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Bears Ears National Monument and Outdoor Recreation in San Juan County, Utah

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ABSTRACT

This policy analysis provides a focused look at the influence of the creation, and subsequent downsizing, of Bears Ears National Monument on outdoor recreation and industries related to outdoor recreation in San Juan County, Utah. Our findings suggest: (1) The creation of the monument has resulted in an increase in the amount of outdoor recreation occurring within the county; (2) Several outdoor recreation-related industries have grown since Bears Ears National Monument was created; and (3) The growth in outdoor recreation-related industries is not related to the increased concentration of outdoor recreation occurring within the county. Municipal and county leaders can take some solace from the finding that several of the county's outdoor recreation-related industries have grown. However, strategies that generate more revenue from the rising number of outdoor recreationists visiting the region can bring added economic benefits to local communities.

ARTICLE HISTORY

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Economic development;
national monuments;
outdoor recreation

Introduction

The Antiquities Act of 1906 gives the President of the United States legal authority to create national monuments from federal lands. Crafted due to concerns over the theft of archaeological resources, the Act was meant to provide the president with an expeditious method of protecting “historic landmarks, historic and prehistoric structures, or other objects of historic or scientific interest” (Antiquities Act, 1906). The Act has been used by nearly every administration, resulting in the creation of 145 national monuments, many of which have subsequently become national parks (NPS Archeology Program: Antiquities Act Centennial n.d). The designation of a national monument results in restrictions on the types of permissible uses within the monument's boundaries; these restrictions can be detailed in the presidential proclamation, administrative statements, agency policies, or management plans (Vincent 2016). Consequently, the creation of national monuments through the Antiquities Act is often met with both acclaim from conservation and preservation advocates and disdain from those who support multiple, and particularly, extractive uses of federal lands.

Despite being politically and publicly controversial, there is relatively little scientific evidence documenting the long-term social and economic consequences of the creation of national monuments. Jakus and Akhundjanov (2018) provide an analysis of several economic sectors possibly impacted by the creation of Grand Staircase-Escalante National Monument. Their analyses show little to no evidence for an impact on the local livestock and energy industries, but positive effects on employment growth in the tourism industry. Jakus and Akhundjanov's analysis also looks at regional per-capita income in the two counties which contain the monument relative to other "control" counties; they find no evidence the creation of the monument impacted per-capita income. Subsequent analysis by Jakus and Akhundjanov (2019), focused on nine other landscape-scale national monuments, also found no evidence for an effect of monument creation on per-capita income. Walls, Lee, and Ashenfarb (2020) provide the most recent, and comprehensive analysis of the economic effects of national monuments. Their analysis of 14 monument designations over a 25-year period suggests monuments have a positive effect on the number of establishments and jobs in areas near monuments. Importantly, the analysis also found monuments have no effect on the mining, forestry, and livestock grazing industries.

One of the most contentious and recent uses of the Antiquities Act was the creation of Bears Ears National Monument in southeastern Utah by President Obama on December 28, 2016. At an initial size of 1.35 million acres [5,463 km²], the monument was the second largest terrestrial monument in the United States (Figure 1). The monument was delineated within an iconic southwestern landscape replete with deep canyons, flat-top mesas, high desert mountains, and thousands of redrock formations. The landscape also holds cultural significance for the Hopi, Navajo, Ouray, Ute Mountain, Uintah, and Zuni tribes (Iverson 2002; Krakoff 2018) and extensive paleontological resources (Uglesich et al. 2018). Several corporate, political, and local interests vehemently opposed the creation of the monument, citing concerns it would negatively impact the region's mining industry (Lipton and Lisa 2018). These interests also expressed concerns the monument would restrict access to the area's outdoor recreation opportunities, many of which are only accessible via motorized off-road travel. While decided on a case-by-case basis, motorized off-road travel is often prohibited within national monuments (Vincent 2016).

Less than one year after the monument was created, newly elected President Trump directed the Secretary of the Interior who oversees the monument's managing agency, the Bureau of Land Management, to make a recommendation as to whether the monument (as well as several others) should be reduced in size or eliminated altogether. The Secretary issued a recommendation to reduce the size of the monument, leading to President Trump using the Antiquities Act to reduce the size of the monument by 85%, to 228,784 acres [925.9 km²] (Figure 1) (Turkewitz 2017). The downsizing of the monument is currently being contested by environmental groups and several Native American tribes (Frazin 2019).

