source: NPS Public Use Statistics

Since visitors were sampled at campgrounds, picnic areas, and boat ramps inside the park, visitors with longer stays had a higher probability of being sampled. To adjust for this length of stay bias, cases were weighted inversely to the number of days spent in the park. Weighting reduces the estimate of the percentage of visitors staying overnight in the area from 56% to 39%.

About half of the non-local visitors came to the area primarily to visit the Chickasaw NRA. Twenty-four percent of visitors came to visit other attractions in the area; ten percent were visiting friends or relatives in the area.

### **MGM2 Visitor Segments**

MGM2 divides visitors into segments to help explain differences in spending across distinct user groups. Five segments were established for Chickasaw NRA visitors:

**Local day users**: Day visitors who reside within the local region, defined as a 50 mile drive of the park.

**Non-local day users**: Visitors from outside the region, not staying overnight in the area. This includes day trips as well as pass-through travelers, who may be staying overnight on their trip outside the region.

**Motel**: Visitors staying in motels, hotels, cabins, or B&B's within a 50 mile drive of the park

**Camp**: Visitors staying in private or public campgrounds within a 50 mile drive of the park

**Other OVN**: Other visitors staying overnight in the area with friends or relatives or not reporting any lodging expenses

The 2005 visitor survey was used to estimate the percentage of visitors from each segment as well as spending averages, lengths of stay and party sizes for each segment. The weighted survey percentages were adjusted to be consistent with park overnight stay figures. Twenty-three percent of the visitors are local residents, 42% are visitors from outside the local area not staying overnight within a sixty minute drive of the park, and 35% are visitors staying overnight within a sixty minute drive of the park. About two thirds of the overnight visitors (63%) are staying in motels, cabins or B&B's, 13% are camping and 24% are staying with friends or relatives or other unpaid lodging (Table 2). The average spending party was 4 people.

Local residents were assumed to be making the trip primarily to visit the park. Non-local visitors on day trips and campers were more likely to make the trip primarily to visit the park than visitors staying in motels or with friends and relatives.

Table 2. Selected Visit/Trip Characteristics by Segment, 2005

		Day			Other	
Characteristic	Local	trip	Motel	Camp	OVN	Total
Segment share (survey)	22%	40%	10%	17%	12%	100%
Segment share (adjusted) <sup>a</sup>	23.4%	42.0%	9.6%	13.0%	12.0%	100.0%
Average Party size	4.06	4.05	3.83	3.93	4.48	4.05
Length of stay (days/nights)	1.08	1.00	1.59	2.05	2.06	1.37
Re-entry rate <sup>b</sup>	1.52	1.24	2.17	3.24	3.64	1.97
Percent primary purpose trips	100%	81%	55%	81%	74%	77% <sup>c</sup>

a. Shares were adjusted to take into account more local visitors and fewer campers during periods not covered by the visitor survey. The camping percent was adjusted to be consistent with park overnight stays in 2005.

The 1.295 million recreation visits to Chickasaw NRA were allocated to the five segments using the adjusted segment shares in Table 2. These visits are converted to 195,164 party trips by dividing by the average party size and park re-entry rate for each segment (Table 3).

Table 3. Recreation Visits and Party Trips by Segment, 2005

Measure	Local	Day trip	Motel	Camp	Other OVN	Total
Recreation visits	303,080	543,989	124,340	168,378	155,425	1,295,212
Party visits/trips	49,081	108,366	14,924	13,260	9,533	195,164
Person trips	199,350	438,565	57,208	52,046	42,725	789,893
Percent of party trips	25%	56%	8%	7%	5%	100%
Party nights	52,801	108,366	23,686	27,154	19,613	231,620

b. The re-entry rate is the number of times a visitor is counted as a park visitor during their stay in the area.

c. Excludes local visitors.

# Visitor spending

Spending averages were computed on a party trip basis for each segment. The survey covered expenditures of the travel party within a 50 mile radius of the park.

The average visitor party spent \$82 in the local area<sup>1</sup>. Visitors reported expenditures of their group within a 50 mile radius of the park. On a party trip basis, average spending in 2005 was \$63 for local residents, \$52 for non-local day trips, \$307 for visitors in motels, \$127 for campers and \$99 for other overnight visitors (Table 4).

