

Sequoia National Forest
Giant Sequoia National Monument (GSNM)
Hume Lake and Western Divide Ranger Districts
Draft Desired Conditions and
Purpose and Need (Rev. 12/15/08)

Purpose and Need

The Presidential Proclamation required preparation of a management plan for the Giant Sequoia National Monument (GSNM). The purpose and need of this management plan is to establish management direction for the land and resources within the Monument in order to protect the objects of interest while providing key resources and opportunities for public use within the Monument. It will amend the current Sequoia National Forest Land and Resource Management Plan as amended by the 2001 Sierra Nevada Forest Plan Amendment (SNFPA); and the 1991 Kings River Wild and Scenic River, and Special Management Area Implementation Plan.

The Monument Management Plan will also comply with applicable management direction provided by the 1990 Sequoia National Forest Land Management Plan Mediated Settlement Agreement (MSA) and the 2004 SNFPA. Applicable elements of the MSA that require analysis under NEPA will be addressed in this new monument planning effort.

The Proclamation identified three main needs:

- A) Within the giant sequoia groves and their ecosystems: 1) “a century of fire suppression has led to an unprecedented failure in giant sequoia reproduction in otherwise undisturbed groves,” and 2) “woody debris has accumulated causing an unprecedented buildup of surface fuels.”
- B) Opportunities for public use within the monument by encouraging scientific research, interpretation, special use permits and recreation. The current commodity uses including grazing “shall continue to apply to lands within the monument” under applicable laws, regulations and policies regarding their administration.
- C) Establish a transportation plan to provide for visitor enjoyment and scientific research while limiting mechanized, motorized vehicles to a designated road system.

The objects of interest were generally identified in the Proclamation, with the requirement that the management plan would provide direction for their proper care. Through public and agency dialogue the Objects of Interest have been determined to be a mix of specific individuals/locations (i.e., named sequoias or specific caverns) and broad ecosystems (i.e., sequoia groves or limestone/marble formations). There are also a number of critical processes interconnecting the objects of interest (i.e., hydrologic function and connectivity within and surrounding sequoia groves and/or caverns).

The following are the objects of interest that will be considered for protection under this Giant Sequoia National Monument Management Plan:

- The ecosystems and outstanding landscapes within the Monument that surround the groves, including the interconnected vegetation types arrayed in a complex landscape mosaic,

- The naturally occurring groves of giant sequoia, and other known rare and endemic plant species,
- The known rare animal species including the Pacific fisher, great gray owl, American marten, northern goshawk, peregrine falcon, California spotted owl, California condor, and rare amphibians,
- The paleontological resources in the meadow sediments, giant sequoia tree rings, and other vegetation that have recorded the ecological changes including fire regimes, volcanism, vegetation and climate over the millennia,
- The limestone caverns and other geologic features including granite domes, spires, geothermally produced hot springs and soda springs, and the mix of glacial and river carved gorges,
- The historic and prehistoric archeological sites that provide a record of the Native American tribal use and settlement patterns, and early Euro-American settlement and use patterns, and their interrelationships.

Desired Conditions

The desired conditions stated below are broad, overarching descriptions of conditions to address the purpose and need to protect the objects of interest while providing key resources and opportunities for public use within the Monument. As stated in the proclamation, “Removal of trees, except for personal use fuel wood, from within the monument area may take place only if clearly needed for ecological restoration and maintenance or public safety [Proclamation p. 5]. Laws, regulations, and policies pertaining to administration by the Department of Agriculture of grazing permits and timber sales under contract as of the date of this proclamation on National Forest System lands within the boundaries of the monument shall continue to apply to lands within the monument. Nothing in this proclamation shall be deemed to affect existing special use authorizations; existing uses shall be governed by applicable laws, regulations, and management plans. Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation [Proclamation p.6].” Therefore public use in the monument is defined as scientific research, interpretation and conservation education, special use permitted activities, recreation activities and current commodity uses (i.e., grazing, fuelwood cutting, biomass¹ removal) under applicable laws, regulations and policies regarding their administration. [Discussion point: Marianne put in “biomass removal” to address the “tree removal” language of the proclamation, knowing there are likely to be restoration activities that remove biomass of some form]

The desired conditions are governed by the 2000 Presidential Proclamation establishing Giant Sequoia National Monument; and, as applicable, informed by the 1988 Sequoia National Forest Land and Resource Management Plan; the 1990 Sequoia National Forest Land Management Plan Mediated Settlement Agreement; the applicable Advisories from the Scientific Advisory Board²; and the 2001 or 2004 Sierra Nevada Forest Plan Amendment.

