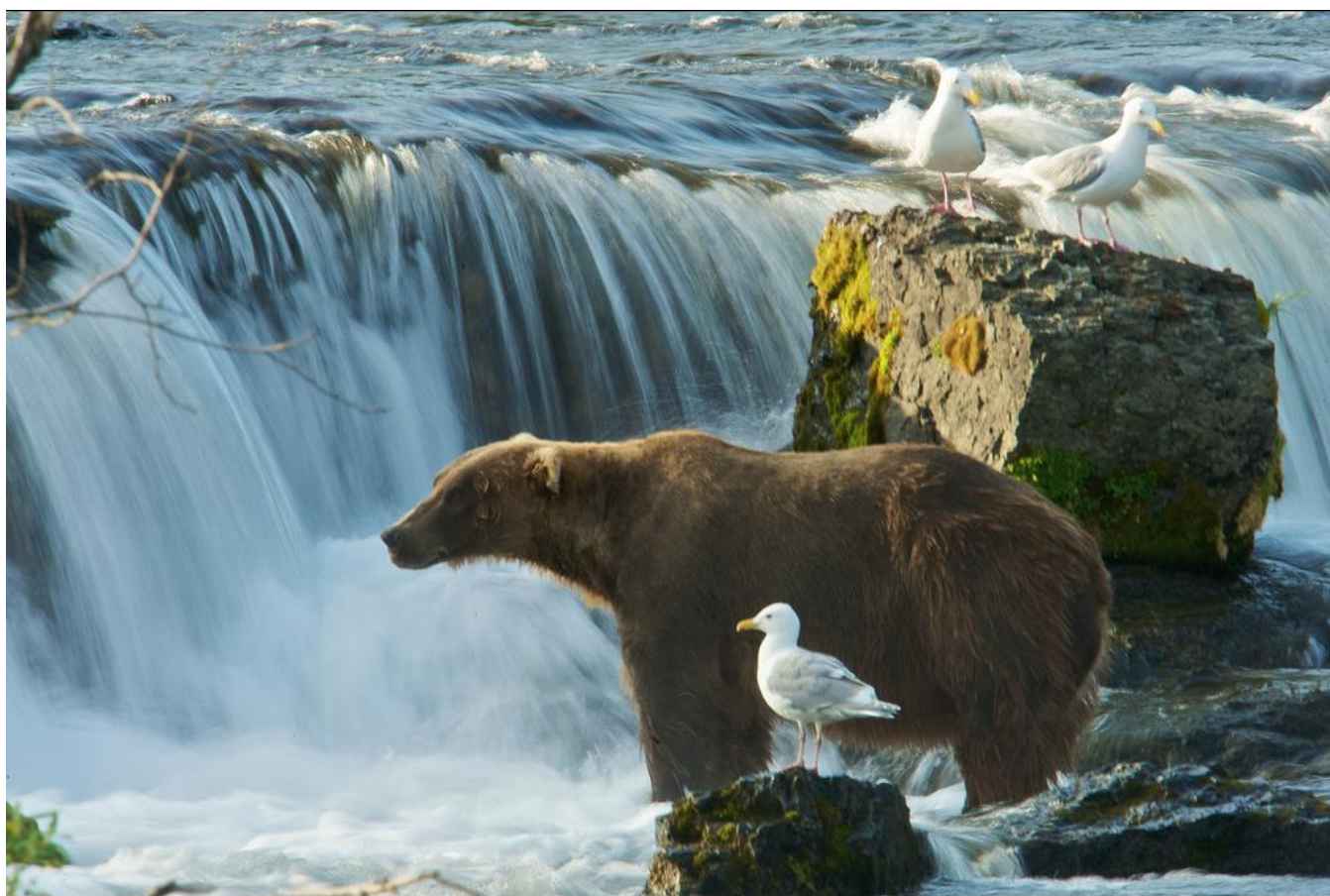




Impacts of Visitor Spending on the Local and Alaska Economies

Katmai National Park and Preserve, 2014

Natural Resource Report NPS/NRSS/EQD/NRR—2015/1086



ON THE COVER

Katmai brown bear and seagulls at Brooks Falls
Photograph courtesy of Roy Wood

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Project Profile

Title: Katmai National Park and Preserve – Economic Impacts of Visitor Spending

Objectives: Produce report of economic impacts of visitor spending on the local areas surrounding the park

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Methods: Mail back survey with onsite intercept

Timeframe: May 2014 –May 2015

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Executive Summary

Katmai National Park and Preserve hosted 30,896 recreation visits in 2014. Adjustments for visitor group size and trip length resulted in 10,860 visitor group trips to the park in 2014. Based on a 2014 visitor survey conducted June 11–September 30, 33% of these visitor groups were on day trips as part of a package tour, 60% were day trips made by visitors not on package tours, and 7% were on overnight trips to the park.¹

Visitors reported their group's expenditures in the park, in a mapped local region outside the park, and in the remainder of Alaska. Visitor groups spent an average of \$1,160 in the park, \$756 in the local region outside the park, and \$4,336 in the remainder of Alaska.

Total visitor spending in 2014 was \$12.6 million inside the park, \$8.2 million in the local region outside the park, and \$47.1 million in the remainder of Alaska. Total visitor spending in the local region—inside the park plus outside the park—was \$20.8 million. Total visitor spending in Alaska—inside the park plus in the local region plus in the remainder of Alaska—was \$67.9 million.

Only 1% of visitor groups were from the local region, and 14% were from Alaska. Ninety-one percent of non-local visitor groups indicated the park visit was the primary reason for their trip to the area. The visitor survey did not ask about the primary reason for the trip to Alaska, but this analysis assumes that the 54% of non-Alaskan visitors who spent more than half the time of their trip to Alaska at Katmai NPP were on primary purpose trips.

Not counting local residents and counting only a portion of non-local visitor expenses in the region if the park visit was not the primary reason for the trip to the region yields \$20.1 million in spending in the local region attributed directly to the park. Similarly, not counting Alaska residents and counting only a portion of non-Alaskan visitor expenses in Alaska if the park visit was not the primary reason for the trip to Alaska yields \$47.8 million in spending in Alaska attributed to the park.

The economic impact of park visitor spending was estimated by applying the spending to an input-output model of the regional economy and the Alaska economy as a whole. The local region was defined as Lake and Peninsula, Kodiak Island, Kenai Peninsula, and Bristol Bay boroughs in southern Alaska.

Including direct and secondary effects, the \$20.1 million in visitor spending in the local region attributed to the park generated \$27.9 million in output, which supported 246 jobs. These jobs paid \$7.4 million in labor income, which was part of \$13.2 million in value added to the local region.² Including direct and secondary effects, the \$47.8 million in visitor spending in Alaska attributed to the park generated \$62.5 million in output in Alaska, which supported 595 jobs. These jobs paid \$17.3 million in labor income, which was part of \$30.6 million in value added to the state of Alaska.

Economic Impacts of Katmai National Park and Preserve Visitor Spending

	<u>Output</u>	<u>Jobs</u>	<u>Labor Income</u>	<u>Value Added</u>
In local region	\$27.9M	246	\$7.4M	\$13.2M
In Alaska (including local region)	\$62.5M	595	\$17.3M	\$30.6M

¹ Results in this study sometimes differ from those reported in the 2014 Katmai National Park and Preserve visitor study report (Strawn et al. 2015) because of the omission of cases considered to be outliers in the current analysis. See Study Limitations and Errors section.

² 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).

Introduction

Katmai National Park and Preserve (NM) was established as a national monument in 1918 to preserve the Valley of Ten Thousand Smokes and the landscape associated with the volcanic eruption of Novarupta in 1912. The park was expanded by four additional proclamations, and then enlarged again and designated a national park and preserve by the Alaska National Interest Lands Conservation Act (ANILCA) in 1980. Katmai NPP is managed to protect habitats for and populations of fish and wildlife, including brown bears and salmon, and to protect the scenic, geological, cultural, and recreational features of the park. The 4.1 million-acre park is located in southern Alaska in Lake and Peninsula, Kodiak Island, Kenai Peninsula, and Bristol Bay boroughs. Katmai NPP received 30,896 recreation visits in 2014 of which 6,597 were overnight stays (Table 1).

