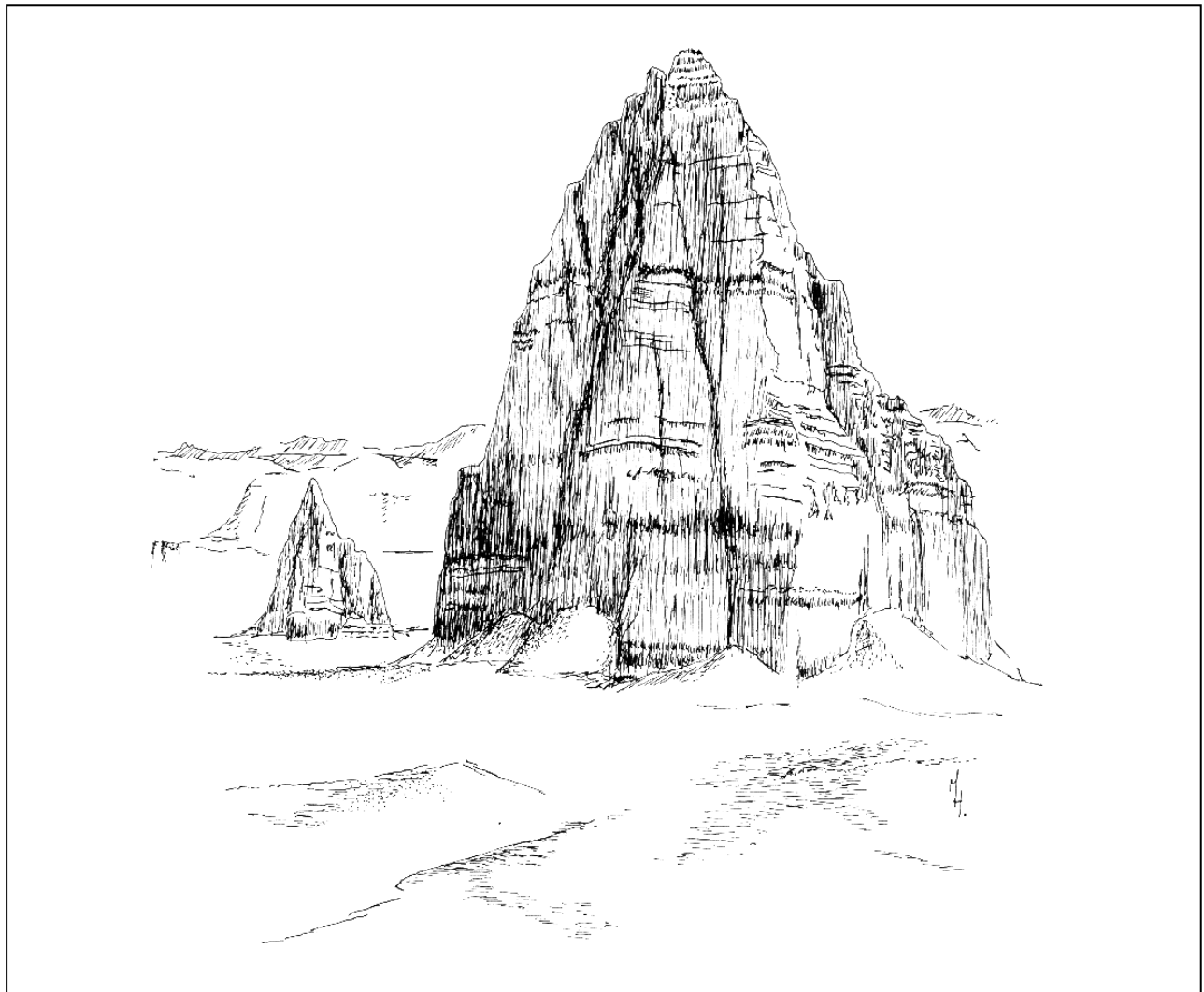




Impacts of Visitor Spending on the Local Economy: *Capitol Reef National Park, 2008*



ON THE COVER

Temple of the Sun and Moon

Drawing by Matt How, courtesy of Capitol Reef National Park

Impacts of Visitor Spending on the Local Economy: *Capitol Reef National Park, 2008*

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December 2010

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science
Fort Collins, Colorado

The National Park Service, Natural Resource Stewardship and Science office in Fort Collins, Colorado publishes a range of reports that address natural resource topics of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

This manuscript received the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

Views, statements, findings, conclusions, recommendations, and data in this report do not necessarily reflect views and policies of the National Park Service, U.S. Department of the Interior. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. Government.

