NAU NORTHERN ARIZONA UNIVERSITY
The W. A. Franke College of Business

Alliance Bank Economic Policy Institute

Extending the Season at the Grand Canyon National Park North Rim

An economic contribution analysis

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The Coconino County Board of Supervisors

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Executive Summary

The importance of the North Rim of the Grand Canyon National Park to the economy of Northern Arizona and Southern Utah cannot be understated. The North Rim is a magnet for visitors in the summer months, attracting tourists from the South Rim of the Grand Canyon, Page, Fredonia, and the Arizona strip (which lies between the Grand Canyon and Utah). Visitors also come from the Southern Utah communities of Kanab and St. George. The typical visitor season at the North Rim runs from May 15th to October 15th. In mid-October, the concessionaire-operated lodging and food service operations close, and the North Rim is essentially shut down for the winter season. Local government representatives in both states, as well as local tourism businesses and transportation providers have long argued for an extended visitor season at the North Rim. This is partly due to the economic activity that would benefit the surrounding rural communities whose economies are largely dependent on the tourism industry.

This study estimates that **extending the North Rim visitor season by an additional four weeks** (two weeks in both May and October) **would result in $14.2 million in economic activity to the regional economy and support 183 jobs.** This illustrates the significant value of expanding the visitor season to the rural communities as the regional economy is predominately supported by the tourism industry.

The purpose of this study is to examine the economic contribution of keeping the North Rim open to visitors from May 1st through October 30th, adding four weeks to the typical tourist season. The study focuses only on the economic contribution of an extra one month of operations and does not consider any further extension of the overall season. The additional cost associated with keeping the North Rim open and running for is also not accounted for.

The results of this study detail the estimated impact of the tourist season extension and are as follows:

- The extended season results in an estimated additional 37,719 visitors.
- The additional visitors have daily direct expenditures of $231,439, and bi-weekly average direct expenditures of $3.5 million.
- Payroll increases by $569,000 and maintenance/operations costs increase by $93,000 for the National Park Service and concessionaire.
- Additional travel expenditures (single-day expenditures) generated by visitors traveling through Northern Arizona and Southern Utah to the North Rim, categorized by visitor origin:
    - South Rim/Cameron/Marble Canyon region: $1.1 million
    - Page: $646,000
    - Fredonia/Jacob Lake: $601,000
    - Kanab (Kane County, Utah): $661,000
    - St. George (Washington County, Utah): $814,000

- When all expenditures are aggregated for the extended season, it is estimated that the extended season will generate $10,282,000 in direct expenditures to the region.
- The anticipated visitor contribution to the regional economy ($10.3 million reduced to $9.3 million because of leakage) is modeled in Implan resulting in secondary (indirect and induced) impacts of $4.9 million, supporting 43 additional jobs.
- Arizona communities garnered $2.3 million in economic contribution from visitors, with the South Rim/Cameron/Marble Canyon region ($962,000), accounting for the largest share followed by Page ($844,000), and Fredonia/Jacob Lake ($535,000) for the extended season and expenditures, supporting an additional 31 jobs.
- Visitors traveling through Kane County, Utah generate $825,000 in economic contribution, while visitors traveling through Washington County generate $1 million in economic contribution, supporting an additional 14 jobs overall in Utah.

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Introduction

The North Rim of Grand Canyon National Park, hereafter referred to as North Rim, is that section of the Grand Canyon National Park (GCNP) located north of the Colorado River. The North Rim was visited by 399,565 visitors in 2017, accounting for 6.4% of overall visits to GCNP. Visits to the North Rim are generally limited to the period of May to October, when the lodging facilities run by concessionaire Forever Resorts are open. Recreation visits after the season are limited by highway access, as HWY 67 from Jacob Lake to the North Rim is often closed in the winter. Forest Road 22 from HWY67 to Fredonia, Arizona is used as an alternative route but is not recommended in winter as the road is not maintained.

The North Rim lodges and tourist amenities (park store, campground etc.) are very important to the rural economy of the Arizona strip, providing seasonal employment to the communities of Jacob Lake, Fredonia and Page. Visitors to the North Rim also have spillover economic effects to Washington and Kane counties in Utah, as visitors driving to the park from southern Utah pass through these counties to get to the park.

The focus of this study is to estimate the economic contribution to the multi-county region of extending the operating season at the North Rim. Increased tourist expenditures in the park and in the region from the extended season will have positive impacts on communities that are dependent on tourist expenditures and have little or no opportunity for local employment outside of the regular tourist season.

This analysis was initially requested by Coconino County Supervisor, Lena Fowler, who was concerned about the general lack of employment opportunities in the northern portion of Coconino County, including Fredonia, Jacob Lake and Page. The topic of extending the North Rim season is not new, it has been discussed by the communities in Northern Arizona and Southern Utah for many years. Supervisor Fowler felt that understanding and measuring the economic contribution of the North Rim on the region would be beneficial in moving the discussion forward.

