



United States
Department of
Agriculture

Forest Service

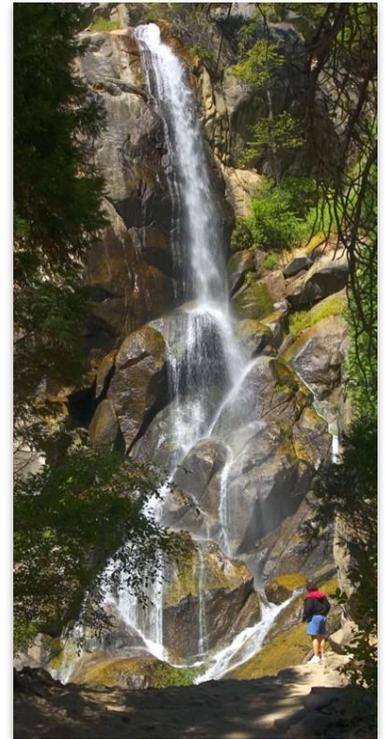
Giant Sequoia
National Monument

August 2010



Giant Sequoia National Monument

Draft Management Plan





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Part I-Vision

Purpose of the Monument Plan

The purpose of the Giant Sequoia National Monument Management Plan (Monument Plan) is to provide overall strategic guidance for managing the Giant Sequoia National Monument (Monument). This plan provides for and encourages continued public and recreational access and use consistent with the purposes of the Monument (Clinton 2000, p. 24097). It contributes to social, economic, and ecological sustainability by guiding the restoration or maintenance of the health of the land in the Monument.

This draft Monument Plan was developed for the preferred alternative, Alternative F, as identified in the Giant Sequoia National Monument Draft Environmental Impact Statement (draft EIS). The draft EIS describes the analysis used in formulating the draft Monument Plan. Identifying the preferred alternative in the draft EIS and the draft Monument Plan does not constitute a decision, but is simply a position or preference at the time these draft documents are published for public comment.

The Monument Plan provides the strategic direction at the broad program level for managing the Monument and its resources over the next 10 to 15 years. It includes the direction required by the Proclamation and it replaces, in its entirety, all previous management direction for the Monument, including the direction in the Forest Plan for this part of the Sequoia National Forest. It is the single comprehensive management plan for this area. While the Monument Plan is a stand-alone document, it is also a subset of the entire Forest Plan.

This strategic direction was developed by an interdisciplinary planning team working with forest staff, making use of extensive public involvement and collaboration, and the best science available. The Monument Plan implements the Proclamation by providing guidance to protect the objects of interest, restore ecosystems, and provide opportunities for public use. It provides a context for informed decision making, while guiding resource management programs, practices, uses, and projects. It will guide the development and analysis of resource management activities in future site-specific projects to move resources toward the desired conditions for the Monument.

This plan does not include any decisions on specific projects or activities. Those decisions will be made later, after more detailed analysis of specific project sites and additional public involvement on site-specific proposals. Compliance with the National Environmental Policy Act (NEPA) is required for any project-level decision that may have an impact on the environment. Project-level decisions must be informed by site-specific analysis through an open, public process.

The Monument Plan is adaptive in that new knowledge and information can be analyzed and the plan changed, if appropriate, at any time. It provides overall intent and guidance, but provides the flexibility needed for the responsible official to work with the public and adapt management strategies to the constantly changing demands that are inherent to natural resource management. It defines the parameters (limits) for management but allows for the adjustment of future project-level decisions to accommodate rapidly changing social and resource conditions. This allows the latest science and public input to be employed at the time a decision is to be made.

The Monument Plan was prepared according to the requirements of the National Forest Management Act (NFMA), the NEPA, and other laws and regulations.

Comments: 1

Organization of the Monument Plan

This Monument Plan consists of three interrelated parts that work together to facilitate the use of adaptive management and the development of management activities that will move the Monument toward the desired conditions. Part 1-Vision paints the picture of the conditions desired in the long term. Part 2-Strategy contains the strategic management direction. Part 3-Design Criteria contains the guidance for designing actions and activities in order to make progress toward the vision and desired conditions described in Part 1.

Part 1 is the Vision for the Monument. It describes the purpose of the Monument Plan, the relationship of the Monument Plan to other documents, and a description of the Monument. Part 1 includes the Monument niche (the Monument's uniqueness on a national and regional level) and its recreation niche. Part 1 also describes the desired conditions (36 CFR 219.11(b)⁽¹⁾) for the resources of the Monument.

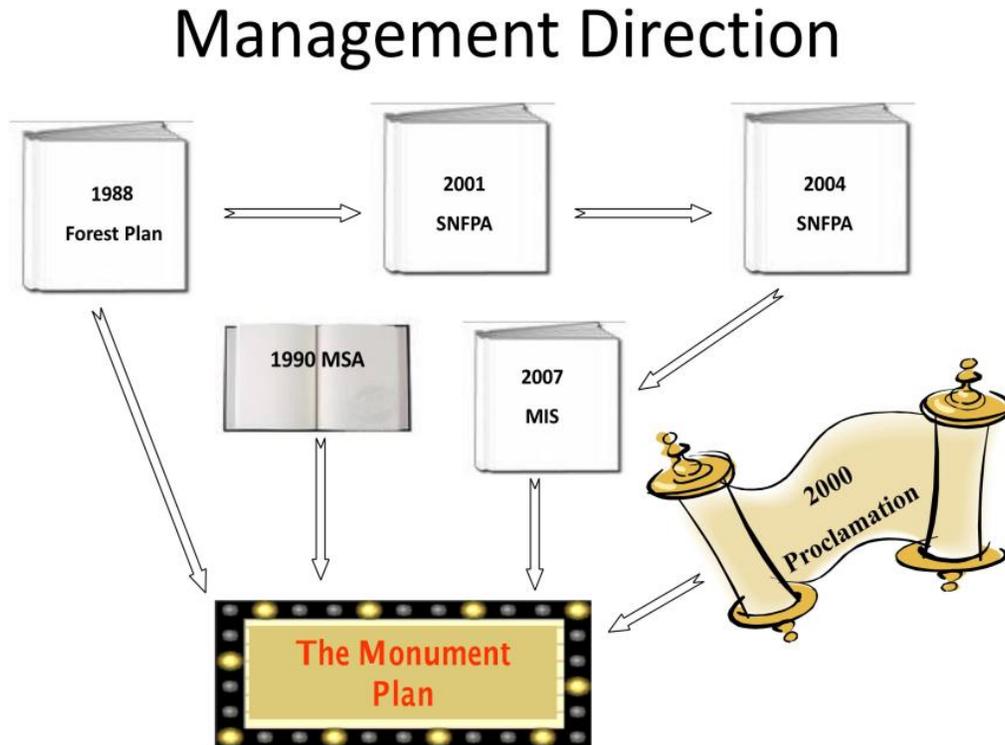
Part 2 is the Strategy for the Monument. It begins by identifying generally suitable land uses and activities for the Monument. It then lays out the management strategies and objectives (36 CFR 219.11 (b)⁽²⁾) that the Forest Service will strive to achieve in order to move the Monument toward the desired conditions described in Part 1. Part 2 also identifies special areas in the Monument (36 CFR 219.17⁽³⁾), as well as the land allocations and management areas (36 CFR 219.11(c)⁽⁴⁾) for the Monument.

Part 3 is the Design Criteria for the Monument. The design criteria include the laws and regulations, the standards and guidelines (36 CFR 219.11(c) and 219.13 through 219.29⁽⁵⁾), and the monitoring and evaluation procedures that will be used during site-specific project planning and implementation. Design criteria are sideboards for subsequent projects and activities to help achieve the desired conditions.

Comments: 2

1 These are 1982 regulations that are no longer in the CFR, but are still applicable to this plan amendment.
2 Ibid.
3 Ibid.
4 Ibid.
5 Ibid.

Figure 1 Management Direction and Guidance for the Monument



The Record of Decision (ROD) for the Monument Plan EIS amends the existing 1988 Forest Plan, as amended by the 1991 Kings River Wild and Scenic River and Special Management Area Implementation Plan (KRSMA), the 2001 Sierra Nevada Forest Plan Amendment (2001 SNFPA), and the 2007 Sierra Nevada Forest Management Indicator Species Amendment (SNF MIS). The Monument Plan was developed using the guidance and management direction provided by the 1990 Mediated Settlement Agreement (MSA) and is constrained by that which is applicable to the Monument and consistent with the Proclamation. The Monument Plan also considers the 2004 Sierra Nevada Forest Plan Amendment (2004 SNFPA), but is not constrained by its management recommendations. The Monument Plan was guided by the best available science, a thorough review of relevant scientific information, and practical experience, as required by national forest planning direction and the Proclamation.

Comments: 3

Monument Description

The Giant Sequoia National Monument (Monument) is located in south-central California and is administered by the United States Department of Agriculture (USDA), Forest Service, Sequoia National Forest (see location maps in Appendices A and B). Created by presidential proclamation on April 15, 2000, the "rich and varied landscape of the Giant Sequoia National Monument holds a diverse array of scientific and historic resources. Magnificent groves of towering giant sequoias, the world's largest trees, are interspersed within a great belt of coniferous forest, jeweled with mountain meadows. Bold granitic domes, spires, and plunging gorges texture the landscape" (Clinton 2000, p. 24095).

Comments: 4

The Monument is set apart and reserved for the purpose of protecting the objects of interest identified in the Proclamation, for their proper care and management (Clinton 2000). The objects of interest were generally identified in the Proclamation, with the requirement that the Monument Plan provide direction for their proper care. Through public and agency dialogue, the objects of interest have been determined to be a mix of individual objects or locations (such as specific caverns or named sequoias) and broad ecosystems with their natural processes. For the purpose of managing the Monument, the Forest Service has refined the list of objects of interest as follows:

- The naturally-occurring giant sequoia groves and their associated ecosystems, individual giant trees, and other rare and endemic plant species listed as threatened, endangered, or sensitive by the Endangered Species Act or the Forest Service.
- The ecosystems and outstanding landscapes that surround the giant sequoia groves.
- The diverse array of rare animal species, including the Pacific fisher; the great gray owl; the American marten; the northern goshawk; the peregrine falcon; the California spotted owl; the California condor; several rare amphibians; the western pond turtle; and other species listed as threatened, endangered, or sensitive by the Endangered Species Act or the Forest Service.
- The paleontological resources in meadow sediments and other sources of recorded ecological changes such as fire regimes, volcanism, vegetation, and climate.
- The limestone caverns and other geological features, including granite domes, spires, geothermally produced hot springs and soda springs, and glacial and river-carved gorges.
- Cultural resources, both historic and prehistoric, which provide a record of human adaptation to the landscape and land use patterns that have shaped ecosystems.

The Monument provides for and encourages continued public and recreational access and use consistent with protecting the objects of interest (Clinton 2000). The Monument provides exemplary opportunities for biologists, geologists, paleontologists, archaeologists, and historians to study the objects of interest; for understanding ongoing environmental changes; and for studying forest resilience and the consequences of different approaches to forest restoration (Clinton 2000).

Comments: 5

Monument Niche

Giant sequoias (*Sequoiadendron giganteum*) grow only on the western slopes of the Sierra Nevada mountain range in California. These trees can tower 270 feet high and reach 30 feet in diameter. Located at the southernmost end of the Sierra Nevada in central California, the Sequoia National Forest, named for the world's largest trees, contains the greatest concentration of giant sequoia groves in the world. Thirty-three groves and the areas around them are protected within the Giant Sequoia National Monument (Monument) (see the list in Appendix C and the map in Appendix D).

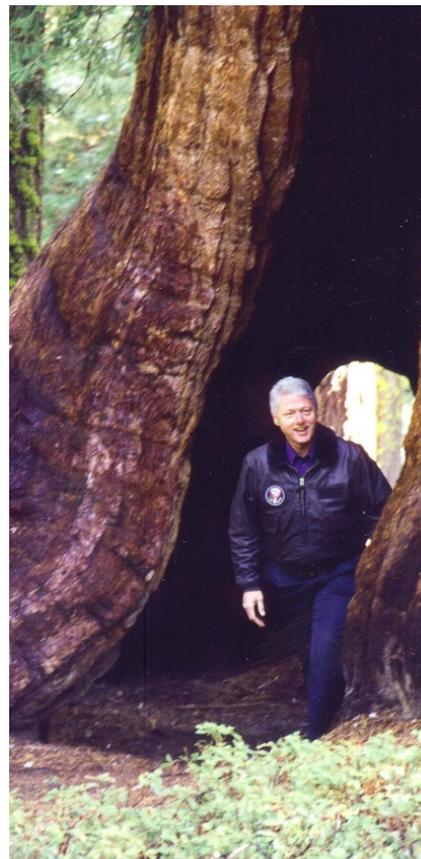
The Monument is unique as it is the only national monument in California that was designated by presidential proclamation. With authority vested in the American Antiquities Act of 1906, in April 2000, President Clinton set aside and reserved the Monument for the purpose of protecting the objects of interest.

The rich and varied landscape of the Giant Sequoia National Monument holds a diverse array of scientific and historic resources. Magnificent groves of towering giant sequoias, the world's largest trees, are interspersed within a great belt of coniferous forest, jeweled with mountain meadows. Bold granitic domes, spires, and plunging gorges texture the landscape. The area's elevation climbs from about 2,500 to 9,700 feet over a distance of only a few miles, capturing an extraordinary number of habitats within a relatively small area. This spectrum of ecosystems is home to a diverse array of plants and animals, many of which are rare or endemic to the southern Sierra Nevada. The monument embraces limestone caverns and holds unique paleontological resources documenting tens of thousands of years of ecosystem change. The monument also has many archaeological sites recording Native American occupation and adaptations to this complex landscape, and historic remnants of early Euroamerican settlement as well as the commercial exploitation of the giant sequoias (Clinton 2000).

The Monument's landscape is as spectacular as its trees. Soaring granite monoliths, glacier-carved canyons, limestone caves, roaring world-class whitewater, and scenic lakes and reservoirs await visitors' discovery at the Sierra Nevada's southern reach. The Monument offers visitors spectacular views in a dramatic range of settings. These mountains stand in contrast to California's San Joaquin Valley, providing cool relief for families from the scorching heat of summer and welcome blue skies and sun during the cold fog of winter. From the dramatic Kings Canyon, through the ancient giant sequoias, down to the mighty Kern River, the Monument features diverse settings and special places.

The Monument is well-known for these settings and places. These settings, as well as other outstanding features that are less well-known, are important to individuals and create strong connections to place, which may come from personal experience or from someone else's experience. Places have particular meaning for individuals, and each

Picture 1 President Clinton next to the giant sequoia where the proclamation was signed (April 2000)



Vision

person can have that attachment for a different place or multiple locations, which may vary with the activity, such as a favorite camping spot, or a favorite trail, or a favorite vista point. No one place can satisfy that connection for all people. The place and the reason for the attachment are as individual as the person.

The Giant Sequoia National Monument is a unique place, highly valued by its neighbors, visitors, and distant admirers. Giant sequoias are a symbolic vestige of the wild Sierra, evoking a deep emotional response, even from people who have never experienced their grandeur firsthand.

Over the years, people have named a number of individual giant sequoia trees or stumps. Some of these trees or stumps have multiple names. The reason they were named is often unknown and is the subject of speculation and stories passed down through the generations. These named trees or stumps are still important to people and represent part of the cultural landscape of the Monument. However, current Forest Service policy is to avoid any further naming of giant sequoia trees. The table below lists the known officially named giant sequoia trees and stumps in the Monument. Named giant sequoia have either been identified on the forest recreation map or in officially published documents such as *The Giant Sequoias of California*, published by the United States Government Printing Office in 1942.

Table 1 Named Giant Sequoias

Tree Stump	Grove Name	Ranger District	Remarks
Boole	Converse Basin (includes Cabin Creek Grove)	Hume Lake	Largest giant sequoia on National forest System lands
Chicago Stump	Converse Basin	Hume Lake	Formerly the General Noble Tree -- cut for the 1893 World Fair in Chicago
Bush	Freeman Creek	Western Divide	Names for President George H. W. Bush in 1992

Comments: 6

Recreation Niche

The recreation niche is what the Monument has to offer in terms of special places, opportunities, and potential experiences, overlapped with what people desire and expect in terms of outdoor recreation from public lands. The Monument is best known for particular attributes or settings, including giant sequoias and their ecosystems. The following settings can be found within the Monument:

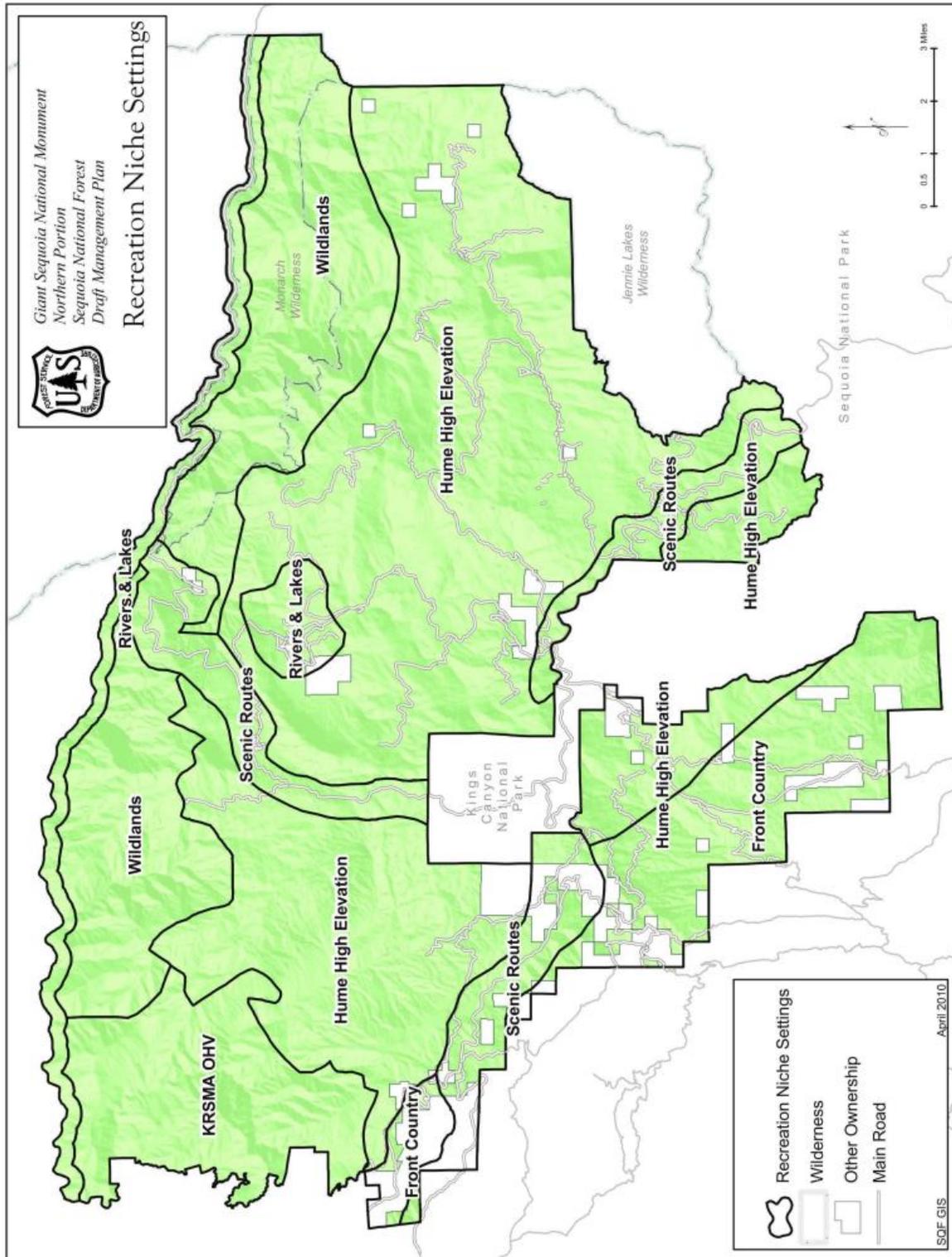
- **Rivers and Lakes.** Water is the magnet, featuring world-class whitewater and attracting family use at Hume Lake and the Kern, Kings, and Tule rivers (high niche conformance⁽⁶⁾).

6 How well those settings fit with what the forest is known for is called niche conformance. However, just because a setting is noted as having low or moderate niche conformance does not mean that those settings are not important to individuals; their own connection to place may be strongest for some of those locations.

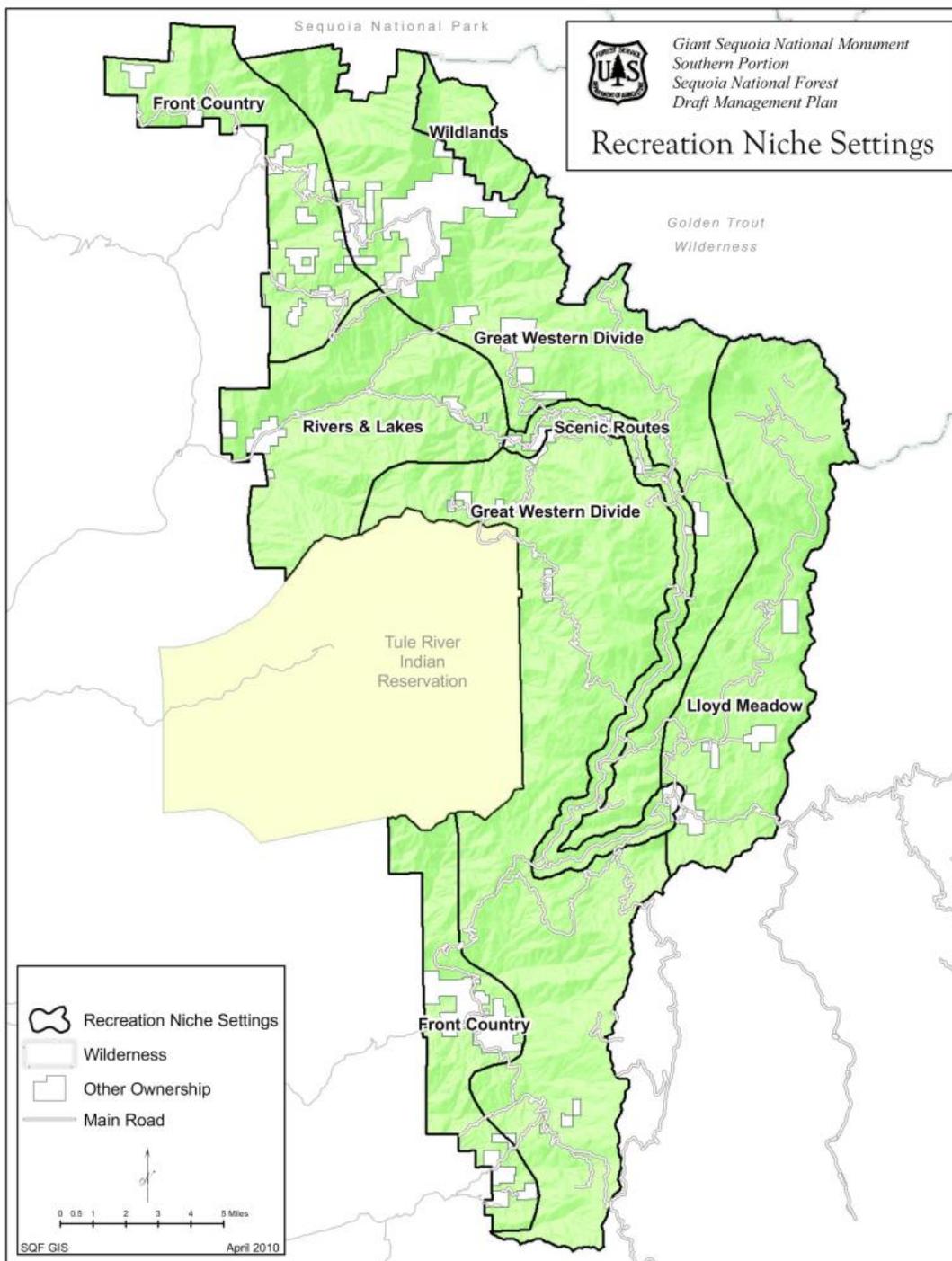
- **Scenic Routes.** These routes offer great views through a range of life zones, providing access to adventure and discovery (high niche conformance).
- **Great Western Divide.** Giant sequoias and dispersed recreation (high niche conformance).
- **Lloyd Meadow.** Spectacular Kern Canyon views; rock climbing on granite formations; dispersed recreation; giant sequoias (high niche conformance).
- **Hume High Elevation.** Overnight destination with giant sequoia logging history; wilderness access; intertwined with national parks (high niche conformance).
- **Wildlands.** Includes parts of two wildernesses in the Monument and a few other areas, offering solitude and scenic backdrop (moderate niche conformance).
- **Front Country.** Year-round access; desirable in spring (wildflowers) and fall (hunting); very hot in summer; chaparral, oak to mixed conifer (low niche conformance).
- **Kings River Special Management Area OHV.** Off-highway vehicle (OHV) use in the Monument, authorized by law; this steep canyon offers motorized trails with solitude (low niche conformance).

Maps 1 and 2 display the recreation niche settings established for the Monument.

Map 1 Recreation Niche Settings for the Northern Portion of the Monument



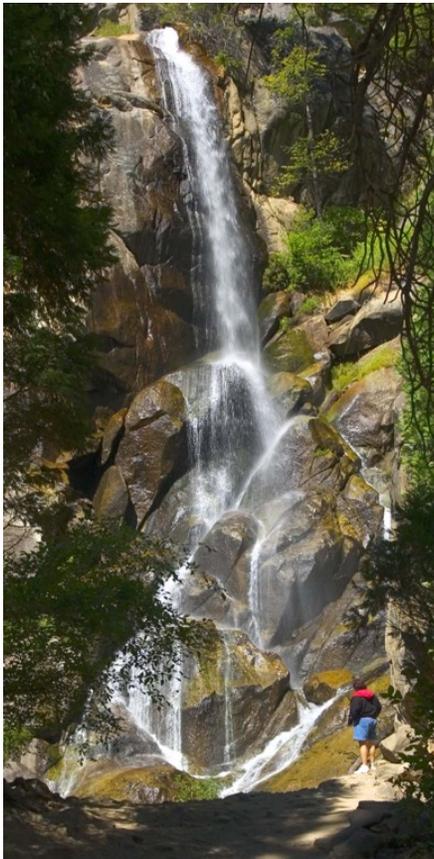
Map 2 Recreation Niche Settings for the Southern Portion of the Monument



Comments: 7

The recreation niche settings, as delineated for the entire Sequoia National Forest, are further divided into places and are described as follows:

Picture 2 Grizzly Falls in Kings Canyon Rivers and Lakes



Kings River. The Kings River forms the boundary between the Sierra National Forest and the Sequoia National Forest. Portions of the river in both forests are designated as wild and scenic. The Kings River Special Management Area (KRSMA), a congressionally designated area, also lies in both forests, but is administered by the Sierra. The river formed the world-renowned Kings Canyon, which is more than 8,000 feet deep, located in both the national forest and the adjacent Kings Canyon National Park. Both the Middle and South Forks begin in Kings Canyon National Park and flow down through portions of the Monarch Wilderness in the national forests.

Highway 180, which is the Kings Canyon Scenic Byway, drops into the Kings River gorge along the South Fork and provides the only vehicle access to the Cedar Grove portion of Kings Canyon National Park. This highway provides access for sightseeing tourists along the South Fork of the Kings River, to Cedar Grove, and to the wilderness trailheads. This is a prime fly fishing area.

The junction of the South and Middle Forks is also the eastern boundary of the KRSMA, which extends west along the main stem of the Kings River to Mill Flat Campground, and includes the surrounding lands up to the main ridges of the Kings River Gorge. This section of the river has steep terrain and very limited access, so this part of the KRSMA has little visitation. It is visited mostly by anglers accessing the river on the Yucca Point or Mill Flat Creek Trails (Forest Trails 28E01 and 27E01).

From Mill Flat Campground west to Pine Flat Reservoir, Mountain Road 2 and Road 12S01 provide vehicle access to the river. Portions of the Kings River are famous for whitewater rafting and fly fishing.

The main stem of the Kings River (west of KRSMA) is popular with activity-oriented adventure seekers such as whitewater rafters (managed by the Sierra National Forest), anglers, water players (couples and families), and social gatherers.

Important Storyline: The upper portion of the Kings River that travels through the Sequoia National Forest is within the world-renowned Kings Canyon. This portion of the river canyon was carved by glaciers that extended downstream along the South Fork of the Kings River to Grizzly Falls. The glaciers formed a U-shaped valley with outstanding geological features, including marble pendants, folded rocks, and limestone caves. In this area, the wild and scenic river and the scenic byway cut the Monarch Wilderness in two.

The main stem of the Kings River begins where the South Fork and Middle Fork join and flow west through the KRSMA, emptying into Pine Flat Reservoir. The main stem once provided the route for the longest known lumber flume, which carried lumber harvested from trees in the area and processed at the Millwood and Hume Lake facilities to Sanger. The flume tender and a Forest Service guard station were located at the 4½-mile marker along the flume. Today these locations are recreation areas, and the guard station is available for overnight rental. This storyline will be showcased on wayside exhibits, on information boards, in publications, and in self-guided tours.

Picture 3 Hume Lake

Hume Lake. This area includes the Hume Lake Campground, multiple day use sites, a group camp, and a recreation residence tract. The lake was once a mill pond created by the Hume Bennett Lumber Company during the historic logging period. Now the lake draws huge crowds during the summer months. The campground is often full. People staying overnight in other areas often use the facilities here during the day. At about 6,000 feet in elevation, the reservoir is located in mixed conifer forest within the Monument. The Hume Lake Dam, designed by John Eastwood in 1908, is the first concrete-reinforced multiple arch dam to be constructed in the United States. The dam is being considered for nomination as a national historic landmark. An interpretive trail was developed around the lake, part of which is accessible for persons with disabilities. The Hume Lake Christian Conference, which is highly developed and nationally known, is located on private land at one end of the lake and is open year-round.



Forest experience seekers, anglers, water players, and social gatherers use the area. Sightseeing tourists overflow from the national parks and the Hume Lake Christian Conference. Because of these influences, visitors tend to be family-oriented and very interested in learning. Overnight camping, non-motorized boating, picnicking, fishing, water play, and hiking are popular activities.

Important Storyline: Hume Lake was built between 1908 and 1909 as a log pond for the historic Hume Bennett Mill. Hume Lake Dam is the first concrete-reinforced multiple arch dam built in the United States. The timber operation harvested pine, fir, cedar, and giant sequoia from 1908 to 1917. The long flume began at the lake and transported lumber milled there to the Kings River via Tenmile Creek, and on to Sanger. Today the lake is a popular recreation destination and provides riparian habitat for wildlife in a mixed conifer forest. This storyline will be shared on wayside exhibits, on information boards, in publications, in personal contact services, and in the development of visitor information services.

Picture 4 Tule River



Tule River. Originating in high-elevation alpine meadows, the three branches of the Tule River flow through the Monument. Steep canyons escort the three forks as they drop in elevation and meet in Lake Success reservoir. The rural community of Springville, at 1,000 feet elevation, is developing quickly and serves as a gateway to the Monument. The Tule River Indian Reservation, the second largest in California, surrounds the South Fork of the Tule River. Special management challenges include fire, hydroelectric power projects, Native American values, tribal relations, urban interface, crowd and traffic control, litter, graffiti, and gang-related problems.

The Tule River corridor is a year-round refuge for recreation, providing relaxation for neighbors (communities of Porterville, Springville, Pierpoint Springs, Camp Nelson, Sequoia Crest, Ponderosa), anglers and hunters, social gatherers, water players (residents of the central valley), and sightseeing tourists. Proximity and easy access allow lower income groups to frequently use the river corridor. Visitors have large youth, Hispanic, and Asian components. The rapidly developing community of Springville is attracting retirees and families from the urban areas of California, many of whom have little

experience with the urban/wildland issues of a foothill community.

Important Storyline: The Tule River is a relatively small river but it has a large impact. The river originates in wilderness, and travels through a wide variety of fire-evolved plant communities as it descends steep slopes to the central valley floor. In most years, all the water in this river is used and re-used before it can reach its historic destination of Tulare Lake. The Tule River corridor is a product of the loss of open space, one of the forest’s best illustrations of the impact of urbanization on wildlands along a major recreation route. Ranches are being subdivided into smaller single-family residence tracts, and new residents need information and education about living “eco-friendly” and “fire safe.” The entire Tule River drainage was once home to the Yokuts. Today their home is the Tule River Indian Reservation. This storyline will be showcased on wayside exhibits, in self-service visitor information kiosks at gateway communities, on information boards, in publications, on self-guided tours, with personal contacts, and in partnerships in visitor information services.

Comments: 8

Scenic Routes

Kings Canyon Scenic Byway. This scenic route transects a number of recreation settings: Front Country, Hume High Elevation, and Rivers and Lakes. This scenic route is the only designated national forest scenic byway in the Sequoia National Forest, and it provides the only vehicle access into the world-renowned Kings Canyon. This area of the forest is strongly influenced by visitors to the Sequoia and Kings Canyon National Parks. Grant Grove, the Kings River, the Monarch Wilderness, Grizzly Falls, and Boyden Cavern are popular attractions along the route. Elevations range from 2,000 to 8,000 feet.

Sightseeing tourists (accessing the national parks) and forest experience seekers (central valley residents escaping the summer heat) use the route to reach favorite recreation destinations. Some wilderness users travel this route to reach backcountry and wilderness. Environmental students and geology enthusiasts are drawn to the rare folded rock formations along the highway and other outstanding geological characteristics.

Important Storyline: The Kings Canyon Scenic Byway takes the visitor to world-class natural wonders and through many of the southern Sierra life zones. Visitors travel through grasslands, oak woodlands, chaparral, mixed conifer forests, giant sequoia groves, red fir forests, and riparian woodlands along the Kings River. On the way to the canyon, the route passes through Big Stump Grove and General Grant Grove in the Kings Canyon National Park. As the route descends, views into Cherry Gap, Converse Basin, and Indian Basin Groves reveal ancient giant sequoia stumps from the historic logging period, and panoramic vistas of Kings Canyon delight the traveler. Unusual displays of folded rocks and marble roof pendants can be viewed from the road cut by prison convicts through the Kings River Gorge, one of the deepest canyons in North America. The road splits the Monarch Wilderness in two before it delivers the traveler to Kings Canyon National Park, where the road ends past Cedar Grove. This area will be showcased on wayside exhibits, in self-service visitor information kiosks, on information boards, on self-guided tours, in personal contact services, and in partnerships in visitor information services.

