

**From:** Eberlien, Jennifer - OSEC, Washington, DC  
**To:** [Bowman, Randal](#)  
**Cc:** [Jiron, Dan - OSEC, Washington, DC](#)  
**Subject:** FW: Monument data due today  
**Date:** Thursday, July 27, 2017 1:49:54 PM  
**Attachments:** [20170720 FS Comments on San Gabriel Mountains Review Draft.docx](#)  
[20170720 FS Comments on Giant Sequoia Review Draft.docx](#)

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Hi Randy – please see attached.

Jennifer Eberlien  
Forest Service Liaison  
Natural Resources and Environment  
Department of Agriculture  
[Jennifer.eberlien@osec.usda.gov](mailto:Jennifer.eberlien@osec.usda.gov)  
202-720-5979  
(b) (6) (cell)

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**From:** Snieckus, Mary -FS  
**Sent:** Thursday, July 27, 2017 2:22 PM  
**To:** Eberlien, Jennifer - OSEC, Washington, DC <[Jennifer.Eberlien@osec.usda.gov](mailto:Jennifer.Eberlien@osec.usda.gov)>; Casamassa, Glenn -FS <[gcasamassa@fs.fed.us](mailto:gcasamassa@fs.fed.us)>  
**Cc:** Coleman, Angela -FS <[acoleman@fs.fed.us](mailto:acoleman@fs.fed.us)>  
**Subject:** Monument data due today

Jen, attached are the updated economic reports on the San Gabriel and Giant Sequoia National Monuments.

Would appreciate your sending them on to Randy when your review is complete.

Thanks so much, Mary

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**From:** Eberlien, Jennifer - OSEC, Washington, DC  
**Sent:** Wednesday, July 26, 2017 1:41 PM  
**To:** Casamassa, Glenn -FS <[gcasamassa@fs.fed.us](mailto:gcasamassa@fs.fed.us)>  
**Cc:** Snieckus, Mary -FS <[marysnieckus@fs.fed.us](mailto:marysnieckus@fs.fed.us)>; Coleman, Angela -FS <[acoleman@fs.fed.us](mailto:acoleman@fs.fed.us)>  
**Subject:** Fwd: Monument data due today

Hi Glenn - can you provide an update for Randy? Thanks.

Jen

Jennifer Eberlien  
Forest Service Liaison  
Natural Resources and Environment  
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[Jennifer.Eberlien@osec.usda.gov](mailto:Jennifer.Eberlien@osec.usda.gov)  
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Begin forwarded message:

**From:** "Bowman, Randal" <[randal\\_bowman@ios.doi.gov](mailto:randal_bowman@ios.doi.gov)>  
**Date:** July 26, 2017 at 11:10:56 AM EDT  
**To:** "Eberlien, Jennifer - OSEC, Washington, DC"  
<[Jennifer.Eberlien@osec.usda.gov](mailto:Jennifer.Eberlien@osec.usda.gov)>  
**Subject:** Re: Monument data due today

Do you know the status of the comments on the San Gabriel and Giant Sequoia economic reports?

On Fri, Jul 21, 2017 at 5:25 PM, Bowman, Randal  
<[randal\\_bowman@ios.doi.gov](mailto:randal_bowman@ios.doi.gov)> wrote:

Thank you. We will be looking for the San Gabriel and Sequoia economic report responses, but no problem if they are a few days late.

On Fri, Jul 21, 2017 at 5:20 PM, Eberlien, Jennifer - OSEC, Washington, DC  
<[Jennifer.Eberlien@osec.usda.gov](mailto:Jennifer.Eberlien@osec.usda.gov)> wrote:

Hi Randy – my understanding is that some aspects of Monument data was due today. We've been sending data as it's been analyzed and requested. I may not have captured everything, but here's the data sets I know have been sent in already:

Already sent on 6/26

- FS Executive Summary of the 4 FS-Managed Monuments in California
- DOI Data Request Responses:
  - 1a & 1b Berryessa Snow Mountain: (2 docs) Initial Data Response & Additional Information Response
  - 2a & 2b Giant Sequoia: (2 docs) Initial Data Response & Additional Information Response
  - 3a. & 3b. San Gabriel Mountains: (2 docs) Initial Data Response & Additional Information Response
  - 4a & 4b Sand to Snow: (2 docs) Initial Data Response & Additional Information Response

Due to day (7/21) are comments on economic reports for

San Gabriel  
Giant Sequoia

Outstanding comments:

Economic report on Sand to Snow due July 27

Economic report on Berryessa-Snow Mountain due August 4

Recommendations on monument changes are still working through our Agency and Department leadership. Once we have those finalized, we will send. Call if you have any questions or issues.

Jen

Jennifer Eberlien  
Forest Service Liaison  
Natural Resources and Environment  
Department of Agriculture  
[Jennifer.eberlien@osec.usda.gov](mailto:Jennifer.eberlien@osec.usda.gov)  
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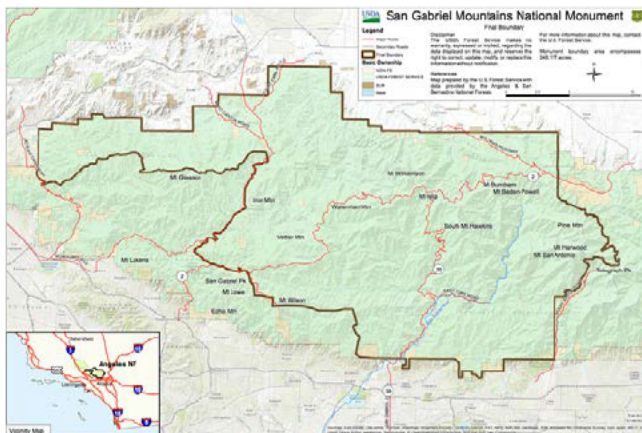
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# San Gabriel Mountains National Monument

## Economic Values and Economic Contributions

### *DRAFT*



## *Introduction*

The purpose of this paper is to provide information on the economic values and economic contributions of the activities and resources associated with San Gabriel Mountains National Monument (SGMNM or Monument). A brief economic profile of Los Angeles and San Bernardino Counties is also provided.

## *Background*

SGMNM was established by President Obama on October 10, 2014 (Proclamation 9194) in recognition of the area's importance for cultural history, watershed protection, and habitat for sensitive and/or iconic plant and animal species. As well, the area has scientific value both for astronomy and earth sciences. SGMNM covers more than 342,000 acres in the Angeles National Forest and another 4,000 acres in the neighboring San Bernardino NF.

### *San Gabriel Mountains National Monument, California*

**Location:** Los Angeles and San Bernardino Counties, CA

**Managing agencies:** USFS

**Resource Areas:**

☒ Recreation ☐ Energy ☒ Minerals  
☐ Grazing ☐ Timber ☒ Scientific  
Discovery ☒ Tribal Cultural

## *Public Outreach Prior to Designation*

Prior to national monument designation, HR 4858 was introduced in the 113<sup>th</sup> Congress by Congresswoman Judy Chu. This resolution, the San Gabriel National Recreation Area Act, contained land that was ultimately designated as the San Gabriel Mountains National Monument. Since national monument designation, Congresswoman Chu introduced the San Gabriel Mountains Foothills and Rivers Protection Act. This resolution, introduced as HR 3820 in the 114<sup>th</sup> Congress and as HR 2323 in the 115<sup>th</sup> Congress, would add an additional 109,143 acres for inclusion within the San Gabriel Mountains National Monument.

A meeting was held in Baldwin Park in August 2014 to solicit public comment for the establishment of the San Gabriel Mountains National Monument, with U.S. Forest Service Chief Tom Tidwell in attendance.

Tribal and Native American outreach efforts also occurred informally prior to designation, comprising discussions with federally recognized tribes and one informal meeting with the local Native American community.