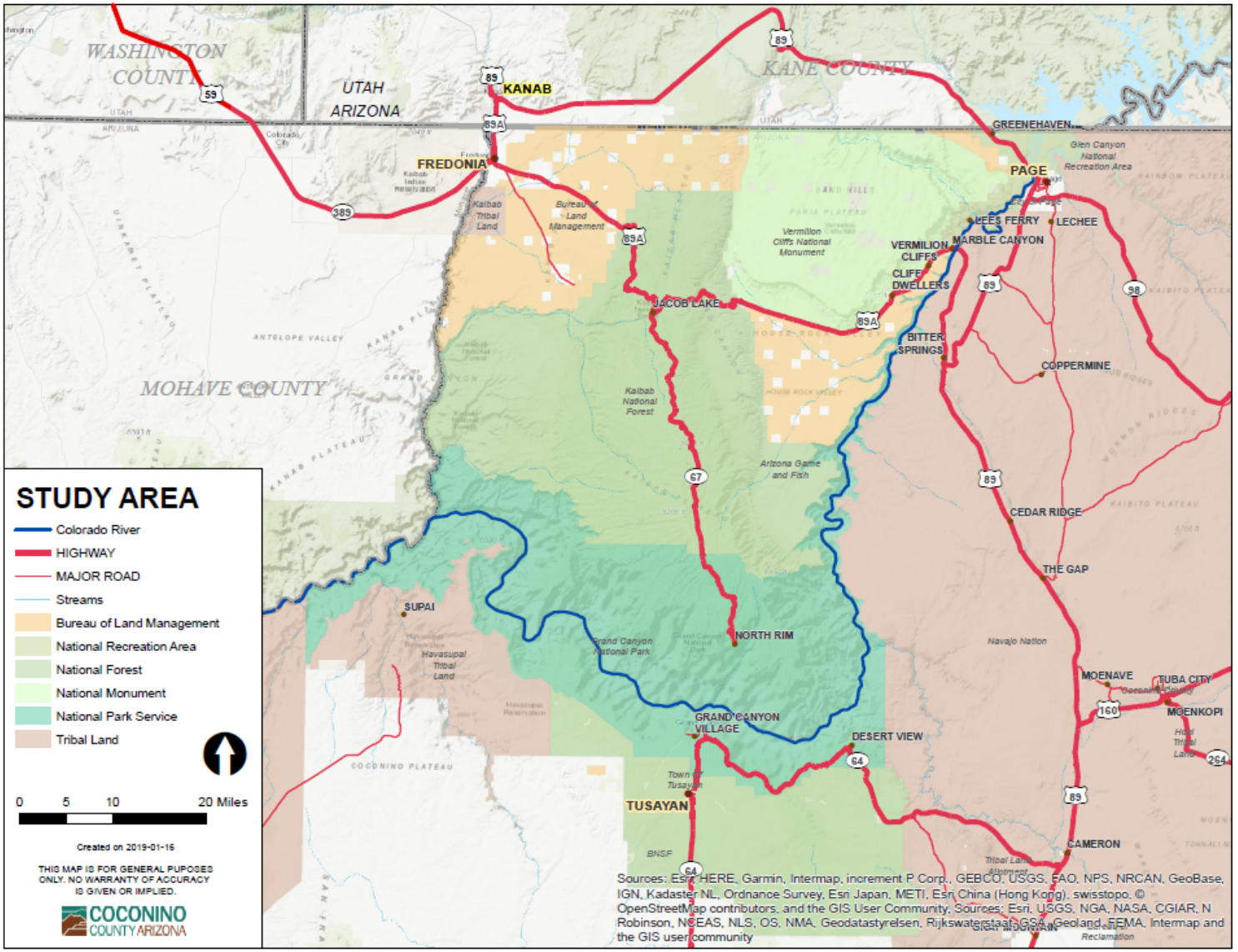
A number of meetings were held with Supervisor Fowler, Coconino County Manager Jimmy Jayne, and other County services to discuss the need for and scope of the analysis. After that, the County reached out to the National Park Service and the Superintendent of Grand Canyon National Park and a series of meetings were held in Kanab. The meetings were attended by the Kane County Commissioners, the regional tourism industry (including Forever Resorts, the Park Service concessionaire at the North Rim), and interested citizens from both Arizona and Utah. The meetings discussed the benefits and possible issues with keeping the North Rim open for the extended season and potentially longer.

Methods

The main thrust of this report is to determine the economic contribution to the region that would result from facilities and services at the North Rim of the GCNP staying open for an extra month. The North Rim of GCNP acts as an attraction bringing visitors to a region that has very little economic activity outside of tourism and mining. Tourist related employment at the North Rim includes temporary employees at the lodge and other facilities serviced by the concessionaire and National Park Service (NPS) employees stationed at the North Rim. The economic impact of tourist spending at the North Rim is not only felt in the park but also in the neighboring communities of Page, Marble Canyon, Jacob Lake, and Fredonia in Arizona and in Kanab in Kane County and in St. George in Washington County in Utah. The communities spread through the region provide services such as food, lodging and gasoline to park visitors, strengthening rural economies and providing seasonal employment.