Table 1. Recreation visits and overnight stays, Katmai NPP, 2014

Month	Recreation visits	Concession lodging	Tent campers	Back-country campers	Total overnight stays
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	5,188	1,034	0	129	1,163
July	16,895	1,454	1,595	181	3,230
August	4,860	994	303	143	1,440
September	3,953	734	0	30	764
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Total	30,896	4,216	1,898	483	6,597

Source: NPS Visitor Use Statistics (2014).

The purpose of this study is to estimate the annual economic impacts on the local and Alaska economies of visitors to Katmai NPP in 2014. Economic impacts were measured as the direct and secondary output, income, jobs, and value added in the local region and Alaska resulting from spending by park visitors. (See Appendix A: Glossary for definitions of terms.) Neither the economic impacts of NPS park payroll or park operations and construction are estimated or reported herein.

This study look at the park's economic impacts in two regions: a local region and Alaska as a whole. The local economic region defined for this study included Lake and Peninsula, Kodiak Island, Kenai Peninsula, and Bristol Bay boroughs. This region had a population of 72,400 (USCB 2014), gross regional product of \$6.6 billion (MIG, Inc. 2013), median household income of \$63,233, and family poverty rate of 5.9% (USCB 2014). Scenic and sightseeing transportation, seafood processing, local government, and commercial fishing were the major

employers in the region (MIG, Inc. 2013), and the region experienced a 7.2% unemployment rate in 2014 (BLS 2014).

Alaska as a whole had a population of 720,316 (USCB 2014), gross regional product of \$80.5 billion (MIG, Inc. 2013), median household income of \$71,039, and family poverty rate of 6.8% (USCB 2014). Scenic and sightseeing transportation, and federal, local, and state governments were the major employers in Alaska (MIG, Inc. 2013), and the state experienced a 6.8% unemployment rate in 2014 (BLS 2014).

Methods

The economic impacts of Katmai NPP were estimated using three main inputs:

1. number of visits to the park broken down by day-trip and overnight-stay segments;
2. spending averages for each segment; and
3. economic multipliers for the local region and Alaska as a whole.

Inputs were estimated from a Katmai NPP visitor survey (Strawn et al. 2015), NPS Visitor Use Statistics (NPS 2014), and Impact Analysis for Planning (IMPLAN) input-output modeling software (MIG, Inc. 2013). Economic impact modelling combines park use, visitor spending, and economic multipliers to compute changes in output, labor income, jobs, and value added in the regions of interest.

The Katmai NPP visitor survey was conducted at the park from June 11–September 30, 2014.³ The survey measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a systematic, random sample of 787 visitor groups. Visitors returned 488 questionnaires resulting in a response rate of 62.0%.

Spending and economic impact estimates for Katmai NPP are based in part on the 2014 visitor survey data. Visitors were asked to report expenditures in the park, in the region surrounding the park included on a map in the questionnaire (see Appendix D), and in Alaska outside the park and mapped area. The two regions for determining economic impact for this study were defined as (1) the local region—Lake and Peninsula, Kodiak Island, Kenai Peninsula, and Bristol Bay boroughs in southern Alaska—and (2) the entire state of Alaska.

The economic impact model divides visitors into segments to help explain differences in spending across distinct user groups. Three segments were established for Katmai NPP visitors based on reported trip characteristics and expenditures:

Independent day trip: Visitors who did not stay overnight in the park and did not report "package tour" expenses.

Package tour day trip: Visitors who did not stay overnight in the park and reported package tour expenses.

Overnight trip: Visitors who stayed overnight in the park, including both those who reported package tour expenses and those who did not.

The Katmai NPP visitor survey data were used to estimate the percentage of visitors in each segment as well as spending averages, lengths of stay, and visitor group sizes for each segment.

³ Results in this study sometimes differ from those reported in the visitor study report because of the omission of cases considered to be outliers in the current analysis. See Study Limitations and Errors section.

Results

Visits

Based on the Katmai NPP visitor survey data, 44% of park entries were classified as independent day visits, 22% were package tour day visits, and 34% were visits involving an overnight stay in the park (Table 2). Average visitor group size ranged from 2.2 to 2.5 people across the three segments of visitors.⁴ The average length of stay in the park was 4.2 nights for visitors on overnight trips. Overall 91% of visitors indicated that visiting the park was the primary reason for their trip to the local region.

Table 2. Selected visit/trip characteristics by segment, 2014

Characteristic	Segment		
	Independent day trip	Package tour day trip	Overnight trip
Visitor segment share (park entries)	44%	22%	34%
Average visitor group size	2.5	2.3	2.2
Length of stay (days or nights)	1.0	1.0	4.2
Percent primary purpose trips	88%	92%	94%

The 30,896 recreation visits in 2014 were allocated to the three segments using the visitor segment shares in Table 2. Because expenditures in the park, local region, and Alaska were reported for the entire trip using the visitor group as a basis, recreation visits were converted to visitor group trips by dividing recreation visits by average visitor group size for day visitors and by average visitor group size and length of stay for overnight visitors. The 30,896 recreation visits represented 10,860 visitor group trips (Table 3).

Table 3. Recreation visits and visitor group trips by segment, 2014

Measure	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Recreation visits	16,077	8,222	6,597	30,896
Visitor group trips	6,527	3,607	726	10,860
Percent of visitor group trips	60%	33%	7%	100%

⁴ Visitor group size reported herein is based on the number of people covered by expenditures reported in the visitor survey.

Visitor Spending

The Katmai NPP visitor survey collected data about expenditures of visitor groups in the park, outside the park but within the local region shown on a map in the questionnaire (see Appendix D), and in the remainder of Alaska. Spending averages were computed on a visitor group trip basis for each visitor segment. The average visitor group spent \$1,160 on the trip in the park, \$756 in the local region outside the park, and \$4,336 in the remainder of Alaska (Table 4). Of their total spending in Alaska, visitor groups spent about 19% in the park, 12% in the local region outside the park, and 69% in the remainder of Alaska.

The relative standard error at a 95% confidence level for the overall spending average was 9%. A 95% confidence interval for the overall visitor group spending average was therefore \$6,252 plus or minus \$569 or between \$5,683 and \$6,821.

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. Katmai NPP visitors spent a total of \$20.8 million in the local region in 2014 (Table 5; "in park" plus "in region (outside park)" spending). Visitors on package tour day trips accounted for 45% of the total spending in the local region, visitors on independent day trips accounted for 42%, and visitors on overnight trips accounted for 13%. Package tours accounted for 56% of total spending in the local region (Figure 1).

Katmai NPP visitors spent a total of \$67.9 million in all of Alaska in 2014 (Table 5). Visitors on independent day trips accounted for 54% of the total spending in Alaska, visitors on package tour day trips accounted for 39%, and visitors on overnight trips accounted for 7%. Package tours accounted for 48% of total spending in Alaska (Figure 2).