This policy analysis contributes to our understanding of designation effects of national monuments by providing a focused look at the influence of the creation, and subsequent downsizing, of Bears Ears National Monument on outdoor recreation and industries related to outdoor recreation in San Juan County, Utah. Now, more than three years after the monument was created, there are sufficient data to take a

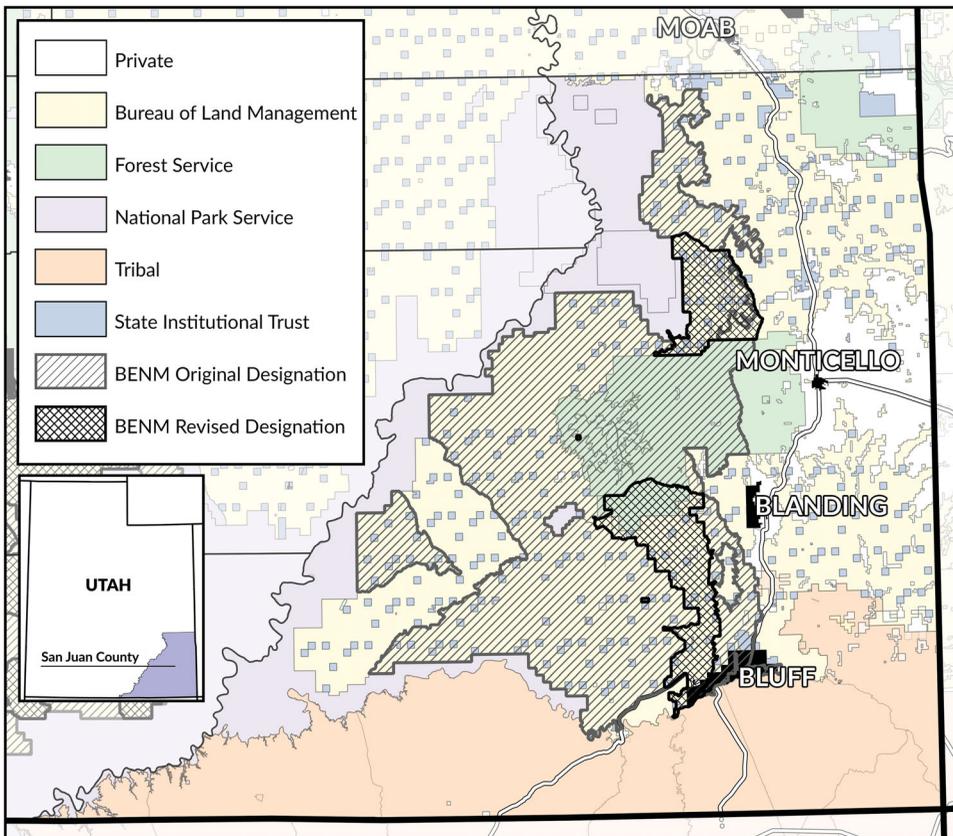


Figure 1. The location of Bears Ears National Monument (before and after downsizing) within San Juan County, Utah.

retrospective look at the influence of the monument. We utilize 16 years of data from social media to quantify the concentration of photosharing activity in Utah occurring within San Juan County¹. We also use six years of quarterly economic data to evaluate the influence of the monument's creation on industries related to outdoor recreation within the county. The specific objectives of the policy analysis are to:

1. Determine the extent to which the concentration of outdoor recreation has changed after the creation of Bears Ears National Monument;
2. Determine the extent to which industries related to outdoor recreation have changed after the creation of the monument; and
3. Determine if the concentration of outdoor recreation occurring within the county affects industries related to outdoor recreation.

Methods

Data Collection

Social media. Social media are quickly becoming an acceptable method of quantifying the amount of visitation to parks, protected areas, and public lands (Teles da Mota and

Pickering 2020). *Flickr*, a photosharing platform preferred by landscape and nature photographers, is the most common platform used for investigations into visitation patterns in and around parks, protected areas, and public lands (Wilkins, Wood, and Smith 2021). Recent research has found social media from the *Flickr* platform capture approximately three-fourths of the variation in annual visitation to federally-managed lands within Utah (Zhang et al. 2021). Social media have also been validated against reported visitation to parks, protected areas, public lands and private recreation destinations in numerous studies across the globe (see Teles da Mota and Pickering (2020) and Wilkins et al. (2021) for comprehensive reviews). However, there are some limitations with this data source. Namely, only a small portion of visitors post on social media, and we do not know their demographic characteristics. Therefore, while social media can provide accurate measures of visitation to parks and protected areas, these data may not be representative of all outdoor recreationists or tourists².