To model the economic impact of an extended season at GCNP, estimates of tourist expenditures at the North Rim were developed by disaggregating park visitor expenditure data from the NPS Visitor Spending Effects 2017 model. The disaggregated data were then applied to a visitor population estimate for the extra four weeks that the North Rim would be open. These expenditures were then used as inputs in Implan, a national input/output model used to estimate economic contributions at the county level. The Implan model allows the basic unit of analysis, the county, to be disaggregated by using local retail purchase coefficient (RPC's) at the zip code level. In total, 7 zip code regions were aggregated to form the basis for analysis, see Figure 1. To capture the localized impact, the model region was specified by zip codes to cover the North Rim to the Utah border and west including Jacob Lake, Marble Canyon and Page. The two adjacent Utah Counties (Kane & Washington) were included in the analysis to model the contribution of Kanab and St. George in the extended season analysis. A Multi Regional Analysis (MRIO) was run in Implan that indicates how the potential extra tourist expenditures would be spread throughout the region.

Figure 1. Study area, Arizona and Utah (Source: Coconino County GIS)



The first step in determining the economic impact of an extended season is to estimate the number of additional visitors that will visit during the 4 week extension which will consist of 2 week extensions in May and October. Historic visits for 2018, obtained from the monthly year-to-date report found on the National Park Service Visitor Use Site. The visits are listed in the Table 1, below.

Table 1. North Rim Recreation Visits 2017

	North Rim
May 2018	38,544
June 2018	60,852
July 2018	61,512
August 2018	54,256
September 2018	50,704
October 2018	40,435
Total Visits	306,303

To be conservative, our estimate of additional visitors (see Table 2) for the extended season was obtained by calculating the average daily visitation for May and October. Then, the daily averages were multiplied by 14 to estimate the additional visitors. This method resulted in estimates of 17,987 extra visitors in May and 19,732 extra visitors in October for a total of 37,719 extra visitor for the extended season.

Table 2. Additional Visits Attributable to Extended Season

Additional Visitors by Month	Visitors
May 1st to May 14th	17,987
October 16th to October 30th	19,732
Total additional visitors	37,719

Estimating the economic contribution of the extra visitors requires determining the percentage of overall GCNP expenditures that are attributable to North Rim visitors. The 2017 version of the "Visitor Spending Effects - Economic Contributions of National Park Visitor Spending" has visitor spending estimates for the GCNP. The NPS model estimates that visitors spent $666.9 million for services and amenities at or within 60 miles of GCNP in 2017. The largest single visitor expenditure is for Hotel/Motel (25.8%), followed by food (19.5%) and recreational services (19.0%). National park visitor expenditures follow a similar pattern to other visitors with respect to the proportion of their expenditures by categories. See Table 3.

Table 3. Grand Canyon National Park Annual Visitor Spending within 60 Miles of the Park (Visitor Spending Effects 2017)

2017 Visitor Spending	Estimated Spending	% of Spend
Camping	$11,800,000	1.8%
Gas	$36,900,000	5.5%
Groceries	$26,000,000	3.9%
Hotels	$172,000,000	25.8%
Recreation Industries	$127,000,000	19.0%
Restaurants	$130,000,000	19.5%
Retail	$88,800,000	13.3%
Transportation	$74,400,000	11.2%
Total	$666,900,000	100.0%

The visitor expenditure estimates are distributed by month based on the percent of total recreation visits for each month during the 2017. See Table 4 and Table 5.

Table 4. Grand Canyon National Park Visits by Month (NPS Visitor Use Statistics)

Total visits	2017	% of total visits
January	217,102	3.5%
February	239,154	3.8%
March	502,739	8.0%
April	590,006	9.4%
May	606,247	9.7%
June	726,916	11.6%
July	837,258	13.4%
August	745,613	11.9%
September	571,946	9.1%
October	529,825	8.5%
November	349,326	5.6%
December	338,106	5.4%
Total	6,254,238	100.0%

Table 5. Total Grand Canyon National Park Expenditures Distributed by Month 2017 (Visitor Spending Effects 2017)