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

Expenditures	Segment			All visitors*
	Independent day trip	Package tour day trip	Overnight trip	
<u>In park</u>				
Package tour (cruise, airline, etc.)**	0.00	2,229.34	1,716.90	855.27
Motels	0.00	0.00	968.78	64.79
Camping fees	0.00	0.00	48.17	3.22
Guide fees	49.01	4.62	112.40	38.50
Restaurants & bars	18.47	18.92	146.07	27.15
Groceries & takeout food	4.68	2.63	17.70	4.87
Gas & oil	5.23	0.33	7.50	3.76
Airfare	165.58	42.11	377.47	138.74
Other transportation	6.07	6.58	15.14	6.85
Admissions	1.17	1.05	15.65	2.10
<u>Souvenirs & other expenses</u>	<u>12.74</u>	<u>15.07</u>	<u>32.32</u>	<u>14.82</u>
Total in park	262.95	2,320.64	3,458.12	1,160.06
<u>In region (outside park)</u>				
Package tour (cruise, airline, etc.)**	277.68	131.59	53.04	214.14
Motels	447.70	45.01	35.65	286.40
Camping fees	0.67	6.58	0.10	2.60
Guide fees	67.11	0.01	0.00	40.34
Restaurants & bars	36.81	12.18	17.57	27.35
Groceries & takeout food	6.15	6.58	1.67	6.00
Gas & oil	13.62	7.89	3.74	11.06
Airfare	184.40	57.91	113.18	137.62
Other transportation	3.49	6.59	3.04	4.49
Admissions	9.19	0.00	0.43	5.55
<u>Souvenirs & other expenses</u>	<u>26.88</u>	<u>11.18</u>	<u>4.35</u>	<u>20.16</u>
Total in region (outside park)	1,073.72	285.54	232.78	755.70
<u>In remainder of Alaska</u>				
Package tour (cruise, airline, etc.)**	1,934.43	2,092.12	754.55	1,907.90
Motels	709.23	641.97	598.91	679.52
Camping fees	29.31	37.11	13.91	30.87
Guide fees	171.81	124.21	90.17	150.54
Restaurants & bars	263.02	402.17	212.51	305.86
Groceries & takeout food	75.17	93.58	128.63	84.86
Gas & oil	132.06	250.64	110.03	169.97
Airfare	501.35	561.97	570.42	526.10
Other transportation	168.66	273.53	189.40	204.88
Admissions	165.34	57.72	43.14	121.42
<u>Souvenirs & other expenses</u>	<u>150.96</u>	<u>174.54</u>	<u>84.26</u>	<u>154.33</u>
Total in remainder of Alaska	4,301.34	4,709.57	2,795.93	4,336.25

Table 4. (continued)

Expenditures	Segment			All visitors*
	Independent day trip	Package tour day trip	Overnight trip	
For all of Alaska				
Package tour (cruise, airline, etc.)**	2,212.11	4,453.05	2,524.50	2,977.30
Motels	1,156.94	686.99	1,603.35	1,030.70
Camping fees	29.98	43.68	62.19	36.69
Guide fees	287.93	128.84	202.57	229.38
Restaurants & bars	318.30	433.28	376.15	360.36
Groceries & takeout food	86.00	102.79	148.00	95.72
Gas & oil	150.92	258.87	121.27	184.79
Airfare	851.32	661.99	1,061.07	802.46
Other transportation	178.22	286.70	207.58	216.21
Admissions	175.70	58.78	59.23	129.07
<u>Souvenirs & other expenses</u>	<u>190.58</u>	<u>200.79</u>	<u>120.93</u>	<u>189.31</u>
Total for all of Alaska	5,638.01	7,315.75	6,486.83	6,252.01

*Weighted by percent visitor group trips.

**Remaining expenditures were not included in package tour.

Table 5. Total visitor spending by segment, 2014 (thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
<u>In park</u>				
Package tour (cruise, airline, etc.)**	0	8,041	1,247	9,288
Motels	0	0	704	704
Camping fees	0	0	35	35
Guide fees	320	17	82	418
Restaurants & bars	121	68	106	295
Groceries & takeout food	31	9	13	53
Gas & oil	34	1	5	41
Airfare	1,081	152	274	1,507
Other transportation	40	24	11	74
Admissions	8	4	11	23
<u>Souvenirs & other expenses</u>	<u>83</u>	<u>54</u>	<u>23</u>	<u>161</u>
Total in park	1,716	8,371	2,512	12,599
<u>In region (outside park)</u>				
Package tour (cruise, airline, etc.)**	1,812	475	39	2,326
Motels	2,922	162	26	3,110
Camping fees	4	24	0	28
Guide fees	438	0	0	438
Restaurants & bars	240	44	13	297
Groceries & takeout food	40	24	1	65
Gas & oil	89	28	3	120
Airfare	1,204	209	82	1,495
Other transportation	23	24	2	49
Admissions	60	0	0	60
<u>Souvenirs & other expenses</u>	<u>175</u>	<u>40</u>	<u>3</u>	<u>219</u>
Total in region (outside park)	7,008	1,030	169	8,207
<u>In remainder of Alaska</u>				
Package tour (cruise, airline, etc.)**	12,626	7,546	548	20,720
Motels	4,629	2,316	435	7,380
Camping fees	191	134	10	335
Guide fees	1,121	448	65	1,635
Restaurants & bars	1,717	1,451	154	3,322
Groceries & takeout food	491	338	93	922
Gas & oil	862	904	80	1,846
Airfare	3,272	2,027	414	5,714
Other transportation	1,101	987	138	2,225
Admissions	1,079	208	31	1,319
<u>Souvenirs & other expenses</u>	<u>985</u>	<u>630</u>	<u>61</u>	<u>1,676</u>
Total in remainder of Alaska	28,074	16,988	2,031	47,093

Table 5. (continued)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Local region (in park+outside)				
Package tour (cruise, airline, etc.)**	1,812	8,516	1,285	11,614
Motels	2,922	162	730	3,814
Camping fees	4	24	35	63
Guide fees	758	17	82	856
Restaurants & bars	361	112	119	592
Groceries & takeout food	71	33	14	118
Gas & oil	123	30	8	161
Airfare	2,284	361	356	3,001
Other transportation	62	48	13	123
Admissions	88	4	12	83
<u>Souvenirs & other expenses</u>	<u>259</u>	<u>95</u>	<u>27</u>	<u>380</u>
Total local region	8,724	9,401	2,681	20,806
Percent of local region total	42%	45%	13%	100%
All of Alaska				
Package tour (cruise, airline, etc.)**	14,438	16,063	1,834	32,334
Motels	7,551	2,478	1,164	11,194
Camping fees	196	158	45	398
Guide fees	1,879	465	147	2,491
Restaurants & bars	2,077	1,563	273	3,914
Groceries & takeout food	561	371	107	1,040
Gas & oil	985	934	88	2,007
Airfare	5,556	2,388	771	8,715
Other transportation	1,163	1,034	151	2,348
Admissions	1,147	212	43	1,402
<u>Souvenirs & other expenses</u>	<u>1,244</u>	<u>724</u>	<u>88</u>	<u>2,056</u>
Total all of Alaska	36,799	26,389	4,711	67,898
Percent of Alaska total	54%	39%	7%	100%