All geotagged social media shared on the *Flickr* platform from within San Juan County was acquired using the platform's Application Programming Interface in June 2020³. In addition to being geotagged, these data are time stamped with the exact time the photograph was taken. Prior to analysis, all social media were reduced to only include one photo, per user, per day (i.e., a photo-user-day (PUD) within a 5-km grid) consistent with best practices in the literature (Wilkins, Wood, and Smith 2021; Zhang et al. 2021). Data were aggregated to the month and averaged across all months within each period of analysis.

Data were segmented into five distinct periods of analysis:

1. January 1, 2004 – December 31, 2013: This 10-year period serves as a baseline against which subsequent shifts in photosharing/outdoor recreation was assessed.
2. January 1, 2014 – December 28, 2016: The three-year period preceding the creation of the monument.
3. December 29, 2016 – December 31, 2019: The three-year period after the monument's creation.
4. December 29, 2016 – December 4, 2017: The period during which the monument was at its original size.
5. December 5, 2017 – December 31, 2019: The period after the size of the monument was reduced.

Economic indicators. Data from the U.S. Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages were used to quantify economic activity within San Juan County. These data include:

1. the mean number of employees in each establishment;
2. the total number of establishments;
3. total payroll; and
4. the mean monthly wage for employees.

Each of these four indicators are collected and reported by the BLS following the North American Industry Classification System (NAICS). Quarterly data were collected for

Table 1. Outdoor recreation related industries and their contribution to Utah's economy.

| Industry | NAICS Code | Value Added to Utah's Economy from Outdoor Recreation (%) |
|--|------------|---|
| Construction | 23 | 1.5 |
| - Construction of Buildings | 236 | n/a ^a |
| Manufacturing | 31–32 | 8.0 |
| Wholesale Trade | 42 | 6.4 |
| Retail Trade | 44–45 | 24.6 |
| - Food and Beverage Stores | 445 | n/a |
| - Gas Stations | 447 | n/a |
| Real Estate and Rental and Leasing | 53 | 3.3 |
| Professional, Scientific, and Technical Services | 54 | 2.2 |
| Accommodation and Food Services | 72 | 15.4 |
| - Accommodation | 721 | n/a |
| - Food Services and Drinking Places | 722 | n/a |

Value added estimates are calculated from the Bureau of Economic Analysis (2017).

^aValue added estimates are not provided by the Bureau of Economic Analysis for industry subsectors.

2014–2019 for all NAICS industries (two-digit codes) for which a complete time series was available; if industry subsectors (three-digit codes) were available, we analyzed these subsectors independently as well⁴. The industries we characterize as outdoor recreation related, as well as their contribution to Utah's economy as a whole, are shown in Table 1.

Data Analysis

Shifts in Outdoor Recreation Participation

Monthly PUDs within the county were normalized as a proportion of all photos shared within Utah to control for the popularity of the *Flickr* platform over the study period. We compared normalized mean monthly PUDs for each period of analysis with the baseline period to determine the extent to which the concentration of outdoor recreation has changed after the creation of Bears Ears National Monument. We review comparative statistics of normalized mean monthly PUDs and an ANOVA is used to formally test for significant differences across the periods of analysis.

Changes in Recreation-Related Industries

Mean quarterly values for each of the four economic indicators were compared before (2014–2016) and after (2016–2019) the monument was created. Unpaired two-sample *t*-tests were used to determine statistically significant differences.

The Concentration of Outdoor Recreation and Economic Activity in Recreation-Related Industries

Time series regression models were used to determine if the growth in economic activity for industries which specifically cater to outdoor recreationists (e.g., gas stations, food services, etc.) is attributable to increases in the concentration of outdoor recreation occurring within the county. These models examine the relationship between an exogenous input (the growth in the concentration of outdoor recreation occurring within the county) and a dependent variable (subsequent growth in an economic indicator) (Box-Steffensmeier et al. 2014). We fit these models using an AutoRegressive

Moving Average with eXogenous variables (ARMAX) specification in which the second-order difference in the monthly value of an economic indicator is regressed on the first-order difference in the concentration of outdoor recreation occurring within the county. The models are generally expressed as:

$$\nabla^2 y_t = \alpha + \beta_1 \nabla^1 p_t + \epsilon_t$$

where: $\nabla^2 y_t = y_t - y_{t-2}$, the difference between the value of an economic indicator y at time t and its value two quarters prior; α is a constant; β_1 is the estimated coefficient corresponding to $\nabla^1 p_t = p_t - p_{t-1}$, the difference between the number of PUDs as a proportion of all posts in Utah at time t and the previous quarter, $t-1$; and ϵ_t is random error.