Month	Camping	Gas	Groceries	Hotels	Recreation Industries	Restaurants	Retail	Transportation	Total
January	$409,611	$1,280,902	$902,532	$5,970,598	$4,408,523	$4,512,662	$3,082,495	$2,582,631	$23,149,954
February	$451,217	$1,411,008	$994,206	$6,577,058	$4,856,316	$4,971,032	$3,395,598	$2,844,960	$25,501,396
March	$948,528	$2,966,160	$2,089,977	$13,826,002	$10,208,734	$10,449,885	$7,138,076	$5,980,550	$53,607,912
April	$1,113,177	$3,481,035	$2,452,762	$16,225,963	$11,980,798	$12,263,809	$8,377,125	$7,018,672	$62,913,340
May	$1,143,819	$3,576,857	$2,520,279	$16,672,612	$12,310,591	$12,601,393	$8,607,721	$7,211,874	$64,645,145
June	$1,371,487	$4,288,804	$3,021,921	$19,991,173	$14,760,924	$15,109,607	$10,321,024	$8,647,344	$77,512,285
July	$1,579,672	$4,939,822	$3,480,633	$23,025,727	$17,001,554	$17,403,166	$11,887,701	$9,959,966	$89,278,240
August	$1,406,763	$4,399,116	$3,099,648	$20,505,365	$15,140,590	$15,498,241	$10,586,491	$8,869,763	$79,505,978
September	$1,079,102	$3,374,481	$2,377,683	$15,729,288	$11,614,067	$11,888,416	$8,120,702	$6,803,832	$60,987,572
October	$999,632	$3,125,967	$2,202,578	$14,570,904	$10,758,749	$11,012,892	$7,522,653	$6,302,763	$56,496,138
November	$659,081	$2,061,023	$1,452,211	$9,606,937	$7,093,494	$7,261,057	$4,959,861	$4,155,559	$37,249,224
December	$637,912	$1,994,825	$1,405,568	$9,298,372	$6,865,658	$7,027,839	$4,800,555	$4,022,087	$36,052,816
Total	$11,800,000	$36,900,000	$26,000,000	$172,000,000	$127,000,000	$130,000,000	$88,800,000	$74,400,000	$666,900,000

The next step is to determine the percentage of overall monthly GCNP visitor expenditures to the region that are attributable to visitors of the North Rim specifically. First, North Rim visits are determined as a portion of overall GCNP visits. These percentages are then used to establish monthly allocations for North Rim visitors from overall expenditures. Overall, the North Rim accounts for 6.4% of all GCNP visits or 399,565 visitors in 2017. See Table 6.

Table 6. North Rim Visits as a Percentage of Overall Monthly Visits (NPS Visitor Use Statistics)

	North Rim	GCNP total	North Rim % of total
January 2017		217,102	
February 2017		239,154	
March 2017		502,739	
April 2017		590,006	
May 2017	36,920	606,247	6.09%
June 2017	80,062	726,916	11.01%
July 2017	96,572	837,258	11.53%
August 2017	80,496	745,613	10.80%
Sept 2017	61,823	571,946	10.81%
October 2017	43,693	529,825	8.25%
November 2017		349,326	
December 2017		338,106	
	399,565	6,254,240	6.39%

Using the 2017 Visitor Spending Effects data as a proxy for expenditures and applying the percentage of North Rim visits to total expenditures yields an estimate of $42.6 million in tourist expenditures for the entire 6 month season. July and August are the months with the highest visitor estimated expenditures and May has the lowest expenditures. See Table 7.

Monthly expenditures were then divided by the number of days in each respective month to develop per-day expenditures. All categories of expenditures are averaged, and these averages are used to estimate the economic contribution of the extended season. See Table 8.

Table 7. North Rim Expenditures based on Visitors as a Proportion of the Total Visitation (Visitor Spending Effects 2017)

	Camping	Gas	Groceries	Hotels	Recreation Industries	Restaurants	Retail	Transportation	Total
May	$69,657	$217,826	$153,481	$1,015,339	$749,698	$767,407	$524,198	$439,193	$3,936,799
June	$151,054	$472,365	$332,832	$2,201,809	$1,625,755	$1,664,158	$1,136,748	$952,411	$8,537,131
July	$182,204	$569,772	$401,465	$2,655,848	$1,961,004	$2,007,327	$1,371,159	$1,148,809	$10,297,588
August	$151,873	$474,926	$334,636	$2,213,748	$1,634,570	$1,673,182	$1,142,912	$957,575	$8,583,423
September	$116,643	$364,758	$257,011	$1,700,226	$1,255,399	$1,285,054	$877,791	$735,446	$6,592,329
October	$82,436	$257,787	$181,639	$1,201,610	$887,235	$908,194	$620,366	$519,766	$4,659,034
Total	$753,868	$2,357,434	$1,661,064	$10,988,580	$8,113,661	$8,305,322	$5,673,174	$4,753,200	$42,606,303

Table 8. Per Day Expenditures North Rim (Visitor Spending Effects 2017)

	Camping	Gas	Groceries	Hotels	Recreation Industries	Restaurants	Retail	Transportation	Total
May	$2,247	$7,027	$4,951	$32,753	$24,184	$24,755	$16,910	$14,168	$126,994
June	$4,873	$15,238	$10,737	$71,026	$52,444	$53,683	$36,669	$30,723	$275,391
July	$5,878	$18,380	$12,950	$85,673	$63,258	$64,752	$44,231	$37,058	$332,180
August	$5,062	$15,831	$11,155	$73,792	$54,486	$55,773	$38,097	$31,919	$286,114
September	$3,763	$11,766	$8,291	$54,846	$40,497	$41,453	$28,316	$23,724	$212,656
October	$2,748	$8,593	$6,055	$40,054	$29,575	$30,273	$20,679	$17,326	$155,301
Average Daily	$4,095	$12,806	$9,023	$59,690	$44,074	$45,115	$30,817	$25,820	$231,439

Once per day average expenditures were calculated, it was relatively straightforward to calculate total estimated expenditures for one day ($231,439), one week ($1,620,075), two weeks ($3,240,151) and for the entire extended season, 4 weeks ($6,480,302). It is therefore estimated that extending the season at the Grand Canyon National Park by two weeks in May and two weeks in October will contribute approximately $6.5 million dollars to the regional economy. See Table 9.