On a per night basis, visitors staying in motels spent \$193 in the local region compared to \$62 for campers and \$48 for other overnight visitors (Table 5). The average

Table 4. Average Visitor Spending by Segment (\$ per party per trip)

Spending Category	Local	Day trip	Motel	Camp	Other OVN	All Visitors
In Park				•		,
Camp, boat, pavilion	0.18	0.04	0.00	0.40	1.32	0.16
Souvenirs and other expenses	1.51	2.63	1.01	3.03	1.88	2.22
In Community						
Motel, hotel cabin or B&B	0.00	0.00	150.29	0.00	0.00	11.49
Camping fees	0.00	0.00	0.99	12.03	0.00	0.89
Restaurants & bars	6.74	10.03	55.74	13.66	15.67	13.22
Groceries, take-out food/drinks	24.73	13.37	31.89	49.14	38.63	21.31
Gas & oil	25.45	21.56	37.93	35.37	29.94	25.14
Local transportation	0.46	1.17	0.50	0.20	3.51	0.99
Admissions & fees	0.27	1.38	20.89	2.09	1.73	2.65
Souvenirs and other expenses	3.88	<u>1.68</u>	<u>7.67</u>	<u>11.37</u>	6.20	<u>3.57</u>
Grand Total	63.22	51.86	306.91	127.29	98.87	81.64

Table 5. Average Spending per Night for Visitors on Overnight Trips (\$ per party per night)

Motel	Camp	Other OVN
94.70	0.00	0.00
0.63	6.07	0.64
35.12	6.67	7.61
20.09	23.99	18.77
23.90	17.27	14.55
0.32	0.10	1.70
13.16	1.02	0.84
<u>5.47</u>	7.03	3.93
193.38	62.16	48.05
	94.70 0.63 35.12 20.09 23.90 0.32 13.16 <u>5.47</u>	94.70 0.00 0.63 6.07 35.12 6.67 20.09 23.99 23.90 17.27 0.32 0.10 13.16 1.02 5.47 7.03

Note: Excludes fees paid to the park

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<sup>&</sup>lt;sup>1</sup> The average of \$82 is considerably lower than the \$243 spending average in the VSP report (Manni and Hollenhorst 2006) due to the omission of outliers, adjustments of segment shares, weighting of cases for a length of stay bias and treatment of missing spending data.

per night lodging cost was \$95 per night for motels and \$6 for campgrounds. The sampling error (95% confidence level) for the overall spending average is 13%. A 95% confidence interval for the spending average is therefore \$82 plus or minus \$11 or (\$71, \$93).

Chickasaw NRA visitors spent a total of \$15.93 million in the local area in 2005 (Table 6). Total spending was estimated by multiplying the number of party trips for each segment by the average spending per trip and summing across segments.

Overnight visitors staying in motels, cabins or B&B's accounted for 29% of the total spending. Visitors on day trips from beyond the local area accounted for 35% of the spending. Thirty-one percent of the spending was for gas and oil, 26% for groceries, 16% for restaurant meals and bar expenses, and 14% for lodging.

Table 6. Total Visitor Spending by Segment, 2005 (\$000s)

	Local	Day trip	Motel	Camp	Other OVN	All Visitors
In Park		<u>, , , , , , , , , , , , , , , , , , , </u>				
Camp, boat, pavilion	9.05	4.52	0.00	5.32	12.60	31.50
Souvenirs and other expenses	73.92	285.36	15.02	40.22	17.90	432.43
In Community						
Motel, hotel cabin or B&B	0.00	0.00	2242.92	0.00	0.00	2242.92
Camping fees	0.00	0.00	14.83	159.57	0.00	174.40
Restaurants & bars	330.96	1087.28	831.79	181.06	149.34	2580.43
Groceries, take-out food/drinks	1213.97	1448.50	475.93	651.54	368.23	4158.16
Gas & oil	1248.90	2336.20	566.10	469.06	285.39	4905.65
Local transportation	22.63	126.43	7.51	2.66	33.42	192.64
Admissions & fees	13.04	149.00	311.76	27.69	16.47	517.96
Souvenirs and other expenses	<u>190.44</u>	182.42	<u>114.48</u>	<u>150.79</u>	<u>59.13</u>	<u>697.26</u>
Grand Total	3,103	5,620	4,580	1,688	942	15,933
Total excluding park fees	3,094	5,615	4,580	1,683	930	15,902
Segment Percent of Total	19%	35%	29%	11%	6%	100%

Not all of this spending would be lost to the region in the absence of the park as 21% of the visitors are local residents and some non-residents came to the area for business, visiting friends and relatives, and other reasons. Spending directly attributed to the park visit was estimated by counting all spending for trips where the park was the primary reason for the trip<sup>2</sup>. Half of the spending outside the park was counted for day trips if the trip was not made primarily to visit Chickasaw NRA. The equivalent of one night of spending was attributed to the park visit for overnight trips made to visit other attractions, friends or relatives or on business.<sup>3</sup> All spending inside the park was counted, but all spending by local visitors outside the park was excluded.