All differenced values were stationary, having constant means, variances, and autocorrelations over time. We inspected for stationarity by visually examining the actual correlations and the partial autocorrelations following Box et al. (2016). Inspection of the correlations and partial autocorrelations suggested the lagged values were not significant; we subsequently dropped them from the model (i.e., $p=0$, $d=1$, and $q=0$). All models were fit using the *arima* command in Stata 16.1.

All data used in the analysis are publicly available on the openICPSR repository (<https://doi.org/10.3886/E135361V3>).

Results

Shifts in the Concentration of Outdoor Recreation Occurring in San Juan County

The summary statistics characterizing the concentration of outdoor recreation in San Juan County throughout the study period are shown in Table 2; these data are also visualized in Figure 2. Approximately 1.57% of all photos shared on the *Flickr* platform during the baseline period within Utah were taken within San Juan County. In the three years leading up to the creation of the monument, this proportion increased to 2.14%. The three years subsequent to the formation of the monument saw photosharing activity increase again to 3.23%. This includes the period of time when the monument was at its original size, when 2.53% of shared photos were taken within the county, and the period subsequent to downsizing, which has seen 3.44% of all photos shared within the state. The mean monthly PUDs as a proportion of all posts in Utah were significantly different across all periods of analysis ($F(3,188) = 18.48$, $p < 0.05$).

When compared to the three-year period prior to the creation of the monument, photosharing increased by 50.6% in the three subsequent years. These findings suggest the formation of the monument has coincided with a substantial shift in the concentration of outdoor recreation occurring within the county. Importantly, the findings also suggest the downsizing of the monument has not slowed the increased concentration of outdoor recreation occurring within the county.

Changes in Recreation-Related Industries

Economic indicators for the outdoor recreation related industries in the county that may have been impacted by the creation of the monument are summarized in Table 3. Differences between the three-year window before and after the creation of the

Table 2. Summary statistics characterizing the amount of photosharing activity in San Juan County (January 1, 2004 – December 31, 2019).

| Period of Analysis | PUD count | Mean Monthly PUDs | % Change | Mean Monthly PUDs As Proportion of All Posts in Utah | % Change |
|---|-----------|-------------------|----------|--|----------|
| Ten-year baseline period (1/1/04 to 12/31/13) | 9,731 | 81.1 | | 1.57% | |
| Three years prior to BENM creation (1/1/14 to 12/28/16) | 5,193 | 144.3 | 77.9% | 2.14% | 36.2% |
| Three years after BENM creation (12/29/16 to 12/31/19) | 3,397 | 94.4 | 16.4% | 3.23% | 105.1% |
| BENM creation to downsizing (12/29/16 to 12/4/17) | 1,377 | 125.2 | 54.4% | 2.53% | 60.7% |
| Period since BENM downsizing (12/5/17 to 12/31/19) | 2,093 | 74.8 | -7.8% | 3.44% | 118.6% |

Note. % Change is relative to the ten-year baseline period.

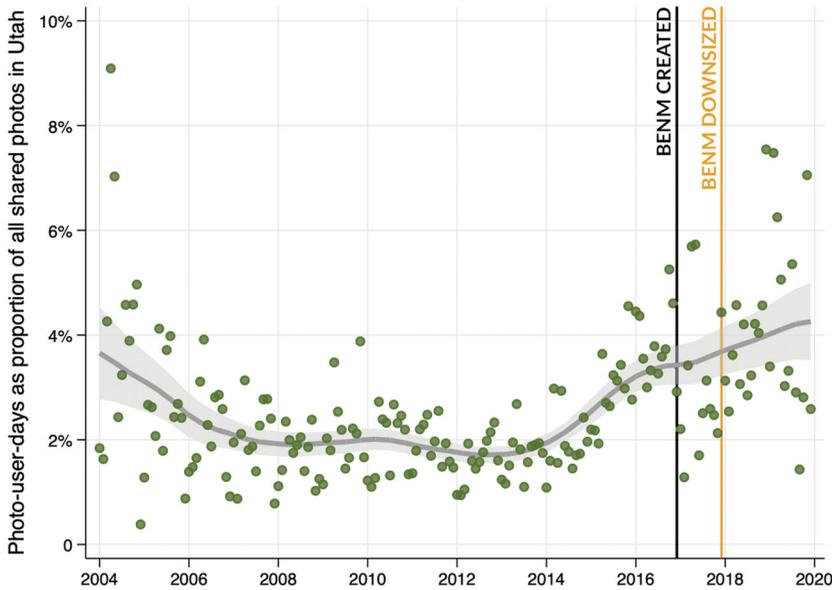


Figure 2. Monthly photo-user-days within San Juan County as a proportion of all shared photos in Utah (2004–2020).

monument for each indicator are also presented in Table 3; only significant differences are discussed here.