Table 9. North Rim Estimated Expenditures from 2017 Visitor Spending Effects Model

	Average Daily	Average Bi-Weekly	Average Monthly
Camping	$4,095	$57,331	$114,661
Gas	$12,806	$179,280	$358,559
Groceries	$9,023	$126,322	$252,643
Hotels	$59,690	$835,666	$1,671,333
Recreation Industries	$44,074	$617,033	$1,234,066
Restaurants	$45,115	$631,608	$1,263,217
Retail	$30,817	$431,437	$862,874
Transportation	$25,820	$361,474	$722,949
Total	$231,439	$3,240,151	$6,480,302

Other Expenditures

There are other expenditures related to the extended opening of the park that accrue to the region in addition to direct tourist expenditures. Specifically, the operations costs of the concessionaire Forever Resorts are an added source of economic contribution that would accrue to the region. This is because the concessionaire has to employ staff to run the operations during the season. According to data obtained from the concessionaire, there are 8 Full Time employees and 233 Part Time/Seasonal employees, all of whom are paid within the region and spend at least part of their income in the region while employed. The payroll for the season is estimated at $3,048,387 based on a monthly payroll of $630,000, or daily payroll of $20,323. Daily payroll is multiplied by the 28 extra days of the extended season to yield additional payroll of $569,147. Annual maintenance and operating costs are estimated at $500,000 per season or $3,333 per-day, for a total of $93,333 for the extended season only. The payroll estimate and the operating/maintenance cost estimate will be modeled along with any other expenditures and visitor expenditures to arrive at an estimate for the extended season. See Table 10.

The National Park Service (NPS) has a staff of between 32 and 40 employees at the North Rim during the season, with a payroll of approximately $1.8 million and operations costs of

$265,000. The per-day operations costs for the NPS is estimated at $14,460. The estimated payroll and operations expenditures of the NPS and the concessionaire Forever Resorts are modeled in the final demand.

Table 10. Operating Costs and Payroll for Concessionaire Extended Season Only (NPS and Forever Resorts)

Operating Costs	Season	Per Day	Extended Season
Payroll	$3,049,000	$20,327	$569,147
Maintenance	$500,000	$3,333	$93,333
Cost of operation	$3,549,000	$23,660	$662,480

Other Expenditures in the Region

The direct visitor expenditures, concessionaire and NPS operating costs and payroll are not the only economic activity that accrues to the region when the North Rim stays open for one month longer. The North Rim is geographically isolated, so visitors can only arrive by car, bus or other means along a few restricted routes. The catchment area for visitors to the North Rim is Southern Utah and Northern Arizona as all visitors have to pass through this region to get to the North Rim. Visitors traveling through Arizona to the North Rim will pass through Page, Marble Canyon, or Fredonia to get to Jacob Lake. In Northern Arizona, visitors can take AZ HWY89 to Marble Canyon and then reach the park via Jacob Lake and HWY89A. Visitors can also travel through Page via UT HWY89 to Kanab then on to Fredonia and AZ HWY89A to Jacob Lake. Lastly, visitors can travel from Page back to Marble Canyon and then on to Jacob Lake and the North Rim. All of the Arizona travel takes place in the northern portion of Coconino County. Travelers from Southern Utah have two routes to access the North Rim. First, they can drive from St. George taking UT HWY 59 to the Arizona border and then take AZ HWY 389 to Fredonia and on to Jacob Lake and the North Rim, with the Utah portion of this route in Washington County. Alternatively, from the south, the most direct route to the North Rim is via Kanab and Fredonia to Jacob Lake. The majority of the Utah portion of this travel is in Kane County.

In order to estimate the economic impact in other communities, the assumption is made that it takes at least one day to drive to the North Rim and, therefore, that one day of visitor expenditures can be allocated to the communities or counties on the travel routes. Using data from a 2005 study of Grand Canyon National Park visitors, the researcher was able to isolate the travel patterns of North Rim visitors. Survey data from the 2005 study was reanalyzed to determine where visitors spent the night before they visited the North Rim. Since there are still only a limited number of places where visitors can stay when driving to the North Rim, the implicit assumption is that the travel patterns to the North Rim have not changed significantly since 2005.

Allocating extra visitors to the travel routes is achieved by using the estimated 17,987 extra visitors in May and 19,732 extra visitors in October from Table 2 and distributing them to the communities that travelers spent the night at based on the 2005 study.

In the 2005 study, the largest single group of respondents arrived via the South Rim, Cameron, Marble Canyon route (28.4%), followed by Washington (21.4%) and Kane County (17.4%). Page accounts for 17.0% of visitors while Fredonia/Jacob Lake segment accounts for 15.8%. The percentage of travel for each segment is then multiplied by the extra visitors attributable to the extended season. See Table 11.