**Remaining expenditures were not included in package tour.

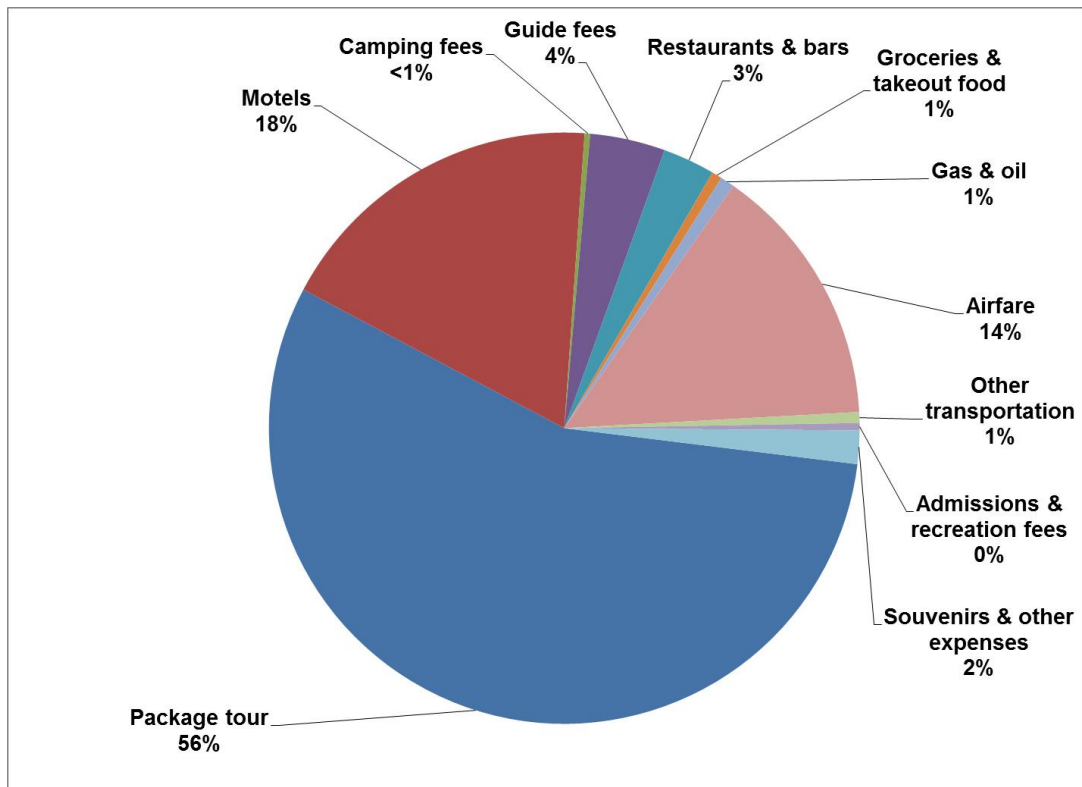


Figure 1. Katmai NPP visitor spending by category in the local region.

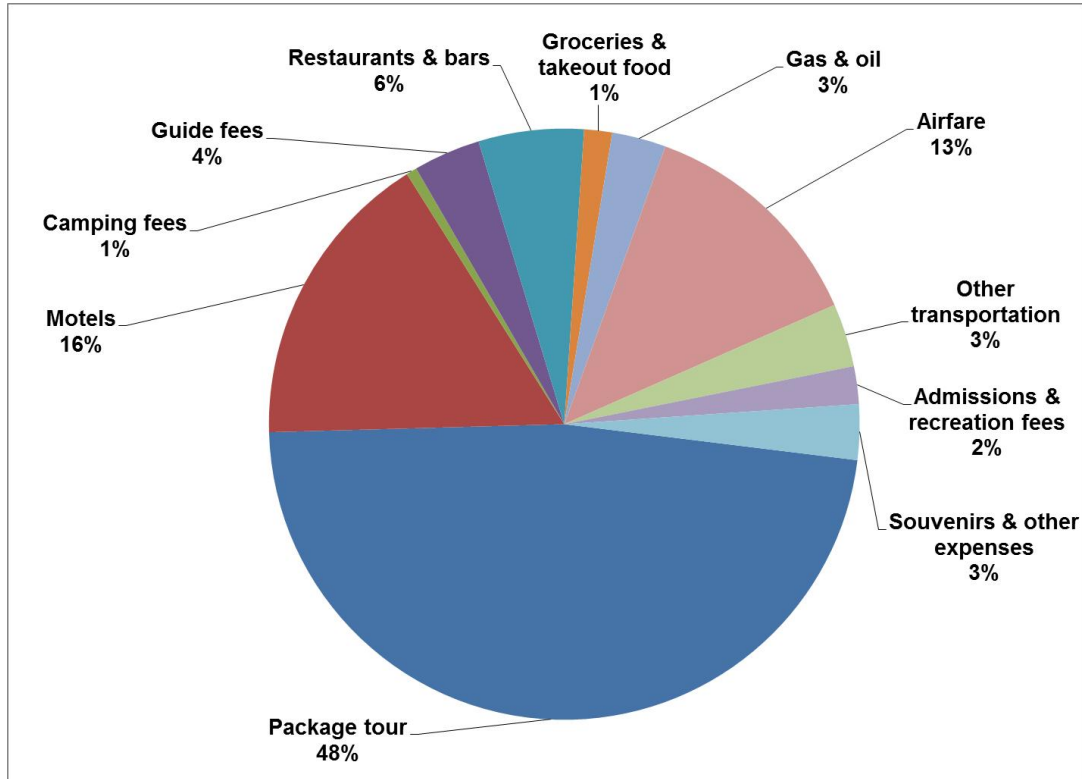


Figure 2. Katmai NPP visitor spending by category in Alaska

This report examines economic impacts at two levels: the local region and the state of Alaska. Therefore, the amount of visitor spending attributable to the park at each level has to be determined. Because some visitors would have come to the local region whether or not the park existed, not all visitor spending can be attributed to the park. Visitors who are residents of the local region would be in the region regardless of whether or not the park existed, so their spending in the local region is not attributable to the park. In addition, some non-local visitor groups did not make the trip to the local region primarily to visit Katmai NPP; only a portion of these visitors' trip expenditures in the local region can be attributed to the park. Similar reasoning applies when considering spending in Alaska as a whole to Alaska residents and non-Alaskan visitors whose primary reason for their trip was not visiting Katmai NPP.

For the local region, based on the visitor survey, 2.1% of independent day trip visitor groups were found to be residents of the local region. No package tour day trip visitor groups or overnight trip visitor groups were found to be residents of the local region. In addition, 12% of non-local independent day trip visitor groups, 8% of non-local package tour day trip visitor groups, and 6% of non-local overnight visitor groups were found to be on trips where visiting Katmai NPP was *not* the primary purpose of their trip to the local region.

For the local region, spending directly attributed to the park visit was estimated by counting all spending in the region on trips by non-locals for which the park was the primary reason for the trip to the region. If the park was not the primary trip purpose, one night of spending in the region was counted for overnight trips and half of the spending in the region was counted for day trips. With these assumptions, a total of \$20.1 million in visitor spending in the local region was attributed to the park visit (Table 6). This represented 96.8% of the \$20.8 million in overall visitor spending in the local region. Because there were so few visitors from the local region, the park was the primary purpose for most visits by non-local visitors, and relatively little was spent by visitors outside the park but within the local region, almost all spending in the local region was attributed to the park.

Table 6. Total spending in local region attributed to park visits, 2014 (thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Package tour (cruise, airline, etc.)	1,664	8,497	1,284	11,444
Motels	2,682	156	728	3,566
Camping fees	4	23	35	62
Guide fees	715	17	82	814
Restaurants & bars	339	110	118	567
Groceries & takeout food	67	32	14	113
Gas & oil	115	29	8	152
Airfare	2,163	352	353	2,868
Other transportation	60	47	13	119
Admissions	63	4	12	78
<u>Souvenirs & other expenses</u>	<u>242</u>	<u>93</u>	<u>26</u>	<u>362</u>
Total Attributed to Park	8,114	9,359	2,673	20,145
Percent of Spending Attributed to the Park	93.0%	99.6%	99.7%	96.8%
Percent of Attributed Spending	40%	46%	13%	100%

Based on the Katmai NPP visitor survey, 14.1% of independent day trip visitor groups, 9.5% of package tour day trip visitor groups, and 17.0% of overnight trip visitor groups were from Alaska. Because the visitor survey did not ask if visiting Katmai NPP was the primary reason for this trip to Alaska, determining how much of non-resident visitor spending in all of Alaska is attributable to the park requires additional assumptions. For this analysis, it was assumed that non-Alaskan visitors who spent more than half their reported time in Alaska at the park were on visits where the primary purpose of the trip was visiting the park. Using this criterion, 52% of independent day trip visitors, 38% of package tour day trip visitors, and 45% of overnight trip visitors were on trips where Katmai NPP was *not* the primary purpose of the trip to Alaska.

For the state of Alaska, spending directly attributed to park visits was estimated by counting all spending in Alaska on trips by non-Alaskans for which the park was the primary reason for the trip to Alaska. If the park was not the primary trip purpose, one night of spending in Alaska was counted for overnight trips and half of the spending in Alaska was counted for day trips. Spending by Alaskans was not counted as attributable to the park. With these assumptions, a total of \$47.8 million in visitor spending in Alaska was attributed to the park visit (Table 7). This represented 70.4% of the \$67.9 million in overall visitor spending in Alaska.