The mean number of general construction and building construction businesses decreased significantly after the creation of the monument. While there was a significant difference in the number of construction establishments after the monument was created, this difference does not appear to be economically meaningful as neither county’s total payroll nor their mean monthly wages in construction declined significantly over the same period of time.

Table 3. Economic indicators of outdoor recreation related industries three years before and after the creation of Bears Ears National Monument.

| Time Period | Mean Employment per Establishment | | Total Number of Establishments | | Total Payroll (USD) | | Mean Monthly Wage (USD) | |
|--|-----------------------------------|-------|--------------------------------|------|---------------------|--------------|-------------------------|----------|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Construction | | | | | | | | |
| Pre-BENM | 259.3 | 24.2 | 35.6 | 2.2 | 2,393,713.00 | 523,230.80 | 3,062.42 | 445.10 |
| Post-BENM | 272.8 | 21.1 | 33.7 | 1.5 | 2,465,032.00 | 146,384.30 | 3,020.00 | 160.91 |
| Difference | 13.4 | | -1.9* | | 71,319.00 | | (42.42) | |
| Construction of Buildings | | | | | | | | |
| Pre-BENM | 70.7 | 19.2 | 14.1 | 1.8 | 547,751.90 | 464,111.20 | 2,374.75 | 996.11 |
| Post-BENM | 71.8 | 12.0 | 12.3 | 1.2 | 474,547.00 | 76,247.04 | 2,215.67 | 199.29 |
| Difference | 1.1 | | -1.8* | | (73,204.90) | | (159.08) | |
| Manufacturing | | | | | | | | |
| Pre-BENM | 98.4 | 18.9 | 6.1 | 0.3 | 674,566.80 | 169,224.00 | 2266.42 | 146.76 |
| Post-BENM | 84.3 | 2.0 | 5.0 | 0.0 | 587,511.20 | 22,253.95 | 2322.42 | 77.12 |
| Difference | -14.1* | | -1.1* | | (87,055.60) | | 56.00 | |
| Wholesale Trade | | | | | | | | |
| Pre-BENM | 30.8 | 5.6 | 12.0 | 7.5 | 322,291.40 | 99,901.77 | 3,525.75 | 988.96 |
| Post-BENM | 24.6 | 3.6 | 7.3 | 0.8 | 227,837.90 | 31,489.41 | 3,109.17 | 358.57 |
| Difference | -6.2* | | -4.7 | | (68,412.40)* | | (416.60) | |
| Retail Trade | | | | | | | | |
| Pre-BENM | 285.3 | 15.7 | 29.6 | 1.5 | 1,190,333.00 | 72,520.76 | 1,392.50 | 83.55 |
| Post-BENM | 297.3 | 15.5 | 33.1 | 2.4 | 1,317,103.00 | 75,482.20 | 1,477.25 | 40.23 |
| Difference | 12.0 | | 3.5* | | 126,770.00* | | 84.75* | |
| Food and Beverage Stores | | | | | | | | |
| Pre-BENM | 87.2 | 4.5 | 5.0 | 0.0 | 363,521.70 | 22,188.79 | 1,392.67 | 103.15 |
| Post-BENM | 89.3 | 3.5 | 5.9 | 0.3 | 356,053.50 | 16,720.74 | 1,329.67 | 67.67 |
| Difference | 2.2 | | 0.9* | | (7,468.20) | | (63.00) | |
| Gas Stations | | | | | | | | |
| Pre-BENM | 98.5 | 12.7 | 8.7 | 1.2 | 339,678.60 | 49,543.80 | 1,151.00 | 114.67 |
| Post-BENM | 89.5 | 9.6 | 8.3 | 0.5 | 371,292.10 | 45,585.34 | 1,384.58 | 109.96 |
| Difference | -9.0 | | -0.3 | | 31,613.50 | | 233.58* | |
| Real Estate and Rental and Leasing | | | | | | | | |
| Pre-BENM | 22.3 | 3.3 | 6.0 | 0.0 | 108,360.30 | 15,964.15 | 1,629.42 | 146.64 |
| Post-BENM | 18.9 | 3.3 | 5.4 | 0.5 | 95,018.50 | 11,088.05 | 1,696.67 | 176.68 |
| Difference | -3.3* | | -0.6* | | (13,341.80)* | | 67.25 | |
| Professional, Scientific, and Technical Services | | | | | | | | |
| Pre-BENM | 25.1 | 2.5 | 16.8 | 1.2 | 296,701.00 | 81,930.79 | 3,934.00 | 1,016.26 |
| Post-BENM | 29.1 | 2.5 | 17.7 | 1.4 | 542,081.60 | 74,289.21 | 6,220.50 | 728.97 |
| Difference | 4.0* | | 0.9 | | 245,380.60* | | 2,286.50* | |
| Accommodation and Food Services | | | | | | | | |
| Pre-BENM | 560.3 | 117.8 | 40.0 | 3.7 | 2,782,264.00 | 929,668.00 | 1,668.08 | 544.17 |
| Post-BENM | 723.7 | 172.2 | 47.5 | 2.3 | 4,254,959.00 | 1,507,014.00 | 1,964.42 | 651.34 |
| Difference | 163.4* | | 7.5* | | 1,472,695.00* | | 296.34 | |
| Accommodation | | | | | | | | |
| Pre-BENM | 391.1 | 85.6 | 22.2 | 2.4 | 2,196,302.00 | 874,594.20 | 1,889.42 | 731.63 |
| Post-BENM | 466.5 | 77.6 | 27.9 | 2.0 | 2,976,454.00 | 1,196,735.00 | 2,149.67 | 934.47 |
| Difference | 75.4* | | 5.7* | | 780,152.00 | | 260.25 | |
| Food Services and Drinking Places | | | | | | | | |
| Pre-BENM | 169.2 | 37.7 | 17.8 | 1.3 | 585,961.80 | 206,832.40 | 1,124.33 | 196.91 |
| Post-BENM | 257.2 | 107.1 | 19.6 | 1.4 | 1,278,505.00 | 674,563.60 | 1,581.00 | 301.14 |
| Difference | 88.0* | | 1.8* | | 692,543.20* | | 456.67* | |