Table 11. Allocation of Extra Visitors from Extended Season to the region (2005 GCNP study)

Visitors traveling to North Rim from	Percent spent night	May	October	Total
South Rim/Cameron/Marble Canyon	28.4%	5,108	5,604	10,712
Fredonia/Jacob Lake	15.8%	2,842	3,118	5,960
Page	17.0%	3,058	3,354	6,412
Kane County/Kanab	17.4%	3,130	3,433	6,563
Washington County/St. George	21.4%	3,849	4,223	8,072
Total	100.0%	17,987	19,732	37,719

The one day travel expenditures for Utah and Arizona is obtained by multiplying the total number of additional visitors for the extended season by the average per-person per-day expenditures ($101). This yields the “one day travel effect” (extra travel-related expenditures) per-person which is applied to the estimated visitors to arrive at the value of an extra day of travel to the North Rim for the extended season. Therefore, the one day travel effect results in the following additional regional per-day expenditures in Arizona: South Rim/Marble Canyon/Cameron ($1.1 million), Fredonia/Jacob Lake ($606,666) and Page ($642,286), for a total of $2.3 million in extra travel-related expenditures. See Table 12.

Table 12. One Day Travel Effect in Coconino County (2017 Visitor Spending Effects)

	South Rim /Marble Canyon /Cameron	Fredonia/ Jacob Lake	Page	Total
Camping	$19,104	$10,628	$11,435	$41,167
Gas	$59,739	$33,235	$35,759	$128,734
Groceries	$42,093	$23,418	$25,196	$90,707
Hotels	$278,460	$154,918	$166,684	$600,061
Recreation Industries	$205,607	$114,387	$123,074	$443,068
Restaurants	$210,464	$117,089	$125,982	$453,534
Retail	$143,763	$79,981	$86,055	$309,799
Transportation	$120,450	$67,011	$72,100	$259,561
Total	$1,079,679	$600,666	$646,286	$2,326,631

In Utah, the one day travel effect yields $661,493 in Kane County and $813,561 in Washington County. This results in $1.5 million in extra travel spending in Utah that is attributable to the extended season. See Table 13.

Table 13. One Day Extra Expenditures for Travel in Utah's Washington and Kane Counties (2017 Visitor Spending Effects)

	Kane	Washington	Total Utah
Camping	$11,704	$14,395	$26,099
Gas	$36,601	$45,015	$81,616
Groceries	$25,789	$31,718	$57,507
Hotels	$170,606	$209,825	$380,431
Recreation Industries	$125,970	$154,929	$280,899
Restaurants	$128,946	$158,589	$287,535
Retail	$88,080	$108,328	$196,408
Transportation	$73,797	$90,762	$164,558
Total	$661,493	$813,561	$1,475,054

All estimated expenditures (including the regional impacts of visitor spending, payroll and operations expenses at the North Rim) and additional travel effects are found in Table 14 below and are used to model the impact of the extended season.

Table 14. All estimated Expenditures Attributable to Extending the Season for 4 weeks at the North Rim of GCNP (2017 Visitor Spending Effects)

Average monthly	North Rim Only	Coconino County (one day travel effect)	Utah (one day travel effect)	Total
Camping	$114,661	$41,167	$26,099	$181,927
Hotels	$1,671,333	$128,734	$81,616	$1,881,683
Restaurants	$1,263,217	$90,707	$57,507	$1,411,431
Recreation Industries	$1,234,066	$600,061	$380,431	$2,214,558
Gas	$358,559	$443,068	$280,899	$1,082,526
Groceries	$252,643	$453,534	$287,535	$993,712
Retail	$862,874	$309,799	$196,408	$1,369,081
Transportation	$722,949	$259,561	$164,558	$1,147,068
Total	$6,480,302	$2,326,631	$1,475,053	$10,281,986

This economic contribution analysis will use Multi-Regional Input-Output Analysis (MRIO) to analyze the direct effect (visitor expenditures at the North Rim) on the communities in the region and adjoining counties in Utah. MRIO offers the advantage of providing a more robust and accurate picture of a local economy because most economies are not isolated to a single county. In this study, MRIO is essential since the flow of visitors for the extended season arrives from two Utah counties and one Arizona county. See Table 15.

Table 15. Arizona and Utah expenditures Modeled to Estimate the Extended Season at the North Rim of GCNP

Total Expenditures	Arizona	Utah	Total
Camping	$155,828	$26,099	$181,927
Hotels	$1,800,067	$81,616	$1,881,683
Restaurants	$1,353,924	$57,507	$1,411,431
Recreation Industries	$1,834,127	$380,431	$2,214,558
Gas	$801,627	$280,899	$1,082,526
Groceries	$706,177	$287,535	$993,712
Retail	$1,172,673	$196,408	$1,369,081
Transportation	$982,510	$164,558	$1,147,068
Total	$8,806,933	$1,475,053	$10,281,986

The analysis will first examine the overall impact, i.e., all expenditures attributable to extending the season at the North Rim, regardless of whether the expenditures originated in Arizona or Utah. Next, the Arizona impacts will be examined including the effects on communities within the region, as well as the estimated fiscal impacts. This analysis will be followed by a similar analysis for Kane and Washington counties in Utah.