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Please cite this publication as:

Stynes, D.J., and P.S. Cook. 2010. Impacts of visitor spending on the local economy: Capitol Reef National Park, 2008. National Park Service, Fort Collins, Colorado.

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Executive Summary

Capitol Reef National Park hosted 604,811 recreation visits in 2008. After adjusting for visitor group size and re-entries into the park, there were 180,004 visitor group trips to the park in 2008. Based on a 2008 Visitor Services Project survey, 31% of these visitor group trips were day trips not including an overnight stay within 100 miles of the park. Thirty-eight percent of the visitor group trips involved an overnight stay in motels, lodges or cabins outside the park. Twelve percent of visitor group trips were overnight stays in campgrounds, 5% inside the park and 7% outside.

Visitors reported expenditures of their group inside the park and in the surrounding communities within 100 miles of the park. The average visitor group consisted of 2.6 people and spent \$204 in the park and within 100 miles of the park. On a visitor group trip basis, average spending in 2008 was \$31 for visitors from the local region and non-local visitors on day trips, \$176 for visitors camping inside the park, \$221 for visitors camping outside the park, and \$422 for visitors staying in motels or lodges outside the park. Overall 95% of spending took place outside the park.

Total visitor spending in 2008 within 100 miles of the park was \$36.6 million including \$1.9 million spent inside the park. The greatest proportions of expenditures were for lodging (40%) and restaurant meals and bar expenses (19%). Overnight visitors staying in motels or lodges outside the park accounted for 79% of the total spending, and campers outside the park accounted for 8%.

Thirty-eight percent of visitors indicated the park visit was the primary reason for the trip to the area. Counting only a portion of visitor expenses if the park visit was not the primary trip purpose yields \$15.6 million in spending attributed directly to the park.

The economic impact of park visitor spending was estimated by applying the spending to an input-output model (IMPLAN) of the local economy. The local region was defined as a five county region including Garfield, Piute, Sanpete, Sevier, and Wayne counties in Utah. This region roughly coincides with the 100 mile radius for which spending was reported.

Including direct and secondary effects, the \$15.6 million in visitor spending attributed directly to the park supports 253 jobs in the area and generates \$15.9 million in output (sales revenues), \$4.9 million in labor income and \$8.5 million in value added.¹

The park itself employed 38 people in FY 2008 with a total payroll including benefits of \$2.3 million. Including secondary effects, the local impact of the park payroll in 2008 was 52 jobs, \$2.6 million in labor income and \$2.9 million total value added.

¹ Jobs include fulltime and part-time jobs. Labor income consists of wages and salaries, payroll benefits and income of sole proprietors. Value added includes labor income as well as property income (dividend, royalties, interest and rents) to area businesses and indirect business taxes (sales, property, and excise taxes).

Acknowledgments

The authors would like to thank Dr. Philip Watson, Dr. Lena Le, and Margaret Littlejohn for their reviews of an early draft of this report.

Introduction

Capitol Reef National Park (NP) was first protected as a national monument in 1937, later becoming a national park in 1971. The 100-mile long, but narrow, park encompasses 378 square miles of colorful canyons, ridges, buttes, and monoliths. The park spans portions of Sevier, Wayne, and Garfield counties in south central Utah. Capitol Reef NP received 604,801 recreation visits in 2008 including 37,872 overnight visits in the park (Table 1).

Table 1. Recreation visits and overnight stays, Capitol Reef National Park, 2008

Month	Recreation Visits	Overnight (OVN) Stays			Total OVN Stays
		Camp	Back-country	Misc	
January	7,397	35	0	0	35
February	10,149	67	1	0	68
March	32,754	1,814	353	0	2,167
April	52,504	5,743	229	257	6,229
May	85,845	5,289	341	231	5,861
June	78,268	4,956	90	381	5,427
July	79,735	4,262	27	357	4,646
August	86,279	4,195	24	224	4,443
September	92,384	4,193	106	208	4,507
October	55,865	3,573	222	94	3,889
November	18,060	458	38	0	496
<u>December</u>	<u>5,571</u>	<u>100</u>	<u>4</u>	<u>0</u>	<u>104</u>
Total	604,811	34,685	1,435	1,752	37,872

Source: NPS Public Use Statistics Office 2008.

The purpose of this study is to estimate the local economic impacts of visitors to Capitol Reef NP in 2008. Economic impacts are measured as the direct and secondary sales, income, and jobs in the local region resulting from spending by park visitors. (See Appendix A: Glossary for definitions of terms.) The local economic region defined for this study includes Garfield, Piute, Sanpete, Sevier, and Wayne counties, Utah.