¹ Biomass is defined in terms of ecology and energy: 1. *Ecology*. the amount of living matter in a given habitat, expressed either as the weight of organisms per unit area or as the volume of organisms per unit volume of habitat. 2. *Energy*. organic matter, esp. plant matter that can be converted to fuel and is therefore regarded as a potential energy source. (<http://dictionary.reference.com/browse/biomass>)

² Several advisories were specific to the 2003 Draft Environmental Impact Statement for the Giant Sequoia National Monument Management Plan and are therefore not necessarily applicable to this current Draft EIS.

The 2004 GSNM plan specified that it relied on the 2001 Sierra Nevada Forest Plan Amendment FEIS and Record of Decision, due in part to the fact that the supplemental SNFPA EIS was being developed at the same time as the monument plan. However the 2004 SNFPA contained updated scientific research regarding fire and fuels, and wildlife habitat information. This current analysis for the monument will rely on the most current scientific information available. Where applicable and appropriate it will adopt existing direction from sources such as the 2001 and/or 2004 SNFPA.

The desired conditions are also informed by the public comments regarding the original 2004 Giant Sequoia National Monument Management Plan; and the commenting opportunity from July 2 through August 31, 2008, on the presidential proclamation and scientific advisories.

The desired conditions are described in the context of protecting the Objects of Interest, and/or providing opportunities for public use as stated in the Purpose and Need above.

Vegetation including Sequoia Groves (Protecting Objects)

Preserve³, protect,⁴ and restore⁵ the giant sequoia ecosystem and the surrounding vegetation types including mixed conifer, chaparral, oak woodland and red fir. Promote a highly diverse vegetation mosaic of age classes, tree sizes, and species composition that are stable, resilient to environmental changes, and provide a wide variety of habitat for terrestrial and aquatic species. [NOTE: The Ecosystem Management Decision Support (EMDS) modeling we will do on January 16 will use a range of size classes and species composition to define desired condition. Size classes would be used as a proxy for age classes.]

The desired vegetation condition is based on vegetation diversity, and maintaining land health and vitality in terms of resisting invasive species, and improving resilience to fire disturbance and native insect and pathogen infestations.

Vegetation Diversity desired condition

Vegetation composition, structure, abundance, distribution, and successional processes contribute to the diversity of native plant and animal species in the plan area. Diversity is spatial and temporal and different species may not exist in the same place or at the same time. In order to best manage the most important objects of interest (i.e. sequoia groves) within the monument, they must be prioritized to focus on the things that make the most difference. It also helps focus on the things that can be changed or maintained within the timeframe of the monument planning period.

³ Preserve is defined in terms of the sequoia groves by allowing ecological processes, or equivalents thereof, to maintain the dynamic of forest structure and function (Piiro and Rogers, An Ecological Foundation for Management of National Forest Giant Sequoia Ecosystems, 1999).

⁴ Protect is defined in terms of sequoia groves as protecting the naturally occurring groves from events that are contrary to or disruptive of natural ecological processes. Protect historical and pre-historical artifacts, and unusual biological and physical features within groves from agents that could destroy them or accelerate their natural rate of deterioration.

⁵ Restore is defined in terms of sequoia groves as: Restore the groves to their natural state where contemporary human activities have interfered with the natural processes—especially fire and hydrology.

[NOTE: need to determine whether to set desired conditions for groves individually since there are differing existing conditions from grove to grove, *OR* set a single desired condition and apply it to all the groves.]

The GSNM has several vegetation cover-types, which are reflected by the composition and dominance of particular species. Some of those are at desired condition and management will be directed towards maintaining that condition. Other cover-types are outside the historic range of variability and management will be directed towards moving to desired condition within that historic range. The historic range of variability is not static in that climate change and other factors have and will continue to alter this range, often in unforeseen ways. Instead, the historic range of variability is a general reference condition on which to base trend data. [Developing these with EMDS modeling? Create table showing ranges of existing/desired conditions for the vegetation cover types, maybe one specific for the groves as well?]

