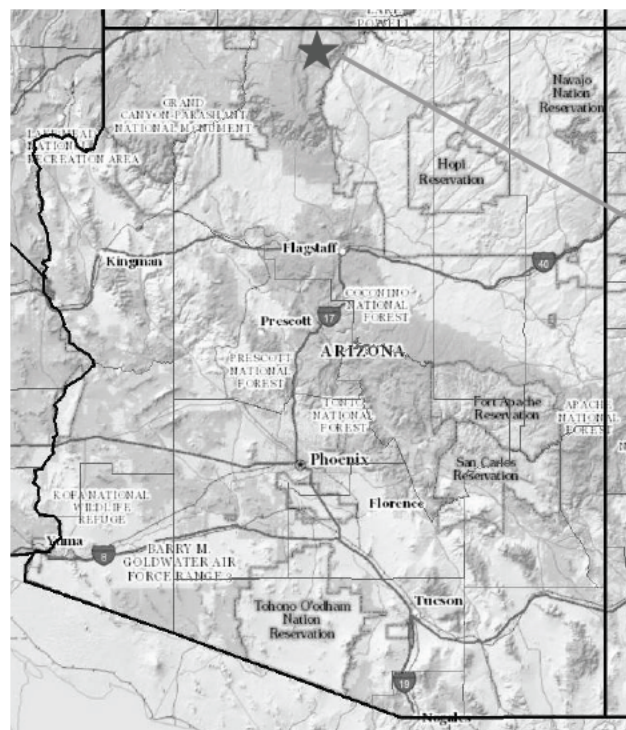




# Vermilion Cliffs National Monument

## Economic Values and Economic Contributions



Vermilion Cliffs  
National Monument

## *Introduction*

The purpose of this paper is to provide information on the economic values and economic contributions of the activities and resources associated with Vermilion Cliffs National Monument (VCNM or the Monument) as well as to provide a brief economic profile of Coconino County, Arizona (AZ).

## *Background*

Vermilion Cliffs National Monument was established by President Clinton on November 9, 2000 (Presidential Proclamation 7374). Prior to designation, the area was managed by the Bureau of Land Management (BLM) and continues to be following designation. The Proclamation designated “approximately 293,000 acres” and states that acreage is “the smallest area compatible with the proper care and management of the objects to be protected.” The BLM manages for multiple use within the Monument (hunting, recreation, and grazing, etc.), while protecting the vast array of historic and scientific resources identified in the Proclamation and providing opportunities for scientific study of those resources. The resources identified in the Proclamation include:

- Geology - Sandstone slick rock, rolling plateaus, and brilliant cliffs with arches, amphitheaters, and massive walls.
- Cultural and Historic Resources - Archaeological evidence displaying a long and rich human history spanning more than 12,000 years. Historic resources, including evidence of early European exploration, ranches, homesteads, mines, and roads.
- Wilderness - The Paria Canyon-Vermilion Cliffs Wilderness is a remote and unspoiled landscape with limited travel corridors along the Utah-Arizona border. A majority of the wilderness lies within Vermilion Cliffs National Monument.
- Vegetation – Cold desert flora and warm desert grassland.
- Wildlife – California condor, bighorn sheep, mountain lion, pronghorn antelope, raptors and desert stream fishes.
- Paria River – The Paria River and widely scattered ephemeral water sources and springs.

Overall, multiple use activities compatible with the protection of resources and objects identified in the Presidential Proclamation are allowed in Vermilion Cliffs National Monument. Multiple use activities are subject to decisions made in current and future BLM resource management planning efforts, which include public participation. National Monuments and other conservation areas managed by the BLM continue to allow for multiple uses according to the Federal Land Policy and Management Act.

## *Public Outreach Prior to Designation*

The Secretary of the Interior met with the public in meetings and in the field prior to VCNM designation. Public outreach was conducted during the summer of 2000 with various participants. It included meetings with affected ranchers, community leaders, the Page Chamber of Commerce and business owners in the Marble Canyon and Jacob Lake Areas.