Input-Output Model Discussion

Visitors to NPS lands spend money in local gateway regions, and these expenditures generate and support economic activity within these economies. Economies are complex webs of interacting consumers and producers in which goods produced by one sector of an economy become inputs to another, and the goods produced by that sector can become inputs to yet other sectors.

Therefore, 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. For example, when visitors come to the North Rim of Grand Canyon National Park to visit the park, these visitors spend money to purchase various goods and services such as food, lodging, gasoline, souvenirs and other services. The sales, income and employment resulting from these direct purchases from local businesses represent the direct effects of visitor spending within the economy. In order to provide supplies to local businesses for the production of their goods and services, suppliers must purchase inputs from other industries, thus creating additional indirect effects of visitor spending within the economy. Employees of directly affected businesses and input suppliers use their income to purchase goods and services in the local economy, generating further induced effects of visitor spending.

The total of indirect and induced effects give the secondary effects of visitor spending, and the sums of the direct and secondary effects equate to the total economic effect of visitor spending in a local economy.

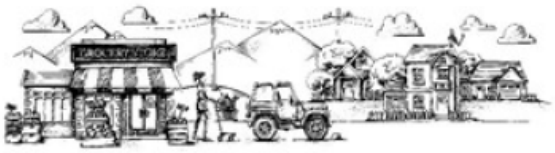
Economic input-output models capture these complex interactions between producers and consumers in an economy and describe the secondary effects of visitor spending through regional economic multipliers. The cycle of visitor spending is illustrated on the following page. This figure is taken from the 2017 National Park Visitor Spending Effects, Economic Contributions to Local Communities, States, and the Nation, and illustrates how visitor spending supports jobs and business activity in local economies.

Figure 2. How NPS visitor spending supports jobs and business activity in local economies

Over 300 million visitors travel to NPS sites across the US every year.

NPS visitors spend money in local communities. The sales, income and jobs resulting from these purchases represent the direct effects of visitor spending.

Additional jobs and economic activity are supported when businesses purchase supplies and services from other local businesses thus creating indirect effects of visitor spending.



Employees use their income to purchase goods and services in the local economy, generating further induced effects of visitor spending.

Overall Impact of an Extended Season at the North Rim

Table 16 illustrates the total impact of extending the season for a total of 4 weeks, two weeks in May and two weeks in October at the North Rim of GCNP. This analysis illustrates the overall impact regardless of where visitor expenditures originated or which county or state the spending occurred.

Direct expenditures estimates from the table below were analyzed in Implan to obtain the economic impact of the extended season. In Implan the direct effects are the result of the initial expenditures. Please note that the direct effect of $10,281,986 is the total of visitor expenditures for the region minus leakage of $958,248 for goods and services not supplied in the local economy. As a result of this leakage, the modeled input is $9,323,738. The direct effects supports approximately 141 jobs.

Indirect effects are a measure of economic activity in other industrial sectors that is spurred by the direct effects. For example, additional North Rim visitors provided an economic boost to regional food/beverage and lodging sectors (a direct effect). These hotels and restaurants require a number of inputs from other industries such as utilities, bulk food and beverage ingredients, and equipment. Indirect effects are the increased economic activity in these other sectors caused by the expenditures of the additional hotel and restaurant patrons. In the case of regional expenditures, 21.2 additional jobs were created in other sectors as a result of indirect effects.

Induced effects are an estimate of increased economic activity resulting from wages and income attributed to the direct effects. Staying with the previous example, a portion of wages earned by workers in the food/beverage and lodging sectors are then locally re-spent in other industrial sectors. In the table below, the induced impact of $2.5 million results from direct expenditures and supports 21.8 additional jobs.

Overall, $10.2 million in estimated expenditures resulting from extending the North Rim season results in an additional $4.9 million in additional impact for a total of $14.2 million for 4 weeks extended season. An estimated $805,000 of state and local taxes result from these expenditures and a further $916,000 of federal taxes.

Table 16. Total Economic Contribution of the 1 Month Extended Season GCNP North Rim on the Region (Coconino County, Arizona and Kane and Washington counties, Utah)

	Direct Effect	Indirect Effect	Induced Effect	Total Effect
Output	$9,323,738	$2,369,524	$2,497,472	$14,190,734
Employment	140.6	21.2	21.8	183.5
Labor Income	$4,090,011	$584,720	$501,028	$5,175,756
Value Added	$5,192,633	$1,062,889	$1,346,868	$7,602,390

Impact of an Extended Season on Coconino County

The impact of visitor expenditures resulting from the extended season accrue to the park and the surrounding communities in Coconino County. Direct effects of the extra visitors can be found in Table 17. These include extra days travel expenditures allocated to communities in Coconino County based on previous research.

