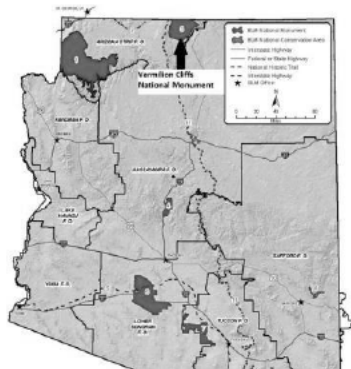




Vermilion Cliffs National Monument

Economic Values and Economic Contributions

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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) as well as to provide a brief economic profile of Coconino County.

Background

Vermilion Cliffs National Monument (VCNM) was established by Presidential Proclamation 7374 on November 9, 2000 consisting of 293,000 acres. Prior to designation, the area was managed by the 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:

Vermilion Cliffs National Monument,
Arizona

Location: Coconino County, Arizona

Managing agency: BLM

Adjacent cities/counties/public lands:

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

- **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.

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.

Table 1. Economic Profile for Coconino County

Measure	Coconino County, AZ	Arizona
Population, 2015	136,701	6,641,928
Unemployment rate, April 2017 ^a	4.9%	5.0%
Median Household Income (2015) ^b	\$50,234	\$50,255

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

^bhttps://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_DP03&src=pt

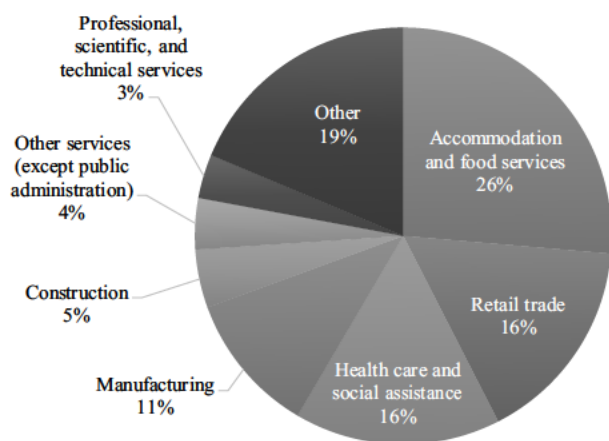


Figure 1. Percent employment by sector in Coconino County, 2015

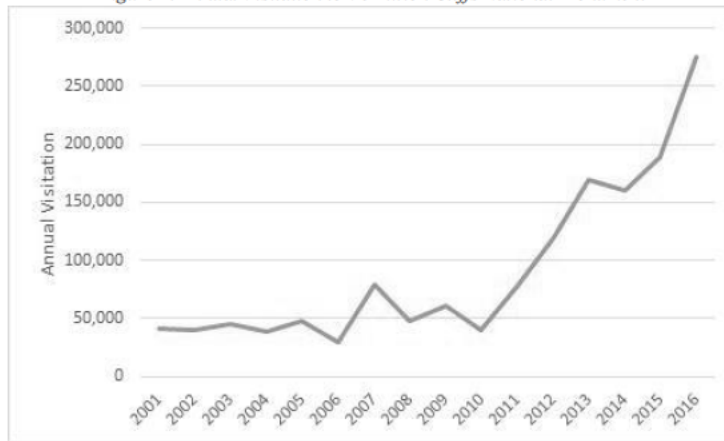
"Other" includes industries classified as Arts, entertainment, and recreation, Transportation and warehousing, Administrative and support and waste management and remediation services, Wholesale trade, Finance and insurance, Real estate and rental and leasing, Information, Educational services, Management of companies and enterprises, Utilities, Agriculture, forestry, fishing and hunting, Mining, quarrying, and oil and gas extraction, and Industries not classified, each of which represents less than 3% of employment.

Activities and Resources Associated with Vermilion Cliffs National Monument

Activities taking place on Vermilion Cliffs National Monument lands include recreation, grazing, and cultural/archaeological exploration. Further detail on these activities is listed below:

- **Recreation:** Visitation at Vermilion Cliffs National Monument has increased since designation, rising from 41,884 visits in 2001 to 275,845 visits in 2016 (*Figure 2*). 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.

Figure 2. Annual Visitation to Vermilion Cliffs National Monument



- **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 existing material sites by the BLM for road maintenance. No new permits or sales contracts were issued.
- **Grazing:**
 - Grazing is allowed within Vermilion Cliffs National Monument. In 2001, there were 29,313 permitted Animal Unit Months (AUMs).¹ Today, there are 28,773 permitted

¹ 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>.