### *Vermilion Cliffs National Monument*

**Location:** Coconino County, AZ  
**Managing agency:** BLM  
**Adjacent communities, Tribal, and Federal land:** Kaibab National Forest, Glen Canyon National Recreation Area, Grand Staircase Escalante National Monument, other BLM lands  
**Resource Areas:**  
☒ Recreation ☐ Energy  
☐ Minerals ☒ Grazing  
☐ Timber ☒ Scientific Discovery  
☒ Tribal Cultural

### *Local Economy and Economic Impacts*

Coconino County makes up around two percent of Arizona's population. Approximately 27 percent of the county population is Native American. Current unemployment rates and median household income are similar to the values for Arizona as a whole (Table 1). The accommodation and food services industry is the largest by employment in Coconino County, accounting for 26 percent of county employment (Figure 1). Other industries that make up more than 10 percent of total employment include retail trade, health care and social assistance, and manufacturing.

### *Activities and Resources Associated with Vermilion Cliffs National Monument*

Information on the economic contributions associated with the activities occurring at Vermilion Cliffs National Monument, as well as resources within the Monument, is provided below. Table 2 provides estimates of the economic contributions of activities associated with VCNM. Additional information on the difference between economic contribution and economic value is provided in the Background and Overview materials.

- **Recreation:** Visitation at VCNM has increased since designation, rising from 41,884 visits in 2001 to 275,845 visits in 2016 (Figure 2).<sup>1</sup> Recreation activities provide the opportunity for economic activity to be generated from tourism for an indefinite period of time. Recreational visitors spend money at local businesses, and that spending can lead to economic contributions that affect regional and state economy. The economic contributions occur annually, and in cases where visitation increases over time, recreation generates additional activity each year. The net economic contributions associated with recreation in 2016 are estimated to be about \$14 million in value added and 246 jobs.

The value of recreation opportunities and experiences is different from the economic activity supported by visitors to the Monument. Recreationists place a value on characteristics of a site, including non-marketed ones (e.g., dark skies, quiet, scenic views), over and above their expenditures to visit the site (this is referred to as consumer surplus). Using an average consumer surplus unit value of \$54.19 per person per day, the estimated economic value (net benefits) generated in 2016 was \$14.9 million.<sup>2</sup>

- **Energy:** There are no renewable resources or known coal, oil and gas resources within the Monument.
- **Non-Energy Minerals:** No production of locatable minerals has occurred. Active mining claims are subject to valid existing rights. An estimated 1,000 cubic yards per year of gravel is used from

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<sup>1</sup>The BLM utilizes the Recreation Management Information System (RMIS) to report visitation. The RMIS, implemented in 1984, is the agency's official system of record for recreation information relating to recreation visitation, permits, and partnerships. Visitation information is based on the best available collection tools and data. Providing definitive visitation information at each National Monument is difficult to quantify, given the numerous factors influencing visitation and collection of visitor information data. Federal land managers are continually improving the methodology and technological resources for visitation reporting.

<sup>2</sup>The consumer surplus unit value is a survey-based value for general recreation in the Intermountain region from the USGS Benefit Transfer toolkit (<https://my.usgs.gov/benefit-transfer>). This unit value was applied to FY 2016 visitation estimates to derive an estimate of economic value. Economic value is the net benefit to recreational users (total benefits minus total costs).

existing material sites by the BLM for road maintenance. No new permits or sales contracts were issued.

- **Timber:** There is no annual timber production of the pinyon pine and juniper community. Personal use fuelwood cutting of pinyon pine and juniper trees was permitted prior to the Resource Management Plan (RMP) and Record of Decision (ROD) being implemented in January 29, 2008, seven years post-Monument designation. Following a decision in the RMP/ROD, the Monument is closed to the sale of vegetative products; however, the gathering of dead and downed wood for campsite use is authorized in areas where campfires are allowed. The quantity of personal use fuelwood removed prior to the signing of the RMP/ROD is unknown.
- **Grazing:**
  - Grazing is allowed within VCNM. In 2001, there were 29,313 permitted Animal Unit Months (AUMs).<sup>3</sup> Today, there are 28,773 permitted AUMs. Grazing use levels vary from year to year depending on factors such as drought. Total AUMs billed were 5,138 in 2016, with an average of 8,456 AUMs billed annually since 2001.<sup>4</sup> Figure 3 shows the number of AUMs permitted and billed annually from 2001 through 2016. Billed AUMs represent an average of 29% of permitted AUMs over the period.
  - Range conditions and management decisions led to the decrease in billed AUMs after 2002. A severe drought in 2002 had lasting impacts on rangeland conditions, as well as on the ranching operations in the area. Many operators voluntarily reduced the number of cattle grazed and sold off cattle during the drought. In addition, four allotments were purchased by an individual and subsequently transferred over the years (late 1990s and early 2000s) to the Grand Canyon Trust through the North Rim Ranch. The North Rim Ranch's current management approach is not to run at full authorized AUM numbers. This also contributes to the lower numbers of billed AUMs on these four allotments.
- **Resource Values:** Monument designation is intended to protect historic landmarks, historic and prehistoric structures, and other objects of historic and scientific interest. In general, these resources are valued by society, but those values are not bought or sold in the marketplace and therefore, difficult to quantify. Below is a brief overview of the natural, cultural, and scientific features identified in the Proclamation that the designation is intended to protect:
  - **Tribal Cultural Resources:** VCNM provides for the collection of pinyon pine seeds (pine nuts) for non-commercial, personal use. Personal use quantities of items necessary for traditional, religious, or ceremonial purposes, such as herbals, medicines or traditional use items are also allowed.
  - **Scientific Investigation:** All cultural sites are generally allocated to Scientific Use, other than the few Public Use sites. 350 sites have been recorded in VCNM from 2000 to the present.

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<sup>3</sup>BLM measures an AUM as the amount of forage needed to sustain one cow and her calf, one domestic horse, or 5 sheep or goats for one month <https://www.blm.gov/programs/natural-resources/rangelands-and-grazing/livestock-grazing/fees-and-distribution>

<sup>4</sup>The total billed AUMs reported do not exclusively fall within the Monument, because the allotment boundaries encompass both Vermilion Cliffs NM and Arizona Strip Field Office lands.

*Land Management Tradeoffs*

Managing land for multiple use requires the consideration of a variety of users, resource needs, and legal requirements, among others. Not all of the competing uses are compatible with one another. Regardless of designation, legal authorities would continue to apply, including the American Indian Religious Freedom Act (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites). See the Background and Overview materials for more information on tradeoff considerations.

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# Vermilion Cliffs National Monument

Table 1. State and County Economic Snapshot

	<b>Coconino County</b>	<b>Arizona</b>
Population, 2015 <sup>a</sup>	136,701	6,641,928
Unemployment rate, April 2017 <sup>b</sup>	4.9%	5.0%
Median Household Income, 2015 <sup>a</sup>	\$50,234	\$50,255

<sup>a</sup> U.S. Census Bureau, 2011-2015 American Community Survey

<sup>b</sup> <https://laborstats.az.gov/sites/default/files/documents/files/emp-report.pdf>

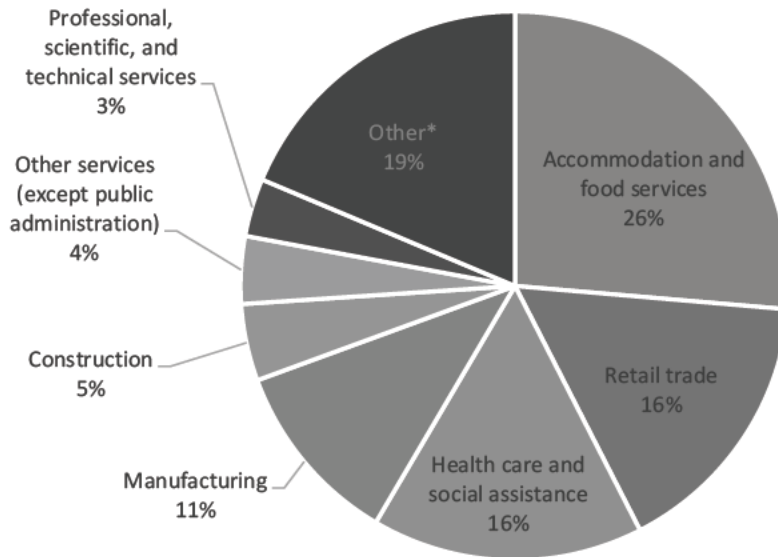
Table 2. VCNM Estimated Economic Contributions, 2016

<b>Activities</b>	<b>Economic output (\$ millions)</b>	<b>Value added (net addition to GDP, \$ millions)</b>	<b>Employment supported (number of jobs)</b>
Recreation <sup>a</sup>	\$23.3	\$14.1	246
Grazing <sup>b</sup>	\$1.0	Not available	27
Cultural Resources	Not available; some values would be included in recreation		

<sup>a</sup>Draft Regional Economic Contributions of National Monuments and National Conservation Areas, BLM, 2016

<sup>b</sup>BLM data.

Figure 1. Percent employment by sector in Coconino County, 2015



\*Other includes arts, entertainment and recreation; transportation and warehousing; administrative and support and waste management and remediation services; wholesale trade; finance and insurance; real estate rental and leasing; information; education services; management of companies and enterprises; utilities; agriculture, forestry, fishing and hunting; mining, quarrying, and oil and gas extraction; and industries not classified. Each of these represents less than 4% of total employment. While this data source covers most NAICS industries, it excludes crop and animal production; rail transportation; National Postal Service; pension, health, welfare, and vacation funds; trusts, estates, and agency accounts; private households; and public administration. Most establishments reporting government employees are also excluded. Source: 2015 County Business Patterns, U.S. Census Bureau.

Figure 2. Annual Visitation to Vermilion Cliffs National Monument

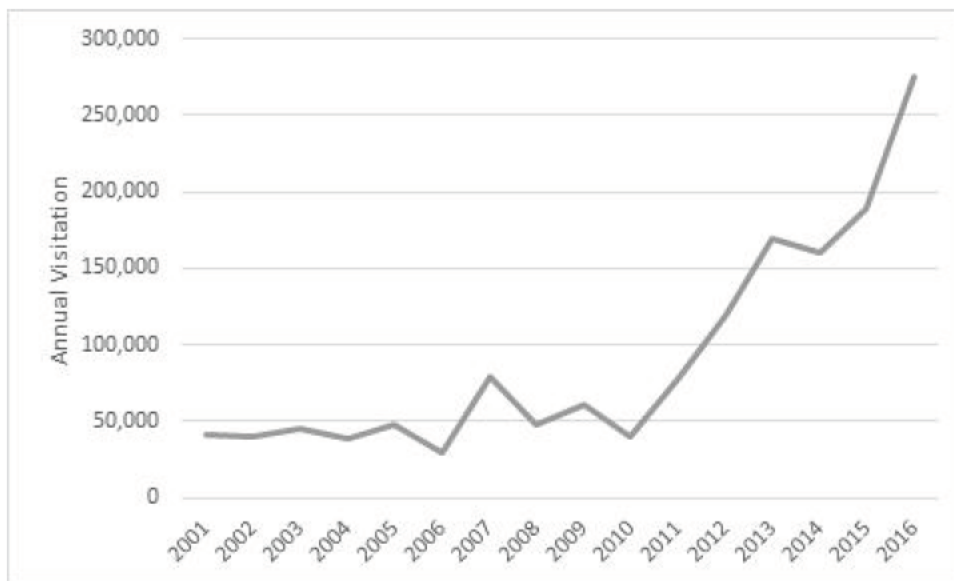


Figure 3. AUMs Permitted and Billed on Vermilion Cliffs National Monument, 1992-2016