This five-county region of Utah has a population of 50,284 (USCB 2000), gross regional product of \$8.5 billion (MIG, Inc. 2008), median household income of \$34,395, and family poverty rate of 9.3% (USCB 2000). State and local governments are the major employers in the region (MIG, Inc. 2008), and the region experienced a 4.5% unemployment rate in 2008 (BLS 2008).

Methods

The economic impact estimates are produced using the Money Generation Model 2 (MGM2) (Stynes et al. 2007). The three main 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 Capitol Reef NP Visitor Services Project (VSP) survey (Manni et al. 2008), National Park Service Public Use Statistics (2008), and IMPLAN input-output modeling software (MIG, Inc. 2008). The MGM2 model provides a spreadsheet template for combining park use, spending, and regional multipliers to compute changes in sales, labor income, jobs, and value added in the region.

The VSP visitor study was conducted at Capitol Reef NP from May 24-June 1, 2008 (Manni et al. 2008). This study measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a systematic, random sample of 615 visitor groups. Visitors returned 480 questionnaires resulting in a response rate of 78%.

Spending and economic impact estimates for Capitol Reef NP are based on the 2008 VSP survey. Visitors were asked to report expenditures within a 100 mile radius of Capitol Reef NP. The local region for determining economic impact was defined as a five county area around the park including Garfield, Piute, Sanpete, Sevier, and Wayne counties in south central Utah, which roughly coincides with the 100 mile radius for which visitor spending was reported.

The MGM2 model divides visitors into segments to help explain differences in spending across distinct user groups. Six segments were established for Capitol Reef National Park visitors based on reported trip characteristics and lodging expenditures:

Local: Visitors from the local region, not staying overnight inside the park.

Day trip: Visitors from outside the local region, not staying overnight within 100 miles of the park.

Camp-in: Visitors reporting camping expenses inside the park.

Motel-out: Visitors reporting motel expenses outside the park within 100 miles of the park.

Camp-out: Visitors reporting camping expenses outside the park within 100 miles of the park.

Other overnight (Other OVN): Visitors staying overnight in the area but not reporting any lodging expenses. This segment includes visitors staying in private homes, with friends or relatives, or in other unpaid lodging.²

The VSP survey was used to estimate the percentage of visitors from each segment as well as spending averages, lengths of stay, and visitor group sizes for each segment. Segment shares

² Visitors reporting multiple lodging types and expenditures were classified based on the greatest reported lodging expense. Some visitors listing motels or campgrounds as lodging types did not report any lodging expenses and were classified in the other overnight (Other OVN) category.

from the VSP surveys were adjusted to be consistent with the park’s NPS Public Use Statistics (2008) overnight stay figures.

Results

Visits

Based on the VSP survey and park overnight stay figures, 22.5% of park entries were classified as day trip visits by either local residents or visitors from outside the area, and 77.5% were classified as overnight visits including an overnight stay inside the park or in the local region (Table 2). The average visitor group size ranged from 2.3 to 2.8 people across the six segments with the average visitor group consisting of 2.6 people.³ The average length of stay in the local region on overnight trips was 2.3 nights.⁴

Table 2. Selected visit/trip characteristics by segment, 2008

Characteristic	Local Day trip		Camp- in	Motel- out	Camp- out	Other OVN	All visitors
Visitor segment share (park entries)	2.0%	20.5%	5.5%	42.0%	10.0%	20.0%	100%
Average visitor group size	2.5	2.3	2.7	2.5	2.8	2.8	2.6
Length of stay (days or nights)	1.0	1.0	2.9	2.0	2.5	2.4	2.3
Re-entry rate (park entries per trip)	1.1	1.0	1.4	1.5	1.6	1.3	1.4
Percent primary purpose trips	100%	16%	54%	37%	44%	29%	38%

Thirty-eight percent of visitors indicated that visiting the park was the primary reason for the trip to the area. Other stated reasons were visiting friends and relatives in the area, business, or visiting other area attractions.

The 604,811 recreation visits in 2008 were allocated to the six segments using the visit segment shares in Table 2. Since spending is reported for the stay in the area, park entries were converted to trips to the area by dividing by the average number of times each visitor entered the park during their stay. Park re-entry rates were estimated based on the number entries into the park reported by survey respondents.

Recreation visits were converted to 180,004 visitor group trips by dividing recreation visits by the average visitor group size and park entry rate for each segment (Table 3). Total person trips in 2008 were 459,035.

³ Visitor group size reported herein is based on the number of people covered by expenditures reported in the VSP survey.