GSNM Vegetation Diversity Objectives: [Use these to help define what we mean by protect, preserve and restore-break out groves & other vegetation?-percents are Marianne's educated guesses.]

- Within the first decade, restore natural biological processes on 10 percent of previously harmed areas [Need definition of "harmed areas"].
- Over an average of 5 years, maintain at least 80 percent of the vegetation cover types that are currently within the "historic range of variability" within that same range.
- Within 10 years, evaluate whether the "historic range of variability" is shifting for specific vegetation cover types, including sequoias?
- Over an average of 5 years, there is a 20 percent decrease in the presence of white fir and incense cedar within the aspen, pine, sequoia and mixed conifer cover types.
- Within 10 years, there is X percent of sequoia regeneration in 10 percent of the groves.
- Manage the groves for current and future resiliency of the desired plant communities. [How do we measure this?]
- Within 5 years, develop at least 2 scientific studies in the groves regarding resilience to disturbance factors, and/or climate change?
- Maintain or improve riparian vegetation cover types –need details
- Over an average of 5 years, restore X percent of chaparral cover type to annual grass or pine type?

Reducing Invasive Species Potential

Invasive species, including yellow star thistle, are moving up from the San Joaquin Valley into the monument. Existing infestations are presumably expanding because control efforts are limited. The desired condition is that the GSNM has reduced the potential for introduction, establishment, and spread of invasive species and has reduced existing infestations in priority areas.

Reduced Invasive Objectives

- On a 5-year average, eradicate 5 percent of known noxious weed populations, beginning along the leading edge of known infestations.
- Within 10 years establish XX acres of blister-rust resistant sugar pine (or maintain what we've got?)
- Within 10 years, eliminate the existing bullfrog populations in Hume Lake, and no new incidences are found in the plan area.

- By X date, the average annual treatment of 30-35% of inventoried infestations of noxious weeds.
- Increase use of certified weed-free feed to at least 50% of feed used for all stock during the plan period (not sure if we have sources yet?).

Vegetation Fuels

As described in the Proclamation many of the ecosystems, including sequoia groves, have a large amount of surface and ladder fuels. In groves and other forest types, effective fuels reduction would decrease vegetation that promotes fuel ladders, comprised of shade tolerant-trees like white fir and incense cedar. The desired condition is to have fire-adapted ecosystems in the plan area that contribute to protecting the objects of interest, and maintaining sustainable environmental, social, and economic benefits, i.e., Fire Regime Condition Class (FRCC) 1 [Klaus has better recommendation? Or use National Park Service (NPS) fuels evaluation process?].

[NOTE: add a table that shows percent of GSNM at which Fire Regime Condition Class in terms of existing and desired conditions, include groves & wildland urban interface (WUIs), too?]

Fire Management Objectives:

- Within 10 years the fire regime condition class is improved over 50% of the area outside FRCC 1.
- Over a 5 year average, the fire regime condition class is improved on at least 10,000 acres.
- Use natural fires jointly with Park Service and other agencies to restore fire adapted ecosystems at least 10% of the time on a 5 year average.
- Choose fuel reduction methods that are efficient and effective regarding timing within local air quality management rules.
- Within 10 years, have the ability to forecast the difference in PM 10 and ozone between fires using controlled fuels and controlled seasons, versus uncontrolled fires through monitoring and working with air quality specialists.
- Within 10 years conduct research to continue to learn and understand the effects of drought, season of burn, intensity and duration of burn, and forest floor reductions on giant sequoia tree physiology and reproduction. Outreach to research groups and individuals to study regeneration, fire effects, hydrological changes, and other important or long term changes in the giant sequoia ecosystems.
- Maintain mixed conifer and chaparral vegetation cover types to provide for no net loss of FRCC 1 lands on a 5 year average.
- Over a 5 year average, restore 5 percent of FRCC 2 and FRCC 3 areas, where restoration activities have the highest probability of success, are consistent with multiple resource objectives, and are socially and economically feasible.