Table 7. Total spending in Alaska attributed to park visits, 2014 (thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Package tour (cruise, airline, etc.)	9,188	13,168	1,327	23,682
Motels	4,805	1,819	813	7,437
Camping fees	125	116	34	274
Guide fees	1,267	344	100	1,711
Restaurants & bars	1,349	1,159	171	2,679
Groceries & takeout food	364	274	58	695
Gas & oil	634	686	46	1,365
Airfare	3,777	1,779	474	6,029
Other transportation	749	763	79	1,591
Admissions	731	156	25	913
<u>Souvenirs & other expenses</u>	<u>810</u>	<u>541</u>	<u>51</u>	<u>1,402</u>
Total Attributed to Park	23,799	20,803	3,177	47,779
Percent of Spending Attributed to the Park	64.7%	78.8%	67.4%	70.4%
Percent of Attributed Spending	50%	44%	7%	100%

Economic Impacts of Visitor Spending

The expenditures of visitors to Katmai NPP generate economic activity in the local economy as well as the economy of Alaska as a whole. An economy is a complex web of interacting consumers and producers in which goods produced by one sector of the economy become inputs to another sector, and goods produced by that sector can become inputs to yet other sectors (Thomas et al. 2014). A change in the final demand for a good or service can generate a ripple effect throughout an economy as businesses purchase inputs from one another.

Economic impacts are described by four metrics (Thomas et al. 2014):

- **Output** represents the value of industry production. It is the sum of all intermediate sales (business to business) and final demand (sales to consumers and exports).
- **Employment** represents the change in the number of jobs generated in a region resulting from a change in regional output. Employment is expressed on an annual basis including both full and part time jobs.
- **Labor income** includes employee wages and salaries, including the income of sole proprietors, and payroll benefits.
- **Value added** measures contribution to Gross Domestic Product (GDP). Value added is equal to the difference between the amount an industry sells a product for and the production cost of the product.

Economic impacts resulting from purchases of goods and services by park visitors directly from local businesses represent the *direct* effects on the economy. To provide goods and services to visitors, local businesses must purchase goods and services from suppliers, who also must purchase inputs from other industries. These purchases are the *indirect* effects of visitor spending. In addition, employees of businesses and input suppliers directly affected by visitor spending use their income to purchase goods and services in the local economy, generating *induced* effects. Together indirect and induced effects are called *secondary* effects. The total economic effect of visitor spending is equal to the sum of direct and secondary effects. Economic input-output models capture these complex interactions between producers and consumers in an economy and describe the secondary effects of visitor spending through regional economic multipliers.

The economic impacts of Katmai NPP visitor spending were estimated for two regions: the local region—Lake and Peninsula, Kodiak Island, Kenai Peninsula, and Bristol Bay boroughs in southern Alaska—and the state of Alaska as a whole. The impacts were estimated by applying visitor spending to a set of economic ratios and multipliers representing the economy.⁵ Economic

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.

ratios and multipliers for the local region and Alaska came from IMPLAN (version 3.1, MIG, Inc. 2013) with 2013 data.⁶

Expenditure categories used in the Katmai NPP visitor survey were assigned to economic sectors within IMPLAN (see Appendix B). The “package tour” category in the visitor survey was too general for assignment to a single IMPLAN economic sector so expenditures reported within that category were proportionately reallocated to all remaining expenditure categories except “souvenirs & other expenses” based on the spending profiles of visitors that did not report package tour expenditures (see Appendix E).

Not all visitor spending counted as direct output to the region (or Alaska). The amount a visitor spends for a retail good is made up of the cost of the good from the producer, a markup by a wholesaler, and a markup by a retailer. To account for mark-ups by retailers and wholesalers, retail and wholesale margins within IMPLAN were applied to visitor spending for the grocery & takeout food, gas & oil, and souvenirs & other expenses sectors. In addition, regional purchase coefficients within IMPLAN were used to account for the proportion of demand within the region (or Alaska) satisfied by imports into the region (or Alaska).

The tourism output multiplier for the local region was 1.48. Every dollar of direct output to visitors generated another \$0.48 in secondary output through indirect and induced effects. The tourism multiplier for Alaska was 1.46.

The economic impacts to the local region and Alaska are presented in two ways: (1) based on all visitor spending and (2) based only on visitor spending attributable to the park. The first estimate—including all visitor spending—shows the overall contribution park visitors make to the local region (or Alaska). The second estimate—including only visitor spending attributable to the park—shows the impact or contribution the park makes to the economy of the local region (or Alaska).

Impacts of All Visitor Spending

Using all visitor spending and including direct and secondary effects, the \$20.8 million spent by park visitors in the local region generated \$28.8 million in output, which supported 255 jobs in the local region (Table 8). These jobs paid \$7.6 million in labor income, which was part of \$13.6 million in value added to the region.⁷

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

⁷ 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 8. Impacts of all visitor spending on the local region economy, 2014

Sector/Expenditure category	Output (thousands of dollars)	Jobs	Labor Income (thousands of dollars)	Value Added (thousands of dollars)
Direct Effects				
Motels	5,691	78	1,643	2,867
Camping fees	121	1	62	83
Restaurants & bars	2,964	65	1,322	1,415
Groceries & takeout food	150	2	78	99
Gas & oil	22	0	12	14
Airfare	8,059	24	1,483	2,951
Other transportation	1,050	4	334	763
Admission & fees	1,319	25	459	641
<u>Souvenirs & other expenses</u>	<u>99</u>	<u>1</u>	<u>50</u>	<u>61</u>
Total Direct Effects	19,476	202	5,442	8,894
<u>Secondary Effects</u>	<u>9,342</u>	<u>53</u>	<u>2,164</u>	<u>4,718</u>
Total Effects	28,818	255	7,606	13,612

Note: Impacts of \$20.8 million in visitor spending in the park plus in the region outside the park reported in Table 5. Totals may not equal sum of individual categories due to rounding.

Using all visitor spending and including direct and secondary effects, the \$67.9 million spent by park visitors in all of Alaska generated \$88.5 million in output, which supported 852 jobs in Alaska (Table 9). These jobs paid \$24.5 million in labor income, which was part of \$43.5 million in value added to the region.

Table 9. Impacts of all visitor spending on the Alaska economy, 2014

Sector/Expenditure category	Output (thousands of dollars)	Jobs	Labor Income (thousands of dollars)	Value Added (thousands of dollars)
Direct Effects				
Motels	18,499	274	5,744	6,774
Camping fees	536	8	270	351
Restaurants & bars	8,261	182	3,403	3,943
Groceries & takeout food	584	9	305	384
Gas & oil	340	5	182	211
Airfare	19,898	56	3,684	10,024
Other transportation	5,216	19	1,657	3,790
Admission & fees	6,667	126	2,319	3,241
<u>Souvenirs & other expenses</u>	<u>512</u>	<u>6</u>	<u>259</u>	<u>332</u>
Total Direct Effects	60,513	685	17,825	29,051
<u>Secondary Effects</u>	<u>27,977</u>	<u>168</u>	<u>6,705</u>	<u>14,468</u>
Total Effects	88,490	852	24,530	43,519

Note: Impacts of \$67.9 million in visitor spending in all of Alaska reported in Table 5. Totals may not equal sum of individual categories due to rounding.

Value added is the preferred measure of the contribution of visitors to an 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 also are comparable to Gross Regional Product, the broadest measure of total economic activity in a region. The largest direct effects of visitor spending at Katmai NPP are in the airfare and motels sectors.

Impacts of Visitor Spending Attributed to the Park

Using only visitor spending attributable to the park by including only non-local visitors and only some spending on trips where the primary trip purpose was not to visit Katmai NPP reduced the overall impacts (see spending inclusion assumptions in previous section). For the local region, overall impacts were reduced by about 3% (Table 10). Including direct and secondary effects, the \$20.1 million spent by park visitors and attributable to the park generated \$27.9 million in output, which supported 246 jobs in the local region. These jobs paid \$7.4 million in labor income, which was part of \$13.2 million in value added to the region.