⁴ Figures reported herein vary slightly from the VSP survey report due to omission of outliers. (See Study Limitations and Error section.)

Table 3. Recreation visits and visitor group trips by segment, 2008

Measure	Local	Day trip	Camp- in	Motel- out	Camp- out	Other OVN	All visitors
Recreation visits	12,096	123,986	33,265	254,021	60,481	120,962	604,811
Visitor group trips	4,597	50,334	8,690	68,680	13,291	34,412	180,004
Percent of visitor group trips	3%	28%	5%	38%	7%	19%	100%
Visitor group nights	4,597	50,334	25,145	140,739	33,494	84,201	338,508
Person trips	11,491	118,174	23,406	174,140	36,920	94,903	459,035

Visitor Spending

The visitor survey covered expenditures of the visitor group inside the park and within 100 miles of the park. Spending averages were computed on a visitor group trip basis for each segment. The average visitor group in 2008 spent \$204 on the trip inside the park and in the local region. On a visitor group trip basis, average spending was \$31 for day trips by local residents and non-local visitors and \$176 for park campers (Table 4). Visitors staying in motels, cabins, lodges or B&B's outside the park spent an average of \$422 on their trips and those camping outside the park spent \$221. Visitor groups spent about 5% of their total spending inside the park and 95% outside the park.

The relative standard error at a 95% confidence level for the overall spending average is 13%. A 95% confidence interval for the overall visitor group spending average is therefore \$204 plus or minus \$26 or between \$177 and \$230.

On a per night basis, visitor groups staying in motels or lodges outside the park spent \$206 in the local region. Campers spent more per night if staying outside the park (\$88) than inside the park (\$61). The average reported per night lodging expense was \$95 for motels outside the park, and \$9 for camping fees inside the park and \$25 for camping fees outside the park (Table 5).

Total spending was estimated by multiplying the number of visitor group trips for each segment by the average spending per trip and summing across segments. Capitol Reef NP visitors spent a total of \$36.6 million in the local region in 2008 (Table 6). Overnight visitors staying in motels outside the park account for 79% of the total spending, and campers outside the park account for 8%. Lodging expenses represent 40% of the total spending, and restaurant and bar expenses represent 19% (Figure 1).

Not all visitor spending would be lost to the region in the absence of the park, as 62% of visitors did not make the trip primarily to visit Capitol Reef NP. Spending directly attributed to park visits was estimated by counting all spending for trips where the park was the primary reason for the trip. If the park was not the primary trip purpose, one night of spending was counted for overnight trips and half of the spending outside the park was counted for day trips. All spending inside the park was treated as park-related spending. With these assumptions, a total of \$15.6 million in visitor spending is attributed to the park visit (Table 7). This represents 42% of the overall visitor spending total.

Table 4. Average visitor spending by segment (\$ per visitor group per trip).

	Local	Day trip	Camp-in	Motel-out	Camp-out	Other OVN	All visitors*
<u>Inside Park</u>							
Camping fees	.00	.00	15.38	.00	.00	.00	0.74
Groceries & takeout food	1.70	1.70	4.41	.95	1.07	.17	1.21
Local transportation	.33	.33	.84	1.38	.00	.00	0.67
Admission & fees	2.79	2.79	1.24	1.95	.23	3.67	2.37
<u>Souvenirs & other expenses</u>	<u>1.97</u>	<u>1.97</u>	<u>8.44</u>	<u>7.60</u>	<u>8.88</u>	<u>6.25</u>	<u>5.76</u>
Total Inside Park	6.79	6.79	30.31	11.88	10.19	10.09	10.75
<u>Outside Park</u>							
Motel, hotel, cabin or B&B	.00	.00	19.06	194.99	.00	.00	75.32
Camping fees	.00	.00	11.65	2.06	62.84	.00	5.99
Restaurants & bars	5.02	5.02	26.34	85.91	17.58	8.62	38.53
Groceries & takeout food	3.84	3.84	14.20	18.40	27.86	3.83	11.66
Gas & oil	14.61	14.61	54.60	50.52	63.50	12.51	33.45
Local transportation	.33	.33	1.35	27.97	12.92	3.81	12.52
Admission & fees	.00	.00	8.90	12.13	10.57	.06	5.85
<u>Souvenirs & other expenses</u>	<u>.66</u>	<u>.66</u>	<u>9.50</u>	<u>18.34</u>	<u>15.33</u>	<u>3.45</u>	<u>9.45</u>
Total Outside Park	24.44	24.44	145.61	410.32	210.61	32.28	192.77
Total Inside & Outside Park	31.23	31.23	175.92	422.21	220.80	42.37	203.52

*Average weighted by percent visitor group trips.