Asterisks indicate statistically significant differences at $p < 0.05$.

The mean number of manufacturing businesses and the mean employment per manufacturing business declined significantly after the monument was created. Mean employment as well as mean payroll in wholesale trade businesses also declined significantly after the monument was created.

The retail trade industry grew after the creation of the monument with the mean number of businesses increasing from 30 to 33, total payroll increasing by 10.7% or just over \$125,000, and mean monthly wages increasing by \$84.75 to nearly \$1,500.

The mean number of food and beverage stores within the county has increased from 5 to 6 since the creation of the monument. However, this increase does not appear to be economically meaningful as neither total payroll or mean wages increased significantly. Similarly, there has been a significant increase in wage earnings at gas stations within the county since the creation of the monument. However, neither total payroll nor the total number of gas stations has increased.

The county's real estate, rental, and leasing industry has become smaller since the creation of the monument, with the mean number of businesses declining from 22 to 19, mean employment per business declining by 1 employee, and total payroll decreasing by \$13,342.

The professional, scientific, and technical services industry has grown since early 2017 with the mean number of businesses increasing by 4, total payroll increasing by nearly \$250,000 and mean monthly wages increasing by \$2,287 to over \$6,221.

Of all the outdoor recreation related industries evaluated, accommodation and food services has grown the most since the monument was created. The mean number of employees per business in this industry has increased by 163, the mean number of businesses has grown by 8, mean monthly payroll has increased by \$1.5 million, and mean monthly wages have increased by nearly \$300 to \$1,964. The accommodations subsector of this industry has realized significant growth in both mean employment per establishment (+75 employees) and in the number of establishments (+6). The food services subsector realized growth in all of the economic indicators we evaluated (+88 employees per establishment, +2 establishments, +\$692k in payroll, and +\$457 in monthly wages).

An Increasing Concentration of Outdoor Recreation and Its Effect on Economic Activity in Recreation-Related Industries

The final piece of analysis looked to determine which of the positive and significant shifts in San Juan County's outdoor recreation economy are associated with the concentration of outdoor recreation occurring within the county's borders. [Table 4](#) presents relevant results from 17 time series models; full model output is provided in the [supplementary material](#). Only one of the metrics characterizing outdoor recreation-related industries (total payroll in retail trade) was significantly related to the concentration of outdoor recreation occurring within the county.