### *Local Economy and Economic Impacts*

As summarized in *Table 1*, Los Angeles and San Bernardino Counties in California account for slightly more than 30% of the State's population. Median income in these counties is a little less than the State's median household income. The unemployment rate for the two-county area is slightly below the state average. The population of the area has increased by over 20% since 2001 and real personal income has risen by about 50%.

The USDA Economic Research Service (ERS) has developed a set of county-level typology codes that captures a range of economic and social characteristics. The SGMNM counties are classified as follows:

- Nonspecialized – both counties are nonspecialized, meaning that they are neither farming, mining, manufacturing, nor government dependent, nor were they recreation counties.
- Both were indicated as low education counties, meaning that 20% or more of the residents age 25 to 64 did not have a high school diploma or equivalent between 2008 -2012

*Table 1. Los Angeles and San Bernardino Counties and State of California Economic Snapshot*

Measure	Los Angeles and San Bernardino Counties, CA	California
Population, 2015 <sup>a</sup>	12,133,157	38,421,464
Unemployment Rate, May 2017 <sup>b</sup>	4.2%	4.2%
Median Household Income, 2015 <sup>a</sup>	\$53,433- \$56,196	\$61,818

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

<sup>b</sup> <http://www.labormarketinfo.edd.ca.gov/file/1fmonth/countvur-400c.pdf>

Socioeconomic conditions in these counties have followed roughly the same pattern as the rest of the U.S. in recent years with a long upward trajectory in personal income and employment, which was interrupted by the 2007-2009 recession. Since 2001, services and construction industries have been the fastest growing economic sectors, exhibiting the most job growth. Services industry jobs increased by a much larger number than did jobs in any other industry during those same years. Since 2001, jobs in the services sector increased by about 20% compared to only about 6% in non-services related sectors. Within the services sector, health care and social assistance accounted for greater job growth than any other services industry.

(b) (5) DPP



## Activities and Resources Associated With SGMNM

Activities supported by management of the Angeles National Forest contribute to the economies of communities around the forest. Recreation visitors to the forest spend money locally on such things as gas, hotels, groceries and restaurant meals. Ranches receive income from the value added to livestock grazed on the National Forest. Table 2 shows the local economic contribution as measured by employment and GDP of these activities on the Sequoia National Forest.

Activities taking place at SGMNM include:

- **Recreation:** There were an estimated 2,880,000 recreation visits to the Angeles NF in FY2016 including about 1,738,000 visits to SGMNM, or about sixty percent of forest visitation.

Estimated visitation in 2011 to the Angeles NF was about 3.6 million. The decline in visitation is attributable to conditions including extended drought and recent wildfires. The economic contributions for the 2016 visitation have not yet been calculated. In 2011, visitors to the Angeles NF spent a total of about \$83 million in the two-county area. That spending sustained about 660 jobs.

- **Energy:** There are no oil and gas wells and no coal developments in the San Gabriel Mountains National Monument. A 4.95 megawatt capacity hydropower system is located within the monument, as well as an intake and conduit for an additional 3 megawatt capacity hydropower system. Actual production numbers are not available for either of these systems, but production would be unchanged by Monument designation. Approximately 94 miles of electrical transmission line is located within the monument. A project to replace 25.1 miles of low-voltage electric line with high-voltage line occurred within the monument. This project was initiated prior to designation and concluded after designation. The Presidential Proclamation that established the monument explicitly stated that future such developments were not precluded, as long as they were consistent with the overall goal of protection of the identified objects of interest.
- **Non-Energy Minerals:** Mineral material, specifically river rock, was previously sold within the San Gabriel Mountains National Monument from a location at the San Gabriel Off-Highway Vehicle area. These were sold under the authority of the Minerals Material Act of 1947. The Mineral Materials Act of 1947 does not provide for authority to sell materials within a national monument. Therefore, zero mineral materials are currently being sold within the monument.