Picture 5 Kings Canyon



Comments: 9

Picture 6 Dome Rock vista



Great Western Divide

Western Divide Highway. Steep mountains with granite outcrops rising from 4,500 feet to 10,000 feet in elevation, mixed conifer forests with multiple giant sequoia groves, and mountain meadows characterize this area. This setting is in the Monument and shares a boundary with the Tule River Indian Reservation. Several small residential communities, recreation rental cabins, and recreation residences are in this setting. Special management challenges include giant sequoia health, fisher habitat, off-highway vehicle (OHV) and over-snow vehicle (OSV) use, tribal relations, public use and the need for patrols, wildland urban intermix, and proximity to Mountain Home State Forest. OHVs and OSVs are restricted to designated roads and are not

allowed on trails. Mechanized use (e.g., mountain bikes) is limited to designated roads and trails.

Visitors include sightseeing tourists, including international visitors from European and Asian countries, forest experience seekers and their families escaping the heat of summer, and individuals from all market zones. Hispanic and Southeast Asian visitation is increasing. Hunters, anglers, and traditional users frequent developed and dispersed camping sites. Activity-oriented adventure seekers are attracted to outstanding rock climbing opportunities, stock use, hiking, mountain biking, cross-country skiing, and OHV and OSV use.

Important Storyline: The Great Western Divide is the ridgeline that separates the Sierra Nevada range into two watersheds, that of the Kern River flowing into Buena Vista Lake, and that of Tulare Lake. President Clinton visited the Long Meadow Grove and established the Monument by presidential proclamation on April 15, 2000. This area has 19 recorded giant sequoia groves. Old growth forests provide habitat for rare wildlife species such as the Pacific fisher. The last California condor chick found living in the wild was removed from a nest in a giant sequoia in Starvation Grove in 1982. Needles and Dome Rock are spectacular, high-profile granite monoliths seen from the highway. Slate Mountain is an unusual and prominent landmark with a botanical area hosting rare plants. Jordan, Mule Peak, and Needles lookouts are still in operation as fire lookouts, and they are open to the public. This area will be showcased on wayside exhibits, in self-service visitor information kiosks, on information boards, in publications, on self-guided tours, in personal contact services, and in partnerships in visitor information services.

Comments: 10

Lloyd Meadow

This high mountain shelf, in the Monument between the Western Divide and the Kern Plateau, has an average elevation of 5,500 feet. The southern third of this meadow was burned in the McNally Fire of 2002. Granite formations and expansive vistas of the Kern River and Kern Plateau are enjoyed from many areas. Special management challenges include lost visitors, visitor safety, patrolling, and litter.

Activity-oriented adventure seekers (rock climbers, equestrians), social gatherers, forest experience seekers, traditional users, hunters, anglers, and wilderness users (accessing trailheads or coming from organizational camps) are predominantly white and local. This area is a generational destination and family use area. Native American, international, and out-of-state use is increasing. Organizational camps contribute a youth component in the summer. Popular activities are dispersed camping, water play at the “tubs and slides,” equestrian use, developed camping, group use (non-commercial), rafting and kayaking the Forks of the Kern, hunting, fishing, rock climbing, hiking, mountain biking, and viewing the George Bush Tree. Outfitter guides provide services for some of these activities. This area contains the only access point for boaters starting the Forks of the Kern run and provides early season access to wilderness.

Important Storyline: Eastside pine (ponderosa) forests with giant sequoia and gray pine mark a transition between the drier forests of the Kern Plateau and moister forests of the Great Western Divide, with excellent birds-eye views of the Kern River Canyon. The McNally Fire burned about 1/3 of this area, and some areas can be used to tell the story of regeneration after disturbance. Visitor use of the Lloyd Meadow area is mostly dispersed and the remote location makes self-policing and personal responsibility important messages for the public. The Freeman Creek Grove is the easternmost giant sequoia grove--ancient monarchs include the George Bush Tree. The Forks of the Kern and Jerkey Trails provide access to the Golden Trout Wilderness. This area provides the earliest wilderness access in spring or early summer, when most other access is still under snow. The Forks of the Kern Trailhead is the only access point for the Class V Forks whitewater run. Wilderness permits are needed for overnight stays in the Golden Trout Wilderness and for wildernesses in the national parks. This area will be showcased on wayside exhibits and interpretive panels, in self-service visitor information kiosks, on information boards, in publications, in personal contact services, and in partnerships in visitor information services.

Picture 7 The President Bush Tree in Freeman Creek Grove



Comments: 11

Picture 8 Buck Rock Lookout



Hume High Elevation

Located in the northern portion of the Monument in the Hume Lake Ranger District, this area is strongly influenced by the national parks and the Hume Lake Christian Camps. Elevations range from 4,000 to 8,000 feet in mixed conifer forest, with one of the largest concentrations of giant sequoia groves. Visitors have many opportunities to discover and explore these groves in their natural, wild condition, while enjoying outstanding scenery, including vistas of the Sierra high country and into Kings Canyon. Special management challenges include coordination of the fee program with the National Park Service.

Year-round use is by sightseeing tourists (many are out-of-state and international), traditional users with

long-standing family traditions, forest experience seekers (mostly central valley residents, with nontraditional user groups of Hispanic and Hmong), some activity-oriented adventure seekers (equestrian camp), wilderness users, and environmental students and enthusiasts visiting the sequoia groves. Popular activities include camping in developed sites, day use, social gatherings, dispersed camping, hiking, equestrian camping, hunting, fishing, rock climbing, and OHV and OSV use (designated roads only). This area provides wilderness access, two resorts, a recreation rental cabin, and organizational camps.

Important Storyline: Thirteen giant sequoia groves are located in this area, including the two largest, with associated mixed conifer to red fir forests and granite and basalt outcrops. The historic logging of giant sequoias is a story unique to this area of the forest. Converse Basin, the largest grove, was the site of the most extensive giant sequoia logging operation. Giant specimen stumps remain after 100 years, presenting the best opportunities in the forest to tell the historic logging story. Buck Rock Lookout, which is staffed with volunteers from the Buck Rock Foundation, functions as a fire lookout and is open to the public. In the Big Meadows area, the traditional grazing, guard station, and family history of Sam and Jennie Ellis are significant stories. Big Meadows guard station is available as a recreation rental cabin. This area will be showcased on wayside exhibits, in self-service visitor information kiosks, on information boards, in publications, on self-guided tours, in personal contact services, and in partnerships in visitor information services.

Comments: 12

Wildlands

Wildlands include designated Wilderness and a few other areas with limited access. The following places are in the Monument: parts of the Golden Trout Wilderness and the Monarch Wilderness, the Agnew Roadless Area, and part of the KRSMA (non-OHV area).

This setting offers the best opportunities for solitude and those recreation experiences centered on self-reliance. No developed facilities and very, very steep slopes characterize these lands. Many areas have significant geological formations. Historic cabins and trails, and a wide range of settings and physical challenges, draw visitors who desire experiences in these remote locations; wilderness does not attract a large number



Picture 9 Golden Trout Wilderness

of visitors to the Sequoia. Special management challenges include shared management and needed coordination for some of these areas (the Monarch is shared with the Sierra National Forest, the Golden Trout and South Sierra are shared with the Inyo National Forest, and the KRSMA is administered by the Sierra National Forest), managed wildfire, grazing, private inholdings, administrative facilities, trail maintenance, group use management, feral pigs, threatened and endangered species, OHV trespass and encroachment, permits, marijuana cultivation, and archaeological site protection. All of the designated wilderness areas have a party size limit of 15 people and 25 head of stock.

Wilderness users consist of individuals and small groups of hikers (usually younger and mostly white) and stock users (usually older and white). Day users are more diverse. Visitors are generally tough, adventurous types, and use is predominantly in the summer months. Outfitter guides operate in these areas, bringing in anglers, hunters, and sightseers.

Important Storyline: This area will be showcased on information boards, in publications, on websites, and in personal contact services.

Comments: 13

Picture 10 California condor in flight



Front Country

This setting is a desirable destination for visitors in spring and fall, when temperatures are moderate and snow prevents access to higher elevations, and less desirable in the heat of summer. During the spring, the hillsides are dressed in spectacular displays of wildflowers. Often referred to as the foothills, the landscape progresses uphill from grasslands, chaparral, and oak woodland to mixed conifer forest. Elevations range from 1,000 to 4,500 feet, with decomposed granite and erosive soils. These areas are subject to fire, by nature, and the wildland urban intermix increases that risk. Special management

challenges include the control of marijuana cultivation, OHV trespass, tribal relations, lack of Forest Service presence in the field, grazing, wildland urban intermix, and fire control.

Activity-oriented adventure seekers include equestrians during the cool months, hang gliders, hunters, hikers, OHV users, and dog trainers. A diverse group, most are day using neighbors. Spring wildflower displays attract visitors driving for pleasure.

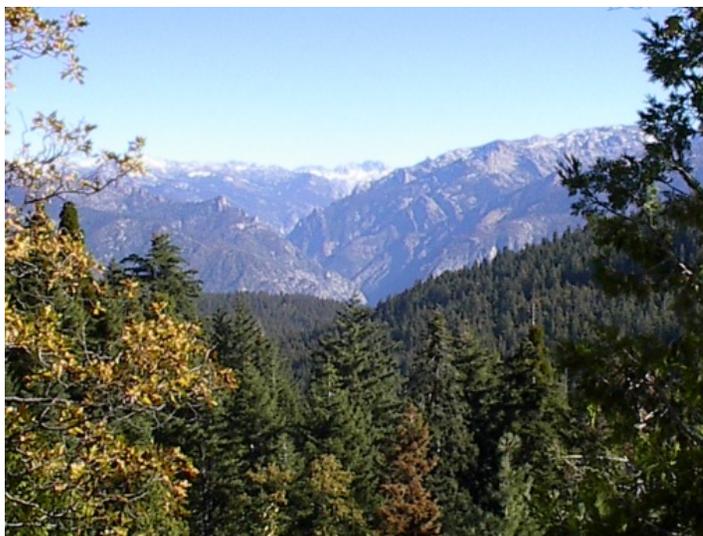
Important Storyline: This area often overlaps with the wildland urban intermix (WUI), and it is generally steep and prone to fire. Critical habitat for the California condor is found here and includes a rock outcrop known as the condor bathtubs. These rock pools would fill with water after storms, and, when condors were more numerous, they would bathe in them. Delilah Lookout is operational as a fire lookout and open to the public. Poso Guard Station is now a recreation rental cabin. This area will be showcased in personal contact services.

Comments: 14

Kings River Special Management Area (KRSMA) OHV

The portion of this area located in the Monument is bounded on the north by the Kings River and has the only two OHV trails in the Monument, as authorized by the legislation that created the KRSMA. This area is generally steep, with brush- and grass-covered canyons, is not very accessible, and provides great opportunities for solitude. Native American use and needs may preclude some types of interpretive efforts. Millwood staging area and Mill Flat Campground are the access points to this area, via the Davis Road (12S01). The existing OHV route is currently impassable, even for a dirt bike. Visitors consist of OHV users and local hunters. Special management challenges include shared management and needed coordination for the KRSMA, which is administered by the Sierra National Forest.

Picture 11 Kings River Special Management Area



Important Storyline: This area has the only OHV trails in the Monument. The terrain is very steep, limiting access to a few trails for advanced and expert riders. During the historic logging period, a flume was maintained along Mill Flat Creek to the Kings River, originating at the town of Millwood. Sampson Flat is the location where outlaws Evans and Sontag hid and were involved in a gunfight with a sheriff’s posse. Mill Flat Creek is a critical aquatic refuge. Grazing, wildlife, and prehistoric use are potentially important stories. The area would be showcased on wayside exhibits, on information boards, and in personal contact services.

Comments: 15

Desired Conditions

The desired conditions stated below are descriptions of the ecological, social, and economic attributes toward which management of the Monument is to be directed. These statements describe a desired future state to achieve for the key resources or opportunities in the Monument. As such, they are aspirations and not commitments or final decisions approving projects and activities, and may be achievable only over a long period of time. They are based upon:

1. The Proclamation (Clinton 2000)
2. Advisories from the Scientific Advisory Board and information presented at the Southern Sierra Science Symposium
3. Current management direction
4. Public comments on the interpretation of the Proclamation and the proposed action

In response to the Proclamation, the desired conditions are presented by the resource areas that would be affected by an amendment or other alterations of the current direction provided in the Forest Plan, as amended by the KRSMA, the 2001 SNFPA, and the 2007 SNF MIS.

Picture 12 An hydrological assessment



Scientific Study and Adaptive Management

Resource management decisions are based on sound science. Research projects focus on science relevant to managers. This includes continuous, iterative collaboration between scientists and managers in the implementation of research projects.

Comments: 16

Vegetation, Including Giant Sequoias

Picture 13 Bearskin Grove

Giant Sequoias

Giant sequoias exist within the mixed conifer forest and vary in density and arrangement, as do associated forest species. Being especially long-lived, giant sequoias dominate their surroundings. Smaller and younger giant sequoias are present. Early seral habitat exists and promotes giant sequoia regeneration.

Mixed Conifer Forest

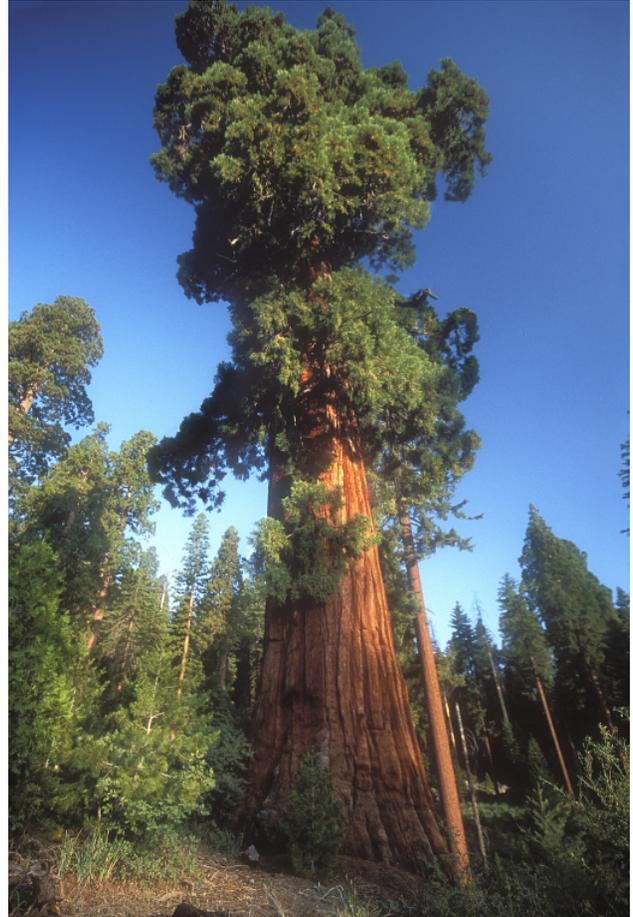
The mixed conifer forest varies by both species composition and structure--as influenced by elevation, site productivity, and related environmental factors, including disturbance--and is in balance with climate and other ecological conditions. The composition is a patchy and a variable mixture of conifer and hardwood trees, as well as a diverse mixture of shrubs, herbaceous vegetation, and grasses. Spatial arrangements vary from pure, or nearly pure, groupings to complex combinations, often within relatively limited areas. Low density forests with frequent canopy openings, varying in size, dominate much of the landscape, with higher density forests on portions of north and east aspects.

More frequent openings with early seral structure and composition (10 percent of the vegetation type) exist within the giant sequoia groves. Some mid-seral structure has converted to a later seral stage as tree sizes increase. Approximately 70 percent of the mixed conifer within groves is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Outside giant sequoia groves, 10 percent of this vegetation type is early seral structure and composition. Almost half of the mid-seral structure has converted to a later seral stage as tree sizes increase. Approximately 50 percent of the mixed conifer is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Blue Oak-Interior Live Oak⁽⁷⁾

Blue oak conditions are maintained at their current condition: a fire regime of low intensity fires, with flame lengths less than 3 feet; natural vegetation types; a highly variable and complex landscape pattern; and a soil composition that can maintain the vegetation. Blue oak dominates, with grass and occasional shrubs as the understory. There are occasional or periodic flushes of regeneration to replace mortality in older trees.



7 Foothill woodlands.

Chaparral-Live Oak⁽⁸⁾

Interior and canyon live oak vegetation is a mosaic of varying size and age classes. Large expanses of dense or older chaparral are broken up by recent disturbances of 10 acres or more, to help slow the spread of fire and regenerate chaparral species. Fire susceptibility and severity are low, and fire hazards to adjacent human communities and surrounding forest types are reduced.

Montane Hardwood-Conifer

The montane hardwood/mixed conifer forests vary by both species composition and structure--as influenced by elevation, site productivity, and related environmental factors, including disturbance--and are in balance with climate and other ecological conditions. The composition is patchy, with an abundance of large black oaks. More frequent openings with early seral structure and composition (10 percent of the vegetation type) exist within the groves. Most mid-seral structure has converted to a later seral stage as tree sizes increase.

Approximately 70 percent of the montane hardwood-conifers within giant sequoia groves is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Outside giant sequoia groves, 20 percent of this vegetation type is early seral structure and composition. Over one-half of the mid-seral structure has converted to later seral as tree sizes increase. Approximately 40 percent of the mixed conifer is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Red Fir

Red fir consists of a mosaic of varying size and age classes, with structural clumping greater than 10 acres, as necessary for species dependent on this vegetation type. Fire susceptibility and severity are low, and fire hazards to adjacent human communities and surrounding forest types are reduced.

More frequent openings with early seral structure and composition (10 percent of the vegetation type) exist within the giant sequoia groves. Some mid-seral structure has converted to later seral as tree sizes increase. Approximately 70 percent of the red fir within groves is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Outside of giant sequoia groves, 10 percent of this vegetation type is early seral structure and composition. Most mid-seral structure has converted to a later seral stage as tree sizes increase. Approximately 70 percent of the mixed conifer outside groves is dominated by trees greater than 24 inches in diameter. Some of the large trees have multi-layered crowns, producing 60 percent or more canopy cover.

Comments: 17

8 Interior and canyon live oaks.

Fire and Fuels

Fire occurs in its characteristic pattern and resumes its ecological role. Frequent fire maintains lower, manageable levels of flammable materials, especially in the surface and understory layers. There is a highly diverse vegetation mosaic of age classes, tree sizes, and species composition, and a low risk for uncharacteristic large, catastrophic fires. The objects of interest are protected; sustainable environmental, social, and economic benefits (such as those associated with tourism) are maintained; and the carbon sequestered in large trees is stabilized.

Fuel reduction treatments in the wildland urban intermix (WUI) zones are focused on developed areas within these zones. The need to maintain fuel conditions that support fires characteristic of complex ecosystems is emphasized, and allows for a natural range of fire to lower fire intensity and protect human life and property on lands in and adjacent to the Monument.



Picture 14 Fuels reduction

Comments: 18

Air Quality

Emissions generated by the Monument are limited and managed, and clean air is provided for the Monument and surrounding communities.

Comments: 19

Wildlife and Plant Habitat

Lands within the Monument provide a diverse range of habitats, with special consideration for native species, riparian areas, montane meadows, and late successional forests.

Picture 15 California spotted owls



Comments: 20

Range

Livestock grazing opportunities are maintained and managed for sustainable, healthy rangelands that contribute to local economies and improve watershed conditions.

Comments: 21

Picture 16 Big Meadows



Hydrological Resources

Streams, meadows, wetlands, and other special aquatic features have proper hydrologic connectivity⁽⁹⁾ and function, while allowing for beneficial uses⁽¹⁰⁾ in the Monument.

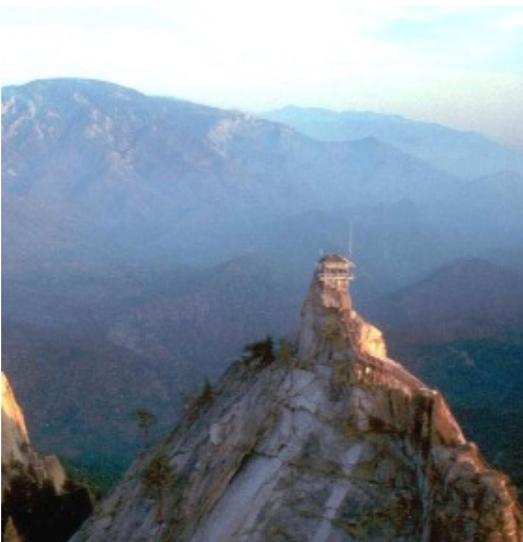
Comments: 22

Groundwater

Groundwater quality and quantity in aquifers across watersheds are sustained.

Comments: 23

Picture 17 The Needles Lookout



Geological Resources

Geological features are protected while providing for public use and enjoyment of these resources.

9 Connectivity refers to the relationship between an active channel and its floodplain.

10 Beneficial uses include recreation, grazing, and fire.

Comments: 24

Paleontological Resources

Paleontological resources retain the components providing the fossil record.

Picture 18 Inside a cave



Comments: 25

Soils

Productive soil conditions are maintained to promote ecosystem health, diversity, and productivity.⁽¹¹⁾

11 Forest Service Handbook 2509.18 - Soil Management Handbook, R5 Supplement No. 2509.18-95 1 defines supplement thresholds and indicator values for desired soil conditions.

Comments: 26

Human Use

The Monument provides wide and varied public use of Monument resources and opportunities while protecting sensitive resources and the objects of interest. Recreation use throughout the year is promoted. Visitors find a rich and varied range of sustainable recreational, educational, and social opportunities enhanced by giant sequoias and the surrounding ecosystems. Consistent and easy-to-read signs and informational materials are provided. Interpretation and conservation education reflect scientifically supported scholarship and research data, conveying clear messages about natural and cultural resources and multiple use. Partnerships are established, providing people with a connection to place and promoting a sense of stewardship. The Monument provides a wide variety of visually appealing landscapes, such as oak woodland, chaparral, a variety of mixed conifer forest, and giant sequoia groves, for the public to enjoy within the places they prefer to visit.

Picture 19 Learning about giant sequoias



Comments: 27

Picture 20 Cultural resource site



Cultural Resources

A comprehensive cultural resource management program places a greater management emphasis on the rich cultural resources within the Monument as described in the Proclamation. Cultural resources are identified and allocated to appropriate management categories (FSM 2363) (e.g., preservation, enhancement, scientific investigation, interpretation, release) so that they can be protected, maintained, studied, and used by the public.

Comments: 28

Picture 21 Trail of 100 Giants



Transportation System

Safe and fully-maintained roads and trails that minimize adverse resource impacts provide public and administrative access to National Forest System lands and facilities within the Monument. Appropriate access is provided to the objects of interest for their proper care, protection, and management.

Comments: 29

Part 2-Strategy

Land Allocations and Management Areas

Land allocations are land areas that are differentiated and named in the 2001 SNFPA or in this Monument Plan and its EIS. All alternatives have some type of land allocation, and their size may differ by alternative. They are areas within which different sets of standards and guidelines apply.

Management areas are not land allocations as defined by the 2001 SNFPA, but rather are areas specific to the Monument with their own distinct management direction. The land allocations and management areas for the Monument are shown in their entirety on Map A of the Monument Plan map packet.

There are three categories of land allocations/management areas for the Monument: static, overlapping, and dynamic.

- *Static* land allocations/management areas are those not likely to change in size and location over time. They include designated wildernesses, wild and scenic river corridors, the Kings River Special Management Area (KRSMA), backcountry (inventories roadless areas), the giant sequoia groves, old forest emphasis area, the Southern Sierra Fisher Conservation Area, research natural areas, botanical areas, and a geological area.
- *Overlapping* land allocations/management areas are those that are likely to overlap with static and dynamic areas. Where they overlap, the area with the most restrictive direction is given priority, as stipulated in the 2001 SNFPA or this document. Land allocations/management areas that have more restrictive management direction preempt those with less restrictive direction. For example, when a wildland urban intermix (WUI) defense zone overlaps designated wilderness, the management direction for the more restrictive land allocation/management area--in this case, the direction for the wilderness area because of the importance of its legal status--is followed.
- *Dynamic* land allocations/management areas are those that are most likely to change in size and location over time with the introduction of new information. For example, as Pacific fisher populations are tracked, new den sites may be identified and mapped. Dynamic land allocations/management areas may, at times, overlap the other types. Since most of the dynamic land allocations/management areas are related to the protection of wildlife species, the standards and guidelines associated with them are usually given priority over most land allocations/management areas they overlap.

The following table shows the acres of land allocations and management areas in the Monument.

Table 2 Acres of Land Allocations/Management Areas

Land Allocation/Management Area (only the portions in the Monument)	Acres
STATIC	
Wildernesses	13,294
Wild and Scenic Rivers	4,669
Kings River Special Management Area	24,288

Land Allocation/Management Area (only the portions in the Monument)	Acres
Backcountry (Inventoried Roadless Areas)	80,297
Giant Sequoia Groves	27,830
Old Forest Emphasis Area	153,758
Southern Sierra Fisher Conservation Area	311,149
Research Natural Areas, Botanical Areas, and Geological Area	9,337
OVERLAPPING	
Wildland Urban Intermix (WUI) Defense Zone	45,342
WUI Threat Zone	145,522
Tribal Fuels Emphasis Treatment Area (TFETA)	56,643
DYNAMIC	
Riparian Conservation Areas (RCAs) and Critical Aquatic Refuges (CARs)	178,002
Willow Flycatcher	86
California Spotted Owl Protected Activity Centers (PACs)	22,617
Goshawk PACs	2,390
Great Gray Owl PACs	62
Furbearer (Fisher and Marten) Den Sites	3,072
California Spotted Owl Home Range Core Areas (HRCAs)	44,408

The following figure shows the relationship between land allocations from the 2001 SNFPA. It demonstrates how managers would prioritize standards and guidelines when allocations overlap.⁽¹²⁾

12 For example, where the critical aquatic refuge (CAR), riparian conservation area (RCA), and willow flycatcher habitat allocations overlay other land allocations, the most restrictive set of standards and guidelines is followed. These three land allocations are dynamic.

The following table further illustrates what management direction would be followed where land allocations or management areas overlap. Where there is an overlap, the table indicates which area's direction applies. Land allocations with standards and guidelines that protect special habitats or protected species have a higher priority than land allocations or management areas that allow more active management. For example, standards and guidelines for California spotted owl protected activity centers (PACs) protect owl habitat and breeding by limiting the types and intensities of fuel treatments within their boundaries. Therefore, where PACs overlap old forest emphasis areas, the standards and guidelines for the PACs take precedence over those for old forest emphasis areas (in which some mechanical fuel treatments are permitted). Standards and guidelines for designated Wilderness and backcountry (inventoried roadless areas) supersede all those for other land allocations.

Table 3 Dominant Management Direction When Land Allocations/Management Areas Overlap

Land Allocations/ Management Areas on BOTH axes	Southern Sierra Fisher Conservation Area (SSFCA)	Old Forest Emphasis	Wildland Urban Intermix (WUI): Defense Zone	Wildland Urban Intermix (WUI): Threat Zone	Riparian Conservation Areas (RCA) and Critical Aquatic Refuges (CARs)	General Monument	Protected Activity Centers (PACs), Den Sites, Home Range Core Areas (HRCAs)	Sequoia Groves (administrative boundary) ⁽¹⁾	Tribal Fuel Emphasis Treatment Area (TFETA)
Southern Sierra Fisher Conservation Area	N/A	Apply old forest	Apply SSFCA- except WUI fuels	Apply SSFCA- except WUI fuels	Apply both	Apply gen. forest plus SSFCA specific	Apply PAC, den & HRCA	Apply grove	Apply gen. forest plus SSFCA specific
Old Forest Emphasis	Apply old forest	N/A	Apply old forest- except WUI fuels	Apply old forest- except WUI fuels	Apply both	N/A	Apply PAC, den & HRCA	Apply grove	Apply old forest
Wildland Urban Intermix (WUI): Defense Zone	Apply SSFCA- except WUI fuels	Apply old forest- except WUI fuels	N/A	N/A	Apply both	Apply WUI	Apply special ⁽²⁾ PAC & den	Apply WUI	Apply SSFCA- except WUI fuels
Wildland Urban Intermix (WUI): Threat Zone	Apply old forest- except WUI fuels	Apply old forest- except WUI fuels	N/A	N/A	Apply both	Apply WUI	Apply PAC & den, WUI <i>usually</i> apply over HRCA	Apply WUI	Apply SSFCA- except WUI fuels
Riparian Conservation Areas (RCA) and Critical Aquatic Refuges (CAR)	Apply both	Apply both	Apply both	Apply both	N/A	Apply both	Apply both, except where PACs, dens, and HRCAs are more restrictive	Apply both	Apply both

Land Allocations/ Management Areas on BOTH axes	Southern Sierra Fisher Conservation Area (SSFCA)	Old Forest Emphasis	Wildland Urban Intermix (WUI): Defense Zone	Wildland Urban Intermix (WUI): Threat Zone	Riparian Conservation Areas (RCA) and Critical Aquatic Refuges (CARs)	General Monument	Protected Activity Centers (PACs), Den Sites, Home Range Core Areas (HRCAs)	Sequoia Groves (administrative boundary) ⁽¹⁾	Tribal Fuel Emphasis Treatment Area (TFETA)
General Monument	Apply gen. forest plus SSFCA specific	N/A	Apply WUI	Apply WUI	Apply both	N/A	Apply PAC, den & HRCA	Apply grove	Apply gen. forest plus SSFCA specific
Protected Activity Centers (PACs), Den Sites, Home Range Core Areas (HRCAs)	Apply PAC, den, & HRCA	Apply PAC, den, & HRCA	Apply special ⁽³⁾ PAC & den	Apply PAC & den, WUI <i>usually</i> apply over HRCA	Apply both, except where PACs, dens, and HRCAs are more restrictive	Apply PAC, den, & HRCA	N/A	Apply PAC, den & HRCA	Apply PAC & den, WUI <i>usually</i> apply over HRCA
Sequoia Groves (administrative boundary)⁽⁴⁾	Apply grove	Apply grove	Apply WUI	Apply WUI	Apply both	Apply grove	Apply PAC, den & HRCA	N/A	Apply grove
Tribal Fuel Emphasis Treatment Area (TFETA)	Apply gen. forest plus 2 SSFCA specific	Apply old forest	Apply SSFCA- except WUI fuels	Apply SSFCA- except WUI fuels	Apply both	Apply gen. forest plus 2 SSFCA specific	Apply PAC & den, WUI <i>usually</i> apply over HRCA	Apply grove	N/A

1. Recommended in MSA and formalized by Bush proclamation.
2. See standards and guidelines for PACs and den sites located in defense zones
3. See standards and guidelines for PACs and den sites located in defense zones
4. Recommended in MSA and formalized by Bush proclamation.

Land Allocations and Management Areas

The Monument Plan map packet contains three maps displaying land allocations and management areas. Map A displays all the land allocations/management areas for the Monument; Map B shows all the land allocations/management areas for wildlife; and Map C displays the WUI and the tribal fuels emphasis treatment area (TFETA). Recreation and scenery management areas are delineated on maps to support broad administrative management, but do not constitute land allocations. Examples of this type of mapped information are Maps 1 and 2, which display the recreation niche settings for the Monument.

Comments: 30

National Forest System lands are generally available for a variety of multiple uses, although not all uses are suitable for all areas. Section 6 (g) of the Resource Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), requires "the identification of the suitability of lands for resource management" (RPA 1974, pp. 4-9).

The definition of suitability is:

The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of economic and environmental consequences and the alternative uses forgone. A unit of land may be suitable for a variety of individual or combined management practices (36 CFR 219.3)

The Sequoia National Forest, as the administrator of the Monument, has identified generally suitable uses for the Monument as guided by current management direction and the Proclamation. The Proclamation makes specific statements about the suitability of the Monument for certain resource-related activities, such as:

- These giant sequoia groves and the surrounding forest provide an excellent opportunity to understand the consequences of different approaches to forest restoration. These forests need restoration to counteract the effects of a century of fire suppression and logging. Fire suppression has caused forests to become denser in many areas, with increased dominance of shade-tolerant species. Woody debris has accumulated, causing an unprecedented buildup of surface fuels. One of the most immediate consequences of these changes is an increased hazard of wildfires of a severity that was rarely encountered in pre-Euroamerican times. Outstanding opportunities exist for studying the consequences of different approaches to mitigating these conditions and restoring natural forest resilience (Clinton 2000, pp. 24095-24096).
- All federal lands and interests in lands within the boundaries of this Monument are hereby appropriated and withdrawn from entry, location, selection, sale, leasing, or other disposition under the public land laws including, but not limited to, withdrawal from locating, entry, and patent under the mining laws and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument (Clinton 2000, p. 24097).
- No portion of the monument shall be considered to be suited for timber production, and no part of the monument shall be used in a calculation or provision of a sustained yield of timber from the Sequoia National Forest (Clinton 2000, p. 24097).
- The plan will provide for and encourage continued public and recreational access and use consistent with the purposes of the monument (Clinton 2000, p. 24097).
- 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 (Clinton 2000, p. 24098).

This section describes general land use suitability and provides guidance for making decisions about future proposed projects and activities, but does not constitute a commitment or a decision to approve any particular projects or activities.

Suitable Land Uses

The following tables display the suitability of specific land uses or activities in both static and overlapping land allocations and management areas. Suitability is expressed as suitable, not suitable, designated areas (existing uses and areas only), regulated by the state (California Department of Fish and Game [CDF&G]), suitable unless otherwise restricted, suitable for authorized use, or by exception. "By exception" means the use or activity is not generally compatible with that land allocation or management area, but it may be appropriate under certain circumstances, such as the collection of culturally important special forest products in the backcountry at a certain time of year. NEPA analyses for site-specific projects may need to be conducted to determine specific instances where exceptions are warranted.

Land allocations and management areas are described and discussed in the Land Allocations section of Part 2 of this plan. For the dynamic land allocations (not included in these tables), suitability will be addressed with standards and guidelines developed for those allocations. A complete list of the standards and guidelines by resource area is available in Appendix F.

Table 4 Suitable Land Uses and Activities by Static Land Allocation or Management Area

Land Use or Activity	Static Land Allocations/Management Areas									
	Wilderness	Wild and Scenic Rivers	Backcountry	Old Forest Emphasis	General Monument	Research Natural Areas	Botanical Areas, Geological Area	Giant Sequoia Groves	Southern Sierra Fisher Conservation Area	
RESOURCE MANAGEMENT										
Prescribed fire	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Managed wildfire	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Hand treatments for fuels reduction (1)	By exception (2)	By exception	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable (3)	Suitable
Mechanical treatments for fuels reduction (4)	Not suitable	By exception	By exception	Suitable	Suitable	By exception	Suitable	Suitable	Suitable	Suitable
Removal of cut trees (5)	Not suitable	By exception	By exception	Suitable	Suitable	By exception	Suitable	Suitable	Suitable	Suitable
New road construction	Not suitable	Suitable	By exception	Suitable	Suitable	By exception	Suitable	Not suitable	Suitable	Suitable
Road reconstruction	Not suitable	Suitable	By exception	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Trail construction or reconstruction	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Administrative facilities(6)	By exception	Suitable	Suitable	Suitable	Suitable	By exception	By exception	By exception	Suitable	Suitable
Scientific study and monitoring	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
HUMAN USE										
Recreation residence tracts	Not suitable	Not suitable	Designated areas (7)	Designated areas	Designated areas	Not suitable	Designated areas	Designated areas	Designated areas	Suitable

Land Use or Activity	Static Land Allocations/Management Areas								
	Wilderness	Wild and Scenic Rivers	Backcountry	Old Forest Emphasis	General Monument	Research Natural Areas	Botanical Areas, Geological Area	Giant Sequoia Groves	Southern Sierra Fisher Conservation Area
Organizational camps	Not suitable	Not suitable	Designated areas	Designated areas	Designated areas	Not suitable	Designated areas	Designated areas	Suitable
Lodges and resorts	Not suitable	Not suitable	Designated areas	Designated areas	Designated areas	Not suitable	Designated areas	Not suitable	Suitable
Developed recreation sites	Not suitable	Not suitable	Designated areas	Designated areas	Designated areas	Not suitable	Suitable	Suitable	Suitable
Dispersed recreation sites	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Hunting and fishing	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)
Motorized use of roads	Not suitable	Designated roads only							
Motorized use of trails	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable
Motorized or mechanized cross country travel	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable
Non-motorized mechanized vehicle use of roads and trails	Not suitable	Suitable unless otherwise restricted							
Temporary special uses (8)	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted

Land Use or Activity	Static Land Allocations/Management Areas								
	Wilderness	Wild and Scenic Rivers	Backcountry	Old Forest Emphasis	General Monument	Research Natural Areas	Botanical Areas, Geological Area	Giant Sequoia Groves	Southern Sierra Fisher Conservation Area
COMMODITY AND COMMERCIAL USES									
Communication sites	Designated areas	By exception	Designated areas	Designated areas	Designated areas	Designated areas	Designated areas	Designated areas	Designated areas
Utility corridors	Designated areas	By exception	Designated areas	Designated areas	Designated areas	Designated areas	Not suitable	Designated areas	Designated areas
Livestock grazing	Suitable	Suitable	Suitable	Suitable	Suitable	Not suitable	Suitable	Designated areas	Suitable
Wood products (firewood)	Not suitable	Suitable for authorized use	By exception	Suitable for authorized use	Suitable for authorized use	Not suitable	By exception	By exception	Suitable for authorized use
Special forest products	Not suitable	Suitable for authorized use	By exception	Suitable for authorized use	Suitable for authorized use	Not suitable	By exception	By exception	Suitable for authorized use
Minerals exploration and development	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable

1. Includes the use of chainsaws, handsaws, axes, and loppers.
2. Activity or use is not generally compatible with the land allocation, but may be appropriate under certain circumstances.
3. As allowed in 2001 SNFPA standards and guidelines.
4. Includes the use of mechanized equipment.
5. Only where clearly needed for ecological restoration and maintenance or public safety.
6. Including trailheads, day use areas, lookouts, and district offices.
7. Existing uses and areas only.
8. Includes weddings, fishing events, historical reenactments, other recreational events.

Table 5 Suitable Land Uses and Activities by Overlapping Land Allocation or Management Area

Land Use or Activity	Overlapping Land Allocations/Management Areas		
	Wildland Urban Intermix: Defense Zone	Wildland Urban Intermix: Threat Zone	Tribal Fuels Emphasis Treatment Area
RESOURCE MANAGEMENT			
Prescribed fire	Suitable	Suitable	Suitable
Managed wildfire	By exception	By exception	Suitable
Hand treatments for fuels reduction ⁽¹⁾	Suitable	Suitable	Suitable
Mechanical treatments for fuels reduction ⁽²⁾⁽³⁾	Suitable	Suitable	Suitable
Removal of cut trees ⁽⁴⁾	Suitable	Suitable	Suitable
New road construction	Suitable	Suitable	Suitable
Road reconstruction	Suitable	Suitable	Suitable
Trail construction or reconstruction	Suitable	Suitable	Suitable
Administrative facilities ⁽⁵⁾	Suitable	Suitable	Suitable
Scientific Study and Monitoring	Suitable	Suitable	Suitable
HUMAN USE			
Recreation residence tracts	Designated areas ⁽⁶⁾	Designated areas	Designated areas
Organizational camps	Designated areas	Designated areas	Designated areas
Lodges and resorts	Designated areas	Designated areas	Designated areas
Developed recreation sites	Designated areas	Designated areas	Designated areas
Dispersed recreation sites	Suitable unless otherwise restricted	Suitable unless otherwise restricted	Suitable unless otherwise restricted
Hunting and fishing	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)	Regulated by the state (CDF&G)
Motorized use of roads	Designated roads only	Designated roads only	Designated roads only
Motorized use of trails	Not suitable	Not suitable	Not suitable
Motorized or mechanized cross country travel	Not suitable	Not suitable	Not suitable

Land Use or Activity	Overlapping Land Allocations/Management Areas		
	Wildland Urban Intermix: Defense Zone	Wildland Urban Intermix: Threat Zone	Tribal Fuels Emphasis Treatment Area
Non-motorized mechanized vehicle use of roads and trails	Suitable	Suitable	Suitable
Temporary special uses (7)	Suitable	Suitable	Suitable
COMMODITY AND COMMERCIAL USES			
Communication sites	Suitable	Suitable	Suitable
Utility corridors	Suitable	Suitable	Suitable
Livestock grazing	Suitable	Suitable	Suitable
Wood products (firewood)	Suitable	Suitable	Suitable
Special forest products	Suitable	Suitable	Suitable
Minerals exploration and development	Not suitable	Not suitable	Not suitable

1. Includes the use of chainsaws, handsaws, axes, and loppers.
2. Includes the use of mechanized equipment.
3. Only where clearly needed for ecological restoration and maintenance or public safety.
4. Only where clearly needed for ecological restoration and maintenance or public safety.
5. Including trailheads, day use areas, lookouts, and district offices.
6. Existing uses and areas only.
7. Includes weddings, fishing events, historical reenactments, other recreational events.

Comments: 31

This part of the Monument Plan sets forth strategies and objectives for achieving or maintaining the desired conditions for the Monument, as established in Part 1. Strategies describe the general approach that the responsible official would use to achieve the desired conditions for each resource. Strategies establish priorities in management efforts and convey a sense of priority and focus for objectives.

Objectives exist for some, but not all, resource areas. They are concise projections of measurable, time-specific outcomes intended to be consistent with the strategies. They provide a way to measure progress toward achieving or maintaining desired conditions. When a time frame has been provided for meeting an objective, the intent is to meet the objective within that time frame, or as soon as reasonably possible thereafter.

Strategies and Objectives

In response to the Proclamation, the management strategies and objectives are focused on the resource areas that would be affected by an amendment or other alterations of the current direction provided in the Forest Plan, as amended by the KRSMA, the 2001 SNFPA, and the 2007 SNF MIS. These resource areas are:

- Scientific Study and Adaptive Management
- Vegetation, including Giant Sequoias
- Fire and Fuels
- Air Quality
- Wildlife and Plant Habitat (including Management Indicator Species; Threatened, Endangered, and Sensitive Species; Invasive Nonnative Species; Rare and Endemic Species; and Botanical Resources)
- Range
- Hydrological Resources
- Groundwater
- Geological Resources
- Paleontological Resources
- Soils
- Human Use (including Recreation, Scenery, and Socioeconomic)
- Cultural Resources
- Transportation System

Scientific Study and Adaptive Management

Figure 3 Overview of Adaptive Management Based on Scientific Study and Monitoring

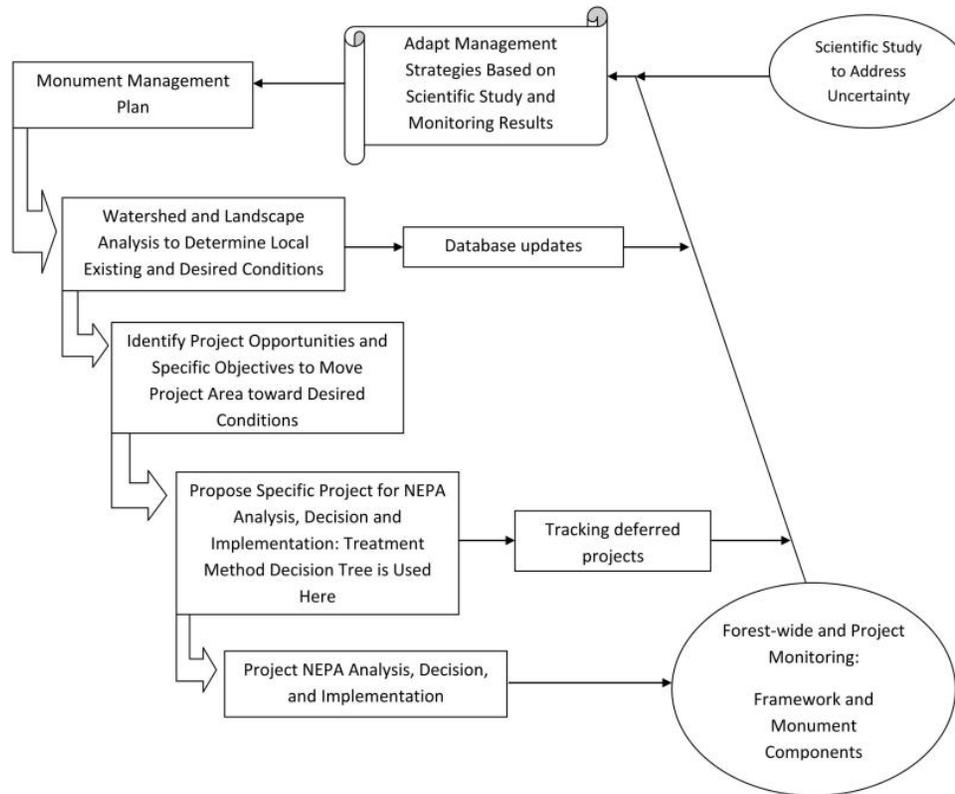


Table 6 Strategies for Scientific Study and Adaptive Management

Strategy
Propose scientific study and management activities that respond to the advice provided in the science advisories, where applicable and practicable. Use the joint strategic framework, "A Strategic Framework for Science in Support of Management in the Southern Sierra Nevada Ecoregion," developed with the National Park Service, to incorporate current and new science. Conduct research to assist in defining agents of change, ecosystem elements of particular interest, and management tools that can promote resilient and adaptable forest ecosystems. Develop adaptive management strategies to focus on relevant resource management factors linked to climate change. Foster partnerships dealing with science.
Conduct research regarding objects of interest, including paleontological, cultural, and geological resources, for which there is little current science available. Also conduct social science and recreation research to better understand connection to place (including objects of interest), levels of acceptable changes, and future use trends.

Objectives

1. Within 5 years,⁽¹³⁾ develop at least two scientific studies in the groves to research resilience to agents of change such as fire, drought, insects, disease, and climate change. Design experiments to investigate the responses, including regeneration, of giant sequoias to changes in temperature and moisture, and the complex interactions of these two factors. Publish results within 10 years of study initiation.
2. Continue and expand research on the effects of management activities on fishers and their habitat to better understand how these activities influence individuals, important habitat components, prey resources, and competition with other predators. After 5 years, evaluate the research findings and refine management direction.
3. Within 5 years, analyze landscapes (6th-field watershed scale) to identify opportunities for site-specific projects.

Comments: 32

Vegetation, Including Giant Sequoias

Table 7 Strategies Specific to Giant Sequoia Groves

Strategy
As part of the giant sequoia grove-specific fuel load reduction plan, emphasize the protection of large giant sequoia trees and trees of other species, including pines, red firs, incense cedars, and black oaks.
Protect naturally-occurring isolated giant sequoias located outside of grove administrative boundaries from vegetation management activities, giving special consideration to the root systems. Make every reasonable effort to protect these trees from road construction. When practical, preserve them within wildlife clumps or within areas reserved to meet seral stage diversity requirements.
Protect only the named sequoias--Boole, President Bush, and Chicago Stump ⁽¹⁾ --from fuels reduction activities, wildfires, and from human disturbance that can damage tree health, such as peeling bark and trampling on roots. Protect these specific trees by pulling fuels away from the base of the trees or removing ladder fuels that could promote a crown fire in them.

Picture 22 The Boole Tree



13 The work toward achieving the objectives in this draft EIS will begin upon plan implementation. When a time frame has been provided for meeting an objective, the intent is to meet the objective within that time frame, or as soon as reasonably possible thereafter.

Strategy
Give the designation of "grove" to any detached naturally occurring group (10 or more giant sequoia trees, with at least 4 trees with a dbh of 3 feet or larger) located outside an existing grove's administrative boundary. Develop a zone of influence (ZOI) where mechanical treatments are restricted. If previously unknown giant sequoia trees of any size and number are discovered outside of a grove's administrative boundary, modify the boundary according to the standards and guidelines.

1. These are the only recognized named giant sequoias within the Monument.

Table 8 Strategies for Climate Change/Carbon Sequestration

Strategy
Design forest management techniques to promote ecosystem resilience to future regional changes in temperature and precipitation. Include adaptive management strategies to forestall effects to high value resources (i.e., retention of named giant sequoia trees), to improve the potential for forest ecosystems to return to desired conditions following natural perturbations (such as fire-enhanced giant sequoia regeneration), and to facilitate ecological transitions to new and novel conditions (Millar et al. 2007, Ecological Applications 17: 2145-2151).
Provide mitigation measures for reducing overall greenhouse gas emissions and for sequestering carbon for project-level activities.
Focus a portion of annual vegetation management activities in areas most likely to show the effects of climate change (for example, riparian areas, vegetation transition zones), in order to manage the Monument for ecological restoration and protect the objects of interest.
Sequester carbon and reduce greenhouse gas emissions, while at the same time reducing carbon accumulations, in periodically unstable forest ecosystems by using fire and mechanical treatments, in combination.

Table 9 Strategies for Ecological Restoration

Strategy
Accomplish ecological restoration, ⁽¹⁾ in part, through the reduction of fuels by decreasing down woody material, ladder fuels, and brush.
Integrate ecological restoration with fuels treatment, giving priority to areas that are most in need. Prioritize ecological restoration to improve the resilience of ecosystems in the Monument so they can adapt to natural change agents such as fire and climate change, ensuring the protection of the objects of interest.
In young stands such as plantations, encourage more diversity in species and age, focusing on heterogeneity. Reduce stocking and vary spacing of trees to encourage stand health and resilience.
After a major disturbance, ⁽²⁾ conduct and evaluate ground inventories in affected areas of the Monument to assess changes in species composition and fuel loading.

1. There are additional strategies for ecological restoration in the other resource areas, such as Hydrological Resources.

2. Such as a bark beetle infestation or large stand-replacing fire.

Table 10 Strategy for Tree Species Regeneration

Strategy
Encourage natural regeneration of tree species. In areas where natural regeneration is not likely, use planting as determined in site-specific project analysis.

Table 11 Strategies for Biomass Removal

Strategy
For the removal of biomass (which includes trees), minimize the costs with the potential for cost recovery.
Where vegetation treatments are proposed, evaluate site-specific conditions, including site capability, ⁽¹⁾ to determine if they are clearly needed for ecological restoration and maintenance or public safety.
Determine when trees clearly need to be removed from the Monument for ecological restoration and maintenance or public safety, using the following criteria: <ol style="list-style-type: none"> 1. If keeping a tree on site would cause unacceptable fuels accumulation, because existing fuel loads are too great to use treatments that would leave the biomass on site (such as chipping or mastication); 2. If keeping a tree on site would provide a vector for insect or disease infestations at levels higher than currently known endemic levels; and/or 3. If keeping a tree on site would create a public safety hazard or attractive nuisance (for example, down trees can be attractive to a child for climbing, creating the potential for falls and injuries).

1. Site capability includes an ecological classification, which can include productivity potential of the site, abundance of species, height of stand, and the site’s ability to support certain species.

Table 12 Strategy for Pest Management

Strategy
Continue using integrated pest management. This management approach reduces the risk from pests and prevents unacceptable levels of pest damage by the most economical means available, while posing the least possible risk to people, property, resources, and the environment.

Objectives

Vegetation and fuels management focuses on the first two decades of time for ecological restoration, tree and stand resiliency, and the reduction of surface and ladder fuels.

Giant Sequoia Groves

1. Within 5 years, complete a giant sequoia grove-specific fuel load reduction plan for every grove within the Monument.

Mixed Conifer

1. Within 5 years, manage vegetation to change 1.1 percent, or approximately 257 acres, of the mixed conifer types to an early seral phase in giant sequoia groves.
2. Within 5 years, manage vegetation to change 0.5 percent, approximately 530 acres, of the mixed conifer types to an early seral phase outside of groves.
3. Within 5 years, manage fire and thinning treatments on 11.3 percent, approximately 2,575 acres, of the mixed conifer types to reduce fuels and increase tree growing space in groves.
4. Within 5 years, manage fire and thinning treatments on 11.3 percent, approximately 13,245 acres, of the mixed conifer types to reduce fuels and increase tree growing space outside of groves.

Blue Oak-Interior Live Oak

1. For the life of the plan, keep the total acres of the blue oak vegetation type stable.

Chaparral-Live Oak

1. Within 5 years, manage vegetation to change 12.5 percent, approximately 20 acres, of the chaparral vegetation types to an early seral phase in giant sequoia groves.
2. Within 5 years, manage vegetation to change 3.1 percent, approximately 53 acres, of the chaparral vegetation types to an early seral phase outside of groves.

Montane Hardwood-Conifer

1. Within 5 years, manage vegetation to change 1.8 percent, approximately 45 acres, of the montane hardwood-conifer vegetation types to an early seral phase in giant sequoia groves.
2. Within 5 years, manage vegetation to change 0.9 percent, approximately 720 acres, of the montane hardwood-conifer types to an early seral phase outside of groves.
3. Within 5 years, manage fire and thinning treatments on 22.5 percent, approximately 574 acres, of the montane hardwood-conifer types to reduce fuels and increase tree growing space in groves.
4. Within 5 years, manage fire and thinning treatments on 11.3 percent, approximately 9,004 acres, of the montane hardwood-conifer types to reduce fuels and increase tree growing space outside of groves.

Red Fir

Strategies and Objectives

1. Within 5 years, manage vegetation to change 2.5 percent, approximately 25 acres, of the red fir vegetation types to an early seral phase in giant sequoia groves.
2. Within 5 years, manage vegetation to change 0.5 percent, approximately 195 acres, of the red fir types to an early seral phase outside of groves.
3. Within 5 years, manage fire and thinning treatments on 22.5 percent, approximately 228 acres, of the red fir types to reduce fuels and increase tree growing space in groves.
4. Within 5 years, manage fire and thinning treatments on 11.3 percent, approximately 4,384 acres, of the red fir types to reduce fuels and increase tree growing space outside of groves.

Comments: 33

Fire and Fuels

Table 13 Strategies for Fire and Fuels

Strategy
Follow the Guidance for Implementation of Federal Wildland Fire Management Policy (February 13, 2009).
Focus fire prevention programs on recreation use and residential areas.
When the use of fire is not appropriate (poor air quality days) or desirable (an abundance of ladder fuels that pose a threat to public safety or adjacent communities), mechanical ⁽¹⁾ treatments can be used to accomplish fuel management objectives. ⁽²⁾
Use mechanical means for the protection of individual trees (such as black oaks), when the use of fire could threaten the individual tree targeted for protection.
Manage some hot fires with high intensity on a limited basis and with a tolerance for relatively high mortality. Continue to allow this, as specified in landscape analysis, to reduce fuels or to improve the diversity of vegetation and habitat characteristics in the Monument.
For fires started by natural ignitions (lightning strikes), determine whether to allow them to burn on a case-by-case basis.
Control or suppress naturally-ignited wildfires only under one or more of the following circumstances: <ol style="list-style-type: none"> 1. Smoke management requirements cannot be met; 2. Fire intensity reduces the probability of protecting people (public or employees);

Strategy
<ol style="list-style-type: none"> 3. Fire intensity reduces the probability of feasibly protecting adjacent land, infrastructure, named sequoias, susceptible cultural resources, or critical natural resources (such as posing risks to critical habitat features, or occurrence during critical nesting/denning periods); 4. Vegetation type conversion of 1,000 contiguous acres or more could not be prevented; and/or 5. Personnel and other resources to monitor or otherwise manage the fire are unavailable.
<p>Avoid aerial application of retardant or foam within 300 feet of waterways. This does not require the helicopter or air tanker pilot in command to fly in such a way as to endanger his or her aircraft, other aircraft, or structures, or compromise ground personnel safety.</p>

1. Mechanical treatment is the use of self-propelled equipment.
2. In some instances, mechanical treatments are restricted to the WUI defense zone only.

Table 14 Strategies for Fuels Reduction

Strategy
<p>Manage fuels to produce a highly diverse vegetation mosaic of age classes, tree sizes, and species composition, to protect the objects of interest, and to help maintain environmental, social, and economic benefits, such as those associated with tourism.</p>
<p>Locate fuel treatments, whether they are a result of natural ignitions or prescribed fuel treatments, across broad landscapes so that the spread and intensity of wildfire is reduced. Continue use of these treatments in the Monument to protect life, property, and sensitive resources such as the giant sequoias, wildlife, cultural resources, and riparian areas. Also use fuel treatments to help create openings for regeneration.</p>
<p>Locate the tribal fuels emphasis treatment area (TFETA) along the eastern boundary of the Tule River Indian Reservation (see map below). Focus fuel treatments in the TFETA on protecting the reservation and its watersheds from severe fire effects. The first priority for fuel reduction treatments in the TFETA is those areas within 1/4 mile of the reservation boundary or in the Long Canyon area.</p>
<p>Prioritization of fuel treatments (which may include an ecological restoration component) by land allocations/management areas will be:⁽¹⁾</p> <ol style="list-style-type: none"> 1. WUI defense zones 2. TFETA areas of high and moderate fire susceptibility within 1/4-mile of the reservation boundary (see map below) 3. WUI threat zone 4. Giant sequoia groves (not previously treated in 1 through 3)

Strategy
5. TFETA areas of high fire susceptibility (not previously treated in 2) 6. Old forest emphasis areas (not previously treated in 1 through 5)

1. This list applies to the land allocations/management areas present in each alternative. For example, the TFETA is only proposed in Alternatives B, C, and F.

Map 3 Tribal Fuels Emphasis Treatment Area

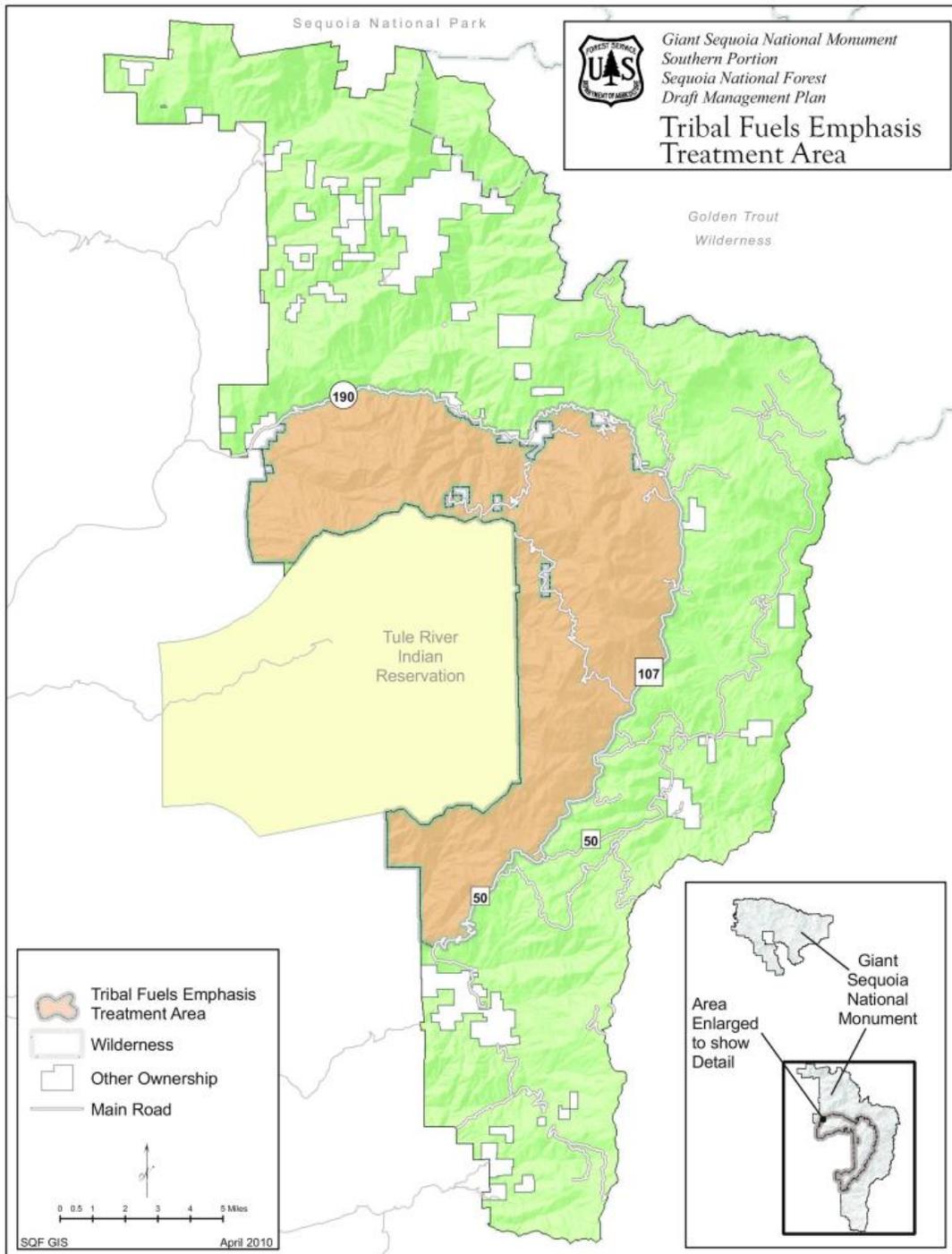


Table 15 Strategies Specific to WUI Management

Strategy
Allow more low to moderate intensity fires to burn in the Monument, including within giant sequoia groves.
Forest supervisors will provide for a 100-foot defensible space minimum (CFR Section 4291) for all structures on administrative sites, structures authorized by permit, and for developments adjacent to National Forest System lands.

Objective

1. Meet at least once annually with cooperating agencies to coordinate prescribed burning plans for projects located on adjacent lands and to coordinate fire protection activities.

Comments: 34

Air Quality

Table 16 Strategies for Air Quality

Strategy
Avoid burning on high visitor use days.
Convey condition and trend information of sensitive resources to the U.S. Environmental Protection Agency, California Air Resources Board, and the San Joaquin Valley Air Pollution Control District for regulatory consideration.
Use ambient air quality monitoring, in collaboration with research, to understand broad southern Sierra air pollution trends and the contribution of smoke to the total pollution load.

Objective

1. As part of prescribed fire and managed wildfire, develop actions that minimize public exposure to atmospheric pollutants.

Comments: 35

Wildlife and Plant Habitat

Table 17 Strategies for Wildlife and Plant Habitat

Strategy
Maintain and improve habitat for endangered and threatened plant and animal species on federal and state lists to meet objectives set forth in their recovery and management plans.
Protect, increase, and perpetuate old forest ecosystems and provide for the diversity of native plant and animal species associated with old forest ecosystems.
Monitor and assess the effects of fuels management on Pacific fisher habitat, using models appropriate to the scale of the project.
Use streamside management zones, the aquatic management strategy, and the riparian conservation objectives for riparian conservation areas (RCAs) and critical aquatic refuges (CARs), to protect aquatic, riparian, and meadow ecosystems.
Use limited operating periods appropriate for particular species as needed.
Manage California condor habitat following the most current U.S. Department of the Interior (USDI) Fish and Wildlife Service California Condor Recovery Plan. Include the management of historic use areas, such as the Starvation Grove historic nest site and the Lion Ridge roost area.
Use evaluation methods for species habitat from the 2007 SNF MIS on a site-specific project level basis.
Maintain species diversity within the Monument through the use of wildlife standards and guidelines.
Manage the Sierra Nevada red fox, pine marten, and fisher as sensitive species (MSA, pages 55-58), and monitor to determine the effects of fuels management on their habitat.
Manage wetlands and meadow habitat for willow flycatchers and other species, following the standards and guidelines from the Forest Plan, as modified by the MSA (MSA, pages 5-6, and Exhibit D).
Reduce, and where possible reverse, the spread of noxious weeds.

Objective

1. Within 3 years, complete a baseline inventory for invasive species within the Monument.

Comments: 36

Range

Table 18 Strategies for Range

Strategy
Maintain or enhance the productivity of all forest ranges through adequate protection of the soil, water, and vegetative resources.
Contribute to the stability of the ranching community by recognizing its value as part of our heritage, its contribution of food and fiber, and its maintenance of open space.
Utilize management systems that ensure cost-effective management of suitable rangelands.

Comments: 37

Hydrological Resources

Table 19 Strategies for Hydrological Resources

Strategies ⁽¹⁴⁾
Restore ecological processes of streams, meadows, wetlands, and other special aquatic features wherever possible.
Retain water on site so that riparian and wetland areas within the Monument can provide for favorable conditions of water flows for longer duration.
Maintain sustainable riparian conditions for giant sequoia ecosystems.
Manage stream channels to maintain riparian vegetation, transport sediment, and ensure streambank stability.
Create a network of long-term monitoring sites within watersheds to determine the current state of riparian and wetland resources and habitat conditions.
Determine streambank erosion rates to define baseline conditions and determine if management activities have resulted in change.
Determine channel geometry and discharge relationships to define baseline conditions and determine if management activities have resulted in change.
Ensure a renewable supply of down logs that can reach the stream channel and provide habitat in riparian areas.

14 Strategies that specifically address stream management zones, riparian conservation areas, and critical aquatic refuges are found in the Wildlife and Plant Habitat section.

Strategies⁽¹⁴⁾
Ensure riparian conservation areas and the critical aquatic refuge (Mill Creek) are managed for species dependent on those areas, while reducing the risks associated with wildfires and allowing for ecological restoration.

Table 20 Strategies for Meadow Restoration

Strategy
Maintain and restore the hydrologic connectivity of meadows by identifying those at risk. Implement corrective actions where necessary to restore connectivity of meadows to their floodplain.
Assess the hydrologic function of at-risk meadow habitats. Ensure that characteristics are, at a minimum, at proper functioning condition (PFC) as defined in the Process for Assessing PFC for Lentic Riparian-Wetland Areas, USDI TR 1737-16 (1999).
Perform a stream condition inventory (SCI) if necessary, instead of using PFC, to validate an existing PFC determination or existing meadow condition.
Perform an SCI prior to meadow restoration and any ground-disturbing activity.
Perform a full hydrologic survey prior to restoration. Include a longitudinal profile and adequate cross-section surveys to determine design parameters. At a minimum, determine meadow pattern, profile, and dimensions for the impaired site and the design.
Require that projects are designed and reviewed by a qualified specialist prior to implementation. A qualified specialist is one with training in river restoration and natural channel design.

Objectives

1. Within 5 years, inventory 5 percent of the perennial streams in 6th-field watersheds within the Monument to determine existing condition.
2. Within 5 years, assess meadows for proper hydrologic connectivity and function.
3. Within 5 years, restore Indian Basin Meadow (Hume Lake Ranger District) to proper hydrologic connectivity and function to enhance species habitat.
4. Within 5 years, restore Long Meadow, Last Chance Meadow, and Dry Meadow (Western Divide Ranger District) to proper hydrologic connectivity and function to enhance species habitat.

14 Strategies that specifically address stream management zones, riparian conservation areas, and critical aquatic refuges are found in the Wildlife and Plant Habitat section.

Comments: 38

Groundwater

Table 21 Strategies for Groundwater

Strategy
Maintain the natural patterns of recharge and discharge and minimize disruption to groundwater levels that are critical for wetland integrity.
Maintain favorable groundwater levels that provide base flows to maintain and enhance the condition of water-dependent resources and their habitat.
Manage springs and their riparian areas as units.
Restore those groundwater-dependent ecosystems damaged by prior land uses.

Objective

1. During evaluation of site-specific projects, determine the location, extent, depth, amount, flowpath, quality, and recharge and discharge area of groundwater resources, and their hydrological connections with surface water.

Comments: 39

Geological Resources

Table 22 Strategies for Geological Resources

Strategy
Identify areas where domes, spires, soda springs, and hot springs are located and can be used by recreationists, while protecting and preserving these sites.
Enhance opportunities for interpretation and education, including brochures and signs, of geological resources (cave ecosystems, domes, and spires).
Keep Church Cave and Boyden Cave open for public use under an appropriate permit system.
Identify and minimize potential geologic hazards including flood hazards, landslide hazards, and naturally-occurring asbestos (NOA) hazards within the Monument.

Objectives

1. In 5 years, complete an inventory of the known caves within the Monument to assess geologic features and their hydrologic characteristics, safety hazards, biological, archaeological, and paleontological resources, to make a determination of significance. Use this information to develop site-specific standards and guidelines for cave management.
2. On an annual basis, evaluate the condition of Church Cave and Boyden Cave, ensuring gates are secured and cave features are protected.

Comments: 40

Paleontological Resources

Table 23 Strategies for Paleontological Resources

Strategy
Retain areas of significant sedimentation and meadow vegetation deposits.
During cave inventories, conduct paleontological evaluations of any fossilized material found.
Determine whether any paleontological areas need to be proposed for designation as stated in Forest Service Manual Section 2370.

Objective

1. Within 5 years, conduct a survey to identify the location and type of paleontological resources in the Monument, focusing on areas most likely to contain these resources. Use survey data to evaluate risk factors to these resources.

Comments: 41

Soils

Table 24 Strategies for Soils

Strategy
Maintain sufficient soil cover to prevent accelerated soil erosion from exceeding the rate of soil formation.

Strategy
In site-specific analysis, prescribe the kinds and amounts of soil cover (organic matter) that would not elevate wildfire risk or severity to the point that fuel management and soil quality objectives (nutrient cycling) cannot be met. If there is no viable alternative for providing soil cover without elevating the risk of adverse wildfire effects, prescribe the minimum soil cover needed to avoid detrimental soil loss.
Maintain soil porosity to decrease detrimental soil compaction.
Maintain organic matter sufficient to prevent significant short or long-term nutrient cycle deficits, and to avoid detrimental physical and biological soil conditions.
Use appropriate mitigation measures if decreased nutrient supply has the potential to affect ecosystem health, diversity, or productivity.

Comments: 42

Human Use

Table 25 Strategies for Human Use

Strategy
Continue to provide visitors with opportunities to recreate in a variety of settings, from primitive to highly developed areas.
Manage for new developed recreation facilities as visitor use increases.
Use the Monument recreation niche settings in accordance with current recreation management direction: Rivers and Lakes, Scenic Routes, Great Western Divide, Lloyd Meadow, Hume High Elevation, Wildlands, Front Country, and Kings River Special Management Area OHV.
Maintain the assigned ROS classes (semi-primitive non-motorized, semi-primitive motorized, roaded natural, and rural).
Accommodate the increasing demand for more specialized and diverse recreation opportunities, in order to provide flexibility to accommodate new and changing recreation activities as they emerge in the future.
Develop and manage opportunities ⁽¹⁾ for public enjoyment.
Balance diverse users and a wide variety of uses, accommodate use through all seasons, and minimize conflicts among recreational users.
Maintain or create scenic vistas as necessary to meets the needs of the public and improve scenery in areas of high public concern.
Provide for the protection of resources, ecological restoration, and the development of stewardship under applicable law and policy, so that people care about the land and its resources.

Strategy
<p>In accordance with the Sequoia National Forest Interpretive Plan and the Forest Service conservation education guidance, provide opportunities for interpretation that reflect scientifically-supported scholarship and research data.</p> <ol style="list-style-type: none"> 1. Convey clear messages regarding natural and cultural resources and multiple use. Use multi-media interpretation and educational programs to develop stewardship of resources, to ensure their present and future protection, and to enhance public enjoyment of this unique place. 2. Promote and integrate awareness of Monument history, appreciation for biological processes, education about past and current human use of the Monument, and education about the distinctive yet interrelated disruptive forces involved with the use and protection of resources.
<p>Emphasize existing management direction to provide for wide and varied public use of monument resources and opportunities, while protecting sensitive resources and the objects of interest.</p>
<p>Emphasize diverse public access, partnerships, and place-based recreation opportunities, focusing on connection to place and the recreation settings (Monument’s recreation niche).</p>
<p>Establish use fees that are compatible with cost and reduce public competition with the private sector.</p>
<p>Continue to support and participate in employment and training program for youths, older Americans, and the disadvantaged, in response to national employment and training needs and opportunities existing in forest surroundings.</p>
<p>Develop partnerships to provide a spectrum of recreation experiences through a variety of providers, including the Forest Service, associations, non-government organizations, permit holders, volunteers, and other community groups.</p>
<p>Support the efforts of the Giant Sequoia National Monument Association.</p>
<p>Develop partnerships to increase interpretive materials and programs that reach larger segments of the general public and to foster stewardship.</p>
<p>Enhance opportunities to connect people to the land, especially those in urban areas and of diverse cultures (connect people to place).</p>
<p>Work with gateway communities and communities within the Monument to help foster economic opportunities.</p>
<p>Develop bi-lingual⁽²⁾ communication tools, including publications, information boards, and radio spots.</p>
<p>Encourage communities of color, focusing on youth, to increase involvement in environmental education programs to educate and develop the citizen steward.</p>
<p>Designate and develop a Children’s Forest in the Monument to provide a place where youth and families can participate in and explore forest-related projects. The criteria for the location of a Children's Forest include:</p> <ul style="list-style-type: none"> • In or in close proximity to a giant sequoia grove

Strategy
<ul style="list-style-type: none">• Within 1/2 mile of a road• Close to an existing parking lot or a suitable area for one• Close to developed recreation facilities• Away from high use, congested areas• Close to water source• Year-round access• Does not conflict with existing uses (such as grazing)

1. Opportunities emphasized would depend on location and other criteria.
2. English-Spanish

Objectives

1. Within 5 years, actively engage communities of color in the central valley of California in management planning and conservation education projects.
2. During project planning, develop partnerships for project implementation.
3. Within 5 years, explore the designation and development of a Children's Forest in the Monument.

Comments: 43

Communication with Communities of Color

The Sierra Nevada is the third fastest growing region in California. Some estimates predict the population will triple by 2040. The area is experiencing rapid retiree and commuter resident growth, and large intermittent recreational populations that increase resource pressures. For some time, the Sierra Nevada's economy has been diversifying from primarily a resource-based economy to one increasingly dependent on tourism and related services; specialized goods and services tied to the state economy; and health, financial, and other services needed by the growing population. Many parts of the region face significant threats from natural disaster, in particular the risk of catastrophic fire. There is increasing conflict over various land use decisions in certain portions of the region and over regional resource conservation strategies (Sierra Nevada Conservancy Revised Strategic Plan March 2009 - *AKey Sierra Nevada Fact*).

Most visitors to national forests, in particular to locations like the Giant Sequoia National Monument, are more likely to be white or Caucasian than any other ethnic or racial group. However, as the population increases in California, in particular the Central Valley (Kern, Tulare, and Kern Counties), more people represent groups of color (communities of color). There are a number of reasons for this disparity in use levels, including a lack of information about outdoor recreational opportunities (Chavez et al. 2008). In the 2000 census, California was 47 percent non-Hispanic white and 32 percent Hispanic. Most of the central San Joaquin Valley had even higher Hispanic percentages--about 38 percent in Kern County, 44 percent in Fresno, Kings and Madera counties, 45 percent in Merced County, and a majority of 51 percent in Tulare County. The continuing shift toward an increasingly diverse society elevates the importance of ensuring that information is provided through means that are most appropriate to each ethnic and racial group. The Monument will need to produce information, recreation sites, and facilities for this increase in communities of color.

Research shows that communicating with a diverse public requires some variation in media sources to be used as points of contact for reaching different ethnic groups. The heavy reliance on family and friends, particularly in the Hispanic community, translates to the production of various communication tools.

Agency culture is seen as a barrier for multiple reasons including the underrepresentation of non-whites as employees delivering and managing recreation opportunities; communication and education methods that are a poor fit with the needs and preferences of communities of color; planning for a “traditional white” visitor experience,;and a general lack of feeling welcomed (Allison and Hibbler 2004, Roberts 2003, Tierney et al. 1998).

To cross a wide variety of communities of color and expand communication opportunities, the Monument will implement the following strategies to communicate with communities of color:

1. Develop bi-lingual communication tools (publications, information boards, radio spots);
2. Establish personal contacts in the community who can be effective in disseminating information on recreation opportunities;
3. Produce newspaper articles to print media, particularly in Spanish;
4. Establish partnerships with Hispanic Chambers of Commerce;
5. Involve and pro-actively encourage communities of color in youth environmental education programs to educate and develop the citizen steward (e.g., MyForest Summit).

Comments: 44

Cultural Resources

Table 26 Strategies for Cultural Resources

Strategy
Recognize cultural resources through National Register of Historic Places nomination, National Historic Landmark nomination, and other special designations as appropriate.
Provide opportunities for public use and enjoyment of cultural resources through education and outreach programs that promote restoration stewardship. Focus on the need to protect cultural resources while simultaneously making them available to the public.
Provide for continued traditional use by Native American people and protect those places that are most important to local Native American people in maintaining their traditional culture. Seek partnerships with tribes to develop cultural education programs.
Emphasize managing cultural resources by systematically identifying, protecting, and sharing cultural resource information throughout the Monument.
Provide protection from fires and from management activities associated with fuels management that would damage cultural resources.
Interview key knowledgeable informants occasionally for project-specific information. Bring together and organize archival resources according to forest archival policy.

Objective

1. Within 3 years, develop a Monument cultural resource management plan that includes identification, evaluation, and allocation of the resources to appropriate management categories. This plan will protect cultural resource values while allowing for public enjoyment.

Comments: 45

Transportation System

Table 27 Strategies for Transportation System

Strategy
Size and maintain the road and trail system to limit impacts on resources and promote aquatic organism passage where needed.

Strategy
Convert to trails or decommission roads not needed to meet management objectives so that natural drainage patterns are restored and natural vegetation will grow back over time.
Maintain roads with effective road drainage and erosion controls to conserve existing soil and reduce effects to adjacent riparian and aquatic systems.
Complete 6th-field watershed analyses and review the transportation system in the Monument to determine the future status of roads, including changes in status, decommissioning, or converting to trails.
Consult with local tribal governments and Native Americans to provide transportation and access needs, including culturally important sites and resources for use by Native Americans.
Coordinate transportation planning, management, and road decommissioning with the Sequoia and Kings Canyon National Parks; other federal, state, and county agencies; and the Tule River Indian Tribe, to reduce traffic congestion and safety hazards, especially along major travelways.
Partner with state and local agencies to maintain roads for four-season use where appropriate.
Provide appropriate parking facilities.
Base proposals for new roads on the need to provide access to recreation opportunities, other public use, or management activities, as appropriate.
Maintain administrative facilities consistent with wilderness values.
Rehabilitate, replace, or relocate existing buildings to support management of the Monument.
Maintain buildings to the minimum level to protect health and prevent building deterioration.

Objectives

1. Within 2 years, complete Subpart A of Travel Management for the Monument.
2. Within 2 years, complete a Monument-wide watershed improvement needs inventory (WINI) to identify adverse impacts to watersheds from roads and trails.
3. Within 5 years, publish updated motor vehicle use maps (MVUMs) for the Monument ranger districts.
4. Within 10 years, establish a sustainable and desirable off-highway vehicle (OHV) route system (on the existing road system) that reflects the updated MVUM, including loop opportunities where feasible and appropriate.

Comments: 46

Special Areas

Table 28 Strategies for Special Areas

Strategy
Classify Slate Mountain as a botanical area and develop a management plan, pursuant to 36 CFR 294.1(a) and the authority vested in the Regional Forester by the Chief of the Forest Service.
Continue coordination with the National Park Service in on-site landmark evaluation studies for Moses Mountain. Protect and manage this candidate area as a national landmark until final resolution.

Objectives

1. Within five years, develop a management plan for the Moses Mountain Research Natural Area.
2. Within five years, prepare the establishment report for the South Mountaineer Creek area for submission to the Chief, as recommended by the Regional Research Natural Areas Committee for final establishment.

Comments: 47

Designated Special Areas

Special areas are places on National Forest System lands identified or designated because of their unique or special characteristics. These include wildernesses, wild and scenic river corridors, special management areas, research natural areas, backcountry (inventoried roadless areas), botanical areas, scenic byways, and geological areas. Special areas have their own sets of management direction.

Several congressionally designated areas are found entirely or partially within the Monument: the Monarch Wilderness, the Golden Trout Wilderness, the Kings Wild and Scenic River, the South Fork Kings Wild and Scenic River, the North Fork Kern Wild and Scenic River, and the Kings River Special Management Area. Within the Monument, the Sequoia National Forest manages 13,294 acres of wilderness, 80,297 acres of roadless areas, and 4,669 acres of Wild and Scenic River Corridor. The 24,288 acres of the Kings River Special Management Area in the Monument are administered and managed by the Sierra National Forest.

Part or all of four giant sequoia groves are in the Monarch Wilderness and Agnew Roadless Area: Agnew, Monarch, Deer Meadow, and Evans Complex. The Golden Trout Wilderness contains part or all of three other groves: Maggie Mountain, Upper Tule, and Middle Tule.

Monarch Wilderness

8,762 acres of the Monarch Wilderness are in the Monument. The Monarch Wilderness was established by Congress in the California Wilderness Act of 1984, created from the High Sierra Primitive Area and a portion of the Agnew Roadless Area. Shared with the Sierra National Forest, it is located 70 miles east of Fresno, California. Between November and April, the access road is closed because of snow. This is a scenically dramatic area rising from elevations of 4,300 feet along the South Fork of the Kings River to 11,080 feet at Hogback Peak. The Monarch Wilderness contains the only occurrence of white-bark pine in the Sequoia National Forest. Because of the steep, rugged character of the area, trail access is extremely limited and use is very light.

Golden Trout Wilderness

4,532 acres of the Golden Trout Wilderness are in the Monument. The Golden Trout Wilderness was designated by Congress in 1978. Shared with the Inyo National Forest, it gets its name from the brightly colored native trout (California's state fish) and its subspecies, the Little Kern golden trout, a federally listed threatened species, as well as the South Fork Kern golden trout. Elevations range from 4,700 feet at the Forks of the Kern River to 12,432 feet on Mt. Florence, the highest peak in the Sequoia National Forest. The entire Little Kern River Drainage lies within the Golden Trout Wilderness. The North Fork Kern and South Fork Kern Wild and Scenic Rivers bisect this wilderness. Approximately 150 miles of trails are located in the Golden Trout Wilderness (mostly outside of the Monument). Grey Meadow and Trout Meadows are located on this trail system and receive high use.

Kings Wild and Scenic River

All 5 miles of the Kings Wild and Scenic River lie along the northern boundary of the Monument. In 1987, Congress designated this part of the Kings River, from the confluence of Middle Fork and South Fork Kings Rivers to Garlic Meadow Creek, as the Kings Wild and Scenic River. The Kings River is one of the largest rivers flowing down the western slopes of the Sierra Nevada and forms the boundary between the Sequoia and Sierra National Forests. The river is wooded, with premium whitewater and several cataracts. The Kings River is a state wild trout stream. Numerous Native American village sites and remnants of one of the longest logging flumes in the world are located

in this system. Other historic artifacts create an area of historic and cultural significance. Whitewater rafting is popular in the lower reaches of the river corridor. The river flows through a wide canyon near Pine Flat. As the river ascends toward the confluence with the Middle Fork - South Fork, the canyon becomes more narrow and steep. Main ridges on both sides of the river are more than 500 feet in elevation above the river. The river exists in a free-flowing state with numerous rapids. Access is limited above Garlic Falls.

South Fork Kings Wild and Scenic River

Approximately 12 miles of the South Fork Kings Wild and Scenic River lie along the northern boundary of the Monument. In 1987, Congress designated 40.5 miles of the South Fork Kings River, from its headwaters in Kings Canyon National Park to its confluence with Middle Fork and Main Kings Rivers, as the South Fork Kings Wild and Scenic River. The headwaters are in the Sequoia and Kings Canyon National Parks, above the timberline in a heavily glaciated basin. The river flows through one of the deepest and most classic glacial canyons in the nation, with several waterfalls and unique geological formations. The South Fork Kings River has complex floral diversity, with several rare species. Numerous prehistoric sites and a significant cultural resource area exist on the river. The state has designated the river as a Wild Trout Stream. Important peregrine falcon and golden eagle habitat exist in the area.

North Fork Kern Wild and Scenic River

Approximately 14 miles of the North Fork Kern Wild and Scenic River lie along the eastern boundary of the Monument. In 1987, Congress designated 78.5 miles of the North Fork Kern River, from its headwaters in Sequoia National Park to the Kern-Tulare County line, as the North Fork Kern Wild and Scenic River. More than 21 miles flow through wilderness, most of this section in a precipitous gorge, and only the lower 17 miles are accessible by road. The section of the Kern River between Lake Isabella and the Johnsondale Bridge is commonly called the Upperkern. Outstanding features for viewing include gray pines, scrub oaks, grass, and dry climate shrubs clinging to steep canyon walls, while cottonwoods and willows line the river.

Kings River Special Management Area (KRSMA)

About 24,280 acres of the KRSMA (of approximately 48,000 total acres) are located within the northern portion of the Monument, adjacent to the Kings River. This special management area was created by Public Law 100-150 in 1987 to provide for public outdoor recreation use and enjoyment; for protection of the natural, archaeological, and scenic resources; and for fish and wildlife management. This public law permits off-highway vehicle (OHV) use on trails to the same extent and in the same location as was permitted before enactment. This statute takes precedence over the presidential proclamation (Clinton 2000) that created the Monument, which prohibits OHVs from driving off designated roads. Therefore, within that portion of the special management area located within the Monument, OHV use may still occur on the 3.8 miles of Trail 27E04.

Moses Mountain Research Natural Area

The Moses Mountain Research Natural Area covers approximately 960 acres. In addition to giant sequoias, the area contains rare plant habitat on the rocky east-facing slopes of Moses Mountain, as well as aquatic habitat along the Wishon Fork of the Tule River. Nearly two-thirds of the area lies within the Golden Trout Wilderness. Moses Mountain is managed for the study of giant sequoias in a natural setting.

Comments: 48

Other Special Areas

Backcountry (Inventoried Roadless Areas)

Roadless areas in the Sequoia National Forest were inventoried as part of the Roadless Area Review and Evaluation (RARE II) process. The California Wilderness Act of 1984 specifically cited those areas that were adjacent to newly created wilderness or adjacent to existing wilderness, and added them to the existing wilderness areas. The rest of the roadless areas identified by the RARE II were released to non-wilderness management, were identified as being non-wilderness or "further planning areas," and were evaluated in the land management planning process for the Forest Plan.

The non-wilderness roadless areas within the Monument, as identified in the Forest Plan, are:

Table 29 Non-Wilderness Roadless Areas

Name	Acres
Agnew	9,300
Jennie Lakes	3,200
Black Mountain	15,800
Slate Mountain	13,100
Lyon Ridge	5,200

Slate Mountain Botanical Area

Slate Mountain is unique because of its abundance of sensitive plants. This area was released by Congress for non-wilderness use in the 1984 California Wilderness Act. The botanical area covers 490 acres along the rocky northern summit comprised of pre-cretaceous metamorphic and metasedimentary rocks surrounded by granitic rocks. Nearly 95 percent of the total population of Twisselmann's buckwheat occurs on Slate Mountain.

In accordance with the Forest Plan, Slate Mountain is classified and being managed as a botanical area.

Freeman Creek Botanical Area

The Freeman Creek Botanical Area contains the Freeman Creek Grove and covers approximately 1,425 acres. The Freeman Creek Grove, also known as Lloyd Meadow Grove, is the easternmost grove of giant sequoias and is considered to be among the most recently established. Part of the grove is underlain by a 3-million-year-old volcanic basalt flow. This botanical area is fairly easy to reach by car throughout the summer. There are several noteworthy sequoias to see in this grove, including the President George Bush Tree. This tree was named for President George H.W. Bush when he signed a proclamation on July 14, 1992, to protect all the sequoia groves throughout the Sierra.

This proclamation set aside giant sequoia groves in national forests for protection, preservation, and restoration. A beautifully reconstructed trail provides a fully accessible loop around the Bush Tree. Freeman Creek Grove and its surrounding watershed are newly designated and being managed as a botanical area.

Kings Canyon Scenic Byway

The National Scenic Byway Program showcases outstanding national forest scenery and increases public awareness and understanding of all national forest activities. The Kings Canyon Scenic Byway, which is 50 miles long, is the only national forest scenic byway in the Monument (and forest) and is an eligible state scenic highway. The scenic byway nomination report states that this travel corridor is internationally significant with two extraordinary features: towering giant sequoia trees and Kings Canyon (USDA Forest Service 1990).

South Mountaineer Creek Research Natural Area

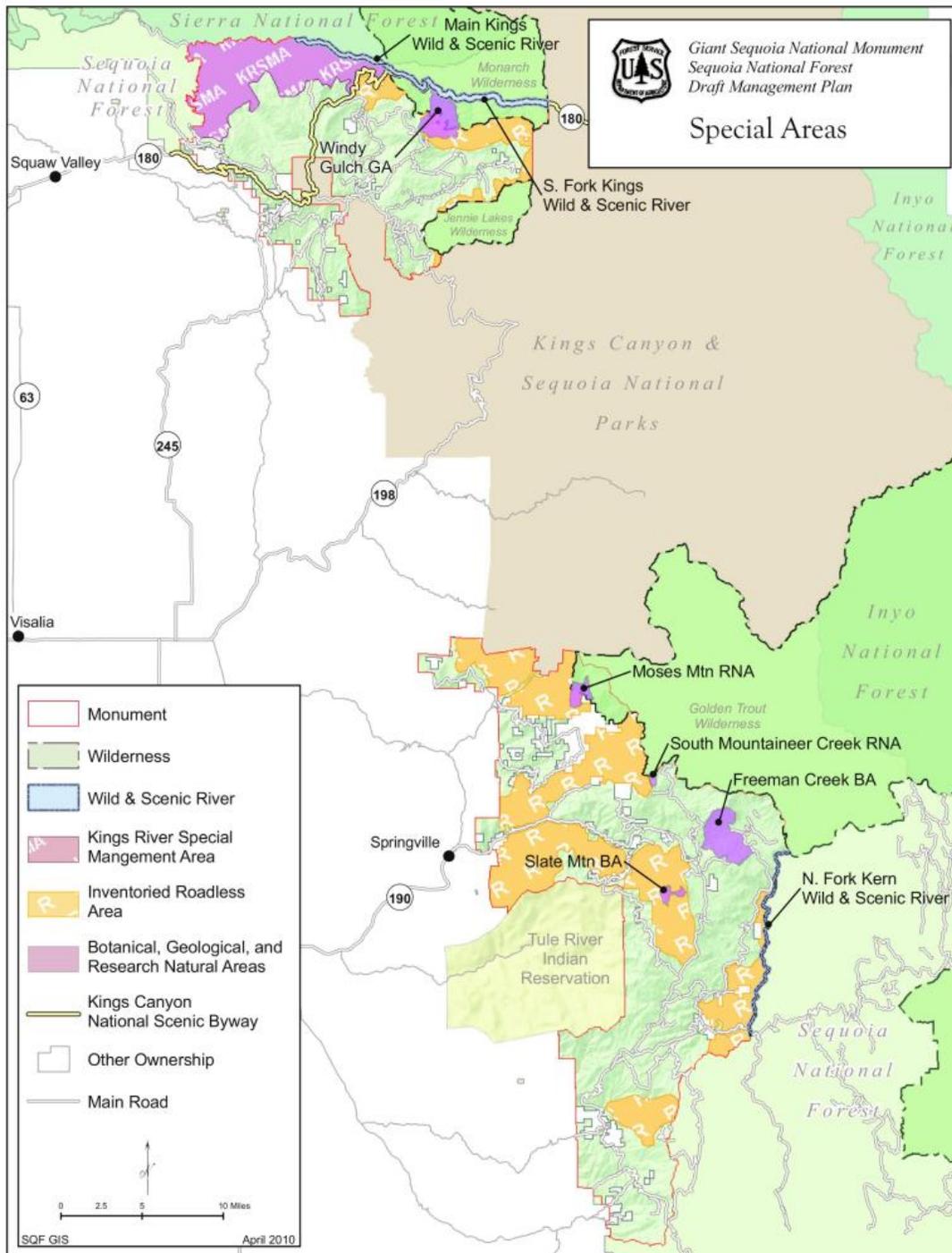
The South Mountaineer Creek Research Natural Area covers 1,325 acres. An extensive red fir forest dominates the area, which lies in the South Mountaineer Creek watershed in the Golden Trout Wilderness. South Mountaineer Creek, though establishment is still pending, is being managed as a research natural area.

Windy Gulch Geological Area

The Windy Gulch Geologic Area contains a number of outstanding formations, including caves and marble roof pendants. Mesozoic granitic rocks are the dominant rock type and consist of several plutons approximately 100 million years old. The metamorphic rocks are known as the Kings Terrain; the most extensive of these are the Lower Kings River, Kaweah River, and Tule River roof pendants. The Lower Kings River roof pendant includes the Boyden Cave roof pendant, whose marbles contain several caves including Boyden Cave and Church Cave.

Map 4 shows all the special areas in the Monument.

Map 4 Special Areas in the Monument



Comments: 49

Part 3-Design Criteria

Design criteria include the legal and regulatory compliance, standards and guidelines, monitoring and evaluation procedures, and adaptive management guidelines to develop and implement a scientific research strategy. Design criteria are sideboards for subsequent projects and activities to help achieve the desired conditions and objectives.

Legal and Regulatory Compliance

The National Environmental Policy Act of 1969 (NEPA) at 40 CFR 1502.25(a) directs “to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with... other environmental review laws and executive orders.” The Monument will be guided by applicable laws, regulations, policies, and guidelines. This Monument Plan supplements, but does not replace, the direction from those sources.

The Monument is guided by direction from numerous sources. The governing source of legal direction is the Proclamation (Clinton 2000); this section discusses other laws and executive orders. Laws passed by Congress such as the NEPA, the National Forest Management Act of 1976 (NFMA), the Multiple Use Sustained Yield Act of 1964 (MUSYA), and the Endangered Species Act of 1973 (ESA), provide direction for certain aspects of management. At the national level, the Resources Planning Act of 1974 (RPA) program gives broad direction and the Administrative Procedure Act of 1966 (APA) (P.L. 79-404) governs the way in which administrative agencies of the federal government may propose and establish regulations.

Applicable laws, regulations, policies, and executive orders, as well as Forest Service manual and handbook guidance, memoranda of understanding, conservation strategies, and programmatic agreements, are listed here by resource. The relevant documents are available on the Forest Service website (<http://www.fs.fed.us/publications/>) and from Forest Service offices. The list included here is not all inclusive.

Scientific Study and Adaptive Management

- Forest Service Handbook (FSH) 1909.12-2006-5, Chapter 40 – Science and Sustainability: direction regarding scientific review guidelines and procedures

Comments: 50

Vegetation, Including Giant Sequoia Groves

- National Forest Management Act of 1976
- National Forest Resource Management: Forest Service Manual (FSM) 2000 – Chapter 2020 – Ecological Restoration and Resilience
- Silvicultural Practices Handbook (FSH 2409.17), Silvicultural Examination and Prescription Handbook (FSH 2409.26d)
- Timber Management: FSM 2400 – Silvicultural Practices Chapter

Comments: 51**Fire and Fuels**

- Guidance for Implementation of Federal Wildland Fire Management Policy, February 2009
- FSM 5100

Comments: 52**Air Quality**

Use the following guidance and direction for smoke management and air quality protection:

- Federal Clean Air Act. The Federal Clean Air Act (CAA) is the federal law passed in 1963, and last amended in 1990, (42 U.S.C. §7401 et seq.) which is the basis for national control of air pollution. Some of the principal components, regulations, and policies related to the Clean Air Act that may directly or indirectly affect planning in the Monument are discussed below.
- National Ambient Air Quality Standards (NAAQS). These are standards for pollutants considered harmful to public health and the environment. The EPA has set the NAAQS for six principal pollutants, which are called “criteria pollutants” (see Table III-2: National ambient air quality standards). Smoke contributes to PM₁₀ and to a lesser degree NO₂, CO, and O₃.
- Class I areas. These include national parks, wildernesses, and some U.S. Fish and Wildlife refuges that were in existence at the passage of the 1977 Clean Air Act amendments. These areas are provided special protection from new and modified major stationary sources. Federal land managers are mandated an affirmative responsibility to protect values that might be impacted by air pollution, including visibility and other air quality-related values.
- Regional Haze Rule. These regulations require states to review how pollution emissions within the state affect visibility at class I areas across a broad region. These rules also require states to make “reasonable progress” in reducing any effect this pollution has on visibility conditions in class I areas and to prevent future impairment of visibility. The states are required by the rule to analyze a pathway that takes the class I areas from current conditions to “natural conditions” in 60 years. “Natural conditions” is a term used in the Clean Air Act that means that no human-caused pollution can impair visibility. This program, while aimed at class I areas, will improve regional visibility and air quality throughout the country.
- Conformity Rule. This rule implements the Clean Air Act conformity provision, which mandates that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve, any activity not conforming to an approved state implementation plan.

Legal and Regulatory Compliance

- EPA Interim Policy on Wildland and Prescribed Fire. This EPA interim policy integrates two public policy goals: (1) to allow fire to function, as nearly as possible, in its natural role in maintaining healthy wildland ecosystems, and (2) to protect public health and welfare by mitigating the impacts of air pollutants on air quality and visibility.
- California Clean Air Act (H&S §§ 39660 et seq.). California adopted the California Clean Air Act (CCAA) in 1988. The Act provides the basis for air quality planning and regulation in California independent of federal regulations, and establishes ambient air quality standards for the same criteria pollutants as the federal clean air legislation.

San Joaquin Valley Air Pollution Control District. The district is comprised of eight counties that share a common air district: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties. Local air pollution control districts in California develop plans and implement control measures in their areas of jurisdiction. These collectively make up California's state implementation plan. These controls primarily affect stationary sources but do include sources of dust and smoke. The following district regulations may directly or indirectly affect planning in the Monument:

- Public Nuisance (Rule 4102). Prohibits air discharge of material that causes nuisance or annoyance to any considerable number of people.
- Prescribed Burning and Hazard Reduction (Rule 4106) – This rule was adopted June 21, 2001, in response to California's Title 17, and is designed to permit, regulate, and coordinate the use of prescribed burning and hazard reduction burning while minimizing smoke impacts on the public.
- Fugitive Dust (Regulation 8). The existing Regulation 8 rules were developed to implement control strategies for major sources of dust. These include construction, demolition, excavation, extraction, handling/storage, landfills, paved/unpaved roads, and open areas. EPA has recently cited deficiencies in these existing rules and the district is evaluating a series of new rules aimed at further reductions in particulates. The San Joaquin Valley Air Pollution Control District (Valley Air District) is responsible for implementing and regulating air quality programs for Fresno County, Tulare County, and a portion of Kern County in the Sequoia National Forest. The Valley Air District regulations can be found at: <http://www.valleyair.org/index.htm>. The Valley Air District has set rules to limit fugitive dust emissions. However, activities conducted at an elevation of 3,000 feet or higher above sea level are exempt. Kern County Air Pollution Control District, which serves eastern Kern County, has set rules for fugitive dust but currently excludes national forests and recreation areas.
- Memorandum of understanding between the California Air Resources Board (CARB) and the Forest Service, signed on July 13, 1999. CARB has set more stringent standards, oversees state and local actions, and implements programs for toxic air pollutants, heavy-duty trucks, locomotives, ships, aircraft, off-road diesel equipment, and some types of industrial equipment.
- The Smoke Management Guidelines for Agricultural and Prescribed Burning (Title 17) are the regulatory basis for California's smoke management program. Amendments to California's Title 17 may directly or indirectly affect planning in the Monument. The smoke management guidelines became effective on March 14, 2001. Local air pollution control districts use these guidelines in local rule development.
- General Conformity State Implementation Plan Handbook (1995)

Climate Change

- Environmental Protection Agency (EPA) "State of Knowledge" paper (2007) development
- Climate Change Consideration in Project Level NEPA Analysis, January 13, 2009

Comments: 53

Wildlife and Plant Habitat

Wildlife

- Endangered Species Act (ESA). The Endangered Species Act of 1973 (16 USC 1531 et seq.) requires that any action authorized by a federal agency not be likely to jeopardize the continued existence of a threatened or endangered (TE) species or result in the destruction or adverse modification of habitat of such species that is determined to be critical. Section 7 of the ESA, as amended, requires the responsible federal agency to consult the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service concerning TE species under their jurisdiction. It is Forest Service policy to analyze impacts to TE species to ensure management activities are not likely to jeopardize the continued existence of a TE species or result in the destruction or adverse modification of habitat of such species that is determined to be critical. This assessment is documented in a biological assessment (BA).
- FSM and FSH, Chapter 2670. Forest Service Sensitive (FSS) species are species identified by the regional forester for which population viability is a concern. The Forest Service develops and implements management practices to ensure that rare plants and animals do not become threatened or endangered and to ensure their continued viability on national forests. It is Forest Service policy to analyze impacts to FSS species to ensure management activities do not create a significant trend toward federal listing or loss of viability. This assessment is documented in a biological evaluation (BE).
- The California Condor Recovery Plan (USDI 1996) provides guidelines for management of nest and roost sites. The 1988 Forest Plan designated the Starvation Grove nest area and Lion Ridge roost area, which are within the Monument (USDA Forest Service 1988a pp. 3–29, 4–27 to 4–28).
- Bald and Golden Eagle Protection Act of 1940
- Migratory Bird Treaty Act of 1918
- Valley Elderberry Longhorn Beetle (VELB) Recovery Plan provides habitat management objectives from the U.S. Fish and Wildlife Service (USDI 1993b)

Threatened, Endangered, and Sensitive Species

Legal and Regulatory Compliance

- Endangered Species Act (ESA). The Endangered Species Act of 1973 (16 USC 1531 et seq.) requires that any action authorized by a federal agency not be likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction or adverse modification of habitat of such species that is determined to be critical. Section 7 of the ESA, as amended, requires the responsible federal agency to consult the USFWS and the National Marine Fisheries Service concerning threatened or endangered species under their jurisdiction.
- Executive Order 13112, Invasive Species 64 FR 6183 (February 8, 1999), to prevent and control the introduction and spread of invasive species
- FSM and FSH, Chapter 2670. Forest Service Sensitive (FSS) species are plant species identified by the regional forester for which population viability is a concern. The Forest Service develops and implements management practices to ensure that plants and animals do not become threatened or endangered and to ensure their continued viability on national forests. It is Forest Service policy to analyze impacts to sensitive species to ensure management activities do not create a significant trend toward federal listing or loss of viability.

Invasive Nonnative Species

- FSM, Chapter 2081.03 requires that a weed risk assessment be conducted when any ground disturbing activity is proposed. Determines the risk of introducing or spreading noxious weeds associated with the proposed action. Projects having moderate to high risk of introducing or spreading noxious weeds must identify noxious weed control measures that must be undertaken during project implementation.
- Executive Order 13112 of Feb. 3, 1999 directs federal agencies to prevent the introduction of invasive species; detect and respond rapidly to and control such species; not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and take all feasible and prudent measures to minimize risk of harm in conjunction with the actions.
- Pacific Southwest Region Noxious Weed Management Strategy
- Sequoia National Forest Weed Management Guidelines
- Work cooperatively with California and Nevada State agencies and individual counties (for example, Cooperative Weed Management Areas) to: (1) prevent the introduction and establishment of noxious weed infestations and (2) control existing infestations.
- The Forest Service will continue to participate in and work toward the goals of the California Interagency Coordinating Committee Memorandum of Understanding signed in 1995. Coordinated weed management will take place in the context of regional and local cooperative weed management areas, which allow effective strategy development and cost-sharing in specific areas to solve common weed problems.

Comments: 54

Range

- Secretary of Agriculture regulations relating to grazing and livestock on the National Forest System in 36 CFR 222
- Legislative authorities for administration of the National Forest System range program are described in FSM 2201. Objectives, policies, and responsibilities for the range management program are in FSM 2202 through 2204, and FSM 2230.01 through 2230.06. National direction and guidance for grazing permit administration is contained in FSM 2230 through FSM 2238.
- 1997 Rangeland Analysis and Planning Guide

Comments: 55

Hydrological Resources

- Organic Act of 1897, Object of Forest Reservations, states that "Public forest reservations are established to protect and improve the forests for the purpose of...insuring conditions favorable to continuous water flow."
- Clean Water Act of 1948 (as amended in 1972 and 1987) establishes as federal policy the control of point and non-point source pollution and assigns the states the primary responsibility for control of water pollution. Compliance with the Clean Water Act by national forests in California is achieved under state law.
- Non-point source pollution on national forests is managed through the Regional Water Quality Management Plan (USDA 2000), which relies on implementation of prescribed best management practices (BMPs).
- The California Water Code consists of a comprehensive body of law that incorporates all state laws related to water, including water rights, water developments, and water quality. The laws related to water quality (Sections 13000 to 13485) apply to waters in national forests and are directed at protecting the beneficial uses of water.
- The Porter-Cologne Water Quality Act, as amended in 2006, is included in the California Water Code. This act provides for the protection of water quality by the State Water Resources Control Board and the Regional Water Quality Control Boards, which are authorized by the U.S. Environmental Protection Agency to enforce the Clean Water Act in California.
- Executive Orders 11988 and 11990 (Floodplains and Wetlands) require federal agencies to avoid, to the extent possible, short- and long-term effects resulting from the occupancy and modification of floodplains and the modification or destruction of wetlands. Standards and guidelines are provided for soil, water, wetlands, and

riparian areas to minimize effects to floodplains and wetlands. They incorporate the BMPs of the Soil and Water Conservation Handbook. The standards and guidelines apply to all floodplains and wetlands where less restrictive management might otherwise occur.

- Clean Water Act of 1948 (as amended in 1972 and 1987) establishes as federal policy the control of point and non-point pollution and assigns the states the primary responsibility for control of water pollution. Compliance with the Clean Water Act by national forests in California is achieved under state law.
- Region 5, FSH 2509.22, Chapter 20
- *Sequoia National Forest Cumulative Watershed Effects Field Guide* (Kaplan-Henry and Machado 1991)

Comments: 56

Groundwater

- Judicial doctrine and water-rights case law provide the legal interpretations of federal and state statutes about usage and management of groundwater (see FSM 2541.01 and FSH 2509.16 for procedures to be followed for complying with federal policy and state water rights laws).
- The national groundwater policy sets out the framework in which groundwater resources are to be managed on NFS lands. The policy is designed to be located in two parts of the Forest Service Manual: FSM 2880, Geologic Resources, Hazards, and Services, and FSM 2543, Groundwater Resource Management. As of the publication date of this document, FSM 2543 is in draft form and may change due to agency and public comment prior to finalization.
- Safe Drinking Water Act of 1974, as amended (42 U.S.C. §300f et seq.). The intent of the SDWA is to ensure the safety of drinking water supplies. Its authority is used to establish drinking water standards and to protect surface and groundwater supplies from contamination.
- Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. §6901 et seq.). The Resource Conservation and Recovery Act (RCRA) regulates the generation, transportation, treatment, storage and disposal of waste materials. It has very specific requirements for the protection and monitoring of groundwater and surface water at operating facilities that may generate solid wastes or hazardous wastes.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. §9601 et seq.). Also known as “Superfund,” the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulates cleanup of existing environmental contamination at non-operating and abandoned sites (see also FSM 2160).

- National Environmental Policy Act of January 1, 1970 (NEPA) (83 Stat. 852 as Amended; 42 U.S.C. 4321, 4331-4335, 4341-4347) (FSM 1950.2). This act directs all agencies of the Federal Government to utilize a systematic interdisciplinary approach which will ensure the integrated use of the natural and social sciences in planning and in decision making which may have an impact on man's environment. Hydrogeology is one of the applicable sciences.
- Forest and Rangeland Renewable Resources Planning Act of August 17, 1974 (RPA) (88 Stat. 476; 16 U.S.C. 1600-1614) as amended by National Forest Management Act of October 22, 1976 (90 Stat. 2949; 16 U.S.C. 1609) (FSM 1920 and FSM 2550). This act requires consideration of the geologic environment through the identification of hazardous conditions and the prevention of irreversible damages. The Secretary of Agriculture is required, in the development and maintenance of land management plans, to use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.
- Federal Water Pollution Control Act of July 9, 1956, as Amended (33 U.S.C. 1151) (FSM 2501.1); Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816) (FSM 2501.1), and Clean Water Act of 1977 (91 Stat. 1566; 33 U.S.C. 1251) (FSM 2501.1, 7440.1). These acts are intended to enhance the quality and value of the water resource and to establish a national policy for the prevention, control, and abatement of water pollution. Groundwater information, including that concerning recharge and discharge areas, and information on geologic conditions that affect ground water quality are needed to carry out purposes of these acts.

Comments: 57

Geological Resources

- Mining and Minerals Policy Act of December 31, 1970 (84 Stat. 1876; 30 U.S.C. 21a). This act provides for the study and development of methods for the reclamation of mineral waste products and the reclamation of mined lands. This requires an evaluation of geology as it relates to groundwater protection and geologic stability.
- Surface Mining Control and Reclamation Act of August 3, 1977 (SMCRA) (30 U.S.C. 1201, 1202, 1211, 1221-43, 1251-79, 1281, 1291, 1309, 1311-16, 1321-28). This act enables agencies to take action to prevent water pollution from current mining activities and also promote reclamation of mined areas left without adequate reclamation prior to this act.
- Federal Cave Resources Protection Act of 1988 (102 Stat. 4546; 16 U.S.C. 4301 et seq.). This act provides that Federal lands be managed to protect and maintain, to the extent practical, significant caves.
- Wild and Scenic Rivers Act of October 2, 1968 (82 Stat. 906 as Amended; 16 U.S.C. 1271-1287). This act states that it is the policy of the United States that certain selected rivers of the nation which, with their immediate environments, possess outstanding scenic, recreation, geologic, fish and wildlife, cultural, or other similar values shall be preserved in free-flowing condition.

Comments: 58

Paleontological Resources

- FSM 2360 pertaining to special interest areas

Comments: 59

Soils

- National Soil Management Handbook: The Soil Management Handbook (USDA 1991) is a national soils handbook that defines soil productivity and components of soil productivity, establishes guidance for measuring soil productivity, and establishes thresholds to assist in forest planning.
- Region 5 Soil Management Handbook Supplement (USDA 1991): The Forest Service Region 5 Soil Management Handbook Supplement (R5 FSH Supplement 2509.18-95-1) establishes regional soil quality analysis standards. The analysis standards address three basic elements for the soil resource: (1) soil productivity (including soil loss, porosity; and organic matter); (2) soil hydrologic function; and (3) soil buffering capacity. The analysis standards are to be used for areas dedicated to growing vegetation. They are not applied to lands with other dedicated uses such as developed campgrounds or administrative facilities.
- Regional Forester's Letter (dated Feb 5, 2007): This letter provided clarification to forest supervisors on the appropriate use of the R5 Soil Management Handbook Supplement (R5 FSH Supplement 2509.18-95-1).

Comments: 60

Human Use (Including Recreation, Scenery, and Socioeconomic)

Recreation

Several authorities guide the provision of recreation opportunities. The FSM provides policy direction, primarily in FSM 2300 for recreation and FSM 2700 for special uses, for both recreation special uses and non-recreation special uses.

The primary management authorities for recreation and related resources are:

- The Term Permit Act of 1915 (38 Stat. 1101, as amended; 16 U.S.C. 497)
- The Multiple Use Sustained-Yield Act of 1960 (74 Stat. 215, as amended; 16 U.S.C. 528-531)

- The Wilderness Act of 1964 (16 U.S.C. 1131-1136)
- The National Historic Preservation Act of 1966 (Pub. L. 89-665; 80 Stat. 915; 16 U.S.C. 470 et seq.)
- The Federal Lands Recreation Enhancement Act, Title VIII, Div. J., of the Consolidated Appropriations Act for 2005, Pub. L. 108-447
- The Architectural Barriers Act of 1968, as amended (42 U.S.C. 4151 et seq.)
- The Rehabilitation Act of 1973, as amended, Sections 504 and 508 (29 U.S.C. 794 and 794d)
- Title V, Section 507c of the Americans with Disabilities Act of 1990 (ADA) (42 U.S.C. 12101 et seq.)

In addition, the Organic Act of 1897, as amended (FSM 1021.11a), instructs the Secretary of Agriculture to preserve and to regulate occupancy and use of the national forests (16 U.S.C. 473-478, 479-482, 551); prohibitions on the use of National Forest System lands are contained in 36 CFR 261 (FSM 1023.4).

Numerous statutory authorities govern the issuance and administration of special use authorizations on National Forest System lands. Some of those laws are:

- The Organic Administration Act of 1897 (16 U.S.C. 477-482, 551)
- The Act of March 4, 1915, as amended in 1956 (16 U.S.C. 497), which authorizes term permits
- Section 7 of the Granger-Thye Act of 1950 (16 U.S.C. 490, 504, 504a, 555, 557, 571c, 572, 579a, 580c-5801, 581i-1)
- The Independent Offices Appropriation Act of 1952, as amended (31 U.S.C. 9701) (Office of Management and Budget Circular No. A-25 further defines this authority)
- The Wilderness Act of 1964 (16 U.S.C. 1131-1136)
- The Land and Water Conservation Fund Act of 1964, as amended (16 U.S.C. 4601-6a(c))
- The National Forest Roads and Trails Act of 1964 (16 U.S.C. 532-38)
- Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761-1771)
- The Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3210)
- The National Forest Ski Area Permit Act of 1986 (16 U.S.C. 497b)
- The Omnibus Parks and Public Lands Management Act of 1996 (16 U.S.C. 497c)
- The Act of May 26, 2000 (16 U.S.C. 4061-6d), which supplements the authority to regulate commercial filming and still photography

Legal and Regulatory Compliance

- The Cabin User Fee Fairness Act of 2000 (16 U.S.C. 6201-6213)
- The National Forest Organizational Camp Fee Improvement Act of 2003 (16 U.S.C. 6231 et seq.).

Special use regulations are in 36 CFR 251.

Scenery

- Agriculture Handbook 434:1973, National Forest Landscape Management, Volume 1
- Agriculture Handbook 701:1995, Landscape Aesthetics, A Handbook for Scenery Management
- Built Environment Image Guide (BEIG): The built environment, as used in this guide, refers to the administrative and recreation buildings, landscape structures, site furnishings, structures on roads and trails, and signs installed or operated by the U.S. Department of Agriculture (USDA) Forest Service, its cooperators, and permittees.

The elements of the built environment constructed on national forest lands and grasslands, or those used for administrative purposes in rural areas, towns, and cities, shall—to the extent practicable—incorporate the principles of sustainability, reflect their place within the natural and cultural landscape, and provide optimal service to our customers and cooperators. These elements will:

- Be located, planned, and designed with respect for the natural systems in which they reside.
- Aesthetically integrate their natural, cultural, and experiential context.
- Contain design elements, including appropriate signs, that reinforce a national agency identity.
- Emphasize efficiency of energy and materials consumption in construction and operation.
- Serve as premier examples to interpret conservation of natural resources and sustainable development.
- Create environments for people to enjoy and gain increased appreciation for the natural environment, and in which employees work productively, experiencing the connection to the resources they manage.

In so doing, the USDA Forest Service built environment will strengthen and reinforce the image of the agency as an international conservation leader.

Socioeconomics

- Antiquities Act of 1906
- Native American Graves Protection and Repatriation Act (NAGPRA) of 1990
- Social Impact Analysis (1900-03)

- Civil Rights Impact Analysis (CRIA) (FSM 1730.3)
- The Civil Rights Policy for the USDA, Departmental Regulation 4300-4 dated May 30, 2003 (7 CFR 15d)

Civil Rights and Environmental Justice

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d -2000d-7: Sec. 2000d). Prohibition against exclusion from participation in, denial of benefits of, and discrimination under federally assisted programs on grounds of race, color, or national origin.
- Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations. Requires each federal agency to make achieving environmental justice part of its mission.
- Departmental Regulation (DR) 5600-2. Provides direction to agencies for integrating environmental justice considerations into USDA programs and activities, in compliance with EO 12898.

Comments: 61

Cultural Resources

- Organic Act of 1897 (Title 16, United States Code (U.S.C.), section 473-478, 479-482, 551)
- Antiquities Act of 1906 (16 U.S.C. 431)
- Historic Sites Act of 1935 (16 U.S.C. 461)
- National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. 470), and its implementing regulation 36 CFR 800
- Archaeological and Historic Preservation Act of 1974 (AHPA) (16 U.S.C. 469)
- Archaeological Resources Protection Act of 1979 (ARPA), as amended (16 U.S.C. 470aa et seq.), as implemented by 36 CFR part 296
- Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), as amended (25 U.S.C. 3001), as implemented by 43 CFR Part 10, Subpart B – Human Remains, Funerary Objects, Sacred Objects, or Objects of Cultural Patrimony From Federal or Tribal Lands
- Curation of Federally-owned and Administered Archaeological Collections, 36 CFR part 79
- National Indian Forest Resources Management Act (NIFRMA), Public Law 101-630, November 28, 1990
- American Indian Religious Freedom Act (AIRFA) (Public Law 103-344, October 6, 1994)

Legal and Regulatory Compliance

- Tribal Forest Protection Act of 2004 (Public Law 108-278, July 22, 2004)
- Executive Order 11593, Protection and Enhancement of the Cultural Environment, issued May 13, 1971
- Executive Order 13007, Indian Sacred Sites, issued May 24, 1996
- Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, issued November 6, 2000
- Executive Order 13287, Preserve America, issued March 3, 2003
- *The First Amended Regional Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region (2001)*
- *The Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties managed by the National Forests of the Sierra Nevada, California (1996)*
- Other regional programmatic agreements for individual historic property types, including lookouts, administrative buildings, and recreation residences, and specific undertaking types of fuel reduction and range; and subsequently issued programmatic agreements
- FSM 2300, Chapter 2360, Heritage Program Management
- FSM 1500, External Relations, Chapter 1560 - State Tribal, County, And Local Agencies, Public and Private Organizations (2007)
- FSH 1509.13, American Indian and Alaska Native Relations Handbook

Comments: 62

Transportation

- Highway Safety Act of 1966: The Department of Transportation is authorized and directed to assist and cooperate with other federal departments and agencies, state and local governments, private industry, and other interested parties to increase highway safety. Each state is responsible for implementing a highway safety program to reduce traffic accidents and deaths, injuries, and property damage.

- Title 36, Code of Federal Regulations, Part 212 (36 CFR 212): The implementing regulation for the National Forest Roads and Trails Act (FRTA) includes portions of the Travel Management Rule published in the Federal Register on November 9, 2005. Part 212, Subpart B, provides criteria for designation of roads and trails. Providing safe transportation facilities and considering the affordability of maintaining the transportation facilities are two of the criteria.
- The California Vehicle Code (CVC): The CVC contains regulations related to the use of motor vehicles in California, including motor vehicles used on the national forests. The CVC sets safety standards for motor vehicles and vehicle operators. It defines the safety equipment needed for highway legal and non-highway legal vehicles. The code also defines the roads and trails where non-highway legal motor vehicles may be operated.
- FSM sections 2350 and 7700 contain agency policy for management of the National Forest Transportation System (NFTS). FSH 7709.59 describes the maintenance management system the Forest Service uses and the maintenance standards needed to meet road management objectives (RMOs). FSH 2309.18 describes the maintenance management system the Forest Service uses and the maintenance standards needed to meet trail management objectives (TMOs).

Comments: 63

Special Forest Products

- USDA Forest Service, 36 CFR Parts 223 and 261, Sale and Disposal of National Forest Products and Forest Botanical Products
- Federal Register/Vol. 73, No. 249/December 29, 2008/Rules and Regulations (FR 2008)

Comments: 64

Standards and Guidelines

Standards and guidelines are requirements that preclude or impose limitations on resource management activities and are designed to be consistent with the objectives and desired conditions; they come into play as site-specific activities are planned to implement the Monument Plan. The standards and guidelines act as thresholds or constraints for management activities or practices to ensure the protection of resources. They may apply to the entire Monument or they may only apply to certain land allocations. The standards and guidelines for the Monument are organized by resource area in Appendix F of this Plan.

Monitoring and Evaluation

The Monument Plan is an integral part of the adaptive management cycle that will provide a framework to guide future management decisions and actions. Monitoring and evaluation activities in the Monument are closely linked to the adaptive management strategy in the 2001 SNFPA. Adaptive management is the process of continually adjusting management in response to new information, knowledge, or technologies. It includes defining measurable objectives, monitoring, learning and changing, and recognizing that uncertainties exist in the course of achieving management goals.

Forest plan monitoring and evaluation is conducted to determine how well the management strategy for the Monument (strategies, objectives, and standards and guidelines) has been met, and how closely standards and guidelines have been applied. The Monument Plan monitoring process responds to specific requirements of the 1969 National Forest Management Act that must be met on a forest-wide basis, and the need to monitor forest management on a forest-wide basis.

The monitoring plan presented in the table below consists of those special activities that focus on evaluating the broad aspects of plan implementation. Most importantly, the monitoring plan includes elements for protecting the objects of interest identified in the Proclamation, including:

- The naturally-occurring giant sequoia groves and their associated ecosystems, individual giant trees, rare and endemic plant species such as the *Springville clarkia*, and other species listed as threatened or endangered by the Endangered Species Act (ESA), or sensitive by the Forest Service.
- The ecosystems and outstanding landscapes that surround the giant sequoia groves.
- The diverse array of rare animal species, including the Pacific fisher, the great gray owl, the American marten, the northern goshawk, the peregrine falcon, the California spotted owl, the California condor, several rare amphibians, the western pond turtle, and other species listed as threatened or endangered by the ESA, or sensitive by the Forest Service.
- The paleontological resources in meadow sediments and other sources that have recorded ecological changes in such markers as fire regimes, volcanism, vegetation, and climate.
- The limestone caverns and other geologic features, including granite domes, spires, geothermally-produced hot springs and soda springs, and glacial and river-carved gorges.
- Cultural resources, both historic and prehistoric, which provide a record of human adaptation to the landscape, and land use patterns that have shaped ecosystems.

Cultural resources are monitored based on law, regulation, and policy. Most monitoring takes place based on site-specific project needs and are developed through the process codified in the National Historic Preservation Act (NHPA) in consultation with the State Historic Preservation Officer and Advisor Council on Historic Preservation. Monitoring is based on the potential to impact historic properties listed and/or potentially eligible for listing on the National Register of Historic Places. Standard protection and mitigation measures, and monitoring of those measures, can be found in the First Amended Regional Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region (2001) (Regional PA), the Programmatic Agreement

Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Identification, Evaluation, and Treatment of Historic Properties managed by the National forests of the Sierra Nevada, California (1996).

Other monitoring consists of reports, reviews, and records that occur as a routine part of forest management. Actions not duplicated in this plan include such things as: accomplishment reporting (roads, etc.); individual and annual fire reports; management attainment reports; annual vegetation management action plans, reviews, and reports; budget and financial management documents; recreation information management reports and databases; visitor use monitoring; special uses administration; environmental analysis reports; activity reviews; audits; and general management reviews; as well as site-specific project monitoring.

Monitoring and evaluation are separate, sequential tasks. Monitoring is designed to observe and record the results of both natural processes and management actions permitted by forest land and resource management plans. Evaluation looks at those results, determines how well those results meet forest plan direction, and identifies measures to adjust management direction in response to this new information.

Management review of the monitoring information discusses the following questions:

- Has the Sequoia National Forest taken actions to protect objects of interest and their ecosystems?
- Has on-the-ground management in the Monument maintained or made progress toward the desired conditions?
- What changes are needed to account for unanticipated changes in conditions?

Actual performance is tracked over time through annual documentation of accomplishments. The Forest Supervisor and other managers will display monitoring results in evaluation reports after a management review and determine if any changes are needed in plan guidance. These data will no longer be reported in the annual report agreed to in the MSA, but rather will be reported in an annual monitoring and evaluation report (Forest Plan Monitoring Report). This report will include both site-specific project monitoring and forest-wide (programmatic level) monitoring. For all Monument projects that include a proposal for tree removal, this report will include documentation of the clear need for removing trees for ecological restoration and maintenance or public safety.

Comments: 65

Types of Monitoring

The table below includes monitoring or inventory program areas or projects, monitoring questions, associated performance measures, and the frequency of reporting (annual or other time period). It also documents the source, or who is expected to conduct the monitoring. Most of the monitoring will be conducted by the Sequoia National Forest (SQF), sometimes engaging the Pacific Southwest Region (RO), or another regional entity or program (such as the Pacific Southwest Research Station (PSW)), for consultation and assistance as needed and as resources are available.

Monitoring and Evaluation

The types of monitoring are:

- Implementation monitoring:** Determines if the management strategy (strategies, objectives, and standards and guidelines) is implemented as designed and in compliance with the Monument Plan. Implementation monitoring answers the question: "Were the management activities to protect the objects of interest and their ecosystems accomplished as specified in the Monument Plan?"
- Effectiveness monitoring:** Determines if the management strategy (strategies, objectives, and standards and guidelines) is effective in moving the Monument toward desired conditions. This type of monitoring provides a better understanding of how ecosystem components, structures, and processes have responded to the management strategy and answers the question: "Did the management strategy actually work to move monument resources closer to their desired conditions?"
- Validation monitoring:** Determines whether the initial data and assumptions used in development of the Monument Plan and its management strategy are correct, or if there is a better way to meet forest planning regulations, policies, goals, strategies, and objectives. Validation monitoring is generally done only when implementation or effectiveness monitoring results suggest that a given practice may not have been implemented properly or was not effective in achieving expected outcomes. Validation monitoring is usually conducted by researchers.
- Status and trend monitoring of ecosystem conditions and management activities:** Assesses important biological, physical, and sociocultural conditions, to gauge whether desired conditions are being achieved and provide early warning of unanticipated impacts from management activities evaluated at a large scale. Baseline data are required before status and trend monitoring can occur. Baseline can be considered a component of implementation monitoring, while status and trend can be considered a component of effectiveness monitoring.

Table 30 Monitoring Plan

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
AIR QUALITY				
Air quality	Were all fuels reduction projects exceeding 250 acres monitored?	Review project records for compliance.	Implementation	Ongoing SQF
	Did smoke from prescribed fire contribute to public nuisance or health standard violations?	Micrograms/cubic meter of PM ^{2.5} , visual observations.	Effectiveness	Bi-annually SQF

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
Air quality conditions	What is the trend of air quality conditions associated with prescribed fire and wildfire?	Chemical constituents of atmospheric aerosols.	Effectiveness/Status and Trend	Ongoing Committee for Interagency Monitoring for Protected Visual Environments (IMPROVE), SQF
ECOSYSTEM ANALYSIS				
Assessment of watershed condition	Have Monument landscapes been analyzed to identify opportunities for site-specific environmental analysis including reduction of risks and hazards associated with wildfire; opportunities for ecological restoration; program and budget development; and priorities for cultural, social and economic ecological needs?	# of landscape analyses (hydrologic unit code [HUC] 6th-field) completed.	Implementation	Within 5 years of ROD, as new science/information available. SQF
	Was current distribution of geologically unstable lands identified in landscape analysis?	# of landscape analyses (HUC 6th-field) completed that identified this.	Implementation	Within 5 years of ROD, as new science/information available. SQF
Assessment of watershed condition: stream channel discharge and geometry relationships	What are the current distribution and location of flooding, and discharge relationships for channels?	Channel geometry, discharge relationships.	Implementation	Ongoing, in response to flood events. SQF
Assessment of watershed condition: stream bank erosion rates	What are the background stream channel erosion rates?	Stream bank erosion.	Implementation	Ongoing SQF

Monitoring and Evaluation

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
Assessment of watershed condition: stream channel discharge and geometry relationships	Are discharge and channel geometry relationships established?	Channel geometry, discharge relationships at the new HUC scale.	Implementation	Ongoing SQF
	Were the areas with a history of flooding identified in landscape analysis?	Review the watershed condition assessment data.	Implementation	In response to flood events SQF
Assessment of watershed condition: areas of special concern	Did the landscape analysis identify areas of special concern, raise awareness of conditions, and result in mitigation/ design modification/ protection/ action?	# of completed landscape analyses at the 6th-field HUC level.	Implementation	Before site-specific project analysis SQF
Stream bank erosion rates	Have background stream channel erosion rates changed as a result of natural processes (including fire) or management actions?	Stream bank erosion.	Effectiveness/ Status and Trend	After site-specific project or disturbance SQF
Stream channel discharge and geometry relationships	Are discharge and channel geometry relationships for the 5th-field HUC accurate at the 6th-field HUC?	Compare 5th-field HUC stream channel discharge and geometry data with 6th field HUC data.	Validation	After disturbance SQF
Stream bank erosion rates	Are stream bank erosion rates for the 5th-field HUC accurate at the 6th-field HUC?	Compare 5th-field HUC erosion rates with 6th-field HUC rates.	Validation	After disturbance SQF
AQUATIC RESOURCES				
Aquatic resource and habitat condition	What is the current state of aquatic resources and habitat conditions?	Stream condition, aquatic macro invertebrates.	Implementation	Every 5 years after plots established SQF

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
	Did stream condition inventory data show changes in aquatic resource and habitat conditions following large-scale disturbances (such as fires and floods)?	Analysis of stream condition inventories for change.	Effectiveness/ status and trend	After disturbances SQF
	Are stream systems capable of moving sediment without causing channel alterations and damage to riparian and aquatic habitat?	Changes in stability and indicators of disequilibrium.	Effectiveness	After disturbances SQF
Aquatic resource and habitat condition	What is the current state of aquatic resources and habitat conditions within the watershed?	Inventories and/or analysis of aquatic resources.	Implementation	After disturbances SQF
Protection from flooding	Did the assumptions used to formulate flooding potential on life, property, and natural resources help reduce or avoid damage from flooding?	Evaluate assumptions for flooding events.	Effectiveness	After disturbances SQF
Water quality	Were best management practices (BMPs) identified for all activities in the Monument?	% implementation monitoring of BMPs.	Implementation	Ongoing SQF
	Were BMPs monitored on all projects?	% effectiveness monitoring of BMPs.	Implementation	After site-specific projects SQF
	Were BMP prescriptions effective in protecting soil and water resources of the watersheds?	SCI surveys.	Effectiveness	After site-specific projects SQF

Monitoring and Evaluation

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
CAVES				
Cave condition	Were cave resources considered in landscape analyses?	# of caves inventoried.	Implementation	Ongoing SQF
	Are caves affected by management activities?	# of caves affected by management activities.	Effectiveness	Every 3 years SQF
	Are gates secured and cave features protected in Church and Boyden Caves?	Condition of Church and Boyden Caves.	Status and trend	Annually SQF
FIRE AND FUELS				
Fire susceptibility	Have we identified areas of fire susceptibility that need to be treated to move toward desired conditions?	Ground fuels, ladder fuels, crown bulk density, and tree density. Acres in need of treatment as determined in landscape analysis.	Implementation	Within 5 years of ROD, as new science/information available SQF
	Have we treated areas of high fire susceptibility to move toward desired conditions?	Acres of fire susceptibility meeting desired conditions.	Implementation	Every 5 years SQF
Fire threat and severity	Have we identified areas in the WUI and general forest that need treatment to reduce the threat and severity of wildfire?	Ground fuels, ladder fuels, crown bulk density, and tree density. Acres in need of treatment as determined in landscape analysis.	Implementation	Within 5 years of ROD, as new science/information available SQF
	Do fire and fuel treatments in the WUI and general forest reduce the threat and severity of wildfire?	Treatment characteristics (location and type), ground fuels, ladder fuels, crown bulk density, and tree density.	Effectiveness	Every 5 years SQF

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
Fire behavior and fire regime	Are the fire and fuel strategies and treatments effective in achieving the desired fire behavior and fire regimes within vegetation types or series?	Severity, rate of spread, fire type, intensity, frequency, spotting, crown bulk density, tree density.	Effectiveness	Every 5 years, or following major wildfire events SQF
Fuel loading	How effective are fuel treatments (prescribed burning, hand and mechanical treatments) and managed wildfire in achieving desired fuel loading at treatment sites?	Vegetation composition and structure, surface fuels, crown loading.	Effectiveness/validation	Every 5 years, or following major wildfire events SQF
Prescribed burns and managed wildfire	Are prescribed burns and managed wildfire being used to meet or trend toward the desired conditions?	Acres of prescribed burns, acres of managed wildfire.	Implementation	Annually SQF
INVASIVE PLANTS/NOXIOUS WEEDS				
Noxious weed inventory	What is the distribution of noxious weeds?	Miles of roads and trails inventoried, distribution of noxious weeds.	Implementation	Within 3 years of ROD, as new science/information available SQF
	Are noxious weed populations responding to the management strategy?	Noxious weed populations and distribution.	Effectiveness/status and trend	Ongoing SQF
RANGE				
Utilization standards: lower westside hardwoods	Did grazing utilization follow standards and guidelines for residual dry matter (RDM)?	Indices of RDM.	Implementation	Annually, at end of grazing season SQF

Monitoring and Evaluation

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
	Are utilization standards for oaks being met within the Monument?	% livestock browse on annual growth of hardwood seedlings and advanced regeneration.	Effectiveness	Annually, at end of grazing season SQF
	Did grazing utilization maintain at least 60% cover in annual grasslands?	% ground cover.	Effectiveness	Annually, at end of grazing season SQF
	Are grazing utilization standards for oak regeneration meeting desired conditions?	Grazing utilization of oak regeneration.	Effectiveness	Every 5 years SQF
Utilization standards: aquatic, meadow, and riparian ecosystems	Are grazing utilization standards being met for meadow vegetation?	Ecological status of meadows per R5 monitoring protocol.	Implementation	Annually, at end of grazing season SQF
Ecological status: range of natural variability	Has the range of natural variability been determined in the Monument?	Riparian condition.	Implementation	Annually SQF
Ecological status: stream banks	Are stream banks maintained at desired conditions?	% stream bank alteration.	Implementation	Annually SQF
Ecological status: aquatic, meadow, and riparian ecosystems	What is the ecological status and trend of key aquatic, meadow, and riparian ecosystems within allotments?	Change in wetland rating, vegetation rating, riparian condition, stream condition, and ecological status per R5 monitoring protocol.	Effectiveness/ status and trend	Every 5 years SQF
Ecological status: special aquatic features	Are special aquatic features protected from grazing?	Riparian vegetation within allotments.	Effectiveness	Annually SQF
Ecological status: woody riparian shrubs	Are grazing utilization standards being met for woody riparian shrubs?	% browsed mature riparian shrubs and individual seedlings.	Effectiveness	Annually SQF

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
SOCIOECONOMICS				
Socioeconomic	How are communities changing in response to social and economic conditions?	Change in demographics.	Status and trend	Every 10 years RO
	What is the capacity for economic development in gateway communities?	Housing, employment by industry, index of industrial specialization, place of work, source of income.	Status and trend	Every 10 years RO
THREATENED, ENDANGERED, AND SENSITIVE (TES) PLANTS				
TES plants	What is the status of known populations of and suitable habitat for TES species (specifically Springville Clarkia)?	Plant survey.	Implementation	Annually SQF
TES plants	Is there any change in the status, location, and suitable habitat for TES species (specifically the Springville clarkia)?	Analysis of population demographics.	Effectiveness/ status and trend	Annually SQF
VEGETATION				
Giant sequoia groves	What is the size and age of giant sequoias? What is the number of larger or monarch giant sequoias?	Dbh, age, height, crown ratio, and crown height (common stand exams).	Implementation	1-10 years SQF
	What is the age and species composition of vegetation?	Age, # by species (common stand exams).	Implementation	10 years SQF

Monitoring and Evaluation

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
	What is the status of ladder fuels and fuel loading?	Height by seral stage and species, amount of down woody material (common stand exams).	Implementation	5-10 years SQF
	What is the status of regeneration?	# of seedlings and saplings (common stand exams).	Implementation	5-10 years SQF
	What is the change in structure of giant sequoia groves and is it trending toward desired conditions?	Dbh, age, height, crown ratio, and crown height (common stand exams).	Effectiveness	2-5 years SQF
	What is the change in age and species composition and is it trending toward desired conditions?	Age, # by species (common stand exams).	Effectiveness	2-5 years SQF
	What is the change in ladder fuels and fuel loading and is it trending toward desired conditions?	Height by seral stage and species, amount of down woody material (common stand exams).	Effectiveness	2-5 years SQF
	What is the change in status of regeneration and is it trending toward desired conditions?	# of seedlings and saplings (common stand exams).	Effectiveness	2-5 years SQF
General forest outside groves	What is the age and species composition of vegetation?	Age, # by species (common stand exams).	Implementation	10 years SQF
	What is the status of ladder fuels and fuel loading?	Height by seral stage and species, amount of down woody material (common stand exams).	Implementation	10 years SQF
	What is the status of regeneration?	# of seedlings and saplings (common stand exams).	Implementation	10 years SQF

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
	What is the change in age and species composition and is it trending toward desired conditions?	Age, # by species (common stand exams).	Effectiveness	10 years SQF
	What is the change in ladder fuels and fuel loading and is it trending toward desired conditions?	Height by seral stage and species, amount of down woody material (common stand exams, FIA plots).	Effectiveness	10 years SQF
	What is the change in status of regeneration and is it trending toward desired conditions?	# of seedlings and saplings (common stand exams, FIA plots).	Effectiveness	10 years SQF
Canopy gap analysis	Are gaps in the canopy large or frequent enough to meet desired conditions for regeneration of pines and giant sequoia?	Canopy cover, acres of canopy gaps (common stand exams).	Effectiveness	10-20 years SQF
WILDLIFE				
Wildlife protection	Does Monument management strategy provide for the protection of wildlife habitat?	Occupancy, habitat conditions.	Implementation	Ongoing SQF
Terrestrial wildlife	Are wildlife species adequately protected?	Occupancy, habitat conditions.	Effectiveness	Within 5 years of ROD, as new science/ information available SQF
	What is the status of the Pacific fisher population in the Monument?	Detection rates.	Effectiveness	Ongoing RO

Monitoring or Inventory Program or Project	Monitoring Question	Performance Measures	Type of Monitoring	Frequency of Reporting and Source
	What is the status of the willow flycatcher population and its suitable habitat?	Occupancy, habitat conditions at the five historically occupied sites.	Effectiveness	Every 4 years SQF

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Monitoring Trends and Performance Measures

Monitoring identified in the monitoring plan above is focused on program implementation. The Sequoia National Forest currently uses performance measures for tracking program accomplishments. The current system is expected to be replaced by a performance accountability system integrating annual budgets with programs of work (WorkPlan) and linking these to tracking of activities designed to implement the National Strategic Plan through the Forest Activities Tracking System (FACTS) or subsequent reporting system.

Actual performance is tracked over time through annual documentation of accomplishment, and these trends are evaluated periodically to determine if the national forest needs to shift program strategies. These data are reported in the annual forest plan monitoring report as part of the Sequoia National Forest’s implementation monitoring efforts.

Inventory is a continuous effort. As funding is available, priority inventories are implemented and reported through various resource information systems, such as the Natural Resources Information System (NRIS) and the Infrastructure database (INFRA). Periodic evaluation of inventory data is used to explore trends in resource conditions over time. Annual forest plan monitoring reports will document when there is a need to change the Monument Plan in response to changing trends in resource conditions.

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General Budget History

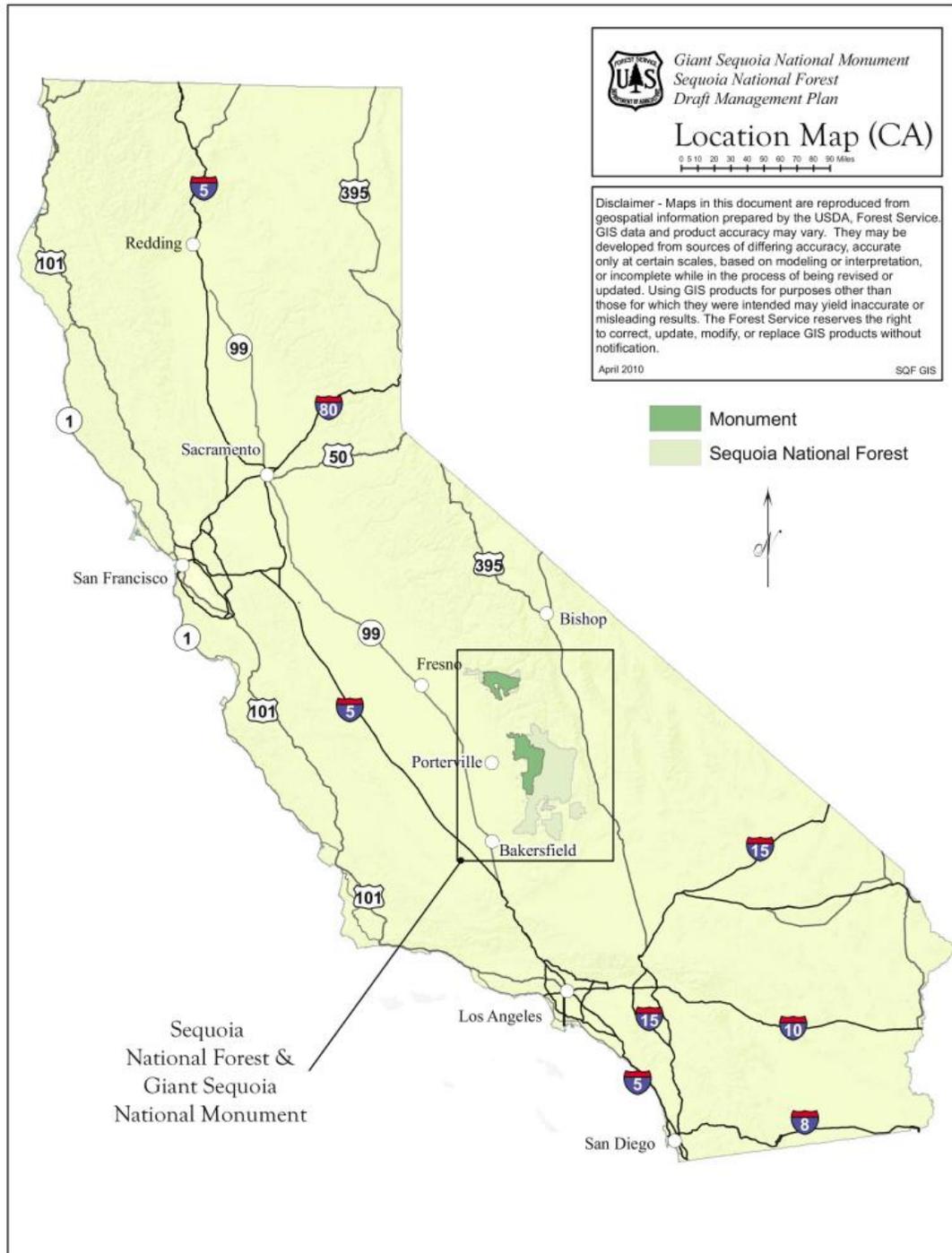
The Sequoia National Forest’s budget allocations increased, even on an inflation-adjusted basis, from 1995 to 2009. Analysis of budget history indicates that practically all the increase was for hazardous fuels reduction and fire pre-suppression (preparedness) to implement the National Fire Plan. Some other program budgets have increased at roughly the rate of inflation. Excluding expenditures for wildland fire suppression and national fire and disaster

support (which are paid when incurred by the Forest Service's national organizations), the total budget for fiscal year 2009 was more than \$1.9 billion for national forests and grasslands. For the Sequoia National Forest, the budget allocations for fiscal year 2009 were:

- Fire/Fuels Management Program -- \$16,145,000
- Recreation/Facilities/Trails -- \$2,179,165
- Natural Resources -- \$2,315,000

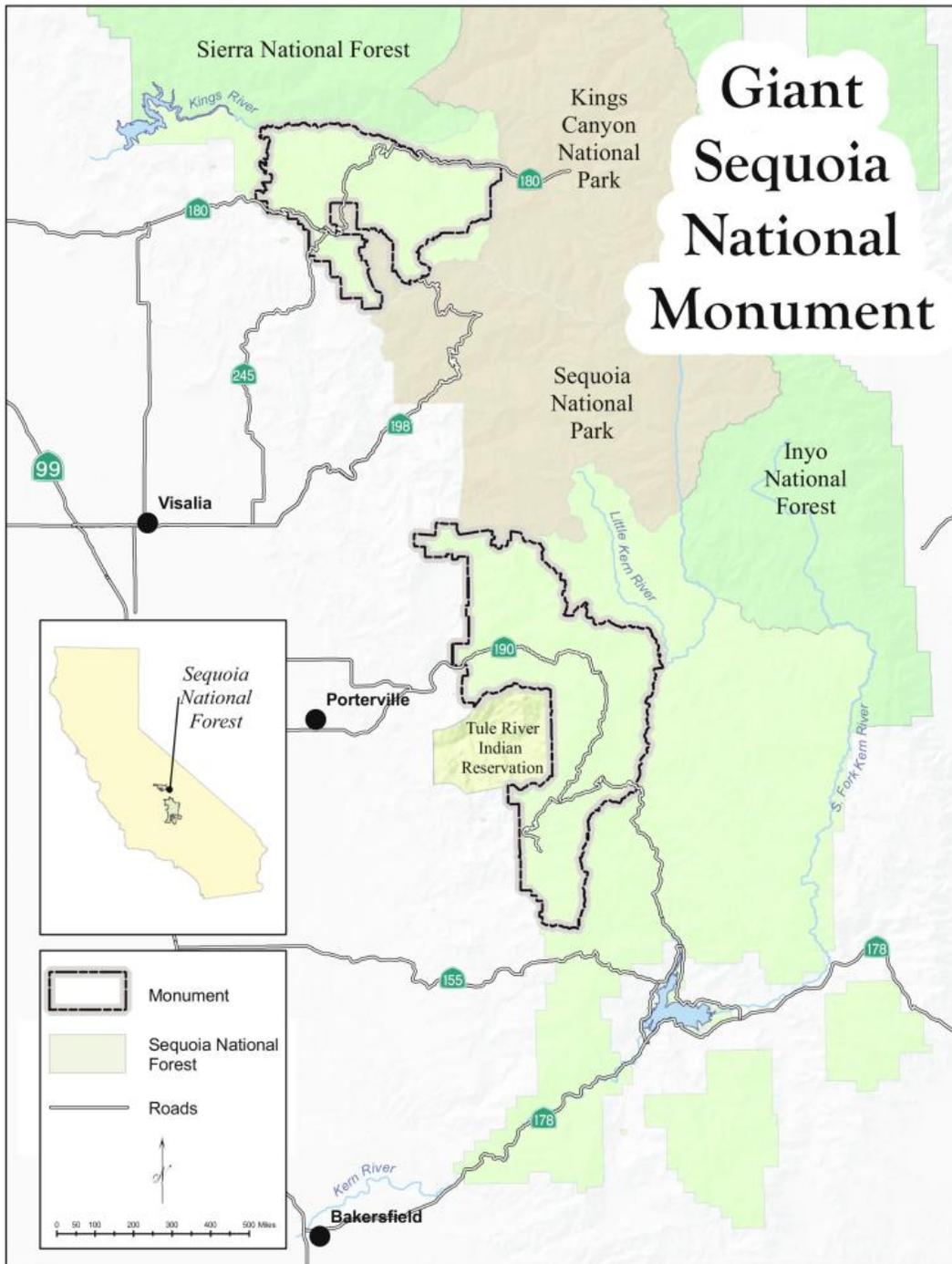
Comments: 68

Map 5 Location of the Monument (California)



Comments: 69

Map 6 Location Map (Local)



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Appendix C-Giant Sequoia Groves List

Table 31 Sequoia Groves and Grove Complexes

Grove or Complex Name ⁽¹⁾	Date Inventoried	Acres in Sequoia National Forest	Groves within Grove Complex
NORTHERN PORTION:			
1. Abbott Creek	October 2009	25	
2. Agnew	October 2009	43	
3. Bearskin	October 2009	187	
4. Big Stump	January 2002	431	
5. Cherry Gap	October 1999	170	
6. Converse Basin	November 1998	4,666	
7. Deer Meadow	October 2009	168	
8. Evans Complex	October 2009	4,256	Evans, Boulder, Little Boulder, Lockwood, Kennedy, Horseshoe Bend
9. Grant	January 2002	292	
10. Indian Basin	April 2004	448	
11. Landslide	October 1999	226	
12. Monarch	October 2009	54	
13. Redwood Mountain	September 2003	1,036	
SOUTHERN PORTION:			
14. Alder Creek	February 2004	409	
15. Belknap Complex	October 2009	3,084	Belknap, Wheel Meadow, McIntyre, Carr Wilson
16. Black Mountain	February 2004	2,614	
17. Burro Creek	October 2009	278	
18. Cunningham	October 2009	32	
19. Deer Creek	November 1998	144	
20. Dillonwood	October 2009	373	
21. Freeman Creek	October 2009	4,192	
22. Long Meadow	November 1999	568	
23. Maggie Mountain	October 2009	64	
24. Middle Tule	October 2009	301	

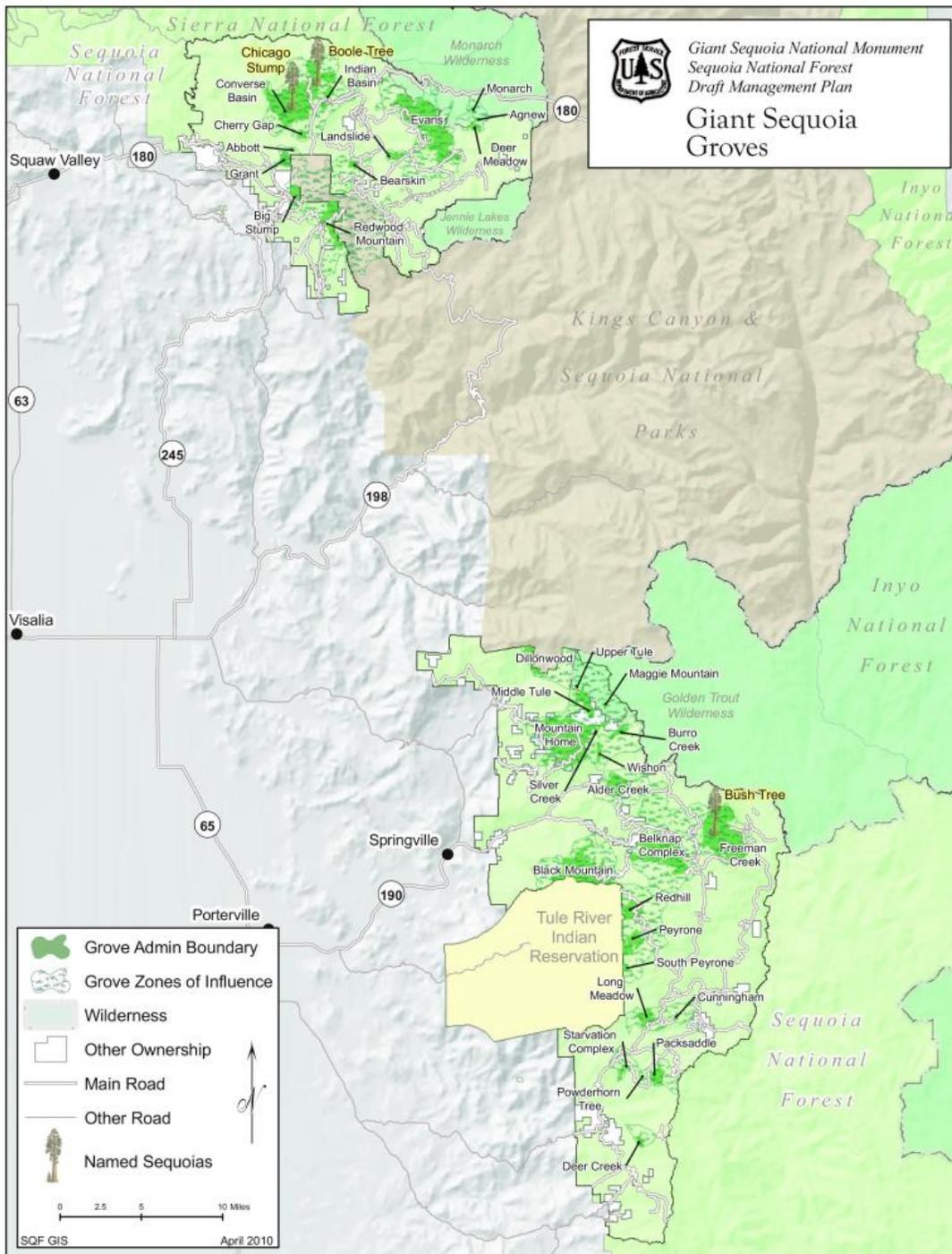
Appendix C-Giant Sequoia Groves List

Grove or Complex Name ⁽¹⁾	Date Inventoried	Acres in Sequoia National Forest	Groves within Grove Complex
25. Mountain Home	February 2004	1,295	
26. Packsaddle	March 2004	533	
27. Peyrone	February 2004	741	
28. Red Hill	February 2004	602	
29. Silver Creek	October 2009	108	
30. South Peyrone	October 2009	115	
31. Starvation Complex	January 2000	182	Starvation Creek, Powderhorn
32. Upper Tule	October 2009	22	
33. Wishon	October 2009	171	
Total Acres of Groves in Sequoia National Forest		27,830	

- Groves within close proximity to each other were identified as grove complexes during boundary mapping per the MSA (MSA II.B.2.c.(2)(e) ii), p.14)

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Map 7 Giant Sequoia Groves



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Partnership Strategy for the Sequoia National Forest and Giant Sequoia National Monument

Partnerships in land stewardship reflect a growing and important trend: the joining of passion and resources by committed citizens, organizations, and government agencies to achieve social, economic, and ecological goals. The Forest Service has worked with partners throughout its 100-year history. But the problems of land management have grown more complex, and the needs of the public more varied. The American people today are voicing their strong desire to volunteer and participate in the stewardship of natural resources and in the decisions that affect their communities (National Partnership Office 2005, accessed on December 21, 2009 from <http://www.partnershipresourcecenter.org/resources/partnership-guide/>).

Creating a Partnership Culture

The Forest Supervisor on the Sequoia National Forest (SQF) and Giant Sequoia National Monument (Monument) is responding to the needs of a varied public by empowering employees and communities of place, interest, and culture to create and sustain successful partnerships. The forest supervisor and forest staff have established the following partnership goals to accomplish the Forest Service mission and build a strong community of stewardship on the SQF and Monument:

- Through partnership, sustain the health, diversity and productivity of the Sequoia National Forest and Giant Sequoia National Monument.
- Build community support for, and understanding of, the Sequoia National Forest and Giant Sequoia National Monument.
- Enhance opportunities to connect people to the land, especially in urban areas and of diverse cultures.
- Expand partnerships with other federal, state, and local government agencies, as well as associations, non-government organizations, and other community groups, to leverage information and resources for mutual benefit.
- Foster partnerships dealing with science.
- Create more “citizen stewards” of the Sequoia National Forest and Giant Sequoia National Monument through volunteerism.
- Support the ongoing efforts of the Giant Sequoia National Monument Association.
- Develop new partnerships focused on management of the land (for example, tree planting, protection from wildfire, education campaign to reduce trash in forest).
- Build and enhance partnerships to protect tribal sites and interpret cultural assets.

Accomplishing these goals will require new and innovative methods as well as the continuation of ongoing successful partnership efforts. The purpose of this strategy is to outline an iterative process for building and sustaining a strong partnership culture for the SQF and Monument. The strategy includes the following components: a method for determining the SQF and Monument capacity for working in partnership; best practices for building new partnerships, and: steps for ensuring effective outreach to nontraditional partners.

SQF and Monument Capacity for Working in Partnership

The National Partnership Office of the U.S. Forest Service has designed an assessment tool to help Forest Service units assess, sustain, and improve their abilities to work with partners in continuing the Forest Service's long history of partnership and collaboration in land stewardship (see <http://www.partnershipresourcecenter.org>).

What is the Partnership Capacity Assessment Tool?

The Partnership Capacity Assessment Tool is essentially a group exercise to reflect on experiences and attitudes about partnerships and collaboration. The tool asks the group to score itself on a series of questions about partnership opportunities, goals, resources, procedures, incentives, barriers, skills, and relationships. The group then uses these scores to chart strengths, analyze positive and negative factors that contribute to partnership capacity, and identify actions to sustain and grow capacity.

Who should use the Assessment Tool?

The Sequoia National Forest in conjunction with communities of place, interest, and culture who care about the Giant Sequoia National Monument will benefit from the assessment. This tool is designed to generate open dialogue with partners and among staff. It is also a useful starting point for assessing current partnership abilities and discussing how to maintain strengths or address needs.

How can the Assessment Tool best meet the needs of the Monument?

The Assessment Tool provides the format for a community forum to assess partnership needs and develop priorities to meet those needs. Including partners in the process can help to promote dialogue and improve relationships. However, the tool is not intended to assess the feasibility of or develop plans for specific partnership opportunities.

How long and where will the assessment take place?

The community forum can expect to complete the assessment in one evening session (3 to 4 hours). The investment of time will pay off by helping SQF staff and potential partners to systematically identify needs and actions to meet those needs. Trained facilitators and recorders will be used to keep the process moving smoothly.

Best Practices for Building New Partnerships

Partnerships can be thought of as a type of alliance, where the complex interaction of business and interpersonal activities are essential to successfully achieving mutually beneficial goals. Key characteristics of successful interpersonal relationships include trust, communication, perspective taking, rapport building, and commitment. Partnerships are known to yield better results under certain conditions (Mockler 1999, O'Neill n.d., Appendix 2) including:

Appendix E-Partnership Strategy

- When each partner recognizes the need to have access to capabilities and competencies it cannot develop internally; and
- When a gradual approach is preferable in accessing resources, capabilities, and competencies (as opposed to faster mechanisms such as contracting).

Keeping these conditions in mind, the following iterative best practices are provided to assist the SQF staff in the identification of new Monument partners:

1. Place the partnership within the long-term strategies of the Monument
 2. Define specific objectives of the partnership
 3. Choose partners
 4. Evaluate what to offer and what to receive in exchange
 5. Define opportunities
 6. Evaluate the impact on Monument stakeholders
 7. Evaluate negotiating capabilities
 8. Plan the integration
 9. Create the partnership
1. **Place the partnership within the long-term strategies of the Monument.** Strategic alliances respond to various long-term strategies of the Monument. For example, the *Interpretive Plan for the Sequoia National Forest and Giant Sequoia National Monument*, published in 2008, established a strategy for the forest's interpretive program, featuring the interpretation of the objects of interest, both natural and cultural. Interpretive services may be provided on-site or virtually. The specific interpretive products, services, and delivery methods are expected to evolve over time, in response to evolving technologies, visitor needs and demands, and available resources. Partnerships are important in the provision of interpretation, not only because of the extra resources they provide, but also because they help to enrich the information provided and help to develop a sense of stewardship in both the partners and recipients of interpretive services.
 2. **Define specific objectives of the partnership.** Three aspects of defining objectives are necessary for the success of the partnership:
 - a. As for any strategy, the objective should be compared with the SQF and Monument's available resources and capabilities and with those that could be used. The partnership should bridge the gap of existing resources and capabilities to achieve the objectives. The Assessment Tool can assist in identifying where these gaps occur.

- b. A clear consensus (internally) on why the Agency cannot reach particular goals on its own and why it must seek a partnership with an external organization rather than internal development or via procurement.
 - c. Knowing where the partnership generates advantages within the chain of value and clarifying why each partner cannot develop these advantages internally.
3. **Choose partners.** According to Hill and Jones (1999), the right partner in an alliance must have three principal features:
 - a. The partner must have the resources and capabilities to help the Monument achieve its strategic goals. It must bring to the partnership what is missing from the others and which they are seeking.
 - b. The partner must share its long-term goals for the partnership. Failure is inevitable if the goals are divergent.
 - c. The partner must not use the alliance to appropriate know-how, relationships with clients or suppliers, or technology without making contributions of equal strategic weight. Alliances are longer lasting and better when they are considered between partners with a reputation for trustworthiness.
4. **Evaluate what to offer and what to receive in exchange.** Reciprocity is a key component of building trust. Each partner should evaluate which capabilities are critical to the partnership, and then decide what the Monument can offer to the others and what it can expect from them.
5. **Define opportunities.** Knowing the value of the opportunities that can be achieved with the alliance is an essential guide in negotiation and subsequent management of the partnership itself. Beyond the opportunities, it is also important to examine the possible threats.
6. **Evaluate the impact on Monument stakeholders.** A key question to consider is, “How will stakeholders react to the partnership?”
7. **Evaluate negotiating capabilities.** A key question to consider here is, “What resources and capabilities can the partners realistically bring to the partnership?”
8. **Plan the integration.** A partnership “business plan” should:
 - a. Organize activities and functions
 - b. Define accounting procedures
 - c. Define procedures to resolve conflicts
 - d. Define the relationships between the partnership and the Monument

9. **Create the partnership.** Flexibility is integral to sustaining an effective partnership. Whatever the form of the partnership, some principles apply:
 - a. Each partner has its own goals that dictate the role of the partnership,
 - b. The role of the partnership changes as internal and external conditions evolve, and
 - c. The relationship between the partners is quite dynamic.

Steps for Ensuring Effective Outreach to Nontraditional Partners

The diversity of people using the Sequoia National Forest and Giant Sequoia National Monument will continue to increase, as the American population becomes more diverse and international visitors increase. The greatest growth is projected to be in Hispanic and Asian populations, and their use is projected to increase dramatically in the next 25 years. Interpretation and outreach methods designed to connect nontraditional users to the Monument need to communicate important resource issues, solicit commitment to conservation, and encourage appropriate behaviors. Use of the Monument by nontraditional user groups, especially Hispanics and Asians, is prevalent and growing.

To assure effective outreach occurs within this growing segment of potential Monument partners, metrics should be designed to monitor and evaluate success, adapting as necessary to continually broaden the circle of involvement. The following steps may be considered, as appropriate, in developing innovative partnerships:

- Translation of major documents (or summaries thereof), provision of translators at meetings, or other efforts as appropriate to ensure that limited-English speakers gain understanding of potential partnership opportunities;
- Provision of opportunities for limited-English speakers to provide comments and actively engage in partnership opportunities;
- Provision of opportunities for public participation through means other than written communication, such as personal interviews or use of audio or video recording devices to capture oral comments;
- Use of different meeting sizes or formats, or variation on the type and number of media used, so that communications are tailored to the particular community or population;
- Use of locations and facilities that are local, convenient, and accessible to disabled individuals, low-income and minority communities, and Indian tribes; and
- Assistance to hearing-impaired or sight-impaired individuals when needed.

References

Hill G.; Jones, G. 1999. Strategic management. Houghton Mifflin.

Mockler, R.J. 1999. Multinational strategic alliances. Wiley.

O'Neill, B. n.d. Brian O'Neills's 21 partnership success factors. San Francisco, CA: Golden Gate National Parks.

U.S. Department of Agriculture [USDA], Forest Service, National Partnership Office. 2005. Partnership guide. <http://www.partnershipresourcecenter.org/resources/partnership-guide/>. (21 December 2009).

U.S. Department of Agriculture [USDA], Forest Service, National Partnership Office. 2004. Partnership capacity assessment tool. Washington, DC.

Resources

<http://www.partnershipresourcecenter.org>. This website provides online resources to build vibrant partnerships and effective collaboration for the nation's forests, grasslands, and other special places. The website is a joint project of the National Forest Foundation and the U.S. Forest Service.

Spanish Colonial Research Center, University of New Mexico. The Center was established by the National Park Service in partnership with the university. The Center employs Spanish speakers from multiple Spanish-speaking countries and regions to assist in translating English into Spanish. English is translated into Spanish so that it makes sense to employees, and then it is back-translated into English to check that the original meaning is intact. Contact: Jerry Gurule and other staff members at (505)346-2890; fax: (505)277-4603; e-mail: clahr@unm.edu.

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Appendix F-Standards and Guidelines

Standards and guidelines are requirements that preclude or impose limitations on resource management activities and are designed to be consistent with the objectives and desired conditions; they come into play as site-specific activities are planned to implement the Monument Plan. The standards and guidelines act as thresholds or constraints for management activities or practices to ensure the protection of resources. They may apply to the entire Monument or they may only apply to certain land allocations. The following standards and guidelines proposed for the Monument are organized by resource area.

Table 32 Standards and Guidelines

Standard/Guideline
VEGETATION, INCLUDING GIANT SEQUOIA GROVES
For all projects that include a proposal for tree removal from within the Monument area, except for personal use fuelwood, conduct an evaluation to document the clear need for removing trees for ecological restoration and maintenance or public safety.
When implementing vegetation and fuels treatments, focus retention on conifer trees with a dbh of 20 inches or greater in westside forest types. Retain montane hardwoods with a dbh of 12 inches or larger in westside forest types. Occasional mortality of larger trees is expected to occur; however, design prescribed fire prescriptions and techniques to minimize the loss of large trees and large down material.
Incidental removal of vegetation and down woody material for activities such as administering special use permits; maintaining recreation developments; constructing, reconstructing, and maintaining roads, trails, and rights of way; expanding resorts based on approved development plans; and removing trees that present imminent safety hazards may deviate from vegetation management standards and guidelines. Exceptions to vegetation management standards and guidelines is acceptable for restoration activities to improve species composition and stand structure and reduce species competition for resources.
Plant all regeneration areas requiring reforestation except where natural seeding is prescribed. Regeneration by natural seeding will be applied primarily in the true fir type and in areas where uneven-aged silvicultural practices are prescribed.
Both natural and artificial regeneration shall be used as appropriate.
Save viable existing reproduction where feasible and incorporate into silvicultural prescriptions for new stands.
Utilize current state-of-the-art regeneration techniques including controlling pests, such as gophers, and controlling competing vegetation.
Make dead and down woody material available for firewood gathering.
In order to maintain forest diversity, particularly within the mixed conifer forest type, reforestation and timber stand improvement prescriptions shall generally emulate existing species composition. Variation from this guideline will be the exception and will be discussed in an environmental document. Commercial values will not be the sole justification for increasing the proportion of high value species.
Design vegetation treatments to provide for edge corridors of cover and enhancement of special habitat features such as meadows for wildlife.
<i>Giant Sequoia Groves</i>

Standard/Guideline
Ensure the maintenance and replacement of specimen trees so that their total number does not decrease through time.
Include any naturally-occurring giant sequoia (1 foot or larger dbh) that is located within 500 feet of at least 3 other giant sequoias (each 1 foot or larger dbh) within a grove boundary.
There shall be no new road building, logging, or mechanized/motorized entry (except for entry on existing roads) within the final administrative boundary of any grove, unless clearly needed for ecological restoration and maintenance or public safety.
Create a "grove zone of influence" (ZOI) outside the administrative boundary of each grove, based on watershed boundaries and other topographical features, to protect groves from damaging effects.
Adjacent groves are to be managed as if they are one large grove or grove complex. The grove boundaries will be a single line around the outermost giant sequoia trees in the complex of groves.
Restrict mechanical entry and logging within grove administrative boundaries. The following mechanical/motorized uses will be permitted within the grove boundary line: a) use of existing roads, b) management in accordance with approved fuel load reduction plans, and only where clearly needed for ecological restoration and maintenance or public safety, c) use of light equipment to build and/or maintain trails, d) use of equipment to fight wildfires (use of heavy equipment off of existing roads will require Forest Supervisor approval), and e) use of battery-operated wheelchairs (MSA, pages 7-8). In Indian Basin Grove, there will be no logging except for safety reasons in and near the Princess Campground area south and east of Highway 180.
<i>Sugar Pine</i>
Silvicultural prescriptions are to consider means of maintaining the widest possible base of sugar pine genes. Generally, this means protecting as many sugar pine trees as possible while meeting land management plan objectives and being compatible with timber harvest and related activities. Current direction regarding sugar pine retention is set forth in appendix 3.
Continue to plant a modest mix (5-10 percent) of sugar pine along with other mixed conifer species even though major gene resistant stock is not now available . This may mean collecting seed from non-tested trees in order to maintain a sugar pine seedbank. With resistant stock this percentage could be increased.
Intensify the effort to collect sample cones from candidate resistant trees. This is high priority.
Continue to protect trees that are known to carry resistance. Collect seed from these trees for our seedbank.
<i>Young Stands, Including Plantations</i>
In young stands of trees, apply the necessary silvicultural and fuels reduction treatments to: (a) accelerate the development of old forest characteristics, (b) increase stand heterogeneity, (c) promote hardwoods, and (d) reduce risk of loss to wildland fire. Use mechanical fuels treatments to remove the material necessary to achieve the following outcomes if the treated plantation was to burn under 90th percentile fire weather conditions: (a) wildland fire would burn with average flame lengths of 2 to 4 feet, (b) the rate of fire spread would be less than 50 percent of the pre-treatment rate of spread, and (c) fireline production rates would be doubled. Achieve these outcomes by reducing surface and ladder fuels and adjacent crown fuels. Treatments should be effective for more than 5 years.

Appendix F-Standards and Guidelines

Standard/Guideline
<i>Hardwood Ecosystems</i>
During or prior to landscape analysis, spatially determine distributions of existing and potential natural hardwood ecosystems (Forest Service Handbook 2090.11). Identify hardwood restoration and enhancement projects.
Manage hardwood ecosystems for a diversity of hardwood tree size classes such that seedlings, saplings, and pole-sized trees are sufficiently abundant to replace large trees that die and maintain mast production.
Where possible, create openings around existing California black oaks and canyon live oaks to stimulate natural regeneration.
Retain the mix of mast-producing species where they exist within a stand.
Retain all blue oak and valley oak trees except where: (a) stand restoration strategies call for tree removal; (b) trees are lost to fire; or (c) tree removal is needed for public health and safety.
When planning prescribed fire or mechanical treatments in hardwood ecosystems: (a) consider the risk of noxious weed spread and (b) minimize impacts to hardwood ecosystem structure and biodiversity.
FIRE AND FUELS
In wilderness, use naturally ignited wildfires to meet management strategies when fuel loading and natural barriers will limit the final fire perimeter to a planned boundary under the most severe weather conditions.
Incorporate fuel treatment and protection planning into reforestation plans. Ensure that tree stocking levels and silvicultural goals are consistent with fuel reduction objectives in plantations located in high and moderate fire hazard and risk areas.
The structural change to treatment acres by mechanical methods is limited to one per decade. Treatments should be designed to be effective for at least 10 years. When subsequent entries within 10 years are needed to reduce surface fuels, prescribed fire is the preferred method. When burning opportunities are limited, mechanical treatments, such as mastication and piling, are allowed.
Lightning-caused fires can be used to reduce fuel loads or to provide other resource benefits, such as conserving populations of fire-dependent species.
Strategically place fuel treatments across the landscape to achieve fuel conditions that reduce the size and severity of wildland fires. Maintain 30 to 40 percent of each landscape (outside the defense zone of the wildland urban intermix zone) in a condition that meets fuel management objectives.
Locate fuel treatments to interrupt wildland fire spread and reduce fire severity. Typically, locate treatment areas on the upper two-thirds of the slope, on south and west aspects, in mid- and lower- elevation vegetation types. Conduct fuel treatments in areas of high fire hazard and risk with human safety and the wildland urban intermix zones as the first priority.
For prescribed fire treatments, use multiple entries, as needed, to achieve fuels management objectives, up to two burns per decade and four burns over 20 years.
When planning prescribed fire or mechanical treatments in hardwood ecosystems: (a) consider the risk of noxious weed spread and (b) minimize impacts to hardwood ecosystem structure and biodiversity.

Standard/Guideline
Lightning-caused fires can be used to reduce fuel loads or to provide other resource benefits, such as conserving populations of fire-dependent species.
Meet at least once annually with cooperating agencies to coordinate prescribed burning plans for projects located on adjacent lands and to coordinate fire protection activities.
<i>Defense Zone of the WUI</i>
Design mechanical fuel treatments to remove the material necessary to achieve the following outcomes: (a) On more than 90 percent of the stand area, achieve an average flame length of 4 feet or less if the stand was to burn under 90 th percentile fire weather conditions; (b) On stands with less than 40 percent canopy cover, achieve an average live crown base height of 15 feet; 40 to 70 percent canopy cover, achieve an average live crown base height of 20 feet; and greater than 70 percent canopy cover, achieve an average live crown base height of 25 feet.
To enhance stand heterogeneity, do not mechanically treat the remaining 10 percent of the stand area.
Achieve the fuels outcomes described above through thinning from below to remove surface and ladder fuels.
<i>Threat Zone of the WUI</i>
Design mechanical fuel treatments to remove the material necessary to achieve the following outcomes: (a) On more than 85 percent of the stand area, achieve an average flame length of 6 feet or less if the stand was to burn under 90 th percentile fire weather conditions; (b) On stands with less than 40 percent canopy cover, achieve an average live crown base height of 15 feet; 40 to 70 percent canopy cover, achieve an average live crown base height of 20 feet; and greater than 70 percent canopy cover, achieve an average live crown base height of 25 feet.
To enhance stand heterogeneity, do not mechanically treat the remaining 15 percent of the stand area.
Design mechanical treatments to achieve the fuels outcomes described above through understory thinning to remove surface and ladder fuels up to 20 inches dbh. Focus treatments on removing suppressed and intermediate trees. Apply treatments to enhance stand heterogeneity. When conducting treatments in dense stands with uniform tree size and spacing, introduce heterogeneity into such stands by creating small (typically less than 1 acre), irregularly spaced openings. Canopy cover reductions may be needed to meet fuels objectives, but do not exceed a 20 percent reduction in the dominant and co-dominant trees. For example, a stand's canopy cover may be reduced from a pre-treatment level of 70 percent down to 50 percent to meet fuels objectives.
In westside forest types, where pre-treatment canopy cover is between 50 and 59 percent, design mechanical treatments to retain a minimum of 50 percent canopy cover in dominant and co-dominant trees. In stands that currently have between 40 and 50 percent canopy cover, do not reduce canopy cover except where canopy cover reductions result from removing primarily shade-tolerant trees less than 6 inches dbh.
For prescribed fire treatments, use multiple entries, as needed, to achieve fuels management objectives, up to two burns per decade and four burns over 20 years.
<i>General Monument⁽¹⁾</i>

Standard/Guideline
Design mechanical fuel treatments to remove the material necessary to achieve the following outcomes: (a) On more than 75 percent of the stand area, achieve an average flame length of 6 feet or less if the stand was to burn under 90 th percentile fire weather conditions; (b) On stands with less than 40 percent canopy cover, achieve an average live crown base height of 15 feet; 40 to 70 percent canopy cover, achieve an average live crown base height of 20 feet; and greater than 70 percent canopy cover, achieve an average live crown base height of 25 feet.
To enhance stand heterogeneity, do not mechanically treat the remaining 25 percent of the stand area.
Design mechanical treatments to achieve the fuels outcomes described above through understory thinning to remove surface and ladder fuels up to 20 inches dbh. Focus treatments on removing suppressed and intermediate conifer trees.
<i>Forested Stands of Large Trees with Moderate to Dense Canopy Cover</i>
Design mechanical fuel treatments to remove the material necessary to achieve the following outcomes: <ul style="list-style-type: none"> ● On over 75 percent of the stand area achieve an average flame length of 6 feet or less if the stand was to burn under 90th percentile fire weather conditions. ● Stands with less than 40 percent canopy cover, achieve an average live crown base height of 15 feet. ● Stands with 40 to 70 percent canopy cover, achieve an average live crown base height of 20 feet. ● Stands with greater than 70 percent canopy cover, achieve an average live crown base height of 25 feet.
To enhance stand heterogeneity and to maintain intact biological processes, particularly soil biota that may be affected by mechanical treatments, do not mechanically treat the remaining 25 percent of the stand area.
Where mechanical treatments are necessary, design treatments to achieve or approach the fuels outcomes described above by reducing surface and ladder fuels less than 12 inches dbh. Apply treatments to enhance stand heterogeneity. Allow incidental felling of trees between 12 and 20 inches dbh where required for operability. Retain felled trees on the ground, where needed, to achieve down woody material standards of 10 to 20 tons per acre in logs greater than 12 inches diameter at midpoint.
Do not reduce canopy cover in dominant and co-dominant trees by more than 10 percent across a stand following mechanical treatments. (For example, if canopy cover in a stand’s dominant and co-dominant trees is 80 percent, retain at least 70 percent canopy cover in dominant and co-dominant trees following mechanical treatment.) .
In westside forest types, where pre-treatment canopy cover is between 50 and 59 percent, design mechanical treatments to retain a minimum of 50 percent canopy cover in dominant and co-dominant trees. Do not reduce canopy cover in stands that currently have between 40 and 50 percent canopy cover, except where canopy cover reductions result from removing shade-tolerant trees less than 6 inches dbh. In the eastside pine forest type, retain a minimum of 30 percent canopy cover.
Give priority to restoring historic fire return intervals where possible. Emphasize fire restoration in pine and mixed-conifer forests. In mixed-conifer forests, fire return intervals vary by aspect and topographic position, with most frequent burning on south- and west-facing aspects.

Standard/Guideline
<p>Emphasize fuel treatments in stands at lower elevations with high fire hazard in the pine, mixed conifer, eastside pine, and eastside mixed conifer forest types. Emphasize fuel treatments on the upper two-thirds of south- and west-facing aspects near roads. Use mechanical treatments where fire managers determine a high potential for: (a) prescribed fire escape due to excessive fuel accumulations; (b) unacceptable smoke impacts; or (c) canopy cover and old forest structure loss due to excessive surface and ladder fuels.</p>
<p><i>Shrubfields</i></p>
<p>Design treatments in brush and shrub patches to remove the material necessary to achieve the following outcomes from wildland fire under 90th percentile fire weather conditions: (a) wildland fires would burn with an average flame length of 8 feet or less; (b) the fire's rate of spread would be less than 50 percent of the pre-treatment rate of spread; and (c) fireline production rates would be doubled. Treatments should be effective for more than 5 years.</p>
<p>AIR QUALITY</p>
<p>Continue the visibility monitoring program and determine sensitive indicators for each air quality-related value in national forest class I areas. Protect air quality-related values by reviewing all projects and management activities that may impact those values. Review external prevention of significant deterioration (PSD) source applications and make recommendations to permitting authorities.</p>
<p>Minimize resource and air quality impacts from air pollutants generated by management activities through use of the following control measures:</p> <ol style="list-style-type: none"> 1. Follow dust abatement procedures. 2. Conduct an air quality analysis for all projects that may impair air quality to determine impacts, mitigations, and/or controls. 3. Respond to local planning and regulatory authorities when development outside forest jurisdiction may impact forest resources. 4. Conduct prescribed burning activities in accordance with air pollution control district regulations and with proper prescriptions to assure good smoke management. 5. Notify the public before burning.
<p>Minimize smoke emissions by following best available control measures (BACMs). Avoid burning on high visitor days. Notify the public before burning.</p> <p>Use the following documents for guidance and direction for smoke management and air quality protection: (1) Interim Air Quality Policy on Wildland and Prescribed Fires, announced by the Environmental Protection Agency (EPA) in 1998; (2) Memorandum of Understanding between the California Air Resources Board (CARB) and the Forest Service, signed on July 13, 1999; (3) Smoke Management Guidelines for Agricultural and Prescribed Burning under Title 17, currently being revised by CARB; and (4) the Nevada Smoke Management Plan.</p>
<p>Coordinate and cooperate with other agencies and the public to manage air quality. Conduct prescribed burns when conditions for smoke dispersal are favorable, especially away from sensitive or class I areas. Use smoke modeling tools to predict smoke dispersion.</p>

Standard/Guideline
WILDLIFE AND PLANT HABITAT⁽²⁾
Retain the following numbers of large snags after fuels treatments except where: (1) snag removal is needed to address imminent safety hazards, and (2) snag levels are reduced as a result of incidental loss to prescribed fire. In westside mixed conifer and ponderosa pine forest types, retain four of the largest snags per acre. In the red fir forest type, retain six of the largest snags per acre. In Westside hardwood ecosystems, retain four of the largest snags (hardwood or conifer) per acre. Where standing live hardwood trees lack dead branches, retain six of the largest snags per acre, where they exist, to supplement wildlife needs for dead material. Use snags larger than 15 inches dbh to meet this standard. Evaluate snag density on a 10-acre basis. The defense zone of the wildland urban intermix zone and developed recreation sites are exempt from this standard and guideline.
Following stand-replacing events (as a result of wildland fire, insects, or diseases), do not conduct salvage harvest in at least 10 percent of the total area affected by the stand-replacing event. This unsalvaged acreage should be comprised of stands classified as California wildlife habitat relationship (CWHR) size class 5 or 6 (average dbh of overstory trees [snags] greater than 24 inches). As needed, use stands classified as CWHR size class 4 (average dbh of overstory trees [snags] between 11 and 24 inches) to reach the 10-percent level. This standard and guideline does not apply to the defense zone of the wildland urban intermix zone.
Retain approximately 132 cubic feet per acre of well-dispersed down logs. Ideal log size is 20 inches in diameter and 20 feet in length.
Fall and remove hazard trees along maintenance level 3, 4, and 5 roads and within or immediately adjacent (tree falling distance) to administrative sites. Review by an appropriate resource specialist is required prior to falling hazard trees along maintenance level 1 and 2 roads. Retain felled trees, where needed, to meet down woody material standards.

1. The 2001 SNFPA called this land allocation General Forest. In this draft EIS, this allocation will be called General Monument.
2. Including Old Forest Habitat; California Spotted Owl; Northern Goshawk; Great Gray Owl; Wolverine and Sierra Nevada Red Fox; Furbearers (Fisher and Marten); Willow Flycatcher; Threatened, Endangered, and Sensitive Plants; Invasive Nonnative Species; and Botanical Resources.

Standard/Guideline
<i>Old Forest Habitat</i>
Minimize old forest habitat fragmentation. Assess potential impacts of fragmentation on old forest associated species (particularly fisher and marten) in biological evaluations. Evaluate locations of new landings, staging areas, and recreational developments, including trails and other disturbances.
Assess the potential impact of projects on the connectivity of habitat for old forest associated species.
Consider forested linkages (with canopy cover greater than 40 percent) that are interconnected via riparian areas and ridgetop saddles during landscape-level and project-level analysis.
During landscape analysis, identify areas for acquisition, exchange, or conservation easements to enhance connectivity of habitat for old forest associated species. Assign a priority order for these areas.
<i>California Spotted Owl</i>
Delineate California spotted owl protected activity centers (PACs) surrounding each territorial owl activity center detected on National Forest System lands since 1986. Owl PACs are designated for all territorial owls based on: (1) the most recent documented nest site, (2) the most recent known roost site when a nest location remains unknown, and (3) a central point based on repeated daytime detections when neither nest or roost locations are known.
Delineate PACs to: (1) include known and suspected nest stands and (2) encompass the best available 300 acres of habitat in as compact a unit as possible. Select the best available habitat for PACs to incorporate: (1) two or more tree canopy layers; (2) trees in the dominant and co-dominant crown classes averaging 24 inches dbh or greater; (3) at least 70 percent tree canopy cover (including hardwoods); and (4) in descending order of priority, CWHR classes 6, 5D, 5M, 4D, and 4M and other stands with at least 50 percent canopy cover (including hardwoods). Use aerial photography interpretation and field verification, as needed, to delineate PACs.
As additional nest location and habitat data become available, review boundaries of PACs and make adjustments as necessary to better include known and suspected nest stands and to encompass the best available 300 acres of habitat.
When activities are planned adjacent to non-national forest lands, check available databases for the presence of nearby California spotted owl activity centers on non-national forest lands. Delineate a 300-acre circular area centered on the activity center. Designate and manage any part of the circular 300-acre area that lies on national forest lands as a California spotted owl PAC.
Prior to undertaking vegetation treatments in suitable California spotted owl habitat with unknown occupancy, conduct surveys in accordance with Pacific Southwest Region survey protocol. Designate California spotted owl protected activity centers (PACs) where appropriate based on survey results.
When activities are planned within or adjacent to a PAC and the location of the nest site or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.
Maintain PACs regardless of California spotted owl occupancy status, unless habitat is rendered unsuitable by a catastrophic stand-replacing event and surveys conducted to protocol confirm non-occupancy.

Appendix F-Standards and Guidelines

Standard/Guideline
Maintain a limited operating period (LOP), prohibiting activities within approximately ¼ mile of the nest site during the breeding season (March 1 through August 31) unless surveys confirm that California spotted owls are not nesting. The LOP does not apply to existing road and trail use and maintenance or continuing recreation use, except where analysis of proposed projects or activities determines that either existing or proposed activities are likely to result in nest disturbance.
The LOP may be waived for individual projects or activities of limited scope and duration or when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a biological evaluation determines that a nest site will be shielded from planned activities by topographic features that minimize disturbance, the LOP buffer distance may be reduced.
The LOP may be waived, where necessary, to allow for early season prescribed burning in up to 5 percent of the California spotted owl PACs on a national forest per year.
The LOP may be modified or waived to assess the effects of prescribed fire and mechanical treatments on breeding owls as a formal adaptive management study developed in cooperation with the Pacific Southwest Research Station.
In PACs located outside the defense zone of the wildland urban intermix zone: <i>Limit stand-altering activities to reducing surface and ladder fuels through prescribed fire treatments. In forested stands with overstory trees 11 inches dbh and greater, design prescribed fire treatments that have an average flame length of 4 feet or less. Prior to burning, conduct hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), within a 1- to 2-acre area surrounding known nest trees, as needed, to protect nest trees and trees in their immediate vicinity.</i>
In PACs located inside the defense zone of the wildland urban intermix zone: <i>Prohibit mechanical treatments within a 500-foot radius buffer around the California spotted owl activity center. Allow prescribed burning within the 500-foot radius buffer. Prior to burning, conduct hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), within a 1- to 2-acre area surrounding known nest trees, as needed, to protect nest trees and trees in their immediate vicinity. The remaining area of the PAC may be mechanically treated to achieve the fuels reduction outcomes described for the general forest land allocation.</i>
Evaluate proposals for new roads, trails, off-highway vehicle routes, and recreational and other developments for their potential to disturb nest sites. Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off-highway vehicle route, trail, and road uses (including road maintenance).
Establish a home range core area surrounding each territorial spotted owl activity center detected after 1986. Home range core area size is 600 acres on the Sequoia National Forest.
Use aerial photography to delineate California spotted owl home range core areas. Identify acreage for the entire core area on national forest lands. Delineate core areas to encompass the best available California spotted owl habitat in the closest proximity to the owl activity center. Select the best available contiguous habitat to incorporate: (1) two or more tree canopy layers; (2) trees in the dominant and co-dominant crown classes averaging 24 inches dbh or greater; and (3) in descending order of priority, CWHR classes 6, 5D, 5M, 4D and 4M and other stands with at least 50 percent tree canopy cover (including hardwoods). The acreage in the 300-acre PAC counts toward the total home range core area. Delineate core areas within 1.5 miles of the activity center.

Standard/Guideline
When activities are planned adjacent to non-national forest lands, delineate circular core areas around California spotted owl activity centers on non-national forest lands. Using the best available habitat as described above, designate and manage any part of the circular core area that lies on national forest lands as a California spotted owl home range core area.
Fuel treatment standards and guidelines for California spotted owl home range core areas are identical to those presented for old forest emphasis areas above, except for the wildland urban intermix.
<i>Northern Goshawk</i>
Delineate northern goshawk protected activity centers (PACs) surrounding all known and newly discovered breeding territories detected on National Forest System lands. Designate northern goshawk PACs based upon the latest documented nest site and location(s) of alternate nests. If the actual nest site is not located, designate the PAC based on the location of territorial adult birds or recently fledged juvenile goshawks during the fledgling dependency period.
Delineate PACs to: (1) include known and suspected nest stands and (2) encompass the best available 200 acres of forested habitat in the largest contiguous patches possible, based on aerial photography. Where suitable nesting habitat occurs in small patches, define PACs as multiple blocks in the largest best available patches within 0.5 miles of one another. Best available forested stands for PACs have the following characteristics: (1) trees in the dominant and co-dominant crown classes average 24 inches dbh or greater; (2) in westside conifer and eastside mixed-conifer forest types, stands have at least 70 percent tree canopy cover. Non-forest vegetation (such as brush and meadows) should not be counted as part of the 200 acres.
As additional nest location and habitat data become available, review boundaries of PACs and make adjustments, as necessary, to better include known and suspected nest stands and to encompass the best available 200 acres of forested habitat.
When activities are planned adjacent to non-national forest lands, check available databases for the presence of nearby northern goshawk activity centers on non-national forest lands. Delineate a 200-acre circular area centered on the activity center. Designate and manage any part of the circular 200-acre area that lies on national forest lands as a northern goshawk PAC.
Prior to undertaking vegetation treatments in suitable northern goshawk nesting habitat that is not within an existing California spotted owl or northern goshawk PAC, conduct surveys using Pacific Southwest Region survey protocols. Suitable northern goshawk nesting habitat is defined as follows: stands with an average tree size of 11 inches dbh or greater and at least 40 percent canopy cover.
When activities are planned within or adjacent to a PAC and the location of the nest site or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.
Maintain PACs regardless of northern goshawk occupancy status, unless habitat is rendered unsuitable by a catastrophic stand-replacing event and surveys conducted to protocol confirm non-occupancy.
Maintain a limited operating period (LOP), prohibiting activities within approximately ¼ mile of the nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand is unknown, either apply the LOP to a ¼-mile area surrounding the PAC or

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Standard/Guideline
<p>survey to determine the nest stand location. The LOP does not apply to existing road and trail use and maintenance or continuing recreation use, except where analysis of proposed projects or activities determines that either existing or proposed activities are likely to result in nest disturbance.</p>
<p>The LOP may be waived for individual projects or activities of limited scope and duration or when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a biological evaluation determines that a nest site will be shielded from planned activities by topographic features that minimize disturbance, the LOP buffer distance may be reduced.</p>
<p>The LOP may be waived, where necessary, to allow for early season prescribed burning in up to 5 percent of the northern goshawk PACs on a national forest per year.</p>
<p>Evaluate proposals for new roads, trails, off-highway vehicle routes, and recreational and other developments for their potential to disturb nest sites. Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off-highway vehicle route, trail, and road uses (including road maintenance).</p>
<p>In PACs located outside the defense zone of the wildland urban intermix zone: Limit stand-altering activities to reducing surface and ladder fuels through prescribed fire treatments. In forested stands with overstory trees 11 inches dbh and greater, design prescribed fire treatments that have an average flame length of 4 feet or less. Prior to burning, conduct hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), within a 1- to 2-acre area surrounding known nest trees, as needed, to protect nest trees and trees in their immediate vicinity.</p>
<p>In PACs located inside the defense zone of the wildland urban intermix zone: Prohibit mechanical treatments within a 500-foot radius buffer around nest trees. Allow prescribed burning within the 500-foot radius buffer. Prior to burning, conduct hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), within a 1- to 2-acre area surrounding known nest trees, as needed, to protect nest trees and trees in their immediate vicinity. The remaining area of the PAC may be mechanically treated to achieve the fuels reduction outcomes described for the general forest land allocation.</p>
<p><i>Great Gray Owl</i></p>
<p>Establish and maintain a protected activity center (PAC) that includes the forested area and adjacent meadow around all known great gray owl nest stands. Delineate at least 50 acres of the highest quality nesting habitat (CWHR types 6, 5D, and 5M) available in the forested area surrounding the nest. Also include the meadow or meadow complex that supports the prey base for nesting owls.</p>
<p>Conduct additional surveys to established protocols to follow up reliable sightings of great gray owls.</p>
<p>Apply a limited operating period (LOP), prohibiting vegetation management activities and road construction within ¼ mile of active great gray owl nest stands during the nesting period (typically March 1 to August 15). The LOP does not apply to: (1) existing road traffic and road maintenance, (2) trail uses, and (3) other recreational uses and activities, unless a biological evaluation documents that these activities will result in nest disturbance. The LOP may also be waived for projects of limited scope and duration.</p>

Standard/Guideline
Evaluate proposals for new roads, trails, off-highway vehicle routes, and recreational and other developments for their potential to disturb nest sites. Mitigate impacts where there is documented evidence of disturbance to the nest site from existing recreation, off-highway vehicle route, trail, and road uses (including road maintenance).
In meadow areas of great gray owl PACs, maintain herbaceous vegetation at a height commensurate with site capability and habitat needs of prey species. Follow regional guidance to determine potential prey species and associated habitat requirements at the project level.
<i>Wolverine and Sierra Nevada Red Fox</i>
Upon detection (photograph, track plate, or sighting verified by a wildlife biologist) of a wolverine or Sierra Nevada red fox, conduct an analysis to determine if activities within 5 miles of the detection have a potential to affect the species. For a 2-year period following the detection, restrict activities that are determined in the analysis to have an adverse impact from January 1 to June 30.
<i>Pacific Fisher</i>
Assess the impact of vegetation management on Pacific fisher habitat using models appropriate for the scale of the project.
Because the effects of prescribed fire on key components of fisher habitat are uncertain, give preference to mechanical treatments over prescribed fire. However, prescribed fire may be applied to achieve restoration and regeneration objectives for fire-adapted giant sequoia.
In areas outside the wildland urban intermix zone, manage each planning watershed to support fisher habitat requirements. Retain 60 percent of each 5,000- to 10,000-acre watershed in CWHR size class 4 (average dbh of overstory trees between 11 and 24 inches) or greater and canopy cover greater than or equal to 60 percent.
Prior to vegetation treatments, identify important wildlife structures, such as large diameter snags and coarse woody material within the treatment unit. For prescribed fire treatments, use firing patterns, fire lines around snags and large logs, and other techniques to minimize effects on snags and large logs. Evaluate the effectiveness of these mitigation measures after treatment.
Fisher den sites are 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available.
Protect fisher den site buffers from disturbance with a limited operating period (LOP) from March 1 through June 30 for all new projects as long as habitat remains suitable or until another regionally approved management strategy is implemented. The LOP may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.
Evaluate the appropriateness of LOPs for existing uses in fisher den site buffers during environmental analysis.

Standard/Guideline
Avoid fuel treatments in den site buffers to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the wildland urban intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels over 85 percent of the treatment unit to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning of piled debris is allowed. Prescribed fire may be used to treat fuels if no other reasonable alternative exists.
Evaluate proposals for new roads, trails, off-highway vehicle routes, and recreational and other developments for their potential to disturb den sites. Mitigate impacts where there is documented evidence of disturbance to the den site from existing recreation, off-highway vehicle route, trail, and road uses (including road maintenance).
<i>Marten</i>
Marten den sites are 100-acre buffers consisting of the highest quality habitat in a compact arrangement surrounding the den site. CWHR Types 6, 5D, 5M, 4D, and 4M in descending order of priority, based on availability, provide highest quality habitat for the marten.
Protect marten den site buffers from disturbance with a limited operating period (LOP) from May 1 through July 31 for all new projects as long as habitat remains suitable or until another regionally approved management strategy is implemented.
Evaluate the appropriateness of LOPs for existing uses in marten den site buffers during environmental analysis.
Avoid fuel treatments in marten den site buffers to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the wildland urban intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels over 85 percent of the treatment unit to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning of piled debris is allowed. Prescribed fire may be used to treat fuels if no other reasonable alternative exists.
Evaluate proposals for new roads, trails, off-highway vehicle routes, and recreational and other developments for their potential to disturb den sites. Mitigate impacts where there is documented evidence of disturbance to the den site from existing recreation, off-highway vehicle route, trail, and road uses (including road maintenance).
<i>Willow Flycatcher</i>
Evaluate proposals for new concentrated stock areas (for example, livestock handling and management facilities, pack stations, equestrian stations, and corrals) located within 5 miles of occupied willow flycatcher sites.
As part of landscape analysis, give priority to meadow restoration opportunities near or adjacent to known willow flycatcher sites.
To the extent possible, construct no new roads in potential willow flycatcher habitat. Potential willow flycatcher habitat includes: (1) occupied willow flycatcher habitat, (2) known willow flycatcher sites, (3) emphasis habitat [meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component], and (4) small, wet woody meadows (meadows less than 15 acres that have standing water on June 1 and a deciduous shrub component).
Continue a 4-year cycle for conducting willow flycatcher surveys in all five known willow flycatcher sites in the Monument.

Standard/Guideline
<p>In meadows with occupied willow flycatcher sites, allow only late-season grazing (after August 15) in the entire meadow.</p> <p>This standard and guideline may be waived if an interdisciplinary team has developed a site-specific meadow management strategy. This strategy is to be developed and implemented in partnership with the affected grazing permittee. The strategy objectives must focus on protecting the nest site and associated habitat during the breeding season and the long-term sustainability of suitable habitat at breeding sites. It may use a mix of management tools, including grazing systems, structural improvements, and other exclusion by management techniques to protect willow flycatcher habitat.</p>
<p>In willow flycatcher sites receiving late season grazing, monitor utilization annually using regional range analysis and planning guide. Monitor willow flycatcher habitat every 3 years using the following criteria: rooting depth cores for meadow condition, point intercepts for shrub foliar density, and strip transects for shrub recruitment and cover. Meadow condition assessments will be included in a GIS meadow coverage. If habitat conditions are not supporting the willow flycatcher or trend downward, modify or suspend grazing.</p>
<p>For historically occupied willow flycatcher sites, assess willow flycatcher habitat suitability within the meadow. If habitat is degraded, develop restoration objectives and take appropriate actions (such as physical restoration of hydrological components, limiting or re-directing grazing activity and so forth) to move the meadow toward desired conditions.</p>
<p>Evaluate site condition of historically occupied willow flycatcher sites. Those sites that no longer contain standing water on June 1 and a deciduous shrub component and cannot be reasonably restored may be removed from the willow flycatcher site database.</p> <p>As part of the project planning process, survey emphasis habitat within 5 miles of occupied willow flycatcher sites to determine willow flycatcher occupancy. Emphasis habitat is defined as meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component. Use established protocols to conduct these surveys. If these surveys determine willow flycatcher occupancy, add these to the database of occupied willow flycatcher sites and include them in the 4-year survey cycle of willow flycatcher sites described above.</p>
<p><i>Threatened, Endangered, and Sensitive Plants</i></p>
<p>Prohibit or mitigate ground-disturbing activities that negatively affect hydrologic processes that maintain water flow, water quality, or temperature critical to sustaining fen ecosystems and the plant species dependent on them. During project analysis, survey, map and protect fens from activities such as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining fens include, but are not limited to, presence of sphagnum moss (<i>Sphagnum spp.</i>), presence of mosses in the genus <i>Meesia</i>, or presence of sundew (<i>Drosera spp.</i>). Complete initial inventories of fens within active grazing allotments prior to re-issuing permits.</p>
<p>Conduct field surveys for threatened, endangered, proposed, and sensitive (TEPS) plant species early enough in the project planning process so that the project can be designed to conserve or enhance TEPS plants and their habitat. Conduct surveys according to procedures outlined in the Forest Service Handbook (FSH 2609.25.11). If additional field surveys are conducted as part of project implementation, document the survey results in the project file.</p>

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Standard/Guideline
<i>Invasive Nonnative Species</i>
Follow Forest Service Manual (FSM 2080) direction pertaining to integrated weed management when planning weed control projects.
Inform forest users, local agencies, special use permittees, groups, and organizations in communities near national forests about noxious weed prevention and management.
Work cooperatively with California and Nevada state agencies and individual counties (for example, cooperative weed management areas) to: (1) prevent the introduction and establishment of noxious weed infestations and (2) control existing infestations.
As part of project planning, conduct a noxious weed risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities. Refer to weed prevention practices in the Regional Noxious Weed Management Strategy to develop mitigation measures for high and moderate risk activities.
When prescribed in project-level noxious weed risk assessments, require off-road equipment and vehicles (both Forest Service and contracted) used for project implementation to be weed free. Refer to weed prevention practices in the Regional Noxious Weed Strategy.
Minimize weed spread by incorporating weed prevention and control measures into ongoing management or maintenance activities that involve ground disturbance or the possibility of spreading weeds. Refer to weed prevention practices in the Regional Noxious Weed Strategy.
Conduct follow-up inspections of ground-disturbing activities to ensure adherence to the Regional Noxious Weed Strategy.
Encourage use of certified weed free hay and straw. Cooperate with other agencies and the public in developing a certification program for weed free hay and straw. Phase in the program as certified weed free hay and straw becomes available. This standard and guideline applies to pack and saddle stock used by the public, livestock permittees, outfitter guide permittees, and local, state, and federal agencies.
Include weed prevention measures, as necessary, when amending or re-issuing permits (including, but not limited to, livestock grazing, special uses, and pack stock operator permits).
Include weed prevention measures and weed control treatments in mining plans of operation and reclamation plans. Refer to weed prevention practices in the Regional Noxious Weed Strategy. Monitor for weeds, as appropriate, for 2 years after project implementation (assuming no weed introductions have occurred).
Conduct a risk analysis for weed spread associated with burned area emergency rehabilitation (BAER) treatments. The BAER team is responsible for conducting this analysis. Monitor and treat weed infestations for 3 years after the fire.
During landscape analysis or project-level planning, consider restoring or revegetating degraded ecosystems to minimize the potential for noxious weed reinfestations. Adhere to regional native plant policies for revegetation (USDA 2008. FSM Chapter 2070).

Standard/Guideline
Consult with American Indians to determine priority areas for weed prevention and control where traditional gathering areas are threatened by weed infestations.
Complete noxious weed inventories, based on a regional protocol, within 3 years of the signing of the record of decision for the Sierra Nevada Forest Plan Amendment Project. Review and update these inventories on an annual basis.
As outlined in the Regional Noxious Weed Strategy, when new, small weed infestations are detected, emphasize eradication of these infestations while providing for the safety of field personnel.
Routinely monitor noxious weed control projects to determine success and to evaluate the need for follow-up treatments or different control methods. Monitor known weed infestations, as appropriate, to determine changes in weed population density and rate of spread.
Botanical Resources
Minimize or eliminate direct and indirect impacts on TESP plants unless management activities are designed to maintain or improve plant populations.
Prohibit or mitigate ground-disturbing activities that negatively affect hydrologic processes that maintain water flow, water quality, or temperature critical to sustaining fen ecosystems and the plant species dependent on them. During project analysis, survey, map and protect fens from activities such as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining fens include, but are not limited to, presence of sphagnum moss (<i>Sphagnum spp.</i>), presence of mosses in the genus <i>Meesia</i> , or presence of sundew (<i>Drosera spp.</i>). Complete initial inventories of fens within active grazing allotments prior to re-issuing permits.
Conduct field surveys for threatened, endangered, sensitive, and proposed (TESP) plant species early in the site-specific project planning process so TESP plants and their habitat can be conserved or enhanced. Conduct surveys according to procedures in the Forest Service Handbook. If additional field surveys are conducted as part of project implementation, document the survey results in the project file.
Ensure that all projects involving revegetation (planting or seeding) adhere to regional native plant policies (USDA 2008. FSM Chapter 2070).
RANGE
Under season-long grazing: For meadows in early seral status – limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height). For meadows in late seral status – limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height).
In meadow areas of great gray owl PACs, maintain herbaceous meadow vegetation at a height commensurate with site capability and habitat needs of prey species. Follow regional guidance to determine potential prey species and associated habitat requirements at the project level.

Standard/Guideline
Grazing utilization in annual grasslands will maintain a minimum of 60 percent cover. Where grasslands are in satisfactory condition and annual precipitation is greater than 10 inches, manage for 700 pounds residual dry matter (RDM) per acre. Where grasslands are in satisfactory condition and annual precipitation is less than 10 inches, manage for 400 pounds RDM per acre. Where grasslands are in unsatisfactory condition and annual precipitation is greater than 10 inches, manage for 1,000 pounds RDM per acre; manage for 700 pounds RDM per acre where grasslands are in unsatisfactory condition and precipitation is less than 10 inches. Adjust these standards, as needed, based on grassland condition.
Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs (including willow and aspen) and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. Herd sheep away from woody riparian vegetation at all times.
To protect hardwood regeneration in grazing allotments, allow livestock browse on no more than 20 percent of annual growth of hardwood seedlings and advanced regeneration. Alter grazing plans if hardwood regeneration and recruitment needs are not being met.
Where professional judgment and quantifiable measurements find that current practices are maintaining range in good to excellent condition, the grazing utilization standards above may be modified to allow for the Forest Service, in partnership with individual permittees, to rigorously test and evaluate alternative standards.
Evaluate proposals for new concentrated stock areas (for example, livestock handling and management facilities, pack stations, equestrian stations, and corrals) located within 5 miles of occupied willow flycatcher sites.
Cattle will be distributed in a manner consistent with moderate forage utilization within meadows. Plant height/weight ratios will be used to monitor the results (BMP 8.3).
Grazing will cease in time to permit re-growth sufficient to store carbohydrates for initial spring growth (as specified in individual allotment plans).
Meadows will be grazed to allowable use standards as determined by use of any applicable method described in the most current version of the Region 5 Rangeland Analysis and Planning Guide.
HYDROLOGICAL RESOURCES
<i>Riparian Conservation Areas (RCAs) and Critical Aquatic Refuges (CARs)</i>
Designate riparian conservation area (RCA) widths as described in the 2004 SNFPA ROD, Appendix A, Part B, page 42: <ul style="list-style-type: none"> Perennial Streams: 300 feet on each side of the stream, measured from the bank full edge of the stream. Seasonally Flowing Streams (includes intermittent and ephemeral streams): 150 feet on each side of the stream, measured from the bank full edge of the stream. Streams in Inner Gorge: top of inner gorge.

Standard/Guideline
<p>Special Aquatic Features (lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs) or Perennial Streams with Riparian Conditions extending more than 150 feet from edge of streambank or Seasonally Flowing streams with riparian conditions extending more than 50 feet from edge of streambank: 300 feet from edge of feature or riparian vegetation, whichever width is greater.</p> <p>Other hydrological or topographic depressions without a defined channel: RCA width and protection measures determined through project level analysis.</p> <p>RCA widths may be adjusted at the project level if a landscape analysis has been completed and a site-specific riparian conservation objective (RCO) analysis demonstrates a need for different widths.</p>
<p>Evaluate new proposed management activities within critical aquatic refuges (CARs) and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.</p>
<p>Identify existing uses and activities in CARs and RCAs during landscape analysis. At the time of permit re-issuance, evaluate and consider actions needed for consistency with RCOs.</p>
<p>As part of project-level analysis, conduct peer reviews for projects that propose ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR.</p>
<p><i>Riparian Conservation Objective 1</i></p>
<p>For waters designated as “water quality limited” (Clean Water Act Section 303(d)), implement appropriate state mandates for the waterbodies, such as total maximum daily load (TMDL) protocols.</p>
<p>Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.</p> <p>Maintain temperature at a no more than a daily average of 20°C on streams affected by management activities. Evaluate stream courses with special circumstances, such as those affected by hot springs or other geologic and geochemical features, on a site-by-site basis at the project level.</p> <p>Maintain average stream surface shade at ≥ 60 percent on streams affected by management activities. Assess meadow environments and streams with limited overhead vegetation on a site-by-site basis at the project level.</p> <p>Ensure that management activities do not adversely affect pH values necessary for local aquatic and riparian-dependent species as defined by the Central Valley Water Quality Board Basin Plan. Maintain pH values between 6.5 and 8.5 on streams affected by management activities. Evaluate water bodies that exhibit special conditions at the project level, including waters affected by hot springs in the presence of CO₂ springs or other geologic and geochemical features (such areas would be expected to yield pH values outside the range of state standards).</p>

Standard/Guideline
<p>Ensure that management activities do not adversely affect alkalinity values, which can affect pH values, necessary for local aquatic- and riparian-dependent species as defined by the Central Valley Water Quality Board Basin Plan. Maintain alkalinity values of no less than 10 mg/L. Site-specific differences could occur based on local geology and water chemistry. Evaluate values outside this range at the project level.</p>
<p>Limit pesticide applications to cases where project-level analysis indicates that pesticide applications are consistent with RCOs. Use local channel geometry curves to determine the location of flood prone areas. Do not apply pesticides, including gopher baiting, within the floodprone area of perennial or intermittent stream courses. If a project's objectives include treatment of riparian areas, evaluate conditions on a site-by-site basis at the project level.</p>
<p>Within 500 feet of known occupied sites for the California red-legged frog, foothill yellow-legged frog, or mountain yellow-legged frog, design pesticide applications to avoid adverse effects to individuals and their habitats.</p>
<p>Prohibit storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites and sites covered by a special use authorization. Prohibit refueling within RCAs and CARs unless there is no other alternative. Ensure that spill plans are reviewed and up-to-date.</p>
<p><i>Riparian Conservation Objective 2</i></p>
<p>Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions, where necessary, to restore connectivity.</p>
<p>Maintain and restore the hydrologic connectivity of meadows by identifying those at risk. Implement corrective actions, where necessary, to restore connectivity of meadows to their floodplain.</p>
<p>A stream condition inventory (SCI) may be used instead of proper functioning condition (PFC) to validate an existing PFC determination or existing meadow condition.</p>
<p>Perform a full hydrologic survey prior to restoration. Include a longitudinal profile and adequate cross-section surveys to determine design parameters. At a minimum, determine meadow pattern, profile, and dimensions for the impaired site and the design.</p>
<p>Design projects by a qualified specialist prior to implementation. A qualified specialist is one that has received training in river restoration and natural channel design. Have the design reviewed by a forest hydrologist prior to implementation.</p>
<p>Make sure all restoration is sustainable. Designs that require continued maintenance are not considered sustainable.</p>
<p>Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species. Locate water drafting sites to avoid adverse effects on stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.</p>

Standard/Guideline

Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.

Maintain width to depth ratios for A and E channels of values less than 14 on streams affected by management activities. Maintain width to depth ratios for B, C, and F channels of values greater than 10 on stream channels affected by management activities. Encourage G and F channels to trend towards width to depth ratios greater than 12.

Evaluate streams affected by management activities to detect shifts in mean particle size toward fine material in stable channel types (A, B, C, or E) to the extent that a change in channel type occurs. Mean particle size would be expected to change in impaired systems or following restoration activities. Evaluate stream courses with special circumstances on a site-by-site basis at the project level.

Manage for specific components of the Pfankuch channel and stream stability indices that might be affected by management activities. Evaluate special conditions at the project level:

Riparian Ecotype	Environmental Indicator			
	Vegetative Bank Protection	Bank Cutting	Bottom Deposition and Scour & Deposition	Bottom Size Distribution and % Stable Material
Naturally Stable Regen Channel Type: A1, A2, B1, B2, B3, C1, C2, F1, F2, G1, G2 <i>Restoration Not Required</i>	NA	NA	Low frequency of mid-channel bars and good pool to riffle ratio	NA
Stable Sensitive Regen Channel Type: B4, B5, B6, C3, C4, C5, C6, E3, E4, E5, E6 <i>Recover with Passive Restoration</i>	80 to 90 % ground cover with stable continuous root mass	Less than or equal to 1 foot of exposed bank cuts affecting less than or equal to 20% of the channel	Little or no sand bar development with 0 to 5% of the bottom affected by bar deposition	NA
Unstable-Sensitive Regen Channel Type: G2, G3, G4, G5, G6, F3, F4, F5, F6, and those D3, D4, D5, D6 in unexpected geomorphic settings. <i>Recover with Active Restoration</i>	Greater than or equal to 70 % ground cover with stable continuous root mass	Less than or equal to 1 foot of exposed bank cuts affecting less than or equal to 30% of the channel	Low frequency of mid channel bar development, Improved pool to riffle ratio, with 5 to 30% deposition behind obstructions	Slight size distribution shift between 50-80% stable material
Naturally Unstable Regen Channel Type: A3, A4, A5, A6 (Landslide and Debris slide Terrain) <i>Impractical to Restore</i>	NA	NA	NA	NA

Standard/Guideline
For stable streams (A, B, C, or E), maintain or improve the channel, as necessary, based on the Pfankuch channel and stream stability indices. Take action to maintain or improve stream sites based on successional stage shifts away from stable conditions. For impaired stream reaches (G, F, or D), successional stage shifts from the impaired stream reach would show a trend toward an unimpaired condition.
Prevent disturbance to streambanks and natural lake and pond shorelines caused by management activities and resource use (such as livestock and dispersed recreation) from exceeding 20 percent of a stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under special use permits, or roads.
In stream reaches occupied by, or identified as “essential habitat” in the conservation assessment for, the Lahontan and Paiute cutthroat trout and the Little Kern golden trout, limit streambank disturbance from livestock to 10 percent of the occupied or “essential habitat” stream reach (conservation assessments are described in the 2004 SNFPA ROD, page 10; see http://www.tucalifornia.org/cgtic/GTCAssessmnt&Strategy9-04.pdf). Cooperate with state and federal agencies to develop streambank disturbance standards for threatened, endangered, and sensitive species. Use the regional streambank assessment protocol. Implement corrective action where disturbance limits have been exceeded.
Maintain width to depth ratios for A and E channels of values less than 14 on streams affected by management activities. Maintain width to depth ratios for B, C, and F channels of values greater than 10 on streams affected by management activities. Encourage G channels to trend towards width to depth ratios greater than 12.
At either the landscape or project level, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If conditions are outside the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem.
Cooperate with federal, tribal, state, and local governments to secure in-stream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat. Maintain in-stream flows to protect aquatic systems to which species are uniquely adapted. Minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species.
For exempt hydroelectric facilities on national forest lands, ensure that special use permit language provides adequate in-stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.
<i>Riparian Conservation Objective 3</i>
Determine if the level of coarse large woody debris is within the range of natural variability in terms of frequency and distribution and is sufficient to sustain stream channel physical complexity and stability. Ensure that proposed management activities move conditions toward the range of natural variability for coarse large woody debris.

Standard/Guideline
<p>Maintain woody material in and adjacent to stream courses. Where fire is responsible for removal of woody material, replace at levels associated with pre-fire conditions, if possible. Evaluate the amount of wood necessary for maintenance of stream stability, sediment reduction, and aquatic species habitat.</p>
<p><i>Riparian Conservation Objective 4</i></p>
<p>Within CARs, in occupied habitat or “essential habitat” as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.</p>
<p>Use screening devices for water drafting pumps (fire suppression activities are exempt during initial attack). Use pumps with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses, and tadpoles.</p>
<p>Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining mitigation measures, weigh the potential harm of mitigation measures (e.g., firelines) against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances when fire suppression or fuel management actions could be damaging to habitat or the long-term function of a riparian community.</p>
<p>Post-wildfire management activities in RCAs and CARs should emphasize enhancing native vegetation cover, stabilizing channels by non-structural means, minimizing adverse effects from the existing road network, and carrying out activities identified in landscape analyses. Post-wildfire operations shall minimize the exposure of bare soil.</p>
<p>Allow hazard tree removal within RCAs or CARs if it is clearly needed for ecological restoration and maintenance or public safety. Allow mechanical ground-disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs and it is clearly needed for ecological restoration and maintenance or public safety. Utilize low-ground-pressure equipment, helicopters, over-the-snow logging, or other non-ground-disturbing actions off of existing roads when needed to achieve RCOs. Ensure that existing roads, landings, and skid trails meet best management practices (BMPs). Minimize the construction of new skid trails or roads into RCAs for access for fuel treatments, salvage harvest, commercial fuelwood cutting, or hazard tree removal.</p>
<p>As appropriate, assess and document aquatic conditions following the regional stream condition inventory protocol prior to implementing ground-disturbing activities within suitable habitat for California red-legged frogs, foothill yellow-legged frogs, and mountain yellow-legged frogs.</p>
<p>Maintain average stream surface shade at or above 60 percent on streams affected by management activities. Assess meadow environments and other streams with limited overhead vegetation for site-specific projects.</p>
<p>Maintain width to depth ratios for A and E channels of values less than 14 on streams affected by management activities. Maintain width to depth ratios for B, C, and F channels of values greater than 10 on streams affected by management activities. Encourage G channels to trend towards width to depth ratios greater than 12.</p>

Standard/Guideline
<p>Evaluate streams affected by management activities to detect shifts in mean particle size toward fine material in stable channel types (A, B, C, or E) to the extent that a change in channel type occurs. Mean particle size would be expected to change in impaired systems or following restoration activities. Evaluate stream courses with special circumstances on a site-by-site basis at the project level.</p> <p>Maintain 85 percent of any waterbodies affected by management activities at no less than very good water quality based on the Hilsenhoff biotic index or similar indices. Evaluate waterbodies outside of this range for site-specific impacts. Indices would be less than ≤ 4.50 on Hilsenhoff biotic index or indicate very good water quality with similar indices. A biotic index or other index of this value should indicate no apparent to possible slight organic pollution. Evaluate waterbodies outside of this range for site-specific projects.</p> <p>Manage for specific components of the Pfankuch channel and stream stability indices that might be affected by management activities. Evaluate special conditions at the project level (see table above).</p>
<p>During fire suppression activities, consider impacts to aquatic- and riparian-dependent resources. Where possible, locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of RCAs or CARs. During pre-suppression planning, include guidelines for suppression activities that avoid potential adverse effects to aquatic- and riparian-dependent species.</p>
<p>Identify roads, trails, staging areas, developed recreation sites, dispersed campgrounds, areas under special use permits or grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic- and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines.</p>
<p><i>Riparian Conservation Objective 5</i></p>
<p>Assess the hydrologic function of meadow habitats and other special aquatic features during site-specific range management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition (PFC), as defined in the following technical reports (or their successor publications): (1) Process for Assessing PFC, TR 1737-9 (1993); (2) PFC for Lotic Areas, USDI TR 1737-15 (1998); (3) PFC for Lentic Riparian-Wetland Areas, USDI TR 1737-11 (1994); and (4) Assessing Proper Functioning Condition for Fen Areas in the Sierra Nevada and Southern Cascade Ranges in California: A User Guide, USDA Forest Service, R5-TP-028 (April 2009).</p> <p>Assess the hydrologic function of at-risk meadow habitats. Ensure that characteristics are, at a minimum, at PFC as defined in the Process for Assessing PFC, TR 1737-9 (1993); PFC for Lotic Areas, USDI TR 1737-15 (1998); or PFC for Lentic Riparian-Wetland Areas, USDI TR 1737-16 (Rev. 2003).</p>
<p>Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, the presence of sphagnum moss (<i>Sphagnum spp.</i>), mosses belonging to the genus <i>Meessia</i>, or sundew (<i>Drosera spp.</i>). Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.</p>

Standard/Guideline
<p>Maintain temperature at a daily average of no more than 20°C on streams affected by management activities. Evaluate stream courses with special circumstances or conditions, such as those affected by hot springs, for site-specific projects.</p>
<p>Locate new facilities for gathering livestock and pack stock outside of meadows and RCAs. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in RCAs with RCOs.</p>
<p>Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use regional ecological score cards and range plant list in regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit geographic information system (GIS) database.</p>
<p>Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status.</p>
<p>Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from herbaceous vegetation to woody riparian vegetation.</p>
<p><i>Riparian Conservation Objective 6</i></p>
<p>Recommend restoration practices in: (1) areas with compaction higher than that allowed in soil quality standards, (2) areas with lowered water tables, or (3) areas with either active downcutting or historic gullies. Identify other management activities (e.g., road building, recreational use, grazing, and fuels reduction) that may be contributing to the observed degradation.</p>
<p>Maintain width to depth ratios for A and E channels of values less than 14 on streams affected by management activities. Maintain width to depth ratios for B, C, and F channels of values greater than 10 on streams affected by management activities. Encourage G channels to trend towards width to depths greater than 12.</p>
<p>For stable streams (A, B, C, or E), maintain or improve the channel as necessary based on stability indices. Take action to maintain or improve stream sites based on successional stage shifts away from stable conditions. For impaired stream reaches (G, F, or D), successional stage shifts from the impaired stream reach would show a trend toward an unimpaired condition.</p>
<p><i>Streamside Management Zones</i></p>
<p>Determine streamside management zone (SMZ) widths. Field conditions, including stream type and project objectives, should dictate the streamside management zone width at the project level.</p>

Standard/Guideline						
Stream Class	SMZ Width by % Slope					Stream Order
	<30%	>30%	>40%	>50%	>70%	
Meadows	100	N/A	N/A	N/A	N/A	-
Seeps, Springs, Bogs	100	N/A	N/A	N/A	N/A	-
I	100	150	200	250	1.5x distance to slope break	4+
II	100	100	150	200		3 - 4
III	50	100	100	150		2 - 3
IV	50	50	75	100		1 - 2
GROUNDWATER						
Establish a minimum distance from a connected river, stream, wetland, or other groundwater-dependent ecosystem from which a well may be sited.						
Establish minimum limits to which water levels can be drawn down at a specified distance from a groundwater-dependent ecosystem.						
Conduct appropriate analyses when evaluating proposals and applications for water wells or other activities that propose to test, study, monitor, modify, remediate, withdraw, or inject ground water on NFS lands (see Technical Guide to Managing Ground Water Resources, FS-881, May 2007).						
GEOLOGICAL RESOURCES						
Protect cave entrances from all activities, including prescribed fire, mechanical treatments, and recreation.						
Evaluate proposed septic systems to determine their potential to contaminate groundwater that moves through cave systems.						
HUMAN USES⁽¹⁾						
Cross-country travel may be restricted to prevent resource damage.						
Manage dispersed recreation activities by location and period of use based on wildlife needs (e.g., excluding incompatible use from key areas during fawning and nesting).						
Encourage energy development, when sources are available, as long as the development is consistent with other standards and guidelines.						
Energy						
Encourage energy development, when sources are available, as long as the development is consistent with other standards and guidelines.						

Standard/Guideline
Scenery
Design management activities to meet and exceed when practical the specified Scenic Integrity Objective (SIO).
Meet scenic integrity objectives with the following exceptions: (1) accept occasional short-term departure from adopted minimum scenic integrity that will lead to long-term desired scenic character if disclosed in a site-specific NEPA decision, and (2) temporary drops of one minimum scenic integrity level may be made during and immediately following project implementation providing they do not exceed 3 years in duration.
Include mitigation measures for activities that alter the landscape beyond the adopted minimum scenic stability.
CULTURAL RESOURCES
Protect cultural resources from the effects of Forest Service or Forest Service-authorized undertakings, unauthorized use, and environmental damage by complying with the National Historic Preservation Act (NHPA) and its implementing regulations in 36 CFR 800. This includes completing cultural resource inventories prior to any action that may effect cultural resources. Develop follow-up actions for evaluation of sites for the National Register of Historic Places (NRHP), protection, and/or interpretation as result of inventory findings.
Comply with Section 110 of the National Historic Preservation Act (NHPA) for non-project inventory, including: <ol style="list-style-type: none"> 1. Conduct inventories as necessary, occasionally doing non-project-specific surveys. 2. Complete archaeological reconnaissance reports and site records to allow evaluation of site significance. 3. Release those site locations declared not significant for other management activities. 4. Approach systematically the reduction of the existing forest backlog of sites to be evaluated. Those types of sites deemed more potentially critical in the forest overview will receive priority.
Fully integrate opportunities for preservation, protection, and utilization of cultural resources into land use planning and decisions through: <ol style="list-style-type: none"> 1. Assessing potential effects on heritage resources on a project-specific basis. 2. Avoiding or mitigating effects on sites eligible for the National Register or other significant sites. 3. Follow-up monitoring to assess the effectiveness of management procedures. 4. Post and sign (e.g., tractors prohibited, Antiquities Act) selected cultural resource sites where such signing will not endanger the sites. 5. Monitor number of sites for protection visits on revolving basis, and prioritize according to resource significance and vulnerability as developed in the forest overview. 6. Develop and provide interpretive brochures for selected sites.
Conduct on-the-ground interpretation at a number of sites that exist at or near developed sites, where high level of use or exposure is possible (i.e., properties adjacent to campgrounds, historic logging activities in the vicinity of campgrounds).

Standard/Guideline
Regularly consult with Native Americans as interested parties on proposed undertakings.
Establish and maintain effective relationships with federal, state, tribal, and local governments and historic preservation organizations at all levels of the agency to ensure protection of cultural resources and to promote heritage program efficiencies (FSM 2300 Chapter 2360.3).
TRANSPORTATION SYSTEM
To protect watershed resources, meet the following standards for road construction, road reconstruction, and road relocation: (1) design new stream crossings and replacement stream crossings for at least the 100-year flood, including bedload and debris; (2) design stream crossings to minimize the diversion of streamflow out of the channel and down the road in the event of a crossing failure; (3) design stream crossings to minimize disruption of natural hydrologic flow paths, including minimizing diversion of streamflow and interception of surface and subsurface water; (4) avoid wetlands or minimize effects to natural flow patterns in wetlands; and (5) avoid road construction in meadows.
Maintain developed trailhead access roads and primary access routes to developed facilities at a minimum of Maintenance Level 3.
Construct and maintain trail bridges consistent with wilderness uses.
Use seasonal closure as a tool to protect key wildlife values, environmental resources, and road investment.
Limit motorized vehicles to designated roads.
Limit non-motorized mechanized vehicles (such as bicycles) to designated roads and trails.
Limit over-snow vehicles to designated roads.
SPECIAL AREAS
<i>Kings River Special Management Area (KRSMA)</i>
Arch sites: Sites are maintained in a condition that will permit an evaluation of significance and, if appropriate, listing in the National Register of Historic Places. Significant sites are protected to permit future data recovery (KRSMA MP p. 53).
Suitable fish habitat: R-5 minimum management requirements, FLMP guidelines, riparian standards and guidelines, and best management practices are being applied in a way that supports the objectives established in the SMA and WSR EIS and Plan; and project-specific NEPA documents (KRSMA MP p. 53).
Management of SMA and WSR: Periodic reviews to evaluate the effectiveness of management directions and monitoring plan indicate that the documents reflect the current environmental social and administrative needs in the area (KRSMA MP p. 53).
Transportation system: The transportation system’s effectiveness meets the opportunity class and zone objectives. Project-specific NEPA documents and the forest trails plan reflect the objective in the SMA and WSR EIS and Plan (KRSMA MP p. 54).

Standard/Guideline
Water quality: Implementation of BMPs and project design do not permit a decrease in water quality (KRSMA MP p. 54)
TES species: Project plans and prescriptions are implemented as designed, consistent with the biological evaluations (KRSMA MP p. 54).
<i>Standards for South Fork Zone:</i>
Public use areas consistency with opportunity class III: Dispersed recreation impacts are temporary, and are commonly only fire rings in the turnouts along Highway 180. Impacts from recreational activities may be evident to the visitor. Use areas are generally >50 feet apart and are fewer than two per 320 acres (KRSMA MP p. 57).
Management of Highway 180, Boyden Cavern, and Grizzly Falls: Adequate parking is provided, sanitation facilities meet current needs, and all facilities complement the area’s natural scenic resources (KRSMA MP p. 57).
Zone aside from Highway 180, Boyden Cavern, and Grizzly Falls: A low probability of meeting other parties or forest users during low-use periods (<50 percent chance), a possible encounter with other recreationists during the spring (25 to 50 percent chance) (KRSMA MP p. 57).
Management focus on river-based and unique opportunities: all resource conditions, social conditions, and management activities reflect the characteristics described for opportunity class II and the objectives for this zone (KRSMA MP p. 57).
<i>Standards for Verplank Zone:</i>
Campsite consistency with opportunity class II: Campsites are small and temporary. Some facilities are provided. Impacts from recreational activities may be evident to the visitor. Campsites are >50 feet apart and are fewer than five per 320 acres (KRSMA MP p. 58).
Few encounters between travelers: A low probability of meeting other parties or forest users during low-use periods (<50 percent chance), a possible encounter with other recreationists during the spring (25 to 50 percent chance) (KRSMA MP p. 58).
Scope of OHV, grazing, and vegetation management: Use of forest resources and OHV use of designated routes is consistent with the long-term protection of the area’s natural, archaeological, and scenic resources (KRSMA MP p. 58).
Management focus to balance recreation with maintaining natural environment: All resource conditions, social conditions, and management activities reflect the characteristics described for opportunity class II and the objectives for this zone (KRSMA MP p. 58).
<i>Standards for Converse Zone:</i>
Campsite consistency with opportunity class I: Campsites are small and temporary. No facilities are provided. Impacts are not evident to the visitor. Campsites are >100 feet apart and are fewer than two per 320 acres (KRSMA MP p. 59).

Appendix F-Standards and Guidelines

Standard/Guideline
Human developments: No large developments are permitted, and small developments are temporary or subordinate to the environmental setting (KRSMA MP p. 59).
Few encounters between travelers: Extremely low probability of meeting other parties or forest users during low-use periods (<25 percent chance), a possible encounter with other recreationists on the National Recreation Trail and the Yucca Point Trail (25 to 50 percent chance) (KRSMA MP p. 59).
Management emphasizes maintaining natural environment: All resource conditions, social conditions and management activities reflect the characteristics described for opportunity class I and the objectives for this zone (KRSMA MP p. 59).
<i>Standards for Boole Zone:</i>
Campsite consistency with opportunity class II: Campsites are small and temporary. Some facilities may be provided. Impacts from recreational activities may be evident to the visitor. Campsites are >50 feet apart and are fewer than five per 320 acres (KRSMA MP p. 60).
Few encounters between travelers: A low probability of meeting other parties or forest users during low-use periods (<50 percent chance), a possible encounter with other recreationists along the Boole Tree Trail (25 to 50 percent chance) (KRSMA MP p. 60).
Scope of OHV, grazing, and vegetation management: Use of forest resources and OHV use of designated routes is consistent with the long-term protection of the area's natural, archaeological, and scenic resources (KRSMA MP p. 60).
<i>Standards for Kings River Corridor Zone (Portion Within the Monument):</i>
Dead and down material: Ten tons per acre of dead and down material should be available for wildlife and recreational campfire building (KRSMA MP p. 61).
Human developments: Not more than five developments per a 320-acre area. Developments include structures and facilities for recreation and non-recreation activities (KRSMA MP p. 61).
Vandalism impacts to visuals: No more than three new occurrences of graffiti vandalism or defacing of natural features located anywhere within the zone per year (KRSMA MP p. 61).
Dispersed campsites: No more than five sites within a quarter-mile length of the river corridor. Dispersed site locations should not impact the experience of other campers (KRSMA MP p. 61).
Group camping (encourage use outside SMA/WSR corridor): No more than five declined requests for group camping. The existing accommodations for group camping should meet user needs (KRSMA MP p. 62).
Few encounters between travelers: Fifty percent probability of no more than five encounters with other parties (KRSMA MP p. 62).
Conflicts between users: No more than five reported or otherwise documented conflicts between different types of users (e.g. anglers and rafters) (KRSMA MP p. 62).

Standard/Guideline
Public safety: No more than four accidents per year within the zone, with attention to rafting incidents. Accidents are incidents where there is either an incident report filed by a forest officer or a forest visitor requires medical attention (KRSMA MP p. 62).
Public parking that protects resource and provides public safety: Public parking space should be provided at a level that protects the resource and provides for public safety and comfort. Visitors should find adequate parking at trailheads, raft put-ins, and raft take-outs.
Congestion at launch site: Rafting groups do not wait longer than 60 minutes to launch (KRSMA MP p. 63).
Groups encountered on river per day: Maximum of 17 parties per day (KRSMA MP p. 63).
<i>Research Natural Areas</i>
Protect and manage South Mountaineer Creek, a potential research natural area, as if it was already established, pending its final establishment or release by the Chief of the Forest Service.
<i>Botanical Areas</i>
The Sequoia National Forest shall manage this area [Freeman Creek Grove] as a botanical area.
There shall be no logging and no motorized vehicle use by the public anywhere in the Freeman Creek grove management area as shown on the map Exhibit E.

1. Including Recreation, Scenery, and Socioeconomics.

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Desired Conditions

Safe and fully maintained roads and trails that minimize adverse resource impacts provide public and administrative access to National Forest System lands and facilities within the Monument. Appropriate access is provided to the objects of interest for their proper care, protection, and management.

The Proclamation states:

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. Prior to the issuance of the management plan, existing roads and trails may be closed or altered to protect the objects of interest in the monument, and motorized vehicle use will be permitted on trails until but not after December 31, 2000 (Clinton 2000, p. 24098).

Current management of the Monument complies with the proclamation direction to limit motorized vehicles to designated roads, with the exception of Trails 27E04 and 27E05 in the Kings River Special Management Area KRSMA. Designated road maps were published in 2001 and with the 2003 Monument Plan Final EIS, and motor vehicle use maps (MVUMs) were published in 2008 to reflect this management of the transportation system in the Monument (the two MVUMs covering the Monument are included in the Map Packet for this draft Monument Plan).

Strategies and Objectives for the Transportation System

The transportation system will provide high levels of access for public and management use, consistent with protection and restoration of the Monument. New roads will be constructed to meet management goals such as to provide access to new recreation facilities, to provide access to the objects of interest, to provide access to new administrative sites, to replace roads that have unacceptable resource impacts, or to provide access for scientific research.

Strategies

1. Size and maintain the road and trail system to limit impacts on resources and promote aquatic organism passage where needed.
2. Convert to trails or decommission roads not needed to meet management objectives so that natural drainage patterns are restored and natural vegetation will grow back over time.
3. Maintain roads with effective road drainage and erosion controls to conserve existing soil and reduce effects to adjacent riparian and aquatic systems.
4. Complete 6th-field watershed analyses and review the transportation system in the Monument to determine the future status of roads, including changes in status, decommissioning, or conversion to trails.

5. Consult with local tribal governments and Native Americans to provide transportation and access needs, including culturally important sites and resources for use by Native Americans.
6. Coordinate transportation planning, management, and road decommissioning with Sequoia and Kings Canyon National Parks; other federal, state, and county agencies; and the Tule River Indian Tribe, to reduce traffic congestion and safety hazards, especially along major travelways.
7. Partner with state and local agencies to maintain roads for four-season use where appropriate.
8. Provide appropriate parking facilities.
9. Base proposals for new roads on the need to provide access to recreation opportunities, other public use, or management activities, as appropriate.

Objectives

1. Within 2 years, complete Subpart A of Travel Management for the Monument.
2. Within 2 years, complete a Monument-wide watershed improvement needs inventory (WINI) to identify adverse impacts on watersheds from roads and trails.
3. Within 5 years, publish an updated motor vehicle use maps (MVUM) for the Monument ranger districts.
4. Within 10 years, establish a sustainable and desirable off-highway vehicle (OHV) route system (on the existing road system) that reflects the updated MVUM, including loop opportunities where feasible and appropriate.

Current Transportation System

Road System

The road system in the Monument consists of approximately 822 miles of classified roads, ranging from single-lane dirt roads to paved-double lane roads. The miles of road by their assigned maintenance level (ML) is shown in the following table. These data are derived from the forest corporate tabular database for infrastructure (INFRA). The *objective* ML is the desired future condition of the road based on potential future access needs and maintenance capabilities. The *operational* ML is the current maintenance level assigned to a road based on access needs and maintenance capabilities. Both maintenance levels may change in the future.

Table 33 Miles of Roads in the Monument by Maintenance Level

Maintenance Levels (ML)	Objective ML	Operational ML
1 (closed to motorized traffic)	313	71
2 (managed for high-clearance vehicles)	255	515
3 (low standard, passenger vehicle traffic)	134	127
4 (moderate standard, passenger vehicle traffic)	69	72
5 (two-lane paved, passenger vehicle traffic)	51	37
Total Miles	822	822

Each road has a functional designation as an arterial, collector, or local road, as shown in the following table (data from the INFRA database). Arterial roads are the main roads that traverse the forest and connect to major state highways or county roads. They are paved and designed for higher-speed travel. Collector roads connect the arterial roads to local roads and balance access needs with construction and maintenance costs. Local roads at the ends of collector roads serve a small land area and tend to be maintained at a low standard. The difference between objective and operational functional classes is similar to the operational and objective maintenance levels discussed above.

Table 34 Miles of Road by Functional Class

Functional Class	Objective Class	Operational Class
Arterial	120	109
Collector	134	127
Local	568	586
Total miles	822	822

Approximately 150 miles of road are designated for OHV use in the northern portion of the Monument. The southern portion has OHV recreation opportunities on approximately 300 miles of unpaved, designated roads.

The road system in the Monument that is currently designated for motorized use is shown on the MVUMs for the Hume Lake and Western Divide Ranger Districts (see the map packet). These maps are published as required by the Travel Management Rule; they display the entire districts, including land outside the Monument, because they cannot be published for areas smaller than an administrative unit.

Trail System

The trail system within the Monument currently consists of approximately 196 miles of system trails, including about 12 miles of the Summit National Recreation Trail. Twelve developed trailheads offer parking, information, and restrooms; and 10 other trailheads provide only parking for trail users.

Some trail facilities are located within the current administrative boundaries of giant sequoia groves. Two interpretive trails, the Indian Basin Trail and the Trail of 100 Giants (about 23 miles combined) and seven trailheads (Chicago Stump, Boole Tree, Cherry Gap, Evans, Little Boulder, Freeman Creek, and Needles) are located in groves. OHV

use is still allowed on about 3.8 miles of trail in the Kings River Special Management Area, which was designated under Public Law 100-150. This public law takes precedence over the proclamation (Clinton 2000). This motorized use is shown on the MVUM for the Hume Lake Ranger District (see the map packet).

Snowmobile Use

In the northern portion of the Monument, 39 miles of marked routes are available for over-snow vehicles, 21 of which are groomed; an additional 50 miles of unmarked roadbeds are open to snowmobiles. These routes offer opportunities for all levels of riding experience, from easy, groomed routes to very difficult, deep-powder routes. Facilities include four winter trailheads with parking, two of which have restrooms. Montecito Lake Resort, authorized under special use permit, offers 31 miles of groomed trails used exclusively by cross-country skiers.

The southern portion of the Monument features approximately 114 miles of primary groomed and marked roads, 68 miles of secondary groomed and marked roads, a warming hut located north of the junction of State Highway 190 and the Western Divide Highway, and three trailheads. Cross-country skiing commonly occurs along the groomed snowmobile routes with some adventure trail-breaking occurring off-road. Volunteers commonly mark approximately four miles of ungroomed ski trails in the Quaking Aspen/Ponderosa and Parker Pass areas.

Transportation System Management

Maintenance Strategy

Currently available funding is insufficient to fully maintain the existing road system. The following strategies will be used to prioritize needed maintenance and to improve the ability to complete all needed maintenance:

1. Public safety and natural resource protection would be the highest priorities for maintenance.
2. Maintenance Levels 3 through 5 roads would be higher priority for maintenance than Maintenance Levels 1 and 2 roads due to the higher potential loss of investment, generally higher traffic volumes and speeds, and resulting safety risks and liabilities.
3. Submit appropriate projects for maintenance, reconstruction, or rehabilitation funding when opportunities are available (agency funding, state grants, partnerships, and other sources).
4. Seek additional sources of funding to reduce the maintenance backlog and keep the road system in acceptable condition. Potential sources include Federal Highway Trust Fund funding through the national transportation bill and appropriated funding specifically for specially designated areas such as monuments.
5. Partner with user groups, permittees, and other entities to accomplish needed road maintenance.
6. Consider reducing the assigned maintenance level of individual roads based on access needs, resource risks, and costs to improve the ability to maintain the entire road system.

7. Consider closing roads not currently needed for resource management activities or significant recreation access, to reduce maintenance costs while retaining the road prism for expected future access needs.
8. Consider opportunities to reduce the size of the road system by decommissioning individual roads or converting them to non-motorized trails.

Road System Changes

Changes to the road system may include construction of new roads, removal of roads from the system through decommissioning, and conversion of roads to trails. New roads could be constructed to meet management goals to provide access to new recreation facilities or opportunities; to provide access to the objects of interest; to provide access to administrative sites (ranger stations, work centers, etc.); to replace roads producing unacceptable resource impacts; or to provide access for scientific research.

The priority for road retention emphasizes retaining road access for public use and for management activities similar to current access levels. For public access, emphasis should be on maintaining roads to recreation sites, concentrated use areas used for dispersed recreation, sites authorized by special use permits, and private land. A road system should be available for recreation driving and off-highway vehicle use. For management access, emphasis should be on ecosystem restoration and fire protection.

Roads with high risks for causing unacceptable impacts to natural resources should be repaired, relocated, closed, or decommissioned to reduce impacts. Road decommissioning should focus on roads producing unacceptable impacts where repair or relocation are unreasonable, roads where the potential for resource impacts and high maintenance costs outweigh the need for access for resource management or recreation, and any unauthorized motorized routes remaining after the road system was designated in 2000, as required by the proclamation.

Changes to the road system will be made through the travel analysis process and site-specific NEPA analysis. The objective of travel analysis is to provide decisionmakers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions. Travel analysis is required to inform decisions related to identification of the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands; and to inform decisions related to the designation of roads for motor vehicle use.

An analysis of the entire designated road system in the Monument was completed in 2003 following the roads analysis process (RAP), which was agency direction at the time. The process was very similar to the current transportation analysis direction, except that it was expanded to include motorized trails and areas. Since motorized travel is limited to designated roads in the Monument, the RAP completed in 2003 is still a valid tool to help inform decisions about the road system.

In the completed RAP, evaluation criteria were created based on specific topic areas described in the FS-643 miscellaneous report (agency direction at the time). These topics included ecosystem functions and processes; aquatic, riparian zones, and water quality; terrestrial wildlife; economics; minerals and range management, water production, and special forest products; special use permits; general public transportation; administrative uses; protection; road-related and unroaded recreation; passive use values; social issues; and civil rights and environmental justice. The same criteria would be appropriate to evaluate the need for future changes in the trail system.

The evaluation criteria developed for the Monument RAP were:

- Aquatic risk factors
 1. Geologic hazard
 2. Stream crossing density
 3. Riparian zone – stream proximity

- Terrestrial risk factors
 1. Heritage resources
 2. Road density effects on wildlife habitat
 3. Scenic resources

- Access factors
 1. Private/non-recreation public access
 2. Public access (recreation)
 3. Administrative site access
 4. Vegetation management
 5. Fire protection

- Social factors
 1. Lifestyle, attitudes, beliefs and values
 2. Economics

The aquatic and terrestrial risk factors were combined into a consolidated “risk equivalent” with a rating of low, medium, or high. The access and social factors were also combined into a consolidated “need equivalent” with a rating of low, medium, or high. This resulted in a combined potential risk versus need equivalent rating for each road in the system. The nine potential combined ratings are displayed in the following table.

Table 35 Table Potential Risk and Need Equivalent Combination Ratings

Risk Equivalent	Need Equivalent	
Low/low	Low/moderate	Low/high
Moderate/low	Moderate/moderate	Moderate/high
High/low	High/moderate	High/high

Based on the combined rating, roads could be considered for the following changes:

1. Roads rarely used by the public or Forest Service (i.e., low need equivalent) and with high risk equivalent could be considered for decommissioning.
2. Roads rarely used by the public or Forest Service (i.e., low need equivalent) and with low resource risk equivalent could be considered for decommissioning or storm-proofing.
3. Roads accessing vegetation that has reached desired condition may be evaluated for decommissioning or storm-proofing.
4. Roads frequently used by the public or Forest Service (i.e., moderate to high need equivalent) with moderate to high resource risk equivalent could be evaluated to relocate portions of the roads away from resource risks or create alternate access routes with fewer resource risks.
5. Where two or more roads access the same area, traffic could be directed onto the more stable road and the less stable road(s) could be decommissioned.

The complete RAP can be found in Appendix A of the Transportation Report and listing of roads is in Appendix B of the Transportation Report, which is available in the project file at the Supervisor's Office of the Sequoia National Forest.

Some topic areas are best evaluated at the more site-specific scale than at the forest or monument-wide scale. Some data can become diluted at the broad scale so that areas appear to have low impacts, whereas negative impacts can be seen and evaluated more readily at the more site-specific scale. The Monument RAP was conducted at a broad, forest scale to identify overall trends. Travel analysis can be conducted at multiple scales as required to adequately inform proposed actions.

When changes are proposed to the road system to further the purposes of the Monument, the decisions made will be informed by travel analysis and site-specific project analysis. Evaluation criteria for the travel analysis will include criteria similar to the criteria described above for the RAP, as well as other criteria appropriate to the specific proposed action.

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Map Packet

There is a supplementary map packet of 5 large maps accompanying this document.

This packet includes:

1. Map A: Land Allocations
2. Map B: Wildlife Allocations
3. Map C: Wildland Urban Intermix
4. Map D: Giant Sequoia Groves
5. Motor Vehicle Use Maps

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