Table 4. Relationships between the concentration of outdoor recreation within San Juan County and economic indicators which have significantly and positively changed since the creation of Bears Ears National Monument.

| Industry and Economic Indicator | Coef. | OPG Std. Err. | z | P > z | 95% Conf. Int. | |
|---|---------------|---------------|--------|-------|-----------------|----------------|
| | | | | | U.B. | L.B. |
| Retail Trade – Establishments | -26.36 | 35.35 | -0.750 | 0.456 | -95.64 | 42.91 |
| Retail Trade – Payroll | 3,620,529.00 | 1,770,172.00 | 2.050 | 0.041 | 151,055.10 | 7,090,002.00 |
| Retail Trade – Monthly Wages | 2,212.55 | 3,333.46 | 0.660 | 0.507 | -4,320.90 | 8,746.01 |
| Food and Beverage Stores – Establishments | 1.11 | 96.78 | 0.010 | 0.991 | -188.58 | 190.80 |
| Gas Stations – Monthly Wages | 4,462.97 | 5,913.67 | 0.750 | 0.450 | -7,127.62 | 16,053.55 |
| Professional, Scientific, and Technical Services – Emp. Per Establishment | -29.46 | 103.74 | -0.280 | 0.776 | -232.79 | 173.87 |
| Professional, Scientific, and Technical Services – Payroll | -2,661,470.00 | 4,192,368.00 | -0.630 | 0.526 | -10,900,000.00 | 5,555,421.00 |
| Professional, Scientific, and Technical Services – Monthly Wages | -29,422.57 | 38,637.93 | -0.760 | 0.446 | -105,151.50 | 46,306.38 |
| Accommodations and Food Services – Employment per Establishment | 8,378.96 | 7,146.99 | 1.170 | 0.241 | -5,628.88 | 22,386.81 |
| Accommodations and Food Services – Establishments | -3.50 | 56.27 | -0.060 | 0.950 | -113.78 | 106.78 |
| Accommodations and Food Services – Payroll | 20,500,000.00 | 66,900,000.00 | 0.310 | 0.760 | -111,000,000.00 | 152,000,000.00 |
| Accommodations – Employment per Establishment | | | | | | |
| Accommodations – Establishments | 5,601.16 | 2,972.69 | 1.880 | 0.060 | -225.20 | 11,427.52 |
| Food Services and Drinking Places – Employment per Establishment | 2,777.80 | 5,004.48 | 0.560 | 0.579 | -7,030.79 | 12,586.39 |
| Food Services and Drinking Places – Establishments | 13.27 | 61.28 | 0.220 | 0.829 | -106.84 | 133.39 |
| Food Services and Drinking Places – Payroll | 12,400,000.00 | 30,400,000.00 | 0.410 | 0.682 | -47,200,000.00 | 72,100,000.00 |
| Food Services and Drinking Places – Monthly Wage | 5,980.40 | 12,404.26 | 0.480 | 0.630 | -16,331.50 | 30,292.30 |

Discussion

The creation and subsequent downsizing of Bears Ears National Monument are arguably some of the most significant public lands decisions in the western United States over the past decade. These decisions have been met with both jubilant support and criticism. They were made, by and large, without any information or research into how they might affect outdoor recreation or outdoor recreation-related industries in the region. With more than three years of economic data since the monument was created, this policy analysis provides a retrospective look at the formation of the monument. The data and analysis reported here suggest:

1. The creation of the monument has resulted in an increase in the concentration of outdoor recreation occurring within San Juan County;
2. Several outdoor recreation-related industries have grown since Bears Ears National monument was created; and
3. The growth in outdoor recreation-related industries is not related to the increased concentration of outdoor recreation occurring within the county.

Increases in Outdoor Recreation Participation since Designation

We observed a 105.1% increase in outdoor recreation participation in the three years following the creation of the monument in late 2016 relative to a ten-year baseline period spanning 2004–2013. Importantly, the concentration of outdoor recreation occurring within the county was already on the rise before the monument was created; the three years prior to designation saw a 36.2% increase relative to the ten-year baseline period. A comparison of the three years before and after the creation of the monument shows a 50.6% increase in the concentration of outdoor recreation occurring within the county.

Growth in Outdoor Recreation-related Industries since Designation

Several outdoor recreation-related industries have grown since Bears Ears National Monument was created. Retail trade, the professional, scientific, and technical services industry, and the accommodation and food services industry have all experienced significant and positive economic expansion in the three years after the monument was created. This growth may be attributable to business owners responding to either a perceived increase in the number of outdoor recreationists visiting the county, or an increase in outdoor recreationists willing to spend more money during their visits to the county. This finding should be received as good news for local leaders who are actively working to expand, and advocate for, businesses that support outdoor recreation within the county.