Table 5. Average spending per night for visitor groups on overnight trips (\$ per visitor group per night).

	Camp-in	Motel-out	Camp-out	Other OVN
Motel, hotel, cabin or B&B	6.59	95.16	0.00	0.00
Camping fees	9.34	1.00	24.94	0.00
Restaurants & bars	9.10	41.93	6.98	3.52
Groceries & takeout food	6.43	9.44	11.48	1.64
Gas & oil	18.87	24.66	25.20	5.11
Local transportation	0.76	14.33	5.13	1.56
Admission & fees	3.50	6.87	4.29	1.52
<u>Souvenirs & other expenses</u>	<u>6.20</u>	<u>12.66</u>	<u>9.61</u>	<u>3.97</u>
Total per visitor group per night	60.80	206.04	87.62	17.32

Table 6. Total visitor spending by segment, 2008 (\$000's).

	Local	Day trip	Camp-in	Motel-out	Camp-out	Other OVN	All visitors
Inside Park							
Camping fees	-	-	134	-	-	-	134
Groceries & takeout food	8	86	38	65	14	6	217
Local transportation	2	17	7	95	-	-	120
Admission & fees	13	140	11	134	3	126	427
<u>Souvenirs & other expenses</u>	<u>9</u>	<u>99</u>	<u>73</u>	<u>522</u>	<u>118</u>	<u>215</u>	<u>1,037</u>
Total Inside Park	31	342	263	816	135	347	1,935
Outside Park							
Motel, hotel, cabin or B&B	-	-	166	13,392	-	-	13,558
Camping fees	-	-	101	141	835	-	1,078
Restaurants & bars	23	252	229	5,901	234	297	6,935
Groceries & takeout food	18	193	123	1,263	370	132	2,100
Gas & oil	67	735	474	3,470	844	431	6,021
Local transportation	2	17	12	1,921	172	131	2,254
Admission & fees	-	-	77	833	141	2	1,053
<u>Souvenirs & other expenses</u>	<u>3</u>	<u>33</u>	<u>83</u>	<u>1,260</u>	<u>204</u>	<u>119</u>	<u>1,701</u>
Total Outside Park	112	1,230	1,265	28,181	2,799	1,111	34,699
Total Inside & Outside Park	144	1,572	1,529	28,997	2,935	1,458	36,634
Segment Percent of Total*	0%	4%	4%	79%	8%	4%	100%

*Percentages do not total to 100% due to rounding.

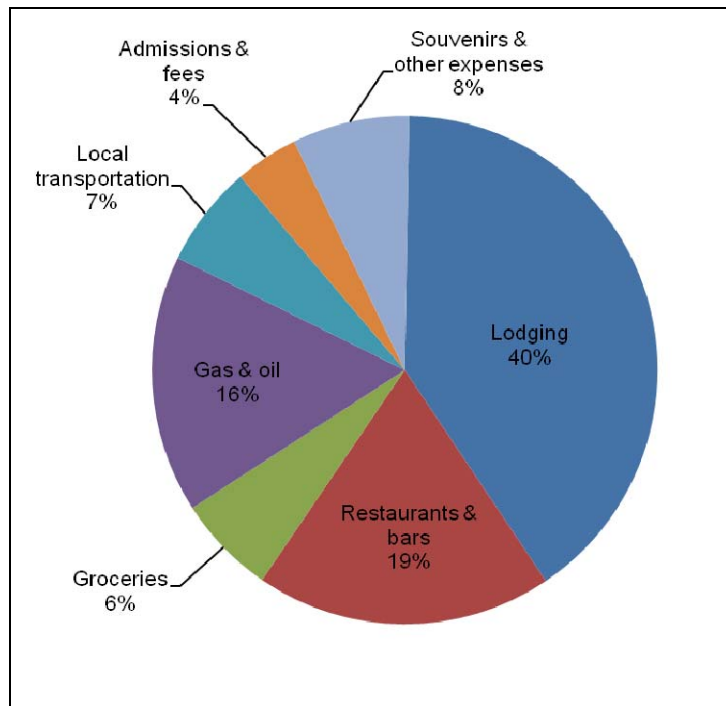


Figure 1. Capitol Reef National Park visitor spending by category.

Table 7. Total spending attributed to park visits, 2008 (\$000's).