Paleontological Resources

According to the proclamation, the monument holds unique paleontological resources (i.e. life of past geologic periods found in the fossil record of plants and animals) documenting tens of thousands of years of ecosystem change. The proclamation goes on to state, "Subfossil vegetation entombed within ancient woodrat middens in these caves has provided the only direct evidence of where giant sequoias grew during the Pleistocene Era, and documents substantial vegetation changes over the last 50,000 or more years. Vertebrate fossils also have been found

within the middens.” In addition, giant sequoias hold within their tree rings multi-millennial records of past environmental changes such as climate, fire regimes, and consequent forest response. The desired condition is manage the paleontological resources is retain the components providing the fossil record throughout the monument.

Paleontological Resource Objectives:

- Within a 10 year period, retain 90 percent of areas of significant sedimentation and meadow vegetation deposits.
- Continue or reinitiate tree ring studies comparing sequoia and bristlecone pines in terms of climate change within the next 5 years.
- During cave inventories conduct paleontological evaluations of any fossilized material found?

Habitat Management for Rare and Endemic Species (Protecting Objects)

The GSNM and surrounding Sequoia National Forest provides habitat for a number of rare plant and animal species. The Proclamation states the following: “The great elevational range of the monument embraces a number of climatic zones, providing habitats for an extraordinary diversity of plant species and communities. The monument is rich in rare plants and is home to more than 200 plant species endemic to the southern Sierra Nevada mountain range, arrayed in plant communities ranging from low-elevation oak woodlands and chaparral to high-elevation subalpine forest. Numerous meadows and streams provide an interconnected web of habitats for moisture-loving species. This spectrum of interconnected vegetation types provides essential habitat for wildlife, ranging from large, charismatic animals to less visible and less familiar forms of life, such as fungi and insects. The mid-elevation forests are dominated by massive conifers arrayed in a complex landscape mosaic, providing one of the last refugia for the Pacific fisher in California. The forests of the Monument are also home to the great gray owl, American marten, northern goshawk, peregrine falcon, spotted owl, and a number of rare amphibians.”

The desired condition is that lands within the monument continue to provide a diverse range of habitats. Riparian areas, montane meadows and late successional forest are areas of particular concern. Old forest habitat in the Monument should be in suitable quality and quantity to support viable populations of late successional dependent species, including Pacific fishers, American martens, California spotted owls, northern goshawks and great gray owls. Appropriate ecological conditions are provided throughout the plan area to contribute to the recovery of Federally Threatened and Endangered species (especially California condors), and to avoid federal listing of Forest Service Sensitive Species.

This monument plan focuses on habitat for the species listed in Table X.

Table X: GSNM Habitat Species List

Habitat Type	Associated Wildlife Species of Concern/Interest	Associated Plant Species of Concern/Interest
Old forest	Pacific fisher, American marten, California spotted owl, great gray owl and northern goshawk	
Cliff or large opening	California condor and peregrine falcon	Springville clarkia? (I don't know habitat needs)
Riparian	willow flycatcher, foothill and mountain yellow-legged frogs	Moonworts, mosses?

Old Forest Habitat and Associated Species

The GSNM is within the portion of the southern Sierra Nevada responsible for the recovery of the Pacific fisher and includes the land allocation Southern Sierra Fisher Conservation Area designated under the 2001 SNFPA. Each spring forest biologists in conjunction with the State of California conduct fisher surveys adjacent to and within the Sequoia National Forest and GSNM.

The great gray owl has a very limited and sporadic distribution on the GSNM and Sequoia National Forest. There are no known nest locations though owls have been found since 199X.

There is substantial historical and continuing recent survey evidence of the presence of California spotted owl, northern goshawk, and American marten distribution on the GSNM and surrounding Sequoia National Forest.

Cliff and/or Opening Dependent Species

The GSNM is within the portion of the southern Sierra Nevada responsible for the recovery of the California condor. Forest Service biologists are working with the USDI, Fish and Wildlife Service on this recovery effort. At this time condors have begun to fly into the monument area, and there is no evidence of nesting or roosting to date.