There are approximately 80 active mining claims within the monument. There is one active mine with an approved operating plan, known as the North Star Mine. The North Star Mine is located in Arrastre Canyon and is an anorthocite-syenite deposit that has been in production since 1988. Annual mineral production is unknown but would be unchanged by monument designation.

Table 2. Estimated Economic Contributions, 2014

Activities	Economic output (\$millions)	Value added (net additions to GDP), \$millions	Employment supported (number of jobs)
Recreation*	\$78.0	\$45.4	660
Grazing, Timber, and Minerals	\$0.0	\$0.0	0
Cultural resources	Unquantifiable; some values would be included in recreation		

\*Source: <https://www.fs.fed.us/emc/economics/contributions/at-a-glance.shtml> Economic contributions estimates are for the Angeles NF as a whole

- **Grazing:** No grazing allotments exist within the SGMNM.
- **Timber:** The only timber produced on the San Gabriel Mountains National Monument is fuelwood. The annual average for the 2 years reported subsequent to monument designation was reported to be 977 CCF. The monument designation has no effect on annual timber production, therefore any differences from prior years are due to other factors.
- **Scientific Investigation:** Scientific research in the SGMNM is diverse and includes ongoing investigations of the area's hydrology, geology, and the ecology of both plant and animal communities. The observatory on Mount Wilson is one of the most famous observatories in the world. The San Dimas Experimental Forest is operated by the Forest Service's Pacific Southwest Research Station, and is utilized by dozens of local university researchers every year. The Experimental Forest existed before the monument designation and its management has not changed.
- **Tribal Cultural Resources:** Participation rates for subsistence activities within the San Gabriel Mountains National Monument are mostly unknown. The monument Proclamation provides specific direction regarding gathering activities, specifically Tribal gathering. The monument Proclamation states "The plan will provide... for continued...access by Indian tribal members for traditional cultural, spiritual, and tree and forest product-, food-, and medicine-gathering purposes". Since the monument designation, the national forest has seen a significant increase in interest and concern for gathering and use of traditional resources by the local Native American community on the forest and within the monument. Since the expiration of the agency-combined U.S Forest Service and BLM policy on tribal gathering and collecting, the monument Proclamation language provides some assurance to the local Native American community that the Forest Service would continue to facilitate this activity by Tribes. Forest products such as mistletoe and seeds are also harvested within the monument. The average annual amount harvested under permit for the 2 years reported subsequent to monument designation was 405 pounds.

Out of a total of 703 sites, 22 new cultural resources were identified within the San Gabriel Mountains National Monument in the past 3 years since its designation in October, 2014. The resource types were predominately Native American subsistence and procurement sites. Half of the 22 sites were identified during Section 110 volunteer activities and projects, the other half were identified during Section 106 project compliance of Forest Service authorized operations or permitted undertakings.

### *Land Management Tradeoffs*

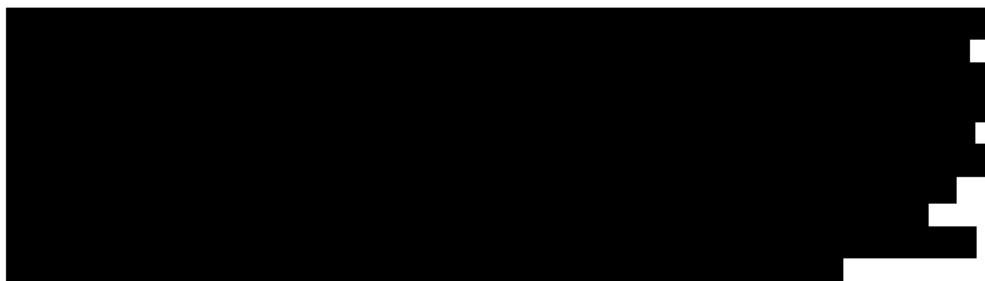
This section presents some information to help understand land management tradeoffs. Decision-making often involves multiple objectives and the need to make tradeoffs among those objectives. However, tradeoffs and decision making are often subject to constraints, such as Monument designations. In general, 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 SGMNM 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 National Forest 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). 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, minerals are non-renewable resources and would only be extracted as long as the resource is economically feasible to produce.