Our analysis also found other outdoor recreation-related industries (construction, manufacturing, wholesale trade, and real estate and rental and leasing) have levels of economic activity that are consistent with, or slightly less than, the three-year period before the monument was created. It is highly possible that these industries have not grown due to business owners and investors being hesitant about investing in a region where public land management decisions are almost always litigated⁵. Future growth in these industries

would likely require either a persistent increase in the concentration of outdoor recreation within the county, or an influx in the number of amenity migrants to the county. Amenity migration to gateway and natural amenity regions has led to economic growth in other regions throughout the West (Green, Deller, and Marcouiller 2005). However, San Juan County has experienced persistent out-migration in recent decades so this may not be a likely scenario in the near future (Hjerpe, Hussain, and Holmes 2020).

Increased Participation in Outdoor Recreation is Not Driving Growth in Outdoor Recreation Related Industries

Of the 17 economic metrics which have positively and significantly changed since Bears Ears National Monument was designated, we found only one of them (total payroll in retail trade) was positively related to the concentration in outdoor recreation occurring within the county. This finding suggests the causal linkage connecting the designation of a national monument to increased outdoor recreation to increased economic growth may not be as strong as many believe. It appears, at least in the case of Bears Ears National Monument, that designation did not spur investment in outdoor recreation-related industries. The lack of investment in outdoor recreation industries is bad news for individuals and organizations who want to steer the regional economy away from extractive industries and toward outdoor recreation and tourism. Unfortunately for these individuals and organizations, the influx of visitation that has happened since the monument was designated has not generated a positive impact on outdoor recreation-related industries. Again, potential economic growth may be stifled by the current uncertainty over the monument's future⁴. Strategies for generating more revenue from the rising number of outdoor recreationists who are visiting the county could bring added economic benefits to local communities. Absent these strategies, the local outdoor recreation industry will likely struggle to keep up with the rising demand placed on them by more visitors.

Conclusion

The analysis presented here suggests the creation of Bears Ears National Monument has corresponded with a notable increase in the concentration of outdoor recreation occurring within San Juan County. A comparison of the three years before and after the creation of the monument revealed a 50.6% increase in the concentration of outdoor recreation occurring within the county, suggesting the creation of the monument likely bolstered an already increasing amount of outdoor recreation occurring within the county. The results also suggest the creation of the monument has not influenced the county's outdoor recreation-related industries. This latter finding is consistent with previous research on the economic consequences of other landscape-scale national monuments (Jakus and Akhundjanov 2018; 2019; Walls, Lee, and Ashenfarb 2020). Municipal and county leaders can take some solace from the finding that several of the county's outdoor recreation-related industries have grown. However, our analysis suggests the current connection between outdoor recreation participation and economic growth in outdoor recreation-related industries is tenuous. To bring added economic benefits to local communities, strategies are needed that generate more revenue from the rising

number of outdoor recreationists who are visiting the county.

Notes

1. We use the term “concentration” purposefully to denote the proportion of all outdoor recreation in Utah that occurs within San Juan County. The concentration measure is the most appropriate measure of the influence of the Bears Ears National Monument designation on outdoor recreation participation because it eliminates the influence of exogenous factors that may also have influenced the amount of outdoor recreation occurring within the county. Both the “Mighty 5” marketing campaign (Drugova, Man-Keun, and Jakus 2020) and rising temperatures have had a positive influence on outdoor recreation participation in Utah throughout the study period (Smith et al. 2018).
2. See Wilkins et al. (2021) for a full review of the limitations of social media in park and protected area research.
3. We also included photographs from within a 5 km buffer of San Juan County to ensure we are capturing visits to outdoor recreation settings that are very close to, or cross, the county’s border (e.g., Hovenweep National Monument, Halls Crossing, etc.).
4. We only included industries in which outdoor recreation accounts for more than 1% of the value added to Utah’s economy. This was determined using estimates from the Bureau of Economic Analysis’ Satellite Account (2017). The arts, entertainment, and recreation industry was excluded from our analysis because a complete time series was not available (i.e., the county has no or too few businesses in this industry to meet the Bureau of Labor Statistics’ reporting standards).
5. Litigation against President Trump’s Executive Order to reduce the size of the monument is still pending as of October 2020 (Groetzinger 2020).

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Author contributions

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