Table 10. Economic impacts of visitor spending attributed to the park on local region economy, 2014

Sector/Expenditure category	Output (thousands of dollars)	Jobs	Labor Income (thousands of dollars)	Value Added (thousands of dollars)
Direct Effects				
Motels	5,355	74	1,546	2,698
Camping fees	118	1	60	81
Restaurants & bars	2,934	65	1,308	1,400
Groceries & takeout food	148	2	77	97
Gas & oil	21	0	11	13
Airfare	7,887	24	1,451	2,888
Other transportation	1,045	4	332	760
Admission & fees	1,257	24	437	611
<u>Souvenirs & other expenses</u>	<u>94</u>	<u>1</u>	<u>48</u>	<u>58</u>
Total Direct Effects	18,859	195	5,271	8,607
<u>Secondary Effects</u>	<u>9,058</u>	<u>51</u>	<u>2,095</u>	<u>4,574</u>
Total Effects	27,917	246	7,365	13,181

Note: Impacts of \$20.1 million in visitor spending attributed to park reported in Table 6. Totals may not equal sum of individual categories due to rounding.

For Alaska as a whole, overall impacts were reduced by about 30% (Table 11). Including direct and secondary effects, the \$47.8 million spent by park visitors and attributable to the park generated \$62.5 million in output, which supported 595 jobs in Alaska. These jobs paid \$17.3 million in labor income, which was part of \$30.6 million in value added to Alaska.

Table 11. Economic impacts of visitor spending attributed to the park on the Alaska economy, 2014

Sector/Expenditure category	Output (thousands of dollars)	Jobs	Labor Income (thousands of dollars)	Value Added (thousands of dollars)
Direct Effects				
Motels	13,335	183	3,850	6,718
Camping fees	366	5	184	246
Restaurants & bars	6,138	135	2,501	2,930
Groceries & takeout food	417	6	218	274
Gas & oil	231	3	123	143
Airfare	13,596	41	2,737	4,978
Other transportation	3,742	14	1,189	2,183
Admission & fees	4,491	85	1,562	2,719
<u>Souvenirs & other expenses</u>	<u>358</u>	<u>4</u>	<u>182</u>	<u>226</u>
Total Direct Effects	42,673	478	12,546	20,418
<u>Secondary Effects</u>	<u>19,807</u>	<u>118</u>	<u>4,726</u>	<u>10,230</u>
Total Effects	62,480	595	17,273	30,648

Note: Impacts of \$47.8 million in visitor spending attributed to park reported in Table 7. Totals may not equal sum of individual categories due to rounding.

Study Limitations and Errors

The accuracy of the economic impact estimates rests on the accuracy of three inputs: visits, spending averages, and multipliers. Accurate visitation measurement at remote, undeveloped parks with multiple access points and modes of transportation for access, such as Katmai NPP, is difficult. Previous researchers (Fay and Christensen 2010) suggested that the standard NPS methodology for counting recreation visits to Katmai NPP (NPS 2014) has flaws and suggested adjustments based on the park's Commercial Use Authorization database. However, after consulting with Katmai NPP staff, the standard NPS Visitor Use Statistics database (NPS 2014) was used as the source of visitation numbers for this analysis.

Spending averages were derived from the 2014 Katmai NPP visitor survey data (Strawn et al. 2015). Estimates from the survey are subject to sampling errors, measurement errors, and potential seasonal biases. The overall spending average is subject to a sampling error of 9%. The sample only covers visitors from June through September. To extrapolate to annual totals, it was assumed that this sample represented visitors throughout the year.

Spending averages are sensitive to the accuracy with which survey respondents are able to recall expenses and assign them to appropriate categories. Expenditure assignment for Katmai NPP may have been challenging for respondents because they were asked to recall and assign expenses in three geographic areas: inside the park, outside the park but in a mapped local region, and in Alaska but outside the local region.

Spending averages also are sensitive to decisions about outliers and treatment of missing data. In order to estimate spending averages, incomplete spending data were filled with zeros. Visitor groups spending more than 90 nights in Alaska on this trip (2 cases), or spending more than \$23,239 (the mean plus two times the standard deviation of the mean for spending, 17 cases) were omitted from the analysis.

Visitor spending totals also are sensitive to the treatment of reported expenditures on "package tours." Although respondents were prompted that package tours included "cruise, airline, etc.," it is unknown exactly what goods or services were included in each package tour. For economic impact estimation, this analysis assigned package tour expenses to other trip expenditure categories in the same proportion as expenses in those categories were reported by visitors who did not report package tour expenditures.

Multipliers came from an input-output model of the local economy, IMPLAN (MIG, Inc. 2013). 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 536 sectors based on the NAICS system (see Appendix B, Table B2). The most recent local IMPLAN dataset available for this analysis was 2013.

Sorting out how much spending to attribute to the park when the park is not the primary reason for the trip to the local region (or Alaska) is somewhat subjective. Only 1% of visitors were from the local region, and 14% of visitors were from Alaska. Their spending was not attributed to the park. Additionally, 9% of visitor groups in the visitor survey reported not making the trip to the

local region primarily to visit the park. The survey did not ask about the primary purpose of the trip to Alaska, so assumptions were made about which trips were primary-purpose trips (see Visitor Spending section, p. 13). Adjustments for trips by residents and non-primary purpose trips have a significant effect on the overall spending and impact estimates.

The accuracy of spending and economic impact estimates also is affected by inconsistencies between the "local region" mapped in the questionnaire and the four-borough local region for which IMPLAN data was available (see Appendix D). The map in the questionnaire included only portions of the four boroughs, whereas the IMPLAN region included the entire boroughs. Economic linkages that affect multipliers and thus impact results may exist outside the mapped area but within the four-borough region.

Literature Cited

- BLS (U.S. Bureau of Labor Statistics). 2014. Local Area Unemployment Statistics. <http://www.bls.gov/lau/>. Data retrieved on March 17, 2015.
- Fay, G., and N. Christensen. 2010. Katmai National Park and Preserve Economic Significance Analysis and Model Documentation. http://www.npca.org/assets/pdf/Katmai_Economic_Report.pdf. Retrieved on April 8, 2015.
- MIG, Inc. 2013. IMPLAN Professional Version 3.1 with 2013 data. Minnesota IMPLAN Group: Huntersville, NC.
- NPS (National Park Service). 2014. Visitor Use Statistics database. <https://irma.nps.gov/Stats/>. Data retrieved on March 25, 2015.
- Strawn, M., C. Jette, and Y. Le, 2015. Katmai National Park and Preserve Visitor Study: Summer 2014. Natural Resource Report NPS/NRSS/EQD/NRR—2015/XXX. National Park Service, Fort Collins, Colorado.
- Thomas, C.C., C. Huber, and L. Koontz. 2014. 2012 National Park Visitor Spending Effects: Economic Contributions to Local Communities, States, and the Nation. Natural Resource Report NPS/NRSS/EQD/NRR—2014/765. National Park Service, Fort Collins, Colorado.
- USCB (U.S. Census Bureau). 2014. 2009-2013 American Community Survey 5-Year Estimates. <http://www.factfinder2.census.gov/>. Data retrieved on March 17, 2015.

Appendix A: Glossary

Term	Definition
Direct effects	Changes in output, labor income, and jobs in businesses that directly receive 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	<p>Converts various economic measures from one to another. For example, direct output can be used to estimate direct effects on jobs, labor income, and value added by applying economic ratios. That is:</p> <ul style="list-style-type: none"> • Direct jobs = direct output * jobs to output ratio • Direct labor income = direct output * labor income to output ratio • Direct value added = direct output * value added to output ratio.
Indirect effects	Changes in output, labor income, and jobs in industries that supply goods and services to the businesses that sell directly to visitors, i.e., businesses in the supply chain. For example, linen suppliers benefit from visitor spending at motels.
Induced effects	<p>Changes in economic activity in the region resulting from household spending of income earned through a direct or indirect effect of 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 include induced effects resulting from local/state/federal government spending.</p>
Intermediate inputs	Purchases of goods and services, such as energy, materials, and purchased services, that are used for the production of other goods and services rather than for final consumption.
Jobs	The number of jobs in the region supported by 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.