(b) (5) DPP



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# Giant Sequoia National Monument

## Economic Value and Economic Contributions

*DRAFT*



## Introduction

The purpose of this paper is to provide information on the economic values and economic contributions of the activities and resources associated with Giant Sequoia National Monument (GSNM or Monument). A brief economic profile of Fresno, Kern, and Tulare Counties, in which the Sequoia National Forest is located, is also provided.

## Background

GSNM was established by President Clinton on April 15, 2000 (Proclamation 7295) in recognition of the outstanding landscape, and particularly the giant sequoias and supporting ecosystems. GSNM covers more than 328,000 acres and includes most of the giant Sequoia groves within the Sequoia National Forest. The Monument was designated at 327,769 acres. Since then, 1,774 acres have been acquired and 66 acres have been conveyed within the Monument boundary. This net increase in Federal acres within the boundary of the Monument would most likely have occurred regardless of Monument designation.

The Monument has a northern area and southern area, bisected by Sequoia National Park. Giant sequoias (*Sequoiadendron giganteum*) grow only on the western slopes of California's Sierra Nevada range. The trees can reach 270 feet in height and are among the longest-lived trees in the world. The GSNM management plan emphasizes restoration and maintenance of healthy forest ecosystems, the importance of a natural fire regime, provision of a broad range of recreation opportunities, and opportunity for increasing the understanding of the value and importance of the scientific and historic objects within the Monument. Existing uses of the lands within the Monument were allowed to continue including grazing, recreation residences, and many forms of outdoor recreation.

## Public Outreach Prior to Designation

In February 2000, President Clinton asked the Secretary of Agriculture to consult with appropriate Federal, State, local, and Tribal officials and agencies prior to making a recommendation regarding designation. The Forest Service responded to this request by meeting with interested State, Federal, local, and Tribal officials. The Forest Service also held two public meetings in Visalia and Fresno, California to provide the public an opportunity to express their views regarding creation of a National Monument in Sequoia National Forest. Additionally, the Forest Service encouraged written comments at the public meetings, through individual contacts, newspaper articles and through a website designed for the purpose.

According to the Record of Decision for the GSNM management plan, extensive public involvement occurred in the development of a collaborative management plan for the GSNM. A *Federal Register* notice was published June 8, 2001. A number of public meetings were held from July 2001 through March 2002. After the initial draft environmental impact statement (DEIS) was released for public comment in December 2002, the Forest Service held public meetings to review, discuss and comment on it in February 2003. An initial plan was remanded to the Forest Service in 2006 and the planning process was restarted.

A third-party facilitator led meetings of people interested in recreation management from December 2007 through June 2009. The meetings resulted in the formation of a group that became the Giant Sequoia National Monument Association. Other concurrent public meetings focused on ecological restoration and

### *Giant Sequoia National Monument & Preserve, California*

**Location:** Fresno, Kern, and Tulare Counties, CA

**Managing agencies:** USFS

**Resource Areas:**

☒ Recreation ☐ Energy ☐ Minerals  
☒ Grazing ☐ Timber ☒ Scientific  
Discovery ☒ Tribal Cultural

fuels and vegetation management strategies. In the spring of 2009, a scoping period, website for obtaining comments, and four public workshops were used to gain public comments. The second DEIS was published in August 2010, with a 120-day public comment period. Public meetings were held in September and October 2010. The management plan was approved in August of 2012.

### Local Economy and Economic Impacts

As summarized in *Table 1*, Fresno, Kern, and Tulare Counties in California account for approximately 6% of the State's population.

Median income in each county is less than the State's median household income. All have unemployment rates higher than the State. The population of Kern County has increased by over 30% since 2000, while the other two are nearer to 20%. Hispanic or Latino residents account for more than half of the population in each of the three counties.