<sup>&</sup>lt;sup>2</sup> Visitors who identified a recreation activity as their primary reason were also included as primary purpose trips.

<sup>&</sup>lt;sup>3</sup> This assumes that these visitors spent an extra night in the area to visit Chickasaw NRA.

These attributions yield a total of \$11.37 million in visitor spending attributed to the park visit (excluding park admission fees), representing 71% of the overall visitor spending total (Table 7).

Table 7. Total Spending Attributed to Park Visits, 2005 (\$000s)

Spending Category	Local	Day trip	Motel	Camp	Other OVN	All Visitors
In Park						
Admissions	9	5	0	5	13	31
Gift shop	74	285	15	40	18	432
In Community						
Motel, hotel cabin or B&B		0	1,866	0	0	1,866
Camping fees		0	12	145	2	159
Restaurants & bars		985	692	164	130	1,970
Groceries, take-out food/drinks		1,312	396	589	319	2,617
Gas & oil		2,117	471	424	248	3,259
Local transportation		115	6	2	29	152
Admissions & fees		135	259	25	14	434
Souvenirs and other expenses		<u>165</u>	<u>95</u>	<u>136</u>	<u>51</u>	448
Total Attributed to Park	83	5,119	3,813	1,531	823	11,368
Percent of spending attributed to the park	3%	91%	83%	91%	87%	71%

# **Economic Impacts of Visitor Spending**

The economic impacts of Chickasaw NRA visitor spending on the local economy are estimated by applying the spending attributed to the park (Table 7) to a set of economic ratios and multipliers representing the local economy. Multipliers for the region were estimated with the IMPLAN system using 2001 data. The tourism sales multiplier for the region is 1.61. Every dollar of direct sales to visitors generates another \$.61 in secondary sales through indirect and induced effects<sup>4</sup>.

Impacts are estimated based on the visitor spending attributed to the park in Table 7, excluding fees paid to the park<sup>5</sup>. Including direct and secondary effects, the \$11.37 million spent by park visitors<sup>6</sup> supports 231 jobs in the area and generates \$12.7 million in sales, \$4.0 million in labor income and \$5.6 million in value added (Table 8).

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<sup>&</sup>lt;sup>4</sup> Indirect effects result from tourism businesses buying goods and services from local firms, while induced effects stem from household spending of income earned from visitor spending.

<sup>&</sup>lt;sup>5</sup> The local economic impact of all \$15.93 million in visitor spending (Table 6) is reported in Appendix C.

<sup>&</sup>lt;sup>6</sup> Revenues received by the park (park admissions and donations) are excluded in estimating visitor spending impacts as the impacts resulting from park revenues are covered as part of park operations.

Labor income covers wages and salaries, including payroll benefits. Value added is the preferred measure of the contribution to the local economy as it includes all sources of income to the area -- payroll benefits to workers, profits and rents to businesses, and sales and other indirect business taxes.

Table 8. Economic Impacts of Visitor Spending Attributed to the Park, 2005.

Sector/Spending category	Sales \$000's	Jobs	Labor Income \$000's	Value Added \$000's
Direct Effects				_
Motel, hotel cabin or B&B	1,972	52	865	1,396
Camping fees	168	1	24	56
Restaurants & bars	2,082	58	837	945
Admissions & fees	458	10	168	282
Local transportation	161	7	74	84
Grocery stores	700	18	275	369
Gas stations	768	18	278	362
Other retail	426	10	207	290
Wholesale Trade	346	4	129	225
Local Production of goods	<u>2,616</u>	<u>4</u>	<u>284</u>	<u>393</u>
Total Direct Effects	9,696	183	3,141	4,401
Secondary Effects	<u>5,845</u>	<u>65</u>	<u>1,529</u>	<u>2,624</u>
Total Effects	15,541	249	4,670	7,025

a. Total direct sales are less than visitor spending as direct sales exclude the cost of goods sold at retail unless the good is locally made.

The largest direct effects are in motels and restaurants and bars. Spending associated with park visits supports 52 jobs in hotels, 58 jobs in restaurants and 46 jobs in retail trade. The contribution to the local economy in terms of value added is \$1.4 million in the hotel sector, \$945,00 in the restaurant sector and \$1.02 million in retail trade.