The peregrine falcons have generally limited and sporadic distribution on the GSNM and Sequoia National Forest where there are rocky outcrops. There is substantial historical and continuing recent survey evidence of the presence of peregrine nesting and distribution on portions of the GSNM and surrounding Sequoia National Forest.

Riparian Dependent Species

The MSA designated Streamside Management Zones (SMZs) to protect hydrologic resources and the associated aquatic and riparian dependent species habitat...[can we combine SMZs and riparian conservation areas (RCAs) somehow into one set of buffers?]

The Sierra Nevada Ecosystem Project (SNEP) found that aquatic, riparian, and meadow ecosystems are the most degraded of all habitats in the Sierra Nevada, although much of this problem was seen to be related to lower elevation dams and diversions. In addition, many aquatic and riparian-dependent species, such as willow flycatcher, were found to be at risk of extirpation. SNFPA was intended to provide regionally consistent direction to address these problems.

The willow flycatcher, and foothill and mountain yellow-legged frogs, located in riparian areas, have generally limited and sporadic distribution on the GSNM and Sequoia National Forest. There is substantial historical and continuing recent survey evidence of the presence of these species on portions of the GSNM and surrounding Sequoia National Forest.

GSNM Habitat Objectives: [need plant habitat objectives!]

- The monument portion of the Southern Sierra Fisher Conservation Area supports a core or reservoir subpopulation of fishers that could expand northward to re-establish connections with the west coast meta-population.
- On a 5 year average, at least 80 percent of habitat components of old forest ecosystems are maintained to conserve their associated species. People's needs for commodities

(fuelwood, grazing, etc.) and outdoor recreation would only be met within this context of protecting old forest habitat characteristics.

- Appropriate ecological conditions are provided throughout the plan area to contribute to the recovery of T&E species (habitat for California condor), to avoid federal listing of Species of Concern (Table X), and to achieve Species of Interest resource goals.
- Affected landscapes encompassed by the California Condor Conservation Strategy (CCCS) contribute to habitat requirements for delisting the condor.
- [follow what SNFPA says?] On a 5 year average maintain at least 80 percent of Critical Aquatic Refuges, SMZs and Riparian Conservation Areas to provide for the viability of species habitat associated with those ecosystems.
- [follow SNFPA guidelines?] The 2020 outcome is Pacific fisher, American marten, California spotted owl, great gray owl, and northern goshawk PACs/SOHAs have amounts of secure habitat at or above 1998? levels.
- [follow Conservation Biology Institute (CBI) or other recent science/SNFPA guidelines?] The 2020 outcome is increased density of large trees, structural diversity of vegetation, and improved continuity and distribution of old forest habitat across the monument landscape by X percent from December 2009.
- Over the next 10 years there is no reduction in habitat for California condor or peregrine falcons.
- Over the next 10 years there is an increase in protected and/or restored aquatic, riparian, and meadow ecosystems across the monument by X percent from December 2009.
- On a 5 year average, restore X miles of riparian, aquatic or meadow habitat to proper hydrologic functioning condition [cite Pfankuch definition?] within the GSNM.
- Over the next 10 years there is a 5-10 percent increase in aspen and willow habitat across the GSNM?
- Within each watershed, a minimum of 50 percent of the mature forested area is at least travel or foraging quality fisher habitat, and at least an additional 20 percent is resting or denning quality habitat as described in the 2001 SNFPA.

Watershed and Geological Resources (Protecting Objects)

The Proclamation describes caves and other special geologic resources as follows: “The monument is dominated by granitic rocks, most noticeable as domes and spires in areas such as the Needles. The magnificent Kern Canyon forms the eastern boundary of the monument's southern unit... Particularly in the northern unit of the monument, limestone outcrops, remnants of an ancient seabed, are noted for their caves.”

Ecological functions operate in a natural role within watersheds and across geologic features of the plan area while resource management activities sustain human needs and uses. Restoration of ecological process is promoted through repair of previously harmed areas by fostering a return to natural conditions wherever possible. Variable response to disturbance occurs, including responses to large natural disturbances, watershed resources (including stream channels) are resilient and regain their ability to function. Water remains in channels and aquifers to maintain riparian vegetation and function, and channel form. Water is available to support a diverse mix of desired plant species and cavern ecosystems in varied structural stages. These plant and geologic communities are healthy, self-perpetuating, resistant to rapid change from even extreme normal disturbances such as floods or drought, and are widening or are at their maximum potential area and extent.