Term	Definition
Output	The value of industry production. Output is the sum of all intermediate sales (business to business) and final demand (sales to consumers and exports).
Regional purchase coefficient (RPC)	The proportion of demand within a region supplied by producers within that region.
Retail margin	The markup to the price of a product when a product is sold through a retail trade activity. Retail margin is calculated as sales receipts minus the cost of goods sold.
Secondary effects	The sum of indirect and induced effects. Changes in economic activity in a region that result from the re-circulation of money spent by visitors.
Total effects	<ul style="list-style-type: none"> • Sum of direct, indirect and induced effects. • Direct effects accrue largely to tourism-related businesses in the area. • Indirect effects accrue to a broader set of businesses that serve these tourism businesses. • Induced effects are distributed widely across a variety of local businesses.
Value added	The difference between an industry's or an establishment's total output and the cost of its intermediate inputs. Value added is equal to the difference between the amount an industry sells a product for and the production cost of the product. Value added consists of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus. Value added measures contribution to Gross Domestic Product (GDP).
Visitor group	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 questionnaire.
Wholesale margin	The markup to the price of a product when a product is sold through wholesale trade. Wholesale margin is calculated as wholesale sales minus the cost of the goods sold.

Appendix B: Expenditure Sector Assignments

Table B1 shows expenditure categories visitors were asked to estimate in the Katmai NPP visitor questionnaire. Some expenditure categories were combined and renamed for economic impact analysis.

Table B1. Expenditure categories in Katmai NPP questionnaire and economic impact model sector assignment

Questionnaire expenditure categories	In Katmai NPP	Area outside (on the map)	In Alaska (outside the map)	Economic impact model sector
Package tour (cruise, airline, etc.)*	X	X	X	Multiple sectors (see Appendix E)
Lodge/hotel/motel/cabins, B&B, etc.		X	X	Motels
Camping fees and charges	X	X	X	Camping fees
Guide fees and charges	X	X	X	Admissions & fees
Restaurants and bars	X	X	X	Restaurants & bars
Groceries and takeout food	X	X	X	Groceries & takeout food
Gas and oil (auto, RV, boat, etc.)	X	X	X	Gas & oil
Airfare	X	X	X	Airfare
Other transportation NOT including airfare	X	X	X	Local transportation
Admission, recreation, entertainment fees	X	X	X	Admissions & fees
All other purchases (souvenirs, books, postcards, sporting goods, clothing, donations, etc.)	X	X	X	Souvenirs & other expenses

X = category included in questionnaire.

*Remaining expenditures were not included in package tour.

Economic sector names correspond to similar sector names and numbers in IMPLAN (Table B2). IMPLAN sectors also correspond to 2012 North American Industry Classification System (NAICS) sectors.

Table B2. Economic impact model sector correspondence to IMPLAN and 2012 NAICS sectors

Economic impact model sector	IMPLAN		2012 NAICS
	No.	Name	
Motels	499	Hotels and motels, including casino hotels	721110
Camping fees	500	Other accommodations	7211-3
Restaurants & bars	501	Full service restaurants	722511
Groceries & takeout food	400	Retail - Food and beverage stores	445
Gas & oil	402	Retail - Gasoline stores	447
Airfare	408	Air transportation	481
Local transportation	414	Scenic and sightseeing transportation and support activities for transportation	487-8
Admissions & fees	496	Other amusement and recreation industries	71392-9
Souvenirs & other expenses	405	Retail – General merchandise stores	452

Source: IMPLAN (MIG, Inc. 2013).

Appendix C: Economic Ratios and Multipliers

Table C1 shows the economic ratios and multipliers for the local region. Table C2 shows the economic ratios and multipliers for Alaska as a whole.

Table C1. Economic ratios and multipliers for selected tourism-related sectors, Katmai NPP local region, 2014

Sector	Direct effects			Total effects				
	Jobs/ \$MM output	Income/ output	Value added/ output	Output I	Output SAM	Jobs/ \$MM output	Income/ output	Value added/ output
Motels	14.17	0.29	0.51	1.27	1.42	17.50	0.41	0.72
Camping fees	12.70	0.51	0.69	1.16	1.38	15.68	0.62	0.90
Restaurants & bars	22.50	0.45	0.48	1.23	1.42	25.64	0.55	0.71
Groceries & takeout food	14.97	0.52	0.65	1.23	1.47	18.26	0.64	0.92
Gas & oil	14.36	0.53	0.61	1.25	1.49	17.92	0.66	0.90
Airfare	3.09	0.18	0.37	1.47	1.57	5.32	0.30	0.63
Local transportation	3.77	0.32	0.73	1.20	1.35	5.94	0.42	0.96
Admission & fees	19.45	0.35	0.49	1.28	1.43	22.57	0.46	0.74
Souvenirs & other expenses	14.51	0.50	0.61	1.28	1.51	18.13	0.64	0.91

Source: IMPLAN (MIG, Inc. 2013).

Explanation of table

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

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

Income/output is the proportion of output going to wages, salaries, and employee benefits.

Value added/output is the proportion of output that is value added.

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

Output I multiplier = (direct + indirect output) / direct output.

Output SAM multiplier = (direct + indirect + induced output) / direct output.

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

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

Value added/output = total value added (direct + indirect + induced) per \$ of direct output.

Using the Motels sector row to illustrate

Direct Effects: Every million dollars in Motels sector output (i.e., short-term lodging room rentals) creates 14.2 jobs in the Motels sector. Fifty-one percent of Motels sector output is value added, including 29% that goes to wages and salaries of motel employees. That means 49% of Motels sector output goes to purchase inputs by motels (e.g., linens, cleaning supplies). The

wage and salary income creates the induced effects, and the 49% of output spent on purchases by motels starts the rounds of indirect effects.

Multiplier effects: There is an additional 27 cents of indirect output in the region for every dollar of direct Motels sector output (type I output multiplier = 1.27). Total secondary output are 42 cents per dollar of direct output, which means 27 cents in indirect effects and 15 cents in induced effects. An additional 3.3 jobs are created from secondary effects of each million dollars in Motels sector output (17.5 total jobs – 14.2 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 Motels sector output are 12% (41%-29%), and the secondary effects on value added for each dollar of Motels sector output are 21% (72%-51%). Including secondary effects, every million dollars of Motels sector output in the region yields \$1.42 million in output, \$410,000 in income, and \$720,000 in value added.

Table C2. Economic ratios and multipliers for selected tourism-related sectors, Alaska, 2014

Sector	Direct effects			Total effects				
	Jobs/ \$MM output	Income/ output	Value added/ output	Output I	Output SAM	Jobs/ \$MM output	Income/ output	Value added/ output
Motels	12.90	0.36	0.55	1.38	1.65	17.18	0.57	0.93
Camping fees	12.61	0.52	0.70	1.26	1.59	16.45	0.71	1.05
Restaurants & bars	19.85	0.51	0.54	1.33	1.65	23.85	0.72	0.95
Groceries & takeout food	14.88	0.52	0.65	1.33	1.67	19.08	0.74	1.06
Gas & oil	13.77	0.55	0.63	1.34	1.70	18.26	0.77	1.06
Airfare	2.99	0.21	0.39	1.59	1.76	5.92	0.39	0.82
Local transportation	3.85	0.31	0.73	1.26	1.48	6.54	0.47	1.04
Admission & fees	18.27	0.39	0.52	1.39	1.66	22.42	0.59	0.93
Souvenirs & other expenses	14.35	0.50	0.62	1.39	1.73	18.82	0.75	1.06

Source: IMPLAN (MIG, Inc. 2013).