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 2001.² 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.

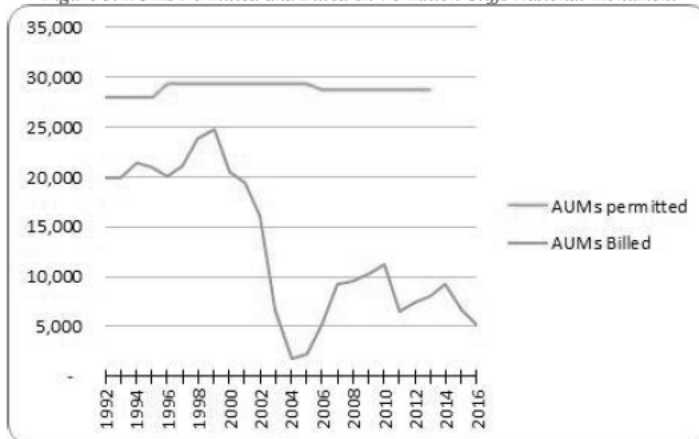
Range conditions and management decisions led to the decrease in billed AUMs after 2002. A severe drought in 2002 had lasting impacts on rangeland conditions, as well as on the ranching operations in the area. Many operators voluntarily reduced the number of cattle grazed and sold off cattle during the 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.

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Figure 3. AUMs Permitted and Billed on Vermilion Cliffs National Monument



- Timber:** There is no annual timber production of the pinyon pine and juniper community. Personal use fuelwood cutting of pinyon pine and juniper trees is the only activity related to timber prior to the RMP and ROD being implemented in January 29, 2008, seven years post monument designation. The quantity of personal use fuelwood removed is unknown.
- Cultural/Scientific:** 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. All cultural sites are generally allocated to Scientific Use, other than the few Public Use sites (five and Sun Valley Mine). 350 sites have been recorded in VCNM from 2000 to the present.

² The total billed AUMs reported do not exclusively fall within the monument, because the allotment boundaries encompass both Vermilion Cliffs and Arizona Strip Field Office lands.


Land Management Tradeoffs

This section presents some information to help understand land management tradeoffs. Decision making often involves multiple objectives and the need to make tradeoffs among those objectives. However, tradeoffs and decision making are often subject to constraints, such as Monument designations. In general, market supply and demand conditions drive energy and minerals activity; societal preferences and household disposal income affect recreation activity levels; and market prices and range conditions affect the demand for forage. Culturally important sites and unique natural resources, by definition, have limited or no substitutes. A particularly challenging component of any tradeoff analysis is estimating the nonmarket values associated with VCNM resources, particularly the nonmarket values associated with cultural and scientific resources.

Planning for permitted resource use on National Monuments will involve trade offs among different activities on the land area being managed in order to allow permitted activities that are compatible with monument objects. Once designated, National Monuments continue to be managed under the multiple use mandate outlined in the Federal Land Policy and Management Act of 1976. In some cases, certain areas of the Monument may be appropriate for more than one use. After the careful consideration of tradeoffs, management decisions in those cases may prioritize certain uses over others. In other cases, land areas may be more appropriate for a particular use and activities could be restricted to certain areas of the Monument. These decisions are based upon whether a use is compatible with the designation. Factors that could inform these tradeoffs include demand for the good or activity, prices, costs, and societal preferences. Other considerations might include the timeframe of the activity how long the benefits and costs of a given activity would be expected to extend into the future. Trust responsibilities and treaty rights should also be considerations.

In considering any trade offs, it is not just the level and net economic value associated with an activity that occurs in a given year that is relevant to decision making. Virtually all activities within the Monument occur over time and it is the stream of costs and benefits over a given period of time associated with each activity that is relevant. For example, recreation activities could continue indefinitely assuming the resources required for recreation remain intact and of sufficient quality for individuals to remain interested in the activity. Likewise, the values associated with the natural and cultural resources could continue indefinitely provided they are not degraded by other activities (and assuming preferences do not change). Grazing could also continue indefinitely as long as the forage resource is sustainably managed and remains consistent with the protection of monument objects. Timber harvest may also continue indefinitely as long as the timber resource is sustainably managed. The stream of costs and benefits associated with some other non renewable resources would be finite, however (assuming these activities were consistent with the designation). For example, oil, gas, coal and minerals are all non renewable resources and would only be extracted as long as the resource is economically feasible to produce.

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DRAFT July 11, 2017 values, figures, and text are subject to revision

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