GSNM Watershed and Geologic Feature Objectives:

- Within 10 years all the known caverns will have cave resource inventories conducted, and 25 percent will also have associated species lists.
- Within 10 years 25% of the caverns are in a “robust [good?]” condition with management strategies. Church Cave is the starting point.
- Within 10 years 25% of “at risk” watersheds are in a “robust” condition. The XXX Creek watershed is the starting point.
- Within 10 years a monitoring strategy is developed to determine whether moisture for giant sequoias is maintained in the applicable subwatershed to make it through more severe weather extremes without high risk of mortality associated with fire.
- [adopt SNFPA watershed maintenance guidelines...refine RCA (SNFPA requirement) and SMZ (MSA requirement) to have one set of streamside buffers?]

Human Use and Socioeconomics (Cost Effective, Socioeconomics, Enjoyment of GSNM, Visitor and Resident Public Safety)

The Proclamation describes human use of the Monument as follows: “The plan will provide for and encourage continued public and recreational access and use consistent with the purposes of the monument.” People of all ages, races and backgrounds, whether from local or metropolitan communities would be encouraged to learn about and visit the Monument. The GSNM would serve as a foundation of our commonality.

The safety of communities within the Monument will be maintained or enhanced. Within the limits of feasibility and protecting the objects of interest, existing communities and their associated wildland urban interface areas within and adjacent to the Monument will be protected from wildfire, insect/disease infestations and flood/landslide events originating within the monument. The economies of gateway communities and communities within the Monument will be protected within the context of protecting the objects of interest. This includes the commercial economic activity generated under private inholdings and special use authorizations.

The monument will be managed cost effectively, using cost-effective research. As the Scientific Advisory Board recommended: “The Plan should take into account substantial increases in visitor use and exploit opportunities for collaboration with nearby communities and businesses plus the National Park[s]...[It] needs to include a plan to develop good quantitative and qualitative information on visitor use, activities undertaken, and enjoyment of proposed interpretive programs and facilities to comply with the Presidential Proclamation (Advisories XVII and XIX).” Partnerships will be strengthened. A transportation system will be provided for access and enjoyment. The monument will enjoy broad support from the community and provide a connection to place for everyone.

Public facilities and services (particularly roads and trails) are as accessible to all members of the population as feasible within context of protecting objects of interest. The road and trail systems, including motorized and non-motorized trails, on the monument are safe, stable, and diverse in providing access to the public (Note: Conditions of roads and trails are further considered in transportation and facility management). New and existing facilities within the Monument would be manageable in terms of existing and expected funding on an ongoing maintenance basis. Building and management decisions may be supported by feasible financial partners, and/or the Forest Service funding system.

Interpretation and conservation education reflect scientifically supported scholarship and research data, conveying clear messages regarding natural resources and multiple-use. The unique qualities of the GSNM peak people's interest throughout the world. This provides a rich opportunity to connect people to the giant sequoias and monument, but also to the earth as a whole. The GSNM has the potential, through multi-media interpretation and educational programs to develop stewardship regarding the resource, to ensure its present and future protection.

Educational messages can also be very effective influences on visitor behavior so that people use the monument in ways that increase its capacity to accommodate them and reduce the need for law enforcement. Awareness of the history of the Monument, appreciation for its biological processes, learning about the people who used and continue to use the monument, and education about fire: all these are distinctive yet interrelated pieces that should be integrated into our overall approach to use of the resource.

Dispersed and Developed Recreation

Providing recreation opportunities is one of the Forest Service's major missions in California, along with providing sustainable, healthy ecosystems. Many recreation experiences in the Sierra Nevada are provided under special use authorizations. Many facilities, some representing investments of hundreds of millions of dollars, have been constructed by permit holders. Authorized recreation businesses contribute significantly to the economic base of communities and counties that rely on national forest recreation for employment, wages, and taxes. Demand for more specialized recreation some through outfitters and guides, such as mountain biking and geo-caching, is increasing and the diversity of specialized recreation is increasingly broad. Regional population growth is expected to lead to greater demand for existing and emerging recreation, especially shorter duration visits. Projected population growth in the United States and increasing tourism in this region, along with other factors, clearly contribute to increasing demand for recreation facilities and services throughout the Sierra Nevada, and on the GSNM specifically.