The USDA Economic Research Service (ERS) has developed a set of county-level typology codes that captures a range of economic and social characteristics. The GSNM counties are classified as follows:

- Nonspecialized – all three counties are nonspecialized, meaning that they are neither farming, mining, manufacturing, nor government dependent, nor were they recreation counties.
- All three were indicated as low education counties, meaning that 20% or more of the residents age 25 to 64 did not have a high school diploma or equivalent between 2008 -2012
- Fresno and Tulare Counties were indicated as being persistent related child poverty counties, indicating that 20% or more of related children under age 18 were poor, as measured by the 1980, 1990, and 2000 decennial censuses and the American Community Survey 5-year estimate for 2007-2011.

Socioeconomic conditions in these counties have followed roughly the same pattern as the rest of the U.S. in recent years with a long upward trajectory in personal income and employment, which was interrupted by the 2007-2009 recession. Over time, unearned income (income from investments, rental properties, retirement accounts, etc.) has become a somewhat larger share of total income within the three counties. Transfer payments have increased proportionally more than any other type of income since 1970. From 1970 to 2000, job growth in services, agriculture, and retail-related industries have been the fastest growing economic sectors. Services industry jobs increased by a much larger number than did jobs in any other industry during those same years. Since 2000, jobs in the services sector increased by about 37% compared to only about 8% in non-services related sectors. Within the services sector, health care and social assistance accounted for greater job growth than any other services industry.<sup>6</sup>

*Table 1. Fresno, Kern, Tulare Counties and State of California Economic Snapshot*

Measure	Fresno, Kern, Tulare Counties, CA	California
Population, 2015 <sup>a</sup>	2,276,518	38,421,464
Unemployment Rate, May 2017 <sup>b</sup>	7.4%-8.6%	4.2%
Median Household Income, 2015 <sup>a</sup>	\$42,031-\$49,026	\$61,818

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

<sup>b</sup> <http://www.labormarketinfo.edd.ca.gov/file/lfmonth/county/r-400c.pdf> [www.census.gov/quickfacts/ca](http://www.census.gov/quickfacts/ca)



## Activities and Resources Associated With GSNM

Activities supported by management of the Sequoia National Forest contribute to the economies of communities around the forest. Recreation visitors to the forest spend money locally on such things as gas, hotels, groceries and restaurant meals. Ranches receive income from the value added to livestock grazed on the National Forest. Table 2 shows the local economic contribution as measured by employment and GDP of these activities on the Sequoia National Forest.

Table 2. Estimated Economic Contributions, 2014

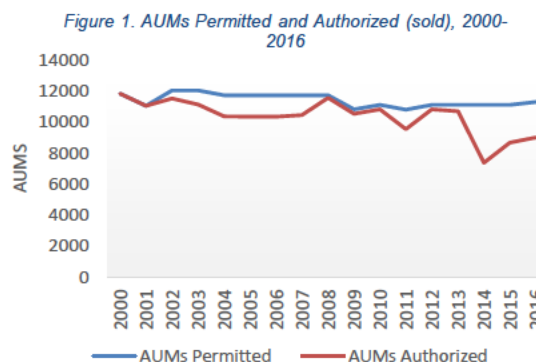
Activities	Economic output (Smillions)	Value added (net additions to GDP) Smillions	Employment supported (number of jobs)
Recreation*	\$21.8	\$12.5	199
Grazing	\$33.5	\$17.2	290
Cultural resources	Unquantifiable; some values would be included in recreation		

\*Source: <https://www.fs.fed.us/emc/economics/contributions/at-a-glance.shtml>. Economic contributions estimates are for the Sequoia NF as a whole

Activities taking place at GSNM include:

- **Recreation:** There were an estimated 780,000 recreation visits to the Sequoia NF in FY2016, including about 400,000 visits to GSNM. Estimated visitation in 2011 was 626,000 to Sequoia NF and 368,000 to GSNM. The economic contributions for the 2016 visitation have not yet been calculated. In 2011, visitors to Sequoia NF spent a total of about \$31 million in the three- county area. That spending sustained about 200 jobs.
- **Energy:** There are two hydroelectric projects located within the Monument. Southern California Edison operates the 2.5 megawatt Lower Tule Hydroelectric Project (Lower Tule Project; Federal Energy Regulatory Commission Project No. 372-008) in the Middle Fork of the Tule River. The Lower Tule Project generates an average of 17.9 gigawatt hours (GWh) of renewable energy annually. Approximately 200 feet of 66-kilovolt transmission line is associated with the Lower Tule Project. Pacific Gas and Electric Company operates the 7.9 megawatt Tule River Hydroelectric Project (Tule River Project; Federal Energy Regulatory Commission Project No. 1333-001) on the North Fork of the Middle Fork of the Tule River. The Tule River Project generates an average of 31.8 GWh of renewable energy annually. Approximately 15.27 miles of 70-kilovolt (kV) transmission line is associated with the Tule River Project. Monument designation did not change the production rates for these hydroelectric projects.
- **Non-Energy Minerals:** New mining claims are prohibited within the Monument. The Proclamation withdrew the area from the 1872 Mining Law and other mining laws. Existing mining claims with a valid discovery of a valuable mineral deposit as of the date of the designation constituted valid existing rights
- **Grazing:** Since designation, Animal Unit Month (AUM)<sup>1</sup> permits have ranged between 10,800 and 12,030 per

<sup>1</sup> An AUM is measured as the amount of forage for sheep or goats for one month.



(b) (5) DPP



year. Permitted use has remained relatively constant and changes primarily reflect permits that have become vacant for various reasons or feed that is no longer available due to growth of brush, or other reasons not related to management of the Monument. AUMs authorized (sold in a given year) averaged between 10,000 and 11,000 per year until about 2013. Since then, the number has fallen slightly, to about 9,000 in 2016. The decline in authorized use primarily reflects nonuse of permits for resource benefit due to drought conditions (see *Figure 1*). Grazing activities are estimated to support about 290 jobs.

- **Timber:** No portion of the Monument may be considered to be suited for timber production and no part of the Monument can be used in a calculation or provision of a sustained yield of timber from Sequoia National Forest. Except for timber sales that were at the time of designation (Proclamation) under contract and for personal use fuel wood, removal of trees within the Monument may only take place if clearly needed for purposes of ecological restoration and maintenance, or public safety. The Giant Sequoia Management Plan identifies "Clearly needed" criteria for felling and removal of timber for the purposes of ecological restoration, maintenance or public safety. From 1995 through 1999, an average of over 12 million board feet per year was harvested from the GSNM area.
- **Scientific Investigation:** Scientific research in the GSNM is diverse and includes ongoing investigations of the ecology and plant communities, especially the giant sequoia trees and their supporting ecosystems.
- **Tribal Cultural Resources:** At the time of designation, 1013 sites were recorded including prehistoric sites, historic sites, trails, and standing structures. Approximately 30 recorded sites have been added to the baseline inventory since Monument designation. The Forest Service is unable to quantify the extent of access by Indian tribal members for traditional cultural, spiritual, and tree and forest product, food, and medicine gathering purposes within the Sequoia National Forest and particularly within the Giant Sequoia National Monument. However, tribes have expressed interest in collecting oak acorns, deer grass, fern, Pinyon, and various berries. Some spiritual/culturally important areas within the Monument are managed by the Forest Service, but frequency of use is not tracked for the most part. One example of tribal use on the Sequoia National Forest that is tracked is the Monache Gathering event. This is a cultural/spiritual gathering that takes place every year following National Historic Preservation Act (NHPA) Undertaking Clearances processes, accompanying a special use permit to allow the Native American religious gathering with cultural, educational, and spiritual focus in two different camp sites located within the Monument on the Western Divide Ranger District. The special use permit authorizes a temporary sweat lodge, cooking facilities, and portable toilets. This event and any similar events when proposed would be considered and authorized regardless of Monument status.

### *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 GSNM 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 National Forest Management Act 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 10, 2017 – values, figures, and text are subject to revision

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