	Local	Day trip	Camp-in	Motel-out	Camp-out	Other OVN	All visitors
Motel, hotel, cabin or B&B	0	0	92	5,037	0	0	5,130
Camping fees	0	0	193	53	385	0	631
Restaurants & bars	0	146	127	2,219	108	87	2,688
Groceries & takeout food	8	198	108	541	185	45	1,076
Gas & oil	0	426	264	1,305	389	127	2,512
Local transportation	2	26	14	818	79	39	976
Admission & fees	13	140	54	448	68	128	838
<u>Souvenirs & other expenses</u>	<u>9</u>	<u>118</u>	<u>121</u>	<u>998</u>	<u>214</u>	<u>252</u>	<u>1,703</u>
Total Attributed to Park	31	1,055	973	11,420	1,428	677	15,553
Percent of Spending Attributed to the Park	22%	67%	64%	39%	49%	46%	42%
Percent of Attributed Spending*	0%	7%	6%	73%	9%	4%	100%

*Percentages do not total to 100% due to rounding.

Economic Impacts of Visitor Spending

The economic impacts of Capitol Reef National Park visitor spending on the local economy are estimated by applying visitor spending to a set of economic ratios and multipliers in MGM2 representing the economy of the five county region.⁵ Economic ratios and multipliers for the region were estimated using the *Impact Analysis for Planning (IMPLAN) Professional software* (version 3, MIG, Inc. 2008) with 2008 data.⁶ For the retail outlet sectors of grocery stores, gas stations, and other retail, retail margins of 25.3%, 22.3%, and 50.0%, respectively, are applied to visitor spending in MGM2 to account for leakages from the local economy.

The tourism output sales multiplier for the region is 1.31. Every dollar of direct sales to visitors generates another \$0.31 in secondary sales through indirect and induced effects.⁷ (See Appendix A: Glossary for further explanation of terms.)

Impacts are estimated based first on all visitor spending and then based on the visitor spending attributed to the park. Including all visitor spending estimates the overall contribution park visitors make to the local region. Including only visitor spending attributable to the park estimates the impact or contribution the park makes to the economy of the local region.

⁵ Economic ratios convert between various economic measures, e.g., direct spending to the directly associated jobs, labor income, and value added in each sector. Economic multipliers capture the secondary effects of economic measures.

⁶ See Appendix B: Economic Ratios and Multipliers for the region.

⁷ 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.

Using all visitor spending and including direct and secondary effects, the \$36.6 million spent by park visitors supports 612 jobs in the local region and generates \$38.3 million in sales, \$11.8 million in labor income and \$20.4 million in value added (Table 8).⁸

Table 8. Impacts of all visitor spending on the local economy, 2008.

Sector/Spending category	Sales (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motel, hotel, cabin or B&B	13,558	200	4,425	8,047
Camping fees	1,211	17	329	541
Restaurants & bars	6,935	144	2,152	3,161
Groceries & takeout food	586	10	242	373
Gas & oil	1,343	15	407	927
Local transportation	2,374	47	1,034	1,501
Admission & fees	1,480	12	305	536
Souvenirs & other expenses	1,369	25	594	884
Wholesale trade	496	6	151	342
<u>Local production of goods</u>	<u>193</u>	<u>1</u>	<u>40</u>	<u>51</u>
Total Direct Effects	29,545	477	9,678	16,362
<u>Secondary Effects</u>	<u>11,669</u>	<u>110</u>	<u>3,361</u>	<u>5,903</u>
Total Effects	41,214	586	13,039	22,265

Note: Impacts of \$36.6 million in visitor spending reported in Table 6.

Value added is the preferred measure of the contribution of visitors 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 that accrue to government units. Value added impacts are also comparable to Gross Regional Product, the broadest measure of total economic activity in a region. The largest direct effects are in lodging establishments and restaurants.

Using only visitor spending attributable to the park by including only some spending on trips where the primary trip purpose was not to visit Capitol Reef NP reduces the overall impacts by about 59% (Table 9; see spending inclusion assumptions in previous section). Including direct and secondary effects, the \$15.6 million spent by park visitors and attributable to the park supports 253 jobs in the local region and generates \$15.9 million in sales, \$4.9 million in labor income and \$8.5 million in value added.

⁸ Jobs include full and part time jobs. Labor income consists of wages and salaries, payroll benefits and income of sole proprietors. Value added includes labor income as well as profits and rents to area businesses and sales and excise taxes.

Table 9. Economic impacts of visitor spending attributed to the park, 2008.