Use of the Monument should be well balanced with a wide variety of recreational activities in a well-managed environment, where people can share and appreciate, and to support this wide range of uses as well as harmony among users. Visitors to the Monument will find a rich and varied range of recreational, educational, and social opportunities enhanced by giant sequoias and the natural resources of the surrounding ecosystems. Visitors to the Monument will have the opportunity to recreate in a variety of settings, from primitive to highly developed areas.

Recreation opportunities and facilities would be managed to support a range of uses, such as hiking, horseback riding, hunting, snowmobiling, etc. without undue disturbance to one another. Differing recreation opportunities would be provided across the monument landscape to reduce the potential for conflict among diverse visitors and their varied activities on the same sites. Handle conflicts that do arise with timeliness and equilibrium.

Recreation use would occur throughout the year. Portions of the Monument would be accessible in all seasons, rather than promoting summer use alone, including hunting in fall and snowmobiling/skiing in winter.

The forest has high scenic integrity that is sustainable and resilient to short-term disturbances. Constructed features and landscape alterations complement and blend with landscape

characteristics, approximating natural disturbances to the extent possible. Recreation settings continue to be attractive while offering motorized and non-motorized users the opportunity to experience the forest's scenic landscapes. Scenic opportunities will range from pristine landscapes to locations where management activities are apparent, helping visitors appreciate how healthy ecosystems function and how humans fit into them.

Historic and Prehistoric Resources

About historic and prehistoric resources, the Proclamation tells us: "During the past 8,000 years, Native American peoples of the Sierra Nevada have lived by hunting and fishing, gathering, and trading with other people throughout the region. Archaeological sites such as lithic scatters, food-processing sites, rock shelters, village sites, petroglyphs, and pictographs are found in the monument. These sites have the potential to shed light on the roles of prehistoric peoples, including the role they played in shaping the ecosystems on which they depended."

The monument also has many archaeological sites recording Native American occupation and adaptations to this complex landscape, and historic remnants of early Euro-American settlement as well as the commercial exploitation of the giant sequoias. The monument provides exemplary opportunities for biologists, geologists, paleontologists, archaeologists, and historians to study these objects."

Heritage assets provide opportunities for interpretation and education so that the public may gain a better understanding and perspective of our heritage. Visitors to the National Forest find opportunities to touch, explore, enjoy, and learn about their cultural heritage.

The individual and family histories and traditions contribute to connecting newcomers to the monument, and relating the historical importance of the various resources found within the GSNM. There is a rich oral history and interaction with the Monument on an intergenerational, familial level, such as camping year after year in a special place passed down parent to child, imparting wisdom to the next generation or carrying on the family ranching tradition across public lands. This is also about connecting within community and across communities.

The cultural and spiritual values of the Monument will be protected, managed, and utilized for the benefit of local tribes, communities, and visitors.

The historic and prehistoric resources of the Monument will be protected, studied, interpreted, and managed to maintain their cultural and scientific integrity and provide educational, cultural, and recreational opportunities to visitors.

GSNM Human Use Objectives:

- Over the next 10 years the existing and new commercial ventures [special use permits (SUPs)] increase local funding of recreation/lands services by 10%. [Nancy: I'm thinking the cost recovery/receipts retention of SUPs.]
- Within the next 10 years all currently existing developed campgrounds are in full compliance with ADA as practicable.
- Within the next 10 years increase access for compatible activities (including clear signage) at least 10 percent above current levels for the plan area.