Table 17. Coconino County and Communities Adjacent to Grand Canyon National Park North Rim

Total Expenditures	South Rim/Marble Canyon/Cameron	Fredonia/ Jacob Lake	Page	Total
Camping	$19,104	$10,628	$11,435	$41,167
Hotels	$59,739	$33,235	$35,759	$128,733
Restaurants	$42,093	$23,418	$25,196	$90,707
Recreation Industries	$278,460	$154,918	$166,684	$600,062
Gas	$205,607	$114,387	$123,074	$443,068
Groceries	$210,464	$117,089	$125,982	$453,535
Retail	$143,763	$79,981	$86,055	$309,799
Transportation	$120,450	$67,011	$72,100	$259,561
Total	$1,079,679	$600,666	$646,286	$2,326,631

The South Rim/Cameron/Marble Canyon corridor (see Table 18), with approximately $962,000 in output, is the greatest beneficiary of the extended season. Page, with approximately $844,000 in output, is the next largest beneficiary, followed by the Fredonia/Jacob Lake corridor receiving approximately $535,000 of output. The region sees a 30.8 job increase.

Table 18. Total Economic Contribution of the 1 Month Extended Season GCNP North Rim on the Communities in Coconino County

Total Effects Communities	Direct Effect	Employment	Indirect Effect	Induced Effect	Total Effect
South Rim/Marble Canyon/Cameron	$677,590	12.7	$151,255	$132,708	$961,553
Fredonia/Jacob Lake	$376,969	7.1	$84,149	$73,831	$534,949
Page	$593,054	11.0	$126,108	$124,597	$843,758
Total	$1,647,613	30.8	$361,512	$331,136	$2,340,260

Impact of an Extended Season on the State of Utah

The secondary impact of visitor expenditures resulting from the extended season accrue to Kane and Washington counties in Utah. These counties provide the primary non-Arizona travel routes to the North Rim. Direct effect estimates of the additional visitors can be found in Table 19, including extra days travel expenditures allocated to the counties based on previous research.

Table 19. One Day Extra Expenditures for Travel in Utah's Washington and Kane Counties

	Kane	Washington	Total Utah
Camping	$11,704	$14,395	$26,099
Gas	$36,601	$45,015	$81,616
Groceries	$25,789	$31,718	$57,507
Hotels	$170,606	$209,825	$380,431
Recreation Industries	$125,970	$154,929	$280,899
Restaurants	$128,946	$158,589	$287,535
Retail	$88,080	$108,328	$196,408
Transportation	$73,797	$90,762	$164,558
Total	$661,493	$813,561	$1,475,054

Washington County (see Table 21), with $1.0 million in output is the greatest beneficiary of the extended season, followed by the Kane County (see Table 20) with $825,000 in output. The region sees a 25 job increase.

Table 20. Total Economic Contribution of the 1 Month Extended Season GCNP North Rim on the Communities in Kane County, Utah

Impact Type	Direct Effect	Indirect Effect	Induced Effect	Total Effect
Output	$586,614	$116,877	$121,088	$824,579
Employment	9.1	1.1	1.1	11.2
Labor Income	$266,638	$28,468	$24,078	$319,184
Value Added	$333,275	$52,528	$66,165	$451,968

Table 21. Total Economic Contribution of the 1 Month Extended Season GCNP North Rim on the Communities in Washington County, Utah

Impact Type	Direct Effect	Indirect Effect	Induced Effect	Total Effect
Output	$721,467	$143,745	$148,924	$1,014,136
Employment	11.2	1.3	1.3	13.8
Labor Income	$327,934	$35,012	$29,613	$392,559
Value Added	$409,890	$64,604	$81,375	$555,868

Limitations of the study

This study does not take into the account the cost or the feasibility of extending the season at the North Rim of the Grand Canyon. In addition to the costs of weatherizing the lodging facilities and infrastructure at the North Rim, there is the cost of maintaining access to HW67. If HWY67 cannot be kept open then the extension of the season will not be feasible. Accounting for the cost of weatherizing infrastructure and facilities and maintaining the necessary labor force to extend the season should be the next phase in the benefit-cost analysis of the North Rim.

Conclusion

The effort to extend the visitor season at the North Rim of Grand Canyon National Park has been gaining traction in Northern Arizona and Southern Utah communities in recent years. County supervisors and commissioners from both states are advocating for a four week extension of the visitor season, keeping the North Rim open to tourists from May 1st through October 30th. The tourism industries in these communities are also actively behind this effort as it will allow them to capture extra tourist revenues during the slower season.

This study estimates that **extending the visitor season by an additional four weeks would result in $14.2 million in economic activity to the regional economy and support 183 jobs.** It is important to emphasize the significance of these economic contributions to the neighboring rural communities. This is due to the limited employment opportunities within these regions, as well as the regional economy's dependence on the tourism industry.

Some members of the tourism community feel that there is a precedent for keeping the park open all winter, as they point to Yellowstone National Park and its yearlong operation. In the short run, year-long operation of the North Rim may not be a viable option and is not analyzed in this study. However, extending the season for two weeks in both May and October would provide significant opportunities to the regional economy and may warrant further consideration moving forward.