### **Impacts of the NPS Park Payroll**

The park itself employed 74 people in FY 2005 with a total payroll including benefits of \$3.34 million. Including secondary effects, the local impact of the park payroll in 2005 was 94 jobs, \$3.73 million in labor income and \$4.11 million total value added. Including both visitor spending and park operations, the total impact of the park on the local economy in 2005 was 343 jobs and \$11.1 million value added. Park operations account for 27% of the employment effects and 37% of value added.

# **Study Limitations and Error**

The accuracy of the MGM2 estimates rests on the accuracy of the three inputs: visits, spending averages, and multipliers. Recreation visit estimates rely on counting procedures at the park, which may miss some visitors and count others more than once during their visit. Recreation visits were adjusted for double counting based on the number of days respondents reported visiting the park during their stay in the area.

Spending averages are derived from the 2005 Chickasaw NRA Visitor Survey. Estimates from the survey are subject to sampling errors, measurement errors and seasonal/sampling biases. The overall spending average is subject to sampling errors of 13%.

Spending averages are also sensitive to decisions about outliers and treatment of missing data . To carry out the analysis incomplete spending data had to be completed and decisions had to be made about the handling of missing spending data and zero spending reports. Conservative assumptions were adopted.

First, cases reporting some expenses but leaving other categories blank were completed with zeros. Respondents that did not complete the spending question were assumed to spend no money on the trip. Fifteen percent of the cases had missing spending data. Dropping these cases instead of treating them as zeros would increase the overall spending average from \$82 to \$96.

The small samples make the spending averages somewhat sensitive to outliers. One case reporting spending of \$6,598 (mostly on restaurants and groceries) and another eleven cases reporting more than \$1,000 in spending were dropped in computing the spending averages. Another 33 cases involving large parties (more than nine people) and 18 cases staying more than seven nights were also omitted, yielding a final sample of 412 cases for the spending analysis <sup>7</sup>. The overall spending average was \$82 omitting outliers compared to \$109 with outliers (See Appendix B for details).

Although sample sizes are small for most segments, the spending averages are consistent with those at similar recreation areas. Estimated nightly room and campsite rates are also reasonable for the area. As the sample only covers visitors during a single week, we must assume these visitors are representative of visitors during the rest of the year to extrapolate to annual totals.

There is a length of stay bias in the VSP sampling procedure as longer stay visitors will have a greater chance of being sampled. This bias was corrected for in the analysis by weighting cases inversely to the number of days spent in the area. Along with

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<sup>&</sup>lt;sup>7</sup> Reports of spending for long stays and large parties are deemed unreliable. Spending reported for large parties may not include everyone in the party. Recall of spending for very long stays may also be unreliable and such stays frequently involve multiple stops and activities, so that much of the spending is unrelated to the park visit. Since spending averages are applied to all visits, the procedures are equivalent to substituting the average of visitors in the corresponding visitor segment for these outliers.

handling of outliers, this adjustment partially explains some of the differences in segment mixes, average lengths of stay, and spending averages between the VSP report and this report.

Multipliers are derived from an input-output model of the local economy using IMPLAN. Input-output models rest on a number of assumptions, however, errors due to the multipliers will be small compared to potential errors in visit counts and spending estimates.

Somewhat more problematic than the errors in visits, spending or multipliers is sorting out how much of the spending to attribute to the park. It is difficult to separate the park from other attractions in the area. As the park was not the primary motivation for the trip to the region for all visitors, some of the spending would likely not be lost in the absence of the park. The procedures for attributing spending to the park are somewhat subjective, but reasonable. They result in 71% of all spending being attributed to park visits.

### REFERENCES

- Manni, M and Hollenhorst, S.J. (2006). Chickasaw National Recreation Area Visitor Study. Summer 2005. Visitor Services Project Report #166. Moscow, ID: National Park Service and University of Idaho, Cooperative Park Studies Unit.
- National Park Service Public Use Statistic Office. (2006). Visitation DataBase. http://www2.nature.nps.gov/stats/. Data retrieved on March 30, 2008.
- Stynes, D. J., Propst, D.B., Chang, W. and Sun, Y. (2000). Estimating national park visitor spending and economic impacts: The MGM2 model. May, 2000. Final Report to National Park Service. East Lansing, Michigan: Department of Park, Recreation and Tourism Resources, Michigan State University.