Sector/Spending category	Sales (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motel, hotel, cabin or B&B	5,130	76	1,674	3,044
Camping fees	631	9	171	282
Restaurants & bars	2,688	56	834	1,225
Groceries & takeout food	272	5	113	173
Gas & oil	560	6	170	387
Local transportation	976	19	425	617
Admission & fees	838	7	173	304
Souvenirs & other expenses	851	16	369	550
Wholesale trade	242	3	73	167
<u>Local production of goods</u>	<u>101</u>	<u>0</u>	<u>21</u>	<u>27</u>
Total Direct Effects	12,290	196	4,023	6,775
<u>Secondary Effects</u>	<u>4,865</u>	<u>46</u>	<u>1,407</u>	<u>2,471</u>
Total Effects	17,155	242	5,430	9,246

Note: Impacts of \$15.6 million in visitor spending attributed to park reported in Table 7.

Impacts of the NPS Park Payroll

The park itself employed 38 people in FY 2008 with a total payroll including benefits of \$2.3 million (NPS 2008). Including secondary effects, the local impact of the park payroll in 2008 was 52 jobs, \$2.6 million in labor income and \$2.9 million total value added. Combining the contributions of all visitor spending and the park payroll, yields a total economic contribution of the park to the local economy in 2008 of 759 jobs and \$26.0 million value added. Counting only visitor spending directly attributed to park visits yields an overall impact with park payroll effects of 306 jobs, \$7.5 million in labor income and \$11.4 million in 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. Visits are taken from NPS Public Use Statistics (2008). Recreation visit estimates rely on counting procedures at the park, which may miss some visitors and count others more than once during their visit. Re-entry rates are important to adjust the park visit counts to reflect the number of visitor trips to the region rather than park entries. Re-entry rates were estimated based on visitor responses to a VSP survey question about the number of times they entered the park.

Spending averages are derived from the 2008 Capitol Reef NP VSP visitor survey (Manni et al. 2008). Estimates from the surveys are subject to sampling errors, measurement errors, and potential seasonal/sampling biases. The overall spending averages are subject to sampling errors of 13%.

Spending averages are also sensitive to decisions about outliers and treatment of missing data. In order to estimate spending averages, incomplete spending data was filled with zeros. Visitor

groups of more than 7 people (9 cases) and visiting the local region for more than 7 nights (22 cases) were omitted from the analysis. This is a conservative assumption about outliers and likely results in conservative estimates of economic impacts.

The sample only covers visitors during a single week at the end of May. To extrapolate to annual totals, it was assumed that this sample represented visitors throughout the year.

Multipliers are derived from an input-output model of the local economy using IMPLAN (MIG, Inc. 2008). The basic assumptions of input-output models are that sectors have homogeneous, fixed and linear production functions, that prices are constant, and that there are no supply constraints. The IMPLAN system uses national average production functions for each of 440 sectors based on the NAICS system (see Appendix B, Table B2). The 2008 county IMPLAN dataset was used for this analysis.

Sorting out how much of the spending to attribute to the park when the park is not the primary motivation for the trip is somewhat subjective. Because most visitors to Capitol Reef NP did not make the trip primarily to visit the park and most spending occurs outside the park, adjustments for non-primary purpose trips have a significant effect on the overall spending and impact estimates.

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Appendix A: Glossary

Term	Definition
Direct effects	Changes in sales, income and jobs in those business or agencies that directly receive the visitor spending.
Economic multiplier	Captures the size of secondary effects and are usually expressed as a ratio of total effects to direct effects.
Economic ratio	Converts various economic measures from one to another. For example, direct sales can be used to estimate direct effects on jobs, personal income, and value added by applying economic ratios. I.e., $\text{Direct jobs} = \text{direct sales} * \text{jobs to sales ratio}$ $\text{Direct personal income} = \text{direct sales} * \text{personal income to sales ratio}$ $\text{Direct Value added} = \text{direct sales} * \text{value added to sales ratio}$
Indirect effects	Changes in sales, income and jobs in industries that supply goods and services to the businesses that sell directly to the visitors, i.e., businesses in the supply chain. 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. IMPLAN's Social Accounting Matrix (SAM) multipliers also include induced effects resulting from local/state/federal government spending.
Jobs	The number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include both fulltime and part-time positions.
Labor income	Wage and salary income, sole proprietor (business owner) income and employee payroll benefits.
Sales	Sales of firms within the region to park visitors.
Secondary effects	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.

Term	Definition
Total effects	<p>Sum of direct, indirect and induced effects.</p> <ul style="list-style-type: none"> • Direct effects accrue largely to tourism-related businesses in the area • Indirect effects accrue to a broader set of businesses that serve these tourism firms. • Induced effects are distributed widely across a variety of local businesses.
Value added	<p>Labor income plus property income (rents, dividends, royalties, interest) 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, property, 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.</p>
Visitor group	<p>A group of people traveling together to visit the park. Visitor group is the basic sampling unit for VSP surveys; each visitor group receives only one survey.</p>

Appendix B: Economic Multipliers and IMPLAN Sectors

Table B1. Economic ratios and multipliers for selected tourism-related sectors, Capitol Reef NP region, 2008.