- Within the next 10 years develop recreation strategy to provide access and embrace diverse activities to minimize conflicting uses in same area (including clear signage), and increases year-round use at least 10 percent above current levels for the plan area.
- Within the next 5 years all priority heritage assets will be managed to standard.
- Oral histories will be conducted to document Native American, other traditional uses (ranching, homesteads, recreation, etc.) and Forest Service histories, on average of 3 every 5 years.
- Within 5 years a GSNM-wide interpretive and educational program regarding sequoias established for elementary and secondary age school children that meets state curriculum standards.
- During the next 5 years, high-quality water is available from the three domestic water supply watersheds (Kings, Kaweah and Tule River).
- Provide 10 percent more self-guided and assisted interpretive services to anyone wanting to learn about the human and natural history of the groves from December 2009 amounts within the context of protecting these objects of interest. Un-interpreted "discoveries" will be available to those who seek adventure through individual exploration, unless protecting the object of interest warrants exclusion. Opportunities will be available for solitude, inspiration, and spiritual renewal.
- Provide 5 percent more educational and interpretive services to schools and youth organizations focused on developing stewardship through on-site and off-site hands on experiences. Include youth work programs to connect students with natural resources careers.

Transportation System

The Proclamation tells us: “The management plan shall contain a transportation plan for the monument that provides for visitor enjoyment and understanding about the scientific and historic objects in the monument, consistent with their protection. For the purposes of protecting the objects included in the monument, motorized vehicle use will be permitted only on designated roads, and non-motorized mechanized vehicle use will be permitted only on designated roads and trails, except for emergency or authorized administrative purposes or to provide access for persons with disabilities. No new roads or trails will be authorized within the monument except to further the purposes of the monument.” The road and trail system on the GSNM is safe, reflects appropriate access, considers needs of adjacent landowners, and meets public demand.

Access to the monument is sufficient to allow the public to reach the Forest/monument in traditional and desired locations and considers needs of adjacent landowners within the context of protecting the objects of interest. Within the monument, the transportation system provides ample access to desired locations, supports a diversity of forest uses inclusive of commodity production, and provides reasonable access across National Forest System lands to private in-holdings. Modes of transportation are compatible with the recreation settings. The condition of the roads and trails is maintained to standards to meet the purposes and objectives of the recreation settings. Trailhead design and access roads accommodate larger vehicles such as horse and snowmobile trailers where needed.

Consistent and easy to read signage provides clarity wherever possible, including obvious trail access, seasonal closures, special notices and interpretive materials. The clarity of signage would reduce confusion of visitors using ambiguous maps.

Monument access points are developed in coordination with gateway communities and other agencies to provide clear, welcoming entry into the GSNM.

In addition the monument road and trail network that is commensurate with the level of management activities occurring in the Monument. The transportation system would be designed to access the objects of interest to provide for their proper care and management. Public use related to recreation, special uses, and private land access would be a secondary need and would not conflict with the proper care and management of the objects of interest. Specifically, roads and trails would be maintained to limit impacts to aquatic and terrestrial habitats.

GSNM Transportation System Objectives:

- Within 10 years, a sustainable and desirable designated OHV route system, including loop opportunities, is established.
- Within 5 years, the road and trail miles on which at least one physical maintenance activity is performed to applicable standards during the fiscal year is increased by 10 percent.
- Within 5 years, the percent of the road system maintained in Operational Maintenance Level 1 (properly stored [closed to use]) is increased by 5 percent.
- Within 5 years, the percent of road system maintained in Operational Maintenance Level 3-5 by Condition Class is decreased by 10 percent.
- Within 10 years, the miles of road maintained in Operational Maintenance Level 2 (as a percentage of road system) is increased by 5 percent.
- Within 10 years the deferred maintenance needs and environmental impacts of the road and trail system within the monument area have declined by at least 5 percent.
- Suitable recreation opportunities provided by the road and trail system are increasing.
- Roads not needed to manage objects of interest or provide necessary public or administrative access will be decommissioned and stabilized.
- Mass transportation options will be phased in if demand for this type of service supports an economically feasible system in conjunction with NPS or local communities.
- Manage designated roads and trails for safe public access to specific groves and other objects of interest.

Scientific Study (Maintain options & accountability)

The desired condition is to maintain options by continuing on-going cooperation, and develop additional joint research efforts with the scientific community and cooperating agencies to adaptively manage resources as we continue to learn and refine our approaches.

The desired condition is to use the right balance between adaptability and accountability, being realistic about the Forest Service's monitoring and re-analysis capabilities; and to use the best available science in data, methodologies, and structure; specifically, to integrate various decision support systems.