**Appendix A: Definitions of Economic Terms** 

Term	Definition
Sales	Sales of firms within the region to park visitors.
Jobs	The number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include part time positions.
Labor income	Wage and salary income, sole proprietor's income and employee payroll benefits.
Value added	Personal income plus rents and profits and indirect business taxes. As the name implies, it is the net value added to the region's economy. For example, the value added by a hotel includes wages and salaries paid to employees, their payroll benefits, profits of the hotel, and sales and other indirect business taxes. The hotel's non-labor operating costs such as purchases of supplies and services from other firms are not included as value added by the hotel.
Direct effects	Direct effects are the changes in sales, income and jobs in those business or agencies that directly receive the visitor spending.
Secondary effects	These are the changes in the economic activity in the region that result from the re-circulation of the money spent by visitors. Secondary effects include indirect and induced effects.
Indirect effects	Changes in sales, income and jobs in industries that supply goods and services to the businesses that sell directly to the visitors. For example, linen suppliers benefit from visitor spending at lodging establishments.
Induced effects	Changes in economic activity in the region resulting from household spending of income earned through a direct or indirect effect of the visitor spending. For example, motel and linen supply employees live in the region and spend their incomes on housing, groceries, education, clothing and other goods and services.
Total effects	<ul> <li>Sum of direct, indirect and induced effects.</li> <li>Direct effects accrue largely to tourism-related businesses in the area</li> <li>Indirect effects accrue to a broader set of businesses that serve these tourism firms.</li> <li>Induced effects are distributed widely across a variety of local businesses.</li> </ul>

## **Appendix B: Handling of Missing Spending Data and Outliers**

To compute spending averages and to sum spending across categories, spending categories with missing spending data had to be filled. If spending was reported in any category, the remaining categories were assumed to be zero. This yielded 411 cases with valid spending data, 7 cases reporting zero spending and 57 cases not completing the spending question. Cases with no spending data were on day trips or overnight trips reporting no lodging expenses. It was assumed that these cases spent no money in the local area.

Table B-1. Cases with Valid, Zero and Missing Spending Data by Segment

		Day			Other	
	Local	trip	Motel	Camp	OVN	Total
Report some spending	64	105	53	124	65	411
Missing spending data	12	21	0	0	24	57
Zero spending	3	4	0	0	0	7
Total cases	79	130	53	124	89	475
Percent zero	4%	3%	0%	0%	0%	1%
Percent missing	15%	16%	0%	0%	27%	12%

Thirty eight cases were omitted from the spending analysis. Thirty-three of these were large parties of more than nine people. Eighteen cases reported stays of more than seven nights. Half of these were campers. Twelve cases reported expenses of more than \$1,000. The overall spending average is \$82 omitting outliers compared to \$109 with outliers.

Table B-2. Spending Averages by Segment, with and without outliers

	V	Vith outlie	rs		Witho	ut outliers	
			Std.			Std.	Pct
Segment	Mean	N	Deviation	Mean	N	Deviation	Error <sup>a</sup>
Local	72	79	92	63	70	96	35%
Day trip	67	130	89	52	120	65	23%
Motel	460	53	594	307	41	215	21%
Camp	190	124	237	127	102	114	17%
Other OVN	<u>124</u>	<u>89</u>	<u>228</u>	<u>99</u>	<u>79</u>	<u>129</u>	<u>29%</u>
Total	109	475	258	82	412	110	13%

Note: Spending averages exclude park fees.

a. Pct errors computed at a 95% confidence level

## Appendix C. Impacts of all Visitor Spending, 2005

Table C1 gives the impacts of \$15.93 million in visitor spending on the local economy. All visitor spending in the region except park fees and donations is included in this analysis. Impacts including all visitor spending are roughly 30% higher than those reported in Table 8, which count only spending directly attributable to the park visits.

Table C-1. Impacts of all Visitor Spending on the Local Economy, 2005

Sector/Spending category	Sales \$000's	Jobs	Labor Income \$000's	Value Added \$000's
Direct Effects				
Motel, hotel cabin or B&B	2,243	57	983	1,588
Camping fees	192	1	28	65
Restaurants & bars	2,580	70	1,037	1,171
Admissions & fees	532	12	195	327
Local transportation	193	8	88	100
Grocery stores	1,052	26	414	554
Gas stations	1,094	23	396	515
Other retail	<u>565</u>	<u>13</u>	<u>274</u>	<u>384</u>
Wholesale Trade	500	6	186	326
Local Production of goods	<u>3,768</u>	<u>5</u>	<u>406</u>	<u>562</u>
Total Direct Effects	12,719 <sup>a</sup>	222	4,009	5,593
Secondary Effects	<u>7,793</u>	<u>86</u>	<u>2,021</u>	<u>3,472</u>
Total Effects	20,512	308	6,030	9.064

**Total Effects** 20,512 308 6,030 9,064 a. Total direct sales are less than visitor spending as direct sales exclude the cost of goods sold at retail unless the good is locally made.