Sector	Direct effects			Total effects multipliers				
	Jobs/\$ MM sales	Income /sales	Value added/ sales	Sales I	Sales SAM	JobII/ MM sales	Income II/ sales	VA II/ sales
Motel, hotel, cabin or B&B	15.53	0.32	0.59	1.16	1.32	19.11	0.41	0.75
Camping fees	13.62	0.28	0.46	1.23	1.38	17.90	0.39	0.65
Restaurants & bars	22.82	0.28	0.42	1.15	1.29	25.93	0.37	0.57
Groceries & takeout food	19.14	0.40	0.62	1.13	1.32	22.66	0.49	0.80
Gas & oil	14.58	0.30	0.69	1.11	1.26	17.38	0.38	0.83
Local transportation	20.51	0.40	0.63	1.08	1.27	23.57	0.47	0.77
Admission & fees	9.92	0.16	0.28	1.24	1.33	13.39	0.25	0.45
Souvenirs & other expenses	20.83	0.42	0.63	1.13	1.32	24.41	0.51	0.80
Local production of goods	8.28	0.12	0.15	1.12	1.19	10.13	0.17	0.25
Wholesale trade	9.39	0.35	0.61	1.12	1.29	12.61	0.44	0.76

Source: IMPLAN (MIG, Inc. 2008).

Brief explanation of table

Direct effects are economic ratios to convert sales in each sector to jobs, income and value added.

Jobs/\$MM sales is jobs per million dollars in sales.

Income/sales is the percentage of sales going to wages, salaries, and employee benefits.

Value added/sales is the percentage of sales that is value added (Value added covers all income, rents and profits and indirect business taxes).

Total effects are multipliers that capture the total effect relative to direct sales.

Sales I captures only direct and indirect sales.

Sales SAM is the SAM sales multiplier = (direct + indirect + induced sales) /direct sales.

Job II/ MM sales = total jobs (direct + indirect + induced) per \$ million in direct sales.

Income II /sales = total income (direct + indirect + induced) per \$ of direct sales.

VA II/sales = total value added (direct + indirect + induced) per \$ of direct sales.

Using the hotel sector row to illustrate

Direct Effects: Every million dollars in hotel sales creates 15.5 jobs in hotels. Thirty-two percent of hotel sales goes to wages and salaries of hotel employees and 59% of hotel sales is value added. That means 41% of hotel sales goes to purchase inputs by hotels. The wage and salary income creates the induced effects and the 41% spent on purchases by the hotel starts the rounds of indirect effects.

Multiplier effects: There is an additional 16 cents of indirect sales in the region for every dollar of direct hotel sales (type I sales multiplier = 1.16). Total secondary sales is 32 cents per dollar of direct sales (Sales SAM = 1.32), which means 16 cents in indirect effects and 16 cents in induced effects. An additional 3.6 jobs are created from secondary effects of each million dollars in hotel

sales (19.1 total jobs – 15.5 direct jobs per \$million). These jobs are distributed across other sectors of the local economy. Similarly, the secondary effects on income for each dollar of hotel sales is 9% (41%-32%), and the secondary effects on value added for each dollar of hotel sales is 16% (75%-59%). Including secondary effects, every million dollar of hotel sales in the region yields \$1.32 million in sales, \$410,000 in income, and \$750,000 in value added.

Table B2. MGM2 sector correspondence to IMPLAN and 2007 NAICS sectors.

MGM sector	IMPLAN		2007 NAICS
	No.	Name	
Motel, hotel, cabin or B&B	411	Hotels and motels, including casino hotels	72111-2
Camping fees	412	Other accommodations	72119, 7212-3
Restaurants & bars	413	Food services and drinking places	722
Groceries & takeout food	324	Retail - Food and beverage	445
Gas & oil	326	Retail - Gasoline stations	447
Local transportation	336	Transit and ground passenger transportation	485
Admission & fees	410	Other amusement and recreation industries	71391-3, 71399
Souvenirs & other expenses	329	Retail - General merchandise	452
Local production of goods	317	All other miscellaneous manufacturing	339993, 339995, 339999
Wholesale trade	319	Wholesale trade	42

Source: IMPLAN (MIG, Inc. 2008).

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NPS 158/110066, December 2010

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