Appendix D: Maps of Local Region in Questionnaire and Four-borough IMPLAN Region

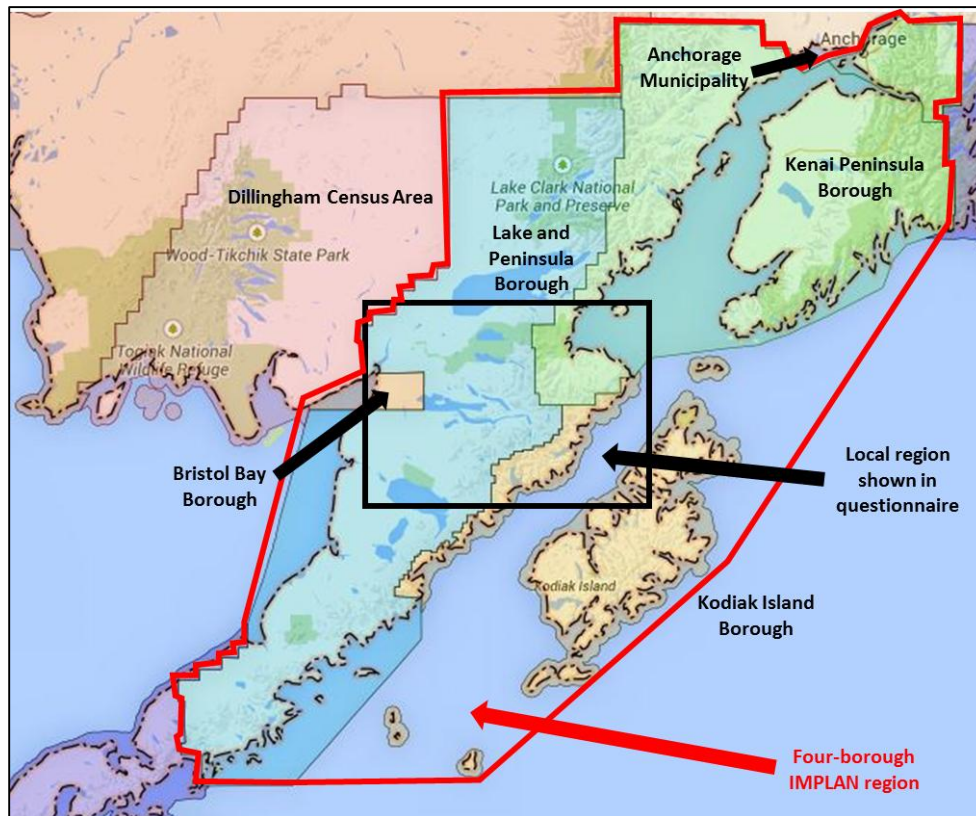


Figure D1. Map of local region shown in questionnaire versus four-borough local region from IMPLAN.

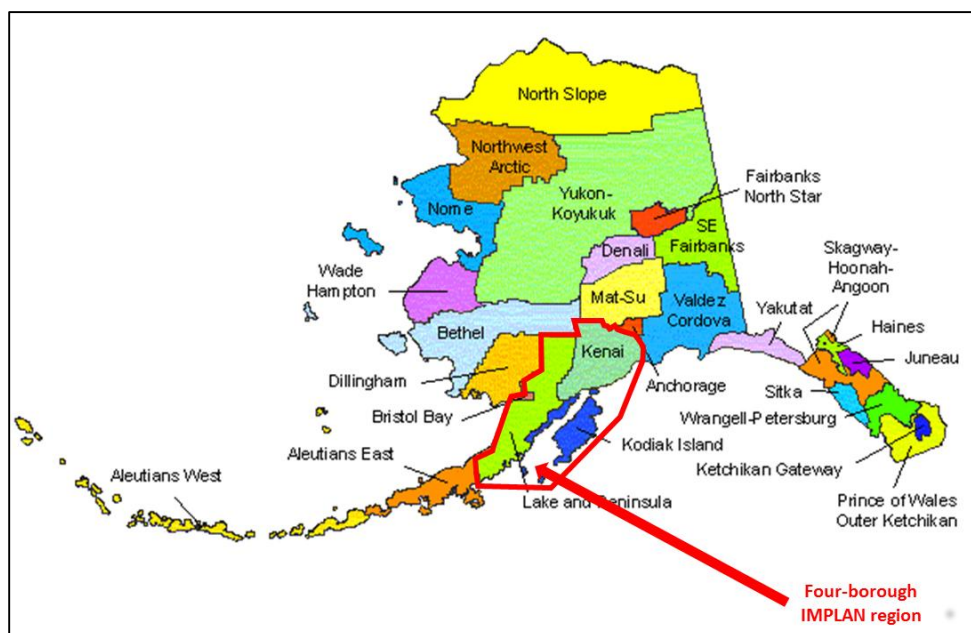


Figure D2. Map of local region's location in Alaska.

Appendix E: Allocation of "Package tour" Expenditures

The "package tour" category in the visitor survey was too general for assignment to IMPLAN economic sectors so expenditures reported within that category were proportionately reallocated to all remaining expenditure categories except "souvenirs & other expenses" based on the spending profile of visitors that did not report package expenses (Tables E1 to E4).

Table E1. Total visitor spending in local region with package tour expenditures reallocated, 2014
(thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Motels	4,044	314	1,502	5,861
Camping fees	6	48	71	125
Guide fees	932	17	142	1,090
Restaurants & bars	420	2,415	194	3,029
Groceries & takeout food	83	432	27	542
Gas & oil	132	58	15	206
Airfare	2,686	4,883	662	8,231
Other transportation	71	985	20	1,077
Admissions	91	154	20	265
<u>Souvenirs & other expenses</u>	<u>259</u>	<u>95</u>	<u>27</u>	<u>380</u>
Total Attributed to Park	8,724	9,401	2,681	20,806
Percent of Total Spending	42%	45%	13%	100%

Table E2. Total visitor spending in Alaska with package tour expenditures reallocated, 2014
(thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Motels	13,292	5,098	2,103	20,493
Camping fees	224	219	85	527
Guide fees	2,959	987	238	4,185
Restaurants & bars	3,230	4,813	399	8,442
Groceries & takeout food	887	1,066	160	2,112
Gas & oil	1,621	1,435	122	3,178
Airfare	8,980	8,668	1,245	18,894
Other transportation	2,226	2,911	212	5,348
Admissions	2,135	468	60	2,663
<u>Souvenirs & other expenses</u>	<u>1,244</u>	<u>724</u>	<u>88</u>	<u>2,056</u>
Total Attributed to Park	36,799	26,389	4,711	67,898
Percent of Total Spending	54%	39%	7%	100%

Table E3. Total spending in local region attributed to park visits with package tour expenditures reallocated, 2014 (thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Motels	3,712	302	1,501	5,515
Camping fees	6	46	71	122
Guide fees	875	17	142	1,033
Restaurants & bars	393	2,412	194	2,998
Groceries & takeout food	78	430	27	535
Gas & oil	124	56	15	194
Airfare	2,532	4,866	657	8,055
Other transportation	68	984	20	1,072
Admissions	84	154	20	258
<u>Souvenirs & other expenses</u>	<u>242</u>	<u>93</u>	<u>26</u>	<u>362</u>
Total Attributed to Park	8,114	9,359	2,673	20,145
Percent of Spending Attributed to the Park	93.0%	99.6%	99.7%	96.8%
Percent of Attributed Spending	40%	46%	13%	100%

Table E4. Total spending in Alaska attributed to park visits with package tour expenditures reallocated, 2014 (thousands of dollars)

Expenditures	Segment			All visitors
	Independent day trip	Package tour day trip	Overnight trip	
Motels	8,458	3,742	1,534	13,734
Camping fees	142	160	66	369
Guide fees	1,954	727	166	2,847
Restaurants & bars	2,082	3,933	257	6,272
Groceries & takeout food	571	848	88	1,507
Gas & oil	1,039	1,054	64	2,157
Airfare	5,955	7,127	804	13,886
Other transportation	1,425	2,301	111	3,837
Admissions	1,360	370	36	1,766
<u>Souvenirs & other expenses</u>	<u>810</u>	<u>541</u>	<u>51</u>	<u>1,402</u>
Total Attributed to Park	23,799	20,803	3,177	47,779
Percent of Spending Attributed to the Park	64.7%	78.8%	67.4%	70.4%
Percent of Attributed Spending	50%	44%	7%	100%

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